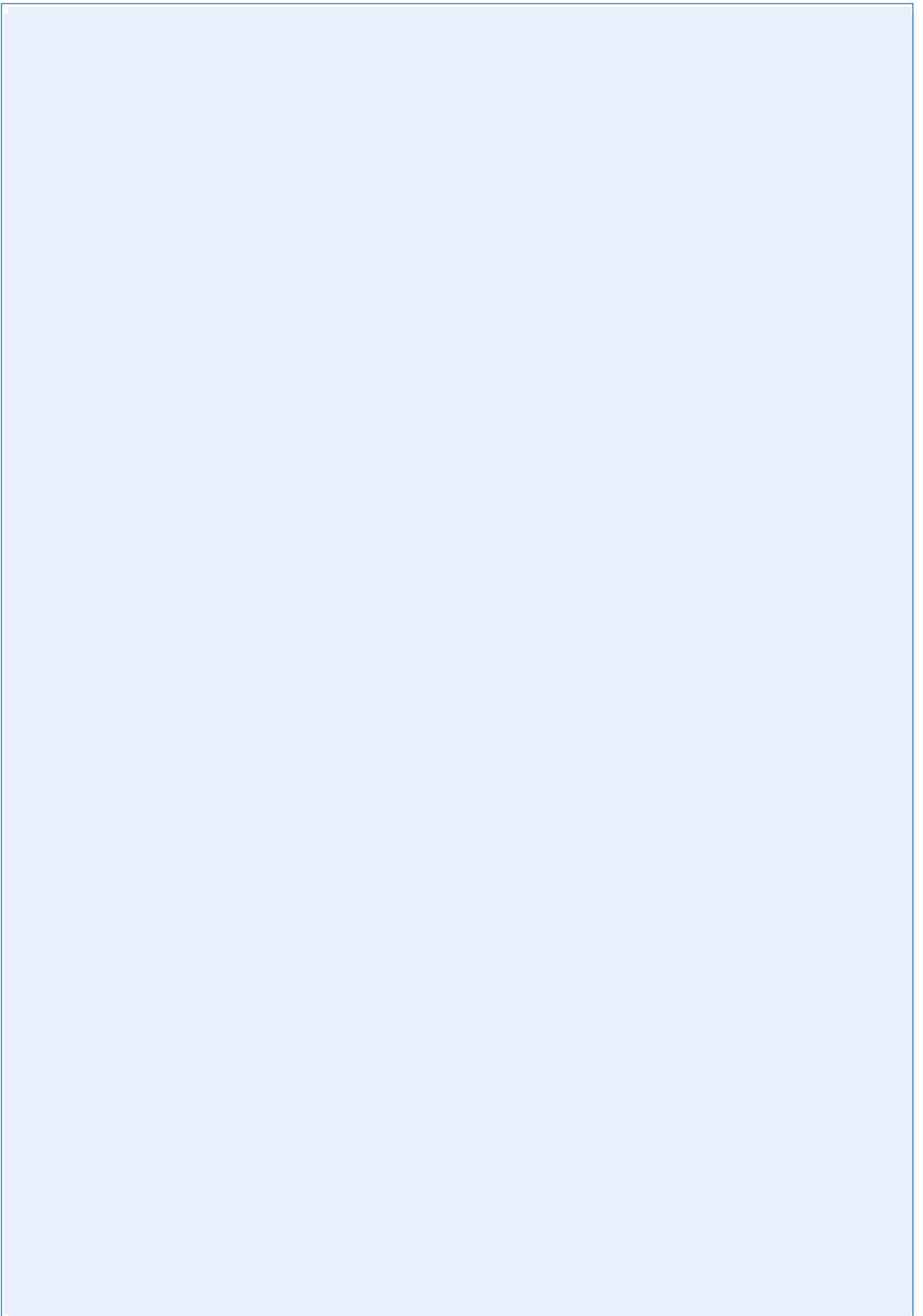


# Our water future

A discussion document



## Table of Contents

<i>Mihi</i> .....	3
<i>Foreword</i> .....	3
<i>Water and Tāmaki Makaurau / Auckland: inseparable stories</i> .....	4
<i>A conversation we need to have: The purpose of this discussion document</i> .....	5
<i>The proposed framework for an Auckland Water Strategy</i> .....	7
<i>From ridge to reef: taking a systems approach</i> .....	8
<i>Meeting current and future needs: the role of the council</i> .....	9
<i>Water, water everywhere: the national conversation</i> .....	10
<i>Implementing the Auckland Plan 2050</i> .....	11
<i>Getting our bearings: international comparisons</i> .....	12
<i>A vision that speaks to this place</i> .....	13
<i>The importance of water: describing our values</i> .....	15
<i>The big issues: what we need to work on</i> .....	28
<i>How we will work: applying a principles-based approach</i> .....	33
<i>What happens next</i> .....	36

## Mihi

[to be inserted prior to publication]

## Foreword

[to be inserted prior to publication]

## Water and Tāmaki Makaurau / Auckland: inseparable stories

Water, or wai, is a precious taonga, a treasured resource. It gives us life, shapes our environment and adds to the beauty of our region.

Our connection with water is part of what makes living in Tāmaki Makaurau / Auckland so special. Historically, our harbours and streams were abundant sources of kai for mana whenua and manuhiri alike. They also formed important transport and trade routes. Waka, ships, ferries and freighters brought trade and economic prosperity, allowing us to grow into a city of 1.66 million people with more than a third of Aotearoa / New Zealand's economic activity.

As the population of Tāmaki Makaurau / Auckland grew, we built water infrastructure to keep us healthy and safe. But we didn't always look after the waters that sustained us. Rivers were piped, wetlands were drained, and plumes of sediment and other pollutants were discharged into the harbours.

In both urban and rural areas, water quality has declined. Freshwater and marine environments are showing the stress of decades of pressure. As the population grows and the impacts of climate change take effect, these stresses will become more acute. Our water infrastructure – the networks that manage our drinking water, wastewater and stormwater – will also face new pressures.

Clean, healthy water is essential to Tāmaki Makaurau / Auckland's future. As we continue to grow and change, we need to look after this most precious taonga.

*[image: timeline of key events]*

**Infographic:** 11,117km<sup>2</sup> of ocean, 3200km of coastline, 16,500km of permanently flowing rivers, 72 natural and artificial lakes, multiple aquifers. The region is 75 per cent water.

## A conversation we need to have: The purpose of this discussion document

Defining our water future is a task for everyone together. We know that we will face some big water challenges in coming years. What kind of water future do we want to create? What vision could we aspire to, and what are the big issues we need to tackle?

We've talked a lot about water lately. Aucklanders have very clearly told the council that clean and healthy water is a top priority. Safeswim has raised awareness about the health risks that we face when our infrastructure doesn't work as well as we would like. Storms, flooding and coastal inundation have made clear the challenges of living in an ever-changing water landscape, especially for the communities that have been directly affected. Community restoration programmes have revealed strong personal connections to our natural ecosystems.

*[image with caption: Taonga tuku iho – a treasure passed down through the generations]*

In June 2018, the council decided to prepare a Water Strategy for Auckland. This will ensure that our actions respond to the many challenges and opportunities we have to improve water outcomes.

This discussion document is a first step in the strategy's development. The purpose of this document is to look across the full range of water issues and develop the discussion about the choices that we, as Aucklanders, will need to make in coming years. We need to understand the issues, so that we can set some regional directions for:

- how we take care of natural waterbodies
- how we meet our daily water needs as our population grows
- how we look after our waters while managing our growth and development
- how we prepare for future changes in our climate and our communities.

We face some big challenges that will shape what we can do:

- our waters are degraded, especially where they are close to urban areas. How can we clean up our natural waters?
- freshwater is a scarce resource, even though it rains frequently. We have limited large rivers, lakes and groundwater resources in the region to draw water from, and we are becoming increasingly reliant on the Waikato region to meet our needs. How much water will we need in future, and what are our options to meet those needs?
- we are operating in an ever-changing context, vulnerable to natural hazards such as flooding, coastal inundation, erosion and drought and the increasingly evident effects of climate change. What do we need to do to be ready for these changes?
- responding to water issues takes money and time (and the costs of doing nothing will likely end up being higher in the long run). Are the decisions we are making today

improving our water future, or just deferring the problems for future generations to resolve?

In coming years, there will be big, potentially controversial decisions to be made about how we manage water. We know that people will bring different perspectives to the table, and are more likely to support decisions that they had a hand in shaping. To help us in this process, we want to sketch out a broad framework that we can agree to, as a starting point for developing the strategy.

After setting out the local and national context, this discussion paper steps through a proposed framework for how we think and make decisions about water in Tāmaki Makaurau / Auckland (see framework, *[next page]*). The framework contains:

- an aspirational vision for our water future
- five values that describe the reasons we attach importance to water
- four big issues that are at the core of our water challenge
- six principles that will guide our actions at the council as we move forward
- four processes that we need to work on, to support quality decisions.

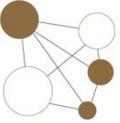
We want to hear what you think. Do the vision and values reflect what matters to you? Have we accurately described the ‘big issues’? Do you think the principles and processes will help us to make progress towards the vision?

With your feedback on this proposed framework, we’ll start to give substance to the issues and options, so that we can develop an Auckland Water Strategy that moves us toward an agreed water future.

**Box:** We have taken advice from the Mana Whenua Kaitiaki Forum to prepare this discussion document. They have said that *te mauri o te wai* should be at the centre of the strategy, with Tāmaki Makaurau / Auckland’s rivers, estuaries and harbours restored to a state of health (discussed on p.xx). Involving mana whenua in governance and decision-making roles is an ongoing part of this process, as well as making sure they are able to actively exercise kaitiakitanga in practical ways.

## The proposed framework for an Auckland Water Strategy

This table sets out what we are proposing as the framework for developing an Auckland Water Strategy. We walk through each of the elements of the framework in the following pages.

The Auckland Plan						
<b>Key challenges</b>	Population growth		Environmental degradation		Shared prosperity	
<b>Outcomes</b>						
	Belonging and Participation	Māori Identity and Wellbeing	Homes and Places	Transport and Access	Environment and Cultural Heritage	Opportunity and Prosperity

Te mauri o te wai: putting water at the centre					
<b>Vision</b>	Te mauri o te wai o Tāmaki Makaurau – the life supporting capacity of Auckland’s water – is protected and enhanced.				
<b>Values</b>	Ecosystems <i>Healthy water systems nourish the natural environment.</i>	Water Use <i>We can meet our everyday water needs, safely, reliably and efficiently.</i>	Culture <i>Water contributes to our identity and beliefs, as individuals and as part of communities.</i>	Recreation and Amenity <i>We enjoy being in, on and near the water.</i>	Resilience <i>Our communities, catchments and coastlines are resilient to natural hazards and the impacts of climate change.</i>

<b>Issues we need to work on</b>	Cleaning up our waters	Meeting future water needs	Growth in the right places	Adapting to a changing water future
<b>Processes we need to work on</b>	Creating our water future together	Setting priorities for investment	Achieving net benefits for catchments	
	Applying a Māori world view			
<b>Principles to guide our work</b>	<ul style="list-style-type: none"> <li>Recognise that water is a treasured taonga</li> <li>Work with natural ecosystems</li> <li>Deliver catchment scale thinking and action</li> </ul>		<ul style="list-style-type: none"> <li>Focus on achieving right-sized solutions with multiple benefits</li> <li>Work together to plan and deliver better water outcomes</li> <li>Look to the future</li> </ul>	

## From ridge to reef: taking a systems approach

This document considers water in all its different forms: in rivers and streams, in underground aquifers, and in estuaries, harbours and marine areas. It talks about drinking water, wastewater and stormwater – the ‘three waters’ that we manage most directly.

Sometimes we need to deal with different forms of water in different ways. But they are all connected – there is only one water, constantly moving around the water cycle. We want to make sure that we actively think about how activities in one part of the water system affect the health of the whole system. This is where we think an overarching vision will help.

Taking a system-wide view is much easier to say than to do, so developing processes to support us to keep the big picture in focus will be part of our challenge.

*[Banner image: Silhouette of Auckland’s water system from ranges to sea. To be used as a recurring visual in values sections.]*

Thinking about the whole water system aligns well with the circular economy, described in the Auckland Plan 2050. A circular economy approach means making the most of resources at each stage of their life cycle, looping resources through many cycles of use, minimising waste and capturing multiple benefits along the way. *[image: circular economy]*

## Meeting current and future needs: the role of the council

### The council has a number of roles and responsibilities for water.

At the council, we work across the region to maintain, renew and improve our waters and our water infrastructure. The decisions we make across the council family, including council controlled organisations like Watercare, Auckland Transport and Panuku, have big implications for the health and the future of our waters.

Every day, we provide safe, reliable drinking water to 1.5 million Aucklanders, and treat wastewater so that it is safe to release into the environment. We manage an extensive stormwater network, including the roads that helps to divert rainfall away from people and property. We anticipate and manage the impacts of storms, floods and other natural hazards. We restore and protect our natural waterways. Most of our work is focused on freshwater, land-based activities and the coast, but we manage impacts on the marine environment too, by capturing and cleaning stormwater before it reaches the sea. In the next ten years, we expect to invest \$7.1 billion in diverse water projects of all sizes across the region.

Our approach to water is constantly developing. We seek to innovate where we can, to find more effective ways to achieve the healthy, clean water outcomes our communities want. We work with other councils to learn together, and are pleased to be leading the development of water sensitive urban design in Aotearoa / New Zealand, such as the Water Sensitive Design Guidelines.

**Infographic:** Auckland Council, Watercare and Auckland Transport look after: 365 million litres of drinking water per day; 450 million litres of wastewater per day; 474 rivers and streams; 6000km of stormwater pipes; 154,000 manholes; 3200km coastline.

All of this work is shaped by the council's strategies, policies and plans, as well as national legislation and policy (see fig xx). *[image of national, regional and local strategies and plans]*

The main plans that we use to manage water are the Auckland Plan, the Unitary Plan, the Long-term Plan and our Asset Management Plans. Together they provide the direction, development rules, finances and work programme that determine the council's activities. They also shape the activities of everyone else across the region.

The cultural significance of water to Māori is recognised in the Treaty of Waitangi and in legislation including the Resource Management Act 1991, the Marine and Coastal Area (Takutai Moana) Act 2011, and the Hauraki Gulf Marine Park Act 2000. These Acts guide our approach to water at the council.

## Water, water everywhere: the national conversation

Water is a big issue for all of Aotearoa / New Zealand. The national conversation often sets the direction for regional and local efforts. Of particular relevance here, the National Policy Statement for Freshwater Management (NPSFM) requires all regions to safeguard the life-supporting capacity of freshwater bodies and their associated ecosystems. The first objective of the NPSFM is ‘to consider and recognise Te Mana o te Wai in the management of fresh water’ (see box). This is to ensure that the health and wellbeing of freshwater bodies is ‘at the forefront of all discussions and decisions about water’.

**Box:** Te Mana o te Wai is the integrated and holistic wellbeing of a freshwater body. Upholding Te Mana o te Wai acknowledges, protects and enhances the mauri of the water. It recognises the connection between water and the broader environment.

*[image: Te Hauora o te Taiao (the health of the environment), Te Hauora o te Wai (the health of the waterbody) and Te Hauora o te Tangata (the health of the people).]*

Further national-level processes are currently underway to review how water is managed, including:

- The Essential Freshwater Work Programme, led by the Ministry for the Environment and Ministry for Primary Industries. This is focused on stopping further harm to freshwater, reversing existing damage, and ensuring fair allocation of freshwater and nutrient discharges. It is expected to result in amendments to the Resource Management Act and the NPSFM, and introduce a new National Environmental Standard for Freshwater Management by 2020.
- The Three Waters Review, led by the Department of Internal Affairs. This is looking at how to improve the management of drinking water, stormwater and wastewater to better support Aotearoa / New Zealand’s prosperity, health, safety and environment.
- The Urban Water Working Group, an independent collaborative body convened by the Ministry for the Environment. The group has developed ten draft principles for promoting Te Mana me te Mauri o te Wai in urban environments.

These processes have implications for our water future in Tāmaki Makaurau / Auckland: they might lead to reforms about how water is managed and delivered to Aucklanders, and change how we regulate our activities. The council will be an active participant in these national discussions, to ensure Tāmaki Makaurau / Auckland’s water needs are considered.

## Implementing the Auckland Plan 2050

The Auckland Plan 2050 sets six outcomes and the development strategy for Tāmaki Makaurau / Auckland. It identifies the directions required to deliver the outcomes we want to see by 2050, supported by focus areas for action. The Auckland Plan 2050 sets the basis for the development of a water strategy for Tāmaki Makaurau / Auckland.

Three challenges sit at the heart of the Auckland Plan:

**Population growth:** More than 1.66 million people live in Tāmaki Makaurau / Auckland already. Over the next 30 years this could increase by another 720,000 people to reach 2.4 million. The rate and speed of Tāmaki Makaurau / Auckland’s population growth puts pressure on our communities, our environment, our housing and our roads.

**Environmental degradation:** Decades of pressure have had negative impacts on the environment, including on our waters. This pressure will continue to increase if changes are not made to the way that the environment is valued and managed. Climate change will further amplify the challenges, with impacts such as sea level rise, more frequent extreme weather events, and increased risk of flooding and coastal inundation.

**Shared prosperity:** Tāmaki Makaurau / Auckland’s success is dependent on how well Tāmaki Makaurau / Auckland’s prosperity is shared. As Tāmaki Makaurau / Auckland continues to grow, we need to ensure that all Aucklanders can benefit from the social and economic prosperity that growth brings and can participate in and enjoy community and civic life.



Better outcomes for water are supported across the six outcomes of the Auckland Plan 2050, highlighting the need to take an integrated approach across a range of areas. For example, one of the environmental focus areas is to restore environments as Tāmaki Makaurau / Auckland grows.

To read more about the Auckland Plan, go to

<https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/auckland-plan/Pages/default.aspx>

## Getting our bearings: international comparisons

### How are other cities around the world thinking about their water futures?

To help us develop a Tāmaki Makaurau / Auckland-based vision, we have looked at international examples of water visions and strategies. Many cities describe their aim as to become ‘water sensitive cities’ or to apply a ‘one water approach’. A scan across comparable cities reveals a number of themes – all of which could be readily applied to Tāmaki Makaurau / Auckland’s water situation:

- recognising water supports prosperity, community and economic wellbeing
- future-facing, aiming for inter-generational sustainability and resilience
- a priority on looking after the environment and ecosystems
- managing hazards and ensuring security of supply
- an integrated approach to decision making across the water cycle.

**Box:** Some examples of water visions:

- ‘Water is fundamental to our communities. We will manage water to support a healthy environment, a prosperous economy and thriving communities, now and into the future.’ *Water for Victoria (Australia)*
- ‘By 2040, London will manage its rainwater sustainably to reduce flood risk and improve water security, maximising the benefits for people, the environment and the economy.’ – *London Sustainable Drainage Action Plan*
- ‘With our OneWaterSF approach, San Francisco will optimise the use of our finite water and energy resources to balance community and ecosystem needs, creating a more resilient and reliable future.’ – *OneWaterSF (San Francisco)*

In Australia, the Cooperative Research Centre for Water Sensitive Cities has supported stakeholders to develop ‘transition strategies’ for different cities. Each city process has defined its own vision, with some commonalities:

- ‘Adelaide is an attractive and resilient city that uses its diverse water resources and knowledge to drive prosperity, sustain healthy ecosystems, and connect communities.’ – *Vision and Transition Strategy for a Water Sensitive Adelaide*
- ‘Sydney is a beautiful, prosperous and resilient city with thriving communities, healthy ecosystems and cherished urban landscapes supported by active water stewardship.’ - *Vision and Transition Strategy for a Water Sensitive Sydney*

## A vision that speaks to this place

What kind of water future do we want for Tāmaki Makaurau / Auckland? A vision statement helps us to define our destination and guide our choices along the way.

While the international examples affirm the issues and opportunities we have identified here in our region, we would like to take an approach that is more clearly connected to Tāmaki Makaurau / Auckland.

Through the Auckland Plan and Long-term Plan consultations in 2018, Aucklanders provided their own views of our water future. They emphasised that improving water quality is an urgent priority for action, to improve environmental health and recreational amenity. They also noted concern about the impacts of growth and climate change.

From that basis, we want to create a vision that:

- is special to this place
- recognises the vital relationship between our water and our people
- recognises the role of mana whenua as kaitiaki within the region
- represents values that can unify us in our actions
- sets a long-term aspiration for the way we take care of our waters.

The vision doesn't have to describe where we are today, but rather where we want to get to. We also want to make sure that we align with the national conversation about water and the objectives that have been set for us to achieve through the National Policy Statement on Freshwater Management.

We are fortunate to have concepts in te Ao Māori that can help us express all of this in a way that is unique to our place in the world. With the guidance of the Mana Whenua Kaitiaki Forum, 'te mauri o te wai – the life supporting capacity of water' has been identified as a concept that encompasses our aspirations for water in Tāmaki Makaurau / Auckland.

### Te Mauri o te Wai

Te mauri o te wai has many layers. It is about the health of water but also about the deep connections between water, the environment and people.

Water has mauri – a vitality or essence that supports life. The actions we each take can enhance mauri or, they can diminish mauri.

In turn, the mauri of water affects the mauri of people. When te mauri o te wai is compromised, so are we. This is a concept that we can all connect to. Knowing that some of our waters are polluted to the point where we can't safely fish, or swim, or drink, is concerning for many Aucklanders. Te mauri o te wai evokes a future where our children

and grandchildren are able to swim in, and harvest from, our rivers, estuaries and harbours.

While the National Policy Statement for Freshwater Management speaks of Te *Mana* o te Wai, we think te *mauri* o te wai is a better description of the aspiration that could unite us in Tāmaki Makaurau / Auckland. Waters with healthy mauri nourish us and allow us to meet our obligations to care for one another (manaakitanga). As mana whenua have observed, there can be no mana without mauri.

Guided by the Mana Whenua Kaitiaki Forum, we are proposing the following vision as an aspirational statement of where we would like to be by 2050:

**Te mauri o te wai o Tāmaki Makaurau – the life supporting capacity of Auckland’s waters – is protected and enhanced.**

We appreciate that we might have many different ideas of how we protect and enhance te *mauri* o te wai, and we believe this opens an exciting space for discussion and collaboration. If we can agree a common destination, it will become easier to debate the options we can take to get there, and the way we prioritise our actions. It should help us to recognise the consequences of actions across the whole water cycle, and ensure we treat water as a precious resource.

## The importance of water: describing our values

When we talk about values, we are describing what is important to us.

A value-based approach can help connect our decisions back to what we think matters most. In this way, our values are our navigational aids, helping us to stay on course towards our vision.

Box: The National Policy Statement for Freshwater Management requires that we develop values to inform the setting of freshwater objectives and limits, including compulsory values of ecosystem health and human health for recreation. These are used to inform the setting of freshwater objectives and limits. **We are proposing to use the values we describe here as we develop Auckland's response to the policy statement.**

So, what is it that we value about water in Tāmaki Makaurau / Auckland?

In the next few pages, we describe values for water in five broad categories:

1. Ecosystems: healthy water systems nourish the natural environment.
2. Water use: we can meet our everyday water needs safely, reliably and efficiently.
3. Recreation and amenity: we enjoy being in, on and near the water.
4. Culture: water contributes to our identities and beliefs, as individuals and as part of communities.
5. Resilience: our communities, catchments and coastlines are resilient to natural hazards and the impacts of climate change.

On the following pages, we describe what it is that we value for each category, and the current and future state of our waters compared to those values. We connect the values to the 'big issues' (which we discuss in the next section). Finally, we identify where you can learn more and suggest some simple examples of how you can take action right now.

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→ Question 1. Do these values match what you value about water? Please tell us why, and if there is anything else you value about water?

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**Box:** Tikanga codifies Māori values into traditional practices and customs, to ensure that the mauri of water is not degraded. Tikanga is commonly based on experience and learning that has been handed down through generations, and its practice can vary between iwi and hapū.

## Ecosystems

### What we value: Healthy water systems nourish the natural environment

Healthy streams, rivers, lakes and coastal waters are home to diverse plants, animals, insects and other organisms. When the mauri of our water is enhanced, and water systems are healthy, they can clean up contaminants, absorb carbon dioxide, and provide us and other animals with the food we need to survive.

### Current state

The health and mauri of our waterways is very closely connected to the activities that are happening on the surrounding land. Some streams are surrounded by native bush and have clean water and thriving animal and plant populations (see map). By contrast, most of our urban streams are in poor health, with degraded mauri. The health of rural waterways is mixed, depending on how the surrounding farming, forestry and agricultural activities are managed. Our estuaries, harbours and marine waters are home to diverse biodiversity, but sediment from land-based activities are muddying the waters and smothering sea life. *[image facing page: water ecological health map]*

#### Fast facts:

- The Kaipara Harbour is the nursery for 98 per cent of snapper off the west coast of the North Island.
- 80 species of birds roost around the Manukau Harbour, including migratory birds like bar-tailed godwits who fly continuously for eight to 10 days to get here from Alaska.
- Marine reserves are proven to help biodiversity. The ecosystems in the Goat Island Marine Reserve are healthier than many others in the Hauraki Gulf. It acts as a nursery for the wider fishery in the gulf, with around 11 per cent of young snapper in a 40km radius the offspring of adults that lived in the reserve.

So, what's causing the degradation? It's not a simple picture. Sediment comes from land disturbance like earthworks, forest harvesting, stream erosion and slips. Many other contaminants accumulate from diffuse sources that are difficult to manage, like the heavy metals that come from car brake linings. Roads are a conduit for rain to wash these materials into the environment.

Although we are the nation's largest city, most of Tāmaki Makaurau / Auckland is rural. Agriculture, forestry and horticulture can increase the levels of sediment, nutrients and bacteria in waterways. Even in natural forest areas, sediment and bacteria will wash into our streams. The more sediment that is released at one time, the harder it is for our ecosystems to recover. *[image: what's having an impact?]*

Our ideas about what is okay have changed over time, and we are less accepting of activities that were once quite normal, such as clearing native forests or tipping waste into rivers. Now, we're learning about the impact of litter and microplastics on wildlife.

We've started to improve our impacts on ecosystems, with more water sensitive rural and urban development practices. Farmers are using stock exclusion and nutrient

management as part of good farming practices. In urban areas, rain gardens, litter traps and swales can filter contaminants out of stormwater. Restoration projects are helping to improve the mauri of wetlands, lakes and streams. In the wider system, many of the actions we are taking for other reasons will also help water outcomes, such as Auckland Transport encouraging Aucklanders to use passenger transport or walking and cycling to reduce the number of single occupancy cars on our roads.

We're innovating and learning as we go. Different treatment systems are being trialled in the road corridor to treat the runoff before it reaches our harbours. New technology brings new opportunities, such as using smart water sensors and drones to carry out water monitoring programmes.

**Case study:** Like many urban streams, Te Auaunga / Oakley Creek in Mount Albert has been known for its poor water quality. Over the last few years local residents have been planting native trees around the stream to help reduce the amount of contaminants entering the water.

Recently students from Gladstone Primary discovered a spotty stonefly nymph at the stream. These are usually only found in areas of native bush and high water quality. Its presence is a reward for local residents, showing their efforts are paying off.

### Future challenges and opportunities

Continued population growth and urbanisation will add to the pressures on our waterways. For example land development is predicted to triple the amount of impervious surfaces (hard surfaces like buildings and roads that stop water from soaking into the ground) by 2048. Without careful design, this will increase the amount and speed of stormwater, eroding waterways and having bigger effects on receiving waters.

The impacts of climate change, such as increased temperatures and more frequent storms will make it harder for our natural systems to recover after events.

### What we need to work on

This value connects to:

- cleaning up our waters (p. xx)
- growth in the right places (p. xx)
- creating our water future together (p. xx)
- achieving net benefits for catchments (p. xx).

### Learn more

State of the Environment 2015; Auckland Design Manual – Water Sensitive Design

### Take action

You can help absorb stormwater in your own backyard by reducing the amount of hard surfaces like concrete, and adding mulch to garden beds. Wash your car on the lawn or in a commercial carwash to help filter contaminants – there are more ideas [here](#).

## Water use

### What we value: We can meet our everyday water needs safely, reliably and efficiently

Access to clean water is essential to life, and critical for public health and the economy. In urban areas, we value having an efficient, trustworthy system that provides safe drinking water as easily as turning on a tap. In rural areas and on our islands, where we must manage our own water resources from season to season, we value every drop. We rely on water for sanitation, with a large-scale wastewater system that helps to convey and treat sewage and minimise the risk of infectious diseases.

### Current state

**Where our water comes from:** Providing Tāmaki Makaurau / Auckland's population with a secure supply of fresh water is one of the council's most important jobs. Although it rains regularly, we do not have large fresh water resources within the region: only 38 per cent of Watercare's municipal water supply is sourced within the region (see fig xx). The rest comes from Watercare-owned dams in the Hunua Ranges (part of the Waikato catchment) and the Waikato river. *[image: sources of Auckland's water]*

The last dam built to supply Tāmaki Makaurau / Auckland's drinking water was opened in 1977. After the drought of 1993/94, Watercare undertook a detailed investigation of future sources of drinking water. The Waikato River was selected as the best source and a new treatment plant and pipeline was completed in 2002.

Today, our municipal system has proven to be safe, reliable and resilient, and we work hard to keep it that way, even in the most testing of situations (see box).

**Case study:** In March 2017, the Tasman Tempest dumped a record amount of rain on Tāmaki Makaurau / Auckland, peaking at two months' worth in only 12 hours. The rain caused massive slips in the Hunua Ranges and filled the dams with silt. The Ardmore treatment plant had to work a lot harder to get the water up to drinking quality. Aucklanders were asked to cut down their water use by 20 litres a day, and Watercare was able to draw on other dams to continue supplying safe drinking water. Watercare is now looking at ways to reduce slips including planting native trees, and treatment technology to handle more silt from future storm events.

Our picture of rural water supply is less clear, because it's not managed in the same way. Rural users source their own supply, from rain tanks, surface water takes, or groundwater. The council issues resource consent for groundwater takes, so we know that aquifers below some parts of Tāmaki Makaurau / Auckland are nearly fully allocated, which poses challenges for future water use.

For those using water tanks, storing enough water to last through summer can be a real challenge. There can be periods when rain is not frequent or heavy enough to replenish dwindling tank levels, and water has to be trucked in.

**How our water is used:** Watercare supplies around 365 million litres of water every day, for use in homes and businesses. That works out to 272 litres per person per day, down 26 litres since 2004.

More than half of that water is used in homes. At 160 litres per person per day, we have the lowest per capita residential water use in Aotearoa / New Zealand.<sup>1</sup> Volumetric charging (paying for water based on the amount that is used) encourages us to be efficient. It also helps us to quickly detect when something's gone wrong, like a broken or leaking pipe. *[Chart: water use per person per day, gross compared to other cities]*

About a quarter of Tāmaki Makaurau / Auckland's reticulated water supply is used by the commercial sector. Some industries are particularly water intensive, including beverages, food and other manufacturing activities. *[Infographic: embodied water]*

**Fast fact:** By being water efficient, Aucklanders have managed to defer the need for another water source by five years. Water efficiency gains by 2025 will buy us another five years.

**Where our water goes:** We also use water to transport our sewage, as wastewater. The mauri of wastewater is diminished. If it mixes with other waters, it can pollute the mauri of those waters too, so keeping untreated wastewater out of waterways is an important objective, especially for our ecosystem and recreation and amenity values (this is discussed further on p.xx). For the value of water use, we are interested in how our wastewater systems meet our daily needs safely, reliably and efficiently.

Before waterborne sanitation was introduced, Aucklanders used cesspits and night-soil carts, and suffered from regular outbreaks of typhoid and other infectious diseases. Tāmaki Makaurau / Auckland's first sewerage system was completed in 1914 and was an important milestone for public health (even if it simply moved the problem elsewhere – more on that on page xx).

Today, 18 treatment plants discharge around 450 million litres of treated water each day. The flow from the largest plant at Māngere is comparable to some of our bigger rivers.

Significant upgrades to treatment plants have greatly improved the standard of wastewater treatment. As well as removing solids and biological nutrients, Māngere's treatment processes result in a 10,000-fold reduction in harmful pathogens, bacteria and viruses. The final effluent meets standards that protect public health, the local environment, and Tāmaki Makaurau / Auckland's coasts, estuaries and harbours.

**Case study:** Wastewater is now being valued as a source of energy and reusable products. Water reuse at the Māngere and Rosedale treatment plants means we don't need to use high quality drinking water for this low-grade purpose. We save enough drinking water to supply 156,000 Aucklanders every year. The plants also generate energy from biogas to power themselves (56 per cent of Māngere's energy needs, and 74 per

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<sup>1</sup> 2016 Water New Zealand performance review

cent for Rosedale). The goal: to run the Māngere and Rosedale plants on self-generated energy by 2025.

### Future challenges and opportunities

We expect that population growth will drive demand for safe, reliable drinking water beyond supply by 2050, and we will need to have new solutions in place. We currently have limited prospects for increasing either supply or storage within our regional boundaries, so this is something we would like to explore further. It is likely that we will need to use a mixture of tools to meet our urban and rural water needs, including managing our demand and securing new sources. We come back to this in 'Meeting Future Water Needs' on page xx. *[image: water abstraction and future demand curves]*

The wastewater network and plants are also going to approach their design capacity. We can add further capacity, and need to think about the best ways to do this.

As our city grows, decisions about where and how this happens can have a big influence on how easy or expensive it is to provide water services. Getting water and wastewater to where we need it to go relies on infrastructure which is expensive to build, maintain and operate. We come back to this in 'Growth in the Right Places' on page xx.

We will also need to ensure that our current water sources remain fit to drink from, especially from smaller-scale bores and rural water takes. As groundwater allocations reach their limits in some places, we need to ensure farmers and growers are able to meet their water needs, and continue their important contribution to Tāmaki Makaurau / Auckland's economy and food systems. This includes thinking about how allocation is fairly managed, for example between existing and new activities.

### What we need to work on

This value connects to:

- meeting future water needs (p. xx)
- adapting to a changing water future (p. xx)
- setting priorities for investment. (p. xx)

### Learn more

[Auckland water efficiency strategy](#)

### Take action

An undetected leak can waste thousands of litres of water. Fix dripping taps and check under appliances for leaks. Watercare provides advice to help households and workplaces save water [on their website](#).

## Recreation and amenity

### What we value: We enjoy being in, on and near the water

Spending time in or around water is one of the benefits of being an Aucklander: we are never more than 20 kilometres from the coast. The recreational possibilities and amenity value of our beaches, harbours, lakes and streams are highly prized and enhance our place as one of the world's most desirable cities to live.

### Current state

**Access:** Tāmaki Makaurau / Auckland's waters are very actively used for recreation, with popular spots like Piha and Long Bay receiving more than 10,000 visitors a day at peak times. Some of our popular recreational spots, like the west coast lakes, are also highly sensitive natural environments. There is a challenge to manage demand without undermining the very qualities that visitors enjoy.

To help people enjoy the water, the council provides facilities like boat ramps, jetties and carparks. To help people stay safe, we support essential services such as Surf Lifesaving and the Auckland Rescue Helicopter. The council's community facilities delivered 400,000 swimming lessons last year.

*[Image and caption: Okahu Bay is a significant landing bay for the many traditional Polynesian voyaging canoes (waka hourua) visiting our shores.]*

**Public health:** Sometimes water gets contaminated with human and animal wastes. This can make people sick, and is a source of considerable public concern. Some of this we can fix (like broken sewer pipes and under-performing onsite wastewater systems), and some (like bird droppings) we cannot. The Central Interceptor and Western Isthmus water quality improvement project will help with wet weather overflows in the older areas of the city that were built with combined stormwater and wastewater services (only two per cent of the serviced area). New technology makes it possible to improve small-scale wastewater issues too, with better information about the sources of contamination, and better technology to fix the problems.

To help people make informed choices about where and when they swim, the council has partnered up with Surf Lifesaving Northern Region and the Auckland Regional Public Health Service to develop Safeswim. Data from sensors on the wastewater network is combined with predictive modelling to provide the public with the best real-time information possible. Safeswim also allows Aucklanders to monitor progress towards our target of more swimmable days and better public health. *[Infographic: sources of contamination]*

**Case study:** In 2018, the council and community of Clarks Beach banded together to find and fix the sources of contamination that were polluting their beach. Locals regularly collected water samples to feed into Safeswim. The causes of pollution are being traced, and the long-term alert on the beach has been lifted.

**Amenity and connection:** In urban and suburban areas, we are working to make hidden waterways visible again. Daylighting and naturalising our streams, providing pre-treatment for stormwater, and building boardwalks along esplanades are great ways to reconnect our communities with their natural environment. They are examples of mauri-enhancing actions.

### Future challenges and opportunities

As Tāmaki Makaurau / Auckland's population increases, it will be important to maintain recreational and amenity opportunities for all Aucklanders, and to manage increased demand for recreational use of waterways, beaches and the associated public facilities like boat ramps. Growth in tourism could add to these pressures, and introduce new challenges, like hosting more visiting cruise ships. More urban development will put further pressure on the health of our waters, and have an effect on their recreational and amenity values.

Climate change, coastal inundation and more severe storm events are likely to undermine access to water for recreation. Already-sensitive environments will become more vulnerable to the impacts of visitors.

**Fastfact:** Since they began in 2002, volunteers of the Watercare Harbour Clean Up have collected 38 million pieces of litter from our waterways.

### What we need to work on

This value connects to:

- cleaning up waterways
- creating our water future together.

### Learn more

The [Safeswim website – safeswim.org.nz](https://safeswim.org.nz)

### Take action

Think before you flush things down the drain. In 2016, around half of the wastewater overflows in dry weather were caused by people flushing rubbish down the toilet and pouring cooking fats, oils and grease down the sink.

## Culture

### What we value: Water contributes to our identities and beliefs, as individuals and as part of communities

For the many cultures that are part of Tāmaki Makaurau / Auckland, our waters add to our vitality and identity, and allow us to express our traditions. Being able to connect with water in places that are special to us, whether that's through swimming, surfing, fishing or gathering shellfish, is part of what makes us an Aucklander. It's also what we like to share with our visitors.

Our cultural attitudes shape how we value and use water. If healthy waterways are valued within our culture, we will place a higher priority on their protection.

Water holds particularly special cultural value to Māori. Mana whenua are iwi and hapū who have a genealogical relationship (whakapapa) to significant local waters, and have an obligation as kaitiaki to protect them as taonga tuku iho (treasures to be passed down to future generations).

### Current state

Population increase, sedimentation and pollution have all had an impact on the cultural value of water, over a long duration. Water with degraded mauri reduces the quality of our experience. Swimming at a litter-strewn beach, or fishing in murky water diminishes our cultural wellbeing.

This has adversely affected mana whenua and their ability to exercise manaakitanga. Caring for guests is an important sign of mana (prestige and authority), and relies on gathering food from traditional harvesting grounds (mahinga kai).

*[image: water in te reo]*

Initiatives in two of our harbours are bringing the cultural values of communities and mana whenua into decision-making processes:

- Sea Change – Tai Timu Tai Pari, a marine spatial plan and initiative for the health and sustainability of the Hauraki Gulf, with mana whenua views woven throughout all aspects of the plan.
- The Integrated Kaipara Harbour Management Group, created to ensure a healthy and productive Kaipara Harbour.

**Case study:** The sewage system that was opened in 1914 helped to reduce the problem of typhoid and infectious diseases in the city, but it also created new problems. The system fed to an above-ground wastewater pipeline that was built across Ōkahu Bay, against the wishes of the Ngāti Whātua Ōrākei iwi. It discharged raw sewage into the bay, polluting the shellfish beds, and turned the papakainga (village) into a swamp during heavy rain. The pipeline separated the people from their mahinga kai and contributed to a loss of mana for their hapū.

## Future challenges and opportunities

Population growth and climate change could put further strain on the cultural values of water, such as mana whenua's ability to gather kai from traditional food grounds.

Changing attitudes to water may play a big part in how we manage our water resources. Recognising significant natural features as a person in the eyes of the law, as has happened with the Whanganui River, could help to ensure the long-term protection and restoration of significant water bodies. Treaty settlements are creating new co-governance and management arrangements with Iwi Authorities. These arrangements recognise Māori values as a fundamental driver for the sustainable management of natural resources.

## What we need to work on

This value links to:

- cleaning up waterways (p. xx)
- applying a Māori world view (p. xx).

## Learn more

[Sea Change Marine Spatial Plan](#)

## Take action

Consider what you can do to restore the mauri of the waters you love. Be mindful of how the effects of your actions might wash downstream to those waters (e.g. littering, and using stormwater drains for anything but rain).

Community groups welcome volunteers to clean up and replant local waterways – lists of community programmes are available [here](#) and [here](#).

## Resilience

### What we value: Our communities, catchments and coastlines are resilient to natural hazards and the impacts of climate change

We value resilience in our water systems, both natural and engineered. We want them to continue working through sudden shocks and more gradual shifts in conditions.

Intense storm events, coastal erosion, and localised floods remind us that Tāmaki Makaurau / Auckland is vulnerable to a range of hazards that can risk our safety and our daily lives. We value our ability to weather such events with the least possible disruption. When disruptions do happen, we value being able to recover quickly and effectively.

### Current state

**The hazards:** Most hazards, like storms, flooding, coastal inundation and droughts, are natural processes. They only become hazards when they affect the things that we value, like property, infrastructure, and – most importantly – our safety. In some places, we have made the impact of natural hazards worse, by reclaiming coastal land, modifying landscapes, increasing impervious surfaces, and building in vulnerable locations.

Hazard events can be localised and frequent. Nearly every year, we will experience a damaging flood or other event somewhere in the region, bringing very real disruptions to affected households and businesses. Some parts of Tāmaki Makaurau / Auckland are more vulnerable than others. *[image highlighting hazards]*

**Fast fact:** Floods are the most frequent and costly natural disasters in Aotearoa / New Zealand. 137,000 buildings in Tāmaki Makaurau / Auckland are prone to some form of flooding, of which 16,000 are at risk of flooding above floor level.

**Water infrastructure:** The resilience of our infrastructure is an important consideration. We want to avoid disruptions to essential services such as drinking water supply and wastewater disposal. Floods can make roads impassable, and pose direct threats to our safety. These can be localised problems or have region-wide consequences, depending on where the hazard occurs and how quickly services can be reinstated.

**Case study:** Five days of unusually heavy rain in March 2017 flooded more than 300 properties. Trees fell, slips blocked many roads, and more than 2800 homes were left without power.

In New Lynn, debris washed downstream and blocked a major culvert under the Clark Street and Great North Road intersection. Stormwater overflowed the culvert and flooded local buildings and residences. The footpath and road collapsed into a very large sinkhole, and one multi-storey building was so damaged that it had to be demolished.

Major urgent repair works were an opportunity to make things better than before. The new and improved culvert has two levels, to cope with regular flows and flash flooding. Embracing water sensitive design, roadside plants are used to capture excess water and act as a 'biofilter' by catching contaminants before they enter the stormwater system.

[image: New Lynn culvert]

**Communities and councils:** In the wake of the South Island earthquakes, we have learned a lot about the community dimensions of resilience, including the need for:

- **Connected communities.** Communities that are better connected to each other are better able to take care of each other in times of difficulty.
- **Informed choices.** Resilience requires that we are all able to make informed choices about risk. The council is working with scientists to develop robust data, such as flood mapping and coastal inundation and erosion studies. We need timely and effective ways to share that information with Aucklanders.

**Case study: Day Zero.** Capetown's experience highlights how essential it is for our water systems to be resilient. A normally well-supplied city, severe drought dropped water storage levels close to the point where officials were counting down to when they would need to turn off the taps. On 'Day Zero,' residents would only be able to collect 25 litres of water each from standpipes across the city. That drastic vision prompted residents to halve their water, delaying Day Zero for now. The city is pursuing further water efficiency and diversifying its water sources. The changes have come at significant economic and personal cost, but highlight the ability of communities to respond when they need to.

The five R's of Tāmaki Makaurau / Auckland's emergency management: Reduction, readiness, response, recovery, resilience.

### Future challenges and opportunities

Risks to resilience are expected to change over time, in part because natural systems are dynamic and ever-changing, and in part because of climate change. Sea level rise, changes in rainfall intensity and patterns, and more storms will all intensify existing risks. For example, predictions for losses from coastal erosion in different parts of the region range from 6m to 55m in the next 100 years. With sea-level rise, these predictions extend to 200m in some areas. These kinds of changes will have significant effects on the future of coastal properties and activities.

**Infographic:** A future with more weather extremes (NIWA, 2017 report)

Spring rainfall declines. Autumn rainfall increases. Annual total rainfall increases slightly.

Extreme rainfall increases. Drought increases.

More hot days. Fewer cold nights. Higher fire risk.

*[image and caption: Tamaki Drive is closed up to eight times per year due to flooding when high tides and significant storms combine. King tides are an indicator of the effects of future sea level rise.]*

### **What we need to work on**

This value connects to:

- adapting to a changing water future (p. xx)
- growth in the right places (p. xx)
- creating our water future together (p. xx)
- setting priorities for investment (p. xx).

### **Learn more**

Working together to build a resilient Auckland: Auckland Civil Defence and Emergency Management Group Plan; [Coastal Management Framework for Auckland](#)

### **Take action**

Have you checked the flood hazard maps for your property?

Keep drains and gutters clear of debris and pay attention to heavy rain warnings.

## The big issues: what we need to work on

The discussion of the five values highlights just how much we need to do if we are going to protect and enhance te mauri o te wai o Tāmaki Makaurau.

As part of developing this discussion document, we talked with Councillors, local board members, the Mana Whenua Kaitiaki Forum and staff from across the council family to get their perspective. We asked them, what are the issues that we need to tackle? We also looked at the submissions from the Long term Plan and Auckland Plan 2050 processes.

From those sources, we have distilled four big issues that we think are at the heart of Tāmaki Makaurau / Auckland's water future:

- cleaning up our waters
- growth in the right places
- meeting future water needs
- adapting to a changing water future.

These are challenging issues that we can't afford to ignore. None of them have a quick fix, and we don't yet have all the solutions that we need.

For the council, we want to make sure that our work programmes are responsive to these big issues, and that we are always on the lookout for new opportunities to make progress. Developing a Water Strategy will help us to keep our focus where it needs to be.

We start to talk about the issues on the following pages, and suggest some lines of inquiry that we'd like to pursue as part of developing an Auckland Water Strategy.

We are proposing to work across the council and with mana whenua, stakeholders and the community to develop better understanding of the issues, to come up with options to move forward, and to implement the preferred approach. We'll also look to define goals and outcomes for each of the big issues. That way, we'll be able to evaluate whether we are making a difference.

We are interested to hear your views about whether we have identified the right set of issues, and what kind of actions we should prioritise.

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→ Question 2. How concerned are you about these issues? Please tell us why, and what you think we can do now to anticipate and adapt to the changes in our water future?

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## Cleaning up our waters

Our biggest ecological effects on water come from our activities on the land. Contaminants wash down through catchments and into our waterways, disrupting ecosystems and damaging mahinga kai. Faecal contamination from humans, animals and birds poses health risks for recreational use.

What do we need to do on the land, to clean up our waterways?

Aucklanders have very clearly stated an ambition for cleaner waters<sup>2</sup>. We want to be able to enjoy the water without risk of getting sick, and we want to get pollutants out of the waterways. We want to restore the biodiversity of our natural waterways, and have confidence that our water infrastructure is providing reliable, clean drinking water.

Cleaning up our waters is a long-term project. It's going to take time and money, and there's a connection between the two. With more money we can move faster, with less it might take us longer to get to our goals.

Through the water targeted rate, we have committed an additional \$452 million over the next ten years to deliver cleaner harbours, beaches and streams. The money is funding programmes to improve stormwater systems, reduce wastewater overflows, and rehabilitate urban and rural streams. This is going to enable us to achieve in a decade what we had originally anticipated would take thirty years, but this investment is only part of the solution: there is still more to be done.

The needs are going to be different across the region. It's going to take more effort to clean the waters in some areas compared to others. We take a risk-based approach to deciding how we stage our investments, for example the places with the highest human health risk. How do we make these choices transparent, with a level of reassurance that the objective of cleaning our waters applies to the whole region, even if its implementation has to be staged?

→ We would like to explore how we can move further, faster with cleaning up our waters. Some of the possibilities include better data-sharing, streamlining processes to encourage water sensitive design, identifying other sources of funds, and stepping up the effort to identify and fix sources of pollution.

*[Image: methods we can use to clean up our waters]*

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<sup>2</sup> Auckland Plan 2050 and Long-term plan consultations, 2018.

## Growth in the right places

Managing growth is Tāmaki Makaurau / Auckland's most pressing challenge. We need to provide for the housing, employment and social needs of our growing population, while meeting concerns about affordability and the environment. The impacts of growth on water are significant: whether we like it or not, human activity inevitably has effects on our waters.

What would growth look like if we made water – te mauri o te wai – the priority in our decision-making processes? And are there changes we can make to enable that kind of growth?

Our monitoring programmes tell us that water quality is usually best in the most remote and natural parts of the region, and worst in the most urbanised areas, with a mixed picture in the rural and suburban areas in between.

If our goal is to improve te mauri o te wai, we think we need to do our best to protect the places where water is relatively healthy, and use growth as an opportunity to improve the impacts on areas that are already degraded. For example, redeveloping in our town centres is an opportunity to address some of our existing water problems, such as reducing flood hazards and improving stormwater capture and treatment. It also helps us manage our infrastructure investments, concentrating demand in a smaller area.

This approach aligns with the compact urban form promoted in the Auckland Plan 2050 and the Auckland Unitary Plan. It also lines up with our transport objectives of increasing public transport patronage. The less time we are stuck in congestion, the less pollution will come from our cars, onto our roads and into the sea.

→ We would like to look further at the tools that are needed to manage and enable growth in ways that will protect and enhance te mauri o te wai.

## Meeting future water needs

We need to ensure we continue to have enough water to meet our needs, for drinking, agriculture and industry, even as our population grows. We will also need to ensure we are fairly allocating the water we have, across the range of water demands. This includes making sure we leave enough water in streams and aquifers so they still have enough 'base flow' to be healthy.

Where will our water come from by 2050?

In urban areas, population growth is expected to outstrip currently available water supply options around the year 2050.

→ We need to evaluate a range of options for meeting Tāmaki Makaurau / Auckland's future water needs, starting with making the most of what we already have, and potentially developing other new sources of supply. The solution is likely to be a mixture of some or all of the following:

- more efficient water use (demand management)
- rainwater collection and storage, from rain tanks to reservoirs
- other water sources in the region, such as aquifers and surface water takes from rivers
- water re-use for non-potable and potable purposes
- water sources from outside the region.

In the rural parts of Tāmaki Makaurau / Auckland, we have a very limited understanding of how much water is being used. This is especially important for groundwater, because we think we are close to the limit of what we can sustainably take from aquifers in some parts of Tāmaki Makaurau / Auckland. Large water users meter their takes (as part of their resource consent conditions), so we know that they aren't all using their full allocation. But, we don't monitor small-scale bores. We also know there are many illegal bores.

→ We would like to improve our groundwater monitoring, so that we can better quantify demand and ensure our allocation systems are working and that our ecological effects are appropriately managed.

## Adapting to a changing water future

We know that conditions for our water future are changing, and that many of the changes – like droughts, flash flooding and coastal inundation – will be rapid and disruptive. We expect that effects will be felt unevenly across communities and different industry sectors, due to geography, socio-economic status, and the level of their water needs.

What can we do now, to anticipate the changes in our water future and be ready to adapt? How much additional capacity (redundancy) do we need to build into our systems, and how do we balance what is efficient today with what might be necessary tomorrow?

Deciding what kind of approaches to take and where are not simple decisions. They require a balance between technical feasibility, affordability, community expectations, and health and safety. There is also a dimension of timing. Today's hotspots require urgent responses, but as the effects of climate change are felt, we can anticipate many more hotspots emerging. How will we prioritise our responses, and how we will ensure we aren't still building in vulnerable places?

The Coastal Management Framework, approved in 2017, is a good basis for our thinking. It sets health and safety as a key consideration, then looks at whole systems to understand what changes might be needed. It sets a long-term horizon for change (100 years), and uses interim measures to work towards more durable solutions. It recognises that not all technical solutions will be suitable, or even possible, for all areas, and that what might work for ten to twenty years may need to change over the longer term.

→ As the frequency and severity of hazard events increases, so will our need for a shared understanding of risks, responses and the allocation of responsibilities. We want to continue to develop this shared understanding with communities.

### **Box:** A hierarchy of responses

On the coast, there are four key approaches we can take: do nothing, protect, adapt, and retreat. Here are some examples:

- Do nothing: No measures put in place
- Protect: Building seawalls and planting dunes
- Adapt: Raising buildings to account for sea level rise
- Retreat: Moving back from the coast

*[Image of a seawall. Coastal defences such as seawalls can reduce the impacts of coastal erosion but they don't usually fix the underlying cause of the erosion. Defences often need a lot of maintenance if they are to be used as more than a temporary solution.]*

## How we will work: applying a principles-based approach

We have a lot to do to make progress, both within the council and in partnership with mana whenua, stakeholders and communities. We are proposing the following six principles to guide us as we work:

1. **Recognise that water is a treasured taonga.** Water is life, and needs to be managed carefully to restore te mauri o te wai.
2. **Work with ecosystems.** Working with the natural environment, and mimicking its systems wherever possible is key to a water sensitive approach.
3. **Deliver catchment scale thinking and action.** The catchment is the best scale to think about water flows and uses, and the balance between different activities and effects.
4. **Focus on achieving right-sized solutions with multiple benefits.** Local variables will drive the fine-grained responses to our regional aspirations, with different solutions appropriate at different scales.
5. **Work together to plan and deliver better water outcomes.** We all have a stake in our water future. Engaging with mana whenua, communities, and across disciplines helps find durable and effective solutions.
6. **Look to the future.** Our planning and development takes future uncertainties into account, so that communities and infrastructure are future-proofed and resilient.

These proposed principles can be applied as we design and implement work programmes, and as we evaluate progress. This will help to ensure the details of how we work contribute to our vision and values.

*Note: the Urban Water Working Group has proposed a series of ten principles to support improved urban water outcomes across Aotearoa / New Zealand. The principles broadly align with what we have proposed here. We will review the alignment when the draft national principles progress to a final approved version.*

### Improving the way we work

We think that there are four key elements that we need to improve within our processes, to help us apply the principles in our work:

- applying a Māori world view
- creating our water future together
- setting priorities for investment
- achieving net benefits for catchments.

As with the four big issues, we will need to work across the council and with mana whenua, stakeholders and the community to identify steps we can take to improve our processes.

## Applying a Māori world view

Putting te mauri o te wai at the centre of our approach to water means that we must incorporate a Māori world view across all of the elements of our framework. So, how might a Māori world view shape our thinking and decision-making?

With advice from the Mana Whenua Kaitiaki Forum, we think there are three main issues:

- placing te mauri o te wai at the centre of decision making processes
- incorporating mātauranga Māori (Māori knowledge and expertise)
- providing for mana whenua in governance arrangements.

We would like to explore how we might increase opportunities for mana whenua to exercise their enduring kaitiaki role over the waters of Tāmaki Makaurau / Auckland, from co-governance arrangements to hands-on projects (some of which might be enabled through the council's social procurement policy).

## Creating our water future together

Achieving a healthy, sustainable and affordable water future for Tāmaki Makaurau / Auckland will require energy and commitment from all of us. From the decisions we make in our own homes and communities, through to the regional investment choices that we will need to make, we all have the opportunity to make a better water future for Tāmaki Makaurau / Auckland.

There are a few things that we know work well already:

- engaging Aucklanders in their communities, about their local water issues
- empowering Aucklanders as citizen scientists
- working directly with industry, agriculture and other sector groups to support their leadership in water management
- ensuring we all take responsibility for our impacts, through pollution prevention and polluter pays programmes
- collaborating across teams within council and with central government agencies to ensure regulatory frameworks and practical projects are responsive to Aucklanders' needs.

**Case study: pollution prevention.** More than 1000 litres of purple dye was spilled into the Ōruarangi Stream in 2013, killing all the eels, fish and many of the oysters. The company responsible was fined \$103,000 plus \$25,000 court costs: a significant example of the polluter pays principle in action.

Mana whenua, as kaitiaki of the awa, are working proactively with the council to ensure such an accident isn't repeated. Through the Industry Pollution Prevention Programme they advise businesses on how to prevent contaminants entering waterways.

## Setting priorities for investment

Water needs to be affordable and accessible to everyone. At the same time, we have to be able to pay for our water systems. Put simply, we can't afford to do everything today. When we do spend money, we need to make sure that our spending lines up with our objectives, and that we're getting value for money.

The next thirty years will require significant investment in our water infrastructure, for drinking water, wastewater and stormwater. Between now and 2048, we expect to have spent around \$35.7 billion on water infrastructure. Rapid growth, historic underinvestment in assets, and high levels of expectations from the community have created significant financial challenges for the council.

Even without the pressure of anticipated population growth, we must continue to maintain, renew and replace our current assets to meet communities' expectations. This needs to be balanced with the community's ability to pay for the significant investments that need to be made.

We would like to investigate whether taking a 'one water' view of the water system would enable clearer prioritisation of our investments. Are there technological innovations or opportunities for partnership that would allow us to get further faster?

*[Image: total projected expenditure by infrastructure type 2019 – 2048, Infrastructure Strategy]*

## Achieving net benefits for catchments

Even with the best techniques, we can't avoid all water impacts from land-based activities. This means that we need practical ways to balance our choices so that, overall, our waterways end up better off than they started.

Looking at this picture at the catchment scale would allow us to understand where impacts are coming from and – when impacts can't be avoided or remedied on-site – how they can be mitigated or offset within a catchment.

For example, there may be opportunities to offset the impacts of new development by protecting significant environmental sites within the same catchment. This is about focusing our efforts on the activities that have the most impact on the whole catchment health.

We also need to look at the regional scale, and make decisions about the level of effect we can accommodate in different catchments. Te mauri o te wai is different in every catchment, with their own mix of impacts and abilities to absorb change (see Growth in the Right Places).

We would like to investigate practical methods to allow for decision-making at a catchment scale. These could include offset mitigation, environmental compensation schemes, and allocation and trading schemes.

## What happens next

The council has decided to develop an Auckland Water Strategy. This discussion document is an early part of that process. It reflects the current state of thinking, and what we know about the issues for Tāmaki Makaurau / Auckland's waters.

We have proposed a framework to organise how we think and make decisions about water in Tāmaki Makaurau / Auckland:

- **Our aspiration** is to protect and enhance te mauri o te wai – the life supporting qualities of water. This sits at the centre of our values and drives our decisions.
- **Five values.** We recognise that we value water for a range of reasons. We describe these in five categories, to help us understand how the current situation measures up to our values, and to hone in on the stressors that are having an impact.
- **Four big issues.** We identify four 'big issues' that define our water challenge. If we are to restore te mauri o te wai, we will need to address these issues.
- **Six principles.** We propose six principles that will guide our actions as we move forward with developing the proposed framework into a Water Strategy.
- **Four processes.** We also identify four elements that we need to work on in our processes, to support quality decisions.

We have focused on high-level values in this document – the spaces where we can find agreement and unify our vision. We would like to get some feedback and agree on a framework as a way of organising our approach to what we do next.

The next steps in developing a Water Strategy for Tāmaki Makaurau / Auckland need to provide a line of sight, from vision to actions, to make sure what we are doing is going to build the future we aspire to. Defining outcomes, measures and processes for transparent reporting on our progress will be an important part of this.

Now, we want to hear from you:

- Question 1. Do these values cover what you value about water? Please tell us why, and if there is anything else you value about water?
- Question 2. How concerned are you about the 'big issues'? Please tell us why, and what you think we can do now to anticipate and adapt to the changes in our water future?
- Question 3. Do you have any feedback on the proposed framework, or is there anything else you think should be included?
- Question 4. What's the most important thing you think we should do for our water future?

You can give feedback online at [akhaveyoursay.nz](http://akhaveyoursay.nz), or you can fill out a submission form available at libraries, service centres and local board offices. Feedback must be received by [date]. We will also be running Have Your Say events across the region. These will be publicised [add details as confirmed]. We'll take all the feedback to the Environment and Community Committee later this year, as part of shaping up the next steps in developing an Auckland Water Strategy.

