

Water

Wai



Water

Wai

Resource sheet

This resource sheet will help you:

- Understand the impacts your business has on our water resources
- Learn about water planning and management
- Find out about other businesses that have made a difference

The fundamentals

Water is so vital and special that we often find ourselves saying things about it that are at odds with reality.

The facts are these. We are mostly water (up to 60% for adults). Where we live is mostly water. Although we call our planet ‘Earth’, 71% of its surface is covered with water. We say that water is ‘used’ or ‘consumed’ in processes, but it actually flows through them. This flow enables and regulates all our life support systems, climate and weather.

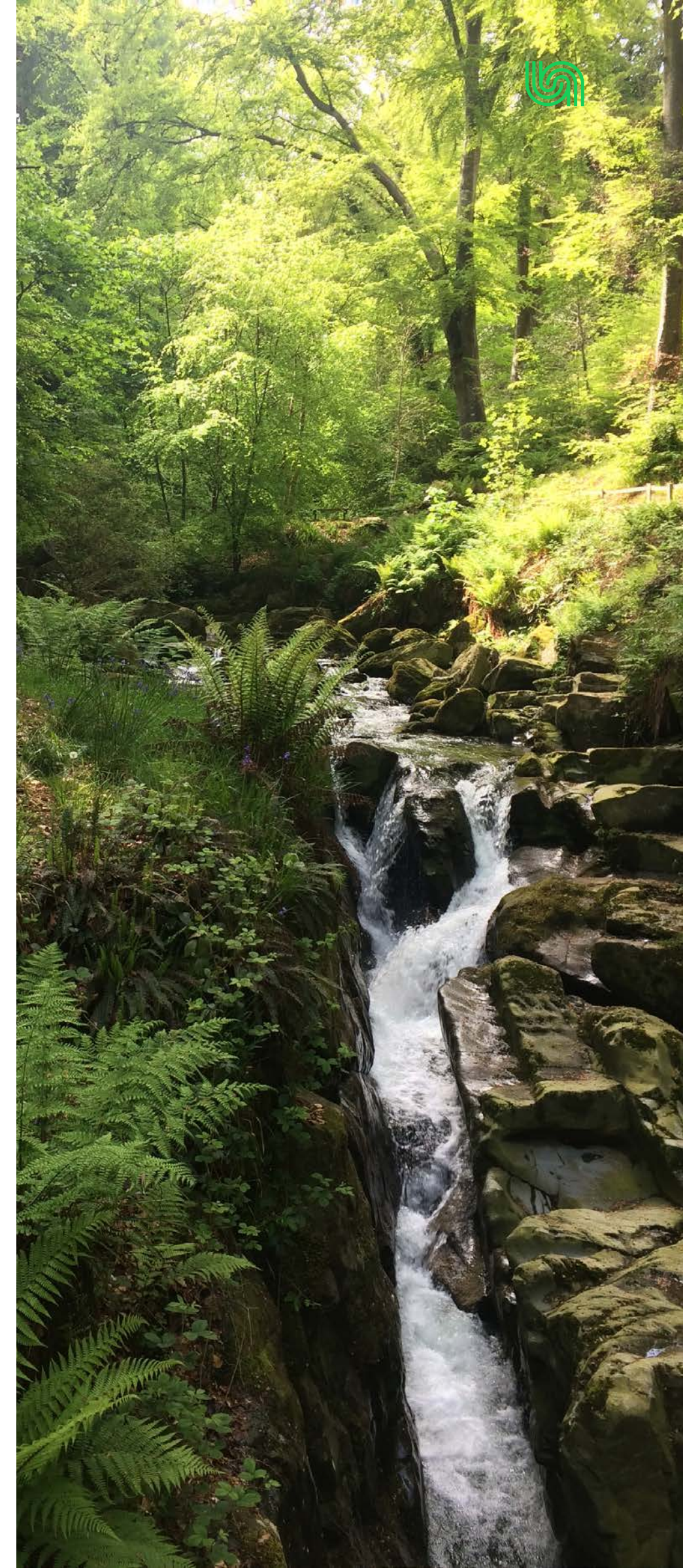
It’s also vital to understand that water is an intrinsic part of all life on Earth and it is in limited supply. Freshwater is precious and makes up only 2.5% of water on the planet.

Te Mana o te Wai is an important concept in Te Ao Māori. It emphasises the primary importance of the wellbeing of the water itself. It reminds us that water has its right to a natural existence in the world’s waterways and oceans, independent of our uses or preferences.

The Ministry of the Environment describes Te Mana o te Wai as “a concept for freshwater that encompasses several different aspects of the integrated and holistic health and wellbeing of a water body. When Te Mana o te Wai is given effect, the water body will sustain the full range of environmental, social, cultural and economic values held by iwi and the community.”

This presents us with the challenge of working more in tune with the natural flow of water in everything we do. We also need to think about freshwater in terms of Ki uta ki tai - an integrated system from mountains to the sea.

The concept of Te Mana o te Wai was perhaps most obviously put into practice in March 2017. The New Zealand Government recognised in law that the Whanganui River was an indivisible, living whole. This established that the river possessed “all the rights, powers, duties, and liabilities” of a legal person.





What's happening in Aotearoa New Zealand?

Until recently we have taken our abundance of freshwater for granted.

Over the past 150 years Aotearoa New Zealand's landscape has changed from forests and wetlands to a largely pastoral farming landscape. The degradation of waterways has been caused by a dramatic change in land use. This is impacting biodiversity, habitats and water quality.

Environment Aotearoa 2019 reported pollution in waterways has resulted in:

82% of river length in pastoral farming areas not being suitable for swimming

94% of river length in urban areas not being suitable for swimming

76% of river freshwater fish being at risk of extinction

Intensive farming and urbanisation have resulted in the cutting down of three quarters of our native forests. It has drained 90% of our wetlands.

Wetlands are nature's kidneys, and much of Aotearoa New Zealand was once covered in them. They improve water quality by removing harmful contaminants and sediment from freshwater on its journey to the ocean. They help us to be more resilient to the impacts of climate change. Healthy wetlands act like sponges. They soak up water during floods and release it during droughts. They also trap carbon, keeping it out of the atmosphere. Wetlands are critical habitats, providing food, shelter and breeding grounds for native birds and nurseries for young fish. They support a huge diversity of birds, invertebrates, frogs and fish.

Until recently wetlands have been dumped in, drained and filled to make way for development and agriculture. Many of Aotearoa New Zealand's major cities were built on swamps, including Christchurch and

Invercargill. The Hauraki plains were bogs, swamps, estuaries and lagoons before being drained for agriculture.

In Aotearoa New Zealand we use large quantities of freshwater in our homes and businesses. We also use it widely for irrigation and hydroelectricity generation. Most of our drinking water comes from dams, rivers and groundwater.

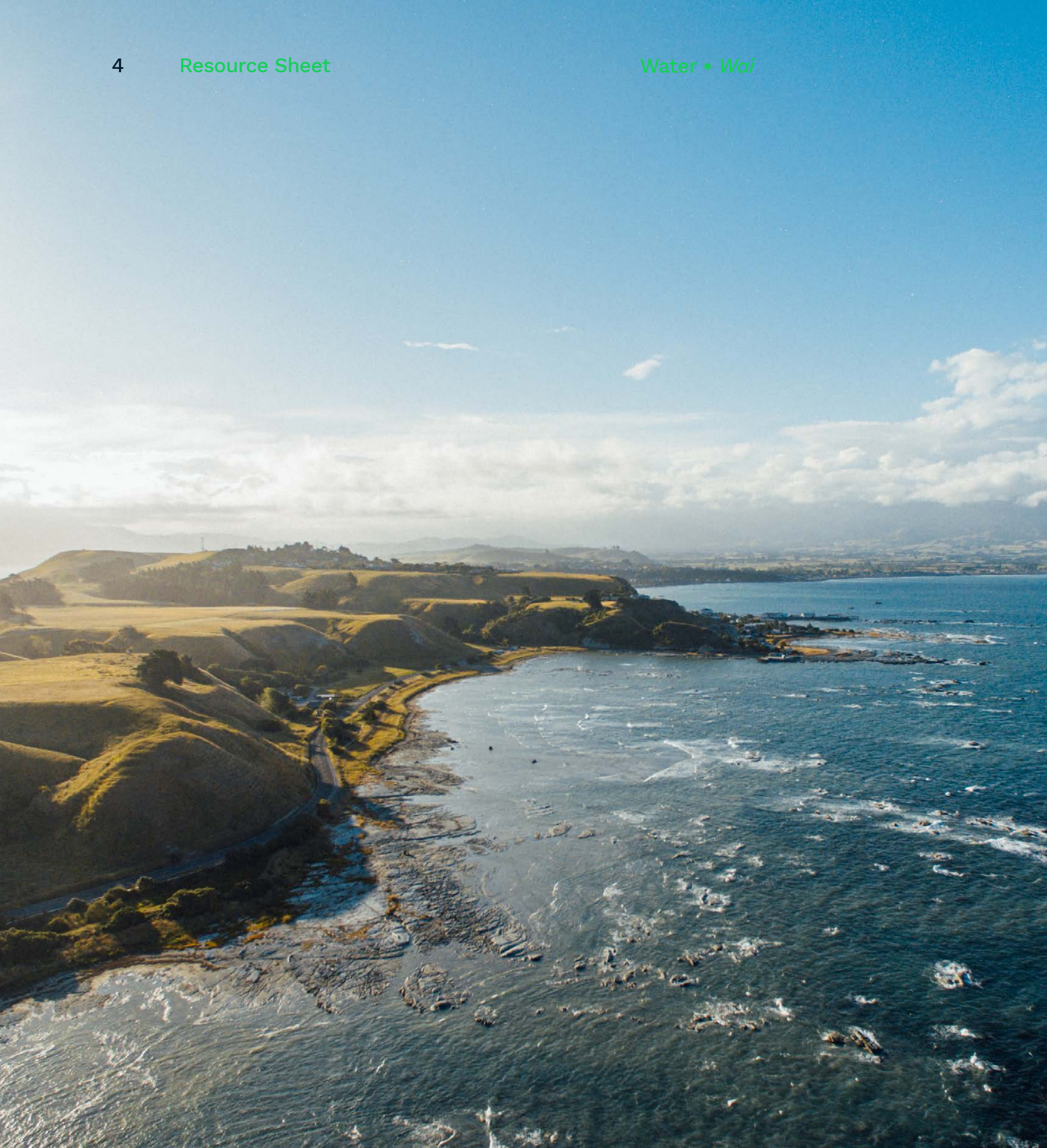
It is estimated that, on average, every New Zealander uses about 227 litres of water every day. Demand for water is rising as a result of increased agricultural use, urbanisation and population growth. Between 2002 and 2017 the area of irrigated agricultural land almost doubled from 384,000 hectares to 747,000 hectares.

Climate change will have an impact on our freshwater and wastewater systems. Weather patterns will be more extreme. There will be more intense rainfall in places and longer droughts in others.

In some regions we are using more water than is available. Rivers are running dry. As a result water is not always available when and where we need it. Important living systems of plants and animals are being destroyed. This is forcing us to divert water across regions, like the pipeline supplying Auckland from the Waikato River. There have also been proposals to build plants to desalinate sea water.

A survey by Water NZ in 2017 found that 87% of respondents were "somewhat to very concerned" about water shortage in Aotearoa New Zealand. It also showed 89% were "somewhat to very concerned" about the quality of our drinking water.

Our Freshwater 2020, a report produced jointly by the Ministry for the Environment and Stats NZ, found freshwater ecosystems are under pressure in four key areas. They include native freshwater species, water quality, changing water flows and climate change.



What's Aotearoa New Zealand doing?

In September 2020 the Government introduced new regulations to restore and protect Aotearoa New Zealand's freshwater.

There are new rules and regulations to:

- Stop further degradation of our freshwater resources and improve water quality within five years.
- Reverse past damage and bring our freshwater resources, waterways and ecosystems to a healthy state within a generation.

You can find out more at the [Ministry for the Environment](#).

Aotearoa New Zealand is also a signatory to the United Nations Sustainable Development Goals. [Goal 6](#) is to ensure availability and sustainable management of water and sanitation for all.

How businesses affect water

Water is the most important shared resource for all businesses. It's important for organisations to be responsible about their water use. Many require uninterrupted access to large quantities of water.

Our water use puts pressure on local water systems, but we also need to keep in mind that we have a global impact. It might not be visible, but everything has a 'water footprint' – an impact on the water systems that surround and support us.

A company's water footprint can be seen in four key areas: raw materials, suppliers, direct operations, and product use. The way water is used by a business and the effects it has are as varied as the businesses themselves.

Improving business sustainability requires a good understanding of how water is used in all production processes and supply chains. Improved water efficiency can save money and resources long term.



What you can do

Businesses need to balance their own water use with the needs of communities and nature.

Here are key areas to focus on:

Direct operations

Start measuring and reporting on water use. Include water use in relevant company key performance indicators (KPIs). Identify and eliminate water leaks in your operations. Introduce new technologies that reduce water use.

Supply chain

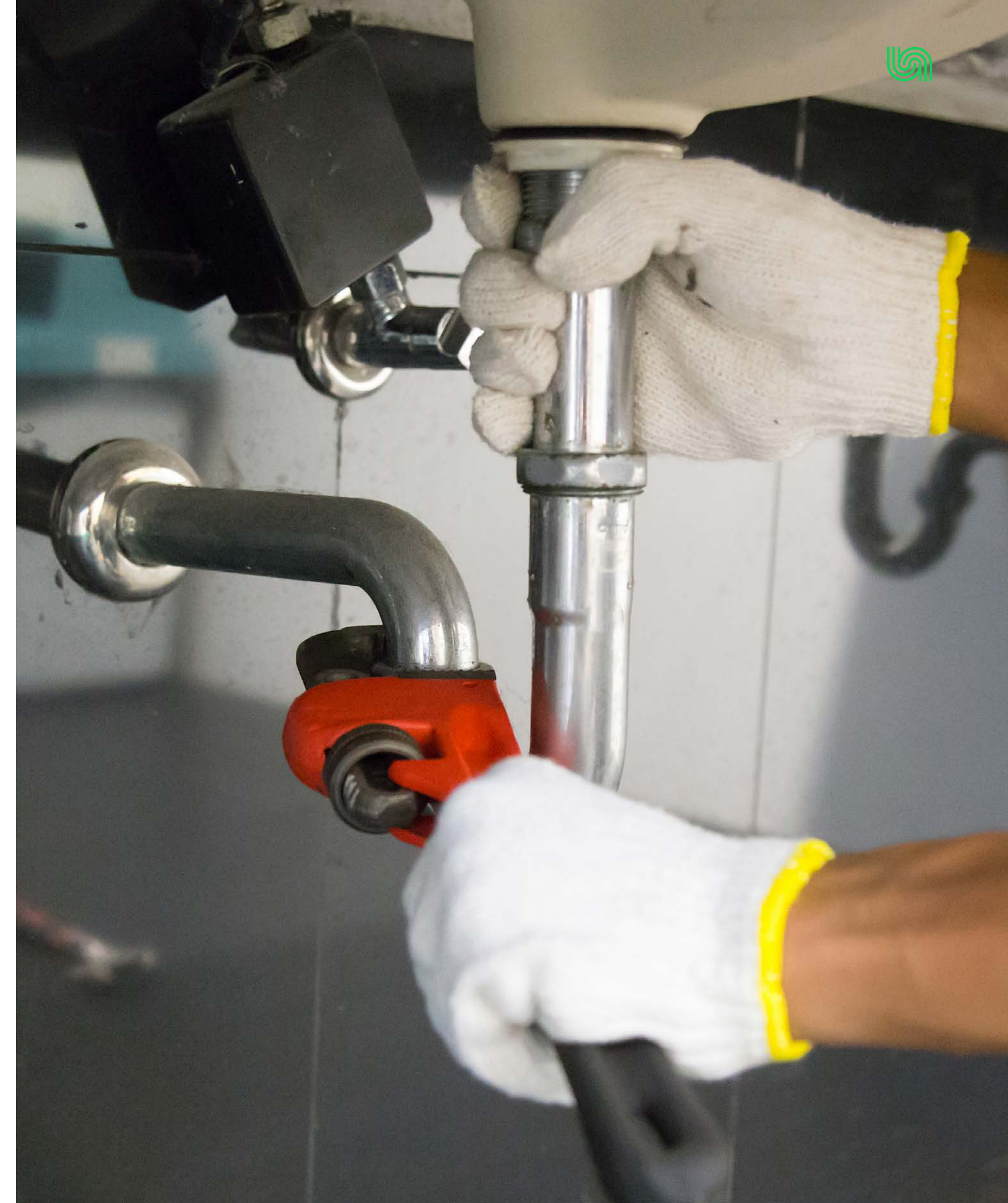
Make sure all the businesses in your supply chain are equally conscientious about water. Set supplier standards.

Water sensitive design

Cities have a lot of impervious surfaces (concrete and asphalt) that don't soak up water. Consider how the use of vegetation, swales and 'Litter Traps' could help reduce sediment and pollution in stormwater run-off from your sites.

Collaboration

Use your influence in partnerships and initiatives that promote water conservation.





Where to start

The first, most basic and important step is to regularly check your pipes for leaks. A hole as small as one millimetre can generate a water loss of thousands of litres a month.

If you can stop using water for a few hours and access your water meters, you can perform a simple leak test. This could be done overnight. If the meter shows water use, it's probably a leak. Contact a licensed plumber. According to Watercare, fixing old leaks, detecting new ones early and upgrading ageing pipes amounts to around 40% of the water savings businesses can achieve.

It's important to know how much water you're using, where it's being used and its impact on the environment. Calculate your water footprint to prioritise water management and efficiency actions. Check out the Water Footprint Network for a free assessment.

Here are some other basic steps.

- Ensure boilers, pumps, chillers, water heaters and washing machines are used according to actual loads. Shut them down when not in use. Ensure they are properly maintained to prevent water loss due to leaks, steam or condensation.
- Eliminate unnecessary cleaning. Consider waterless options. These include safety air guns, brooms, vacuum cleaners and air blowers. Fit hoses with trigger-operated guns, so they can't be left on unattended.
- If watering outdoors, select efficient systems, to cut down the high-quality drinking water use on lawns, plants and pavements.
- Ensure you don't have any sprinklers running in wet weather. Install rain sensors or, even better, soil moisture sensors to control the flow.

- Know where you're discharging water. Consider whether this can be recycled, and if treatment is needed. This may include industrial processes, equipment cooling and cleaning and toilet flushing.

Where possible, appropriate and allowed by local regulations, use rainwater to supplement non-potable water use. This can include things like irrigation, toilet flushing, floor cleaning and cooling towers. Assess your roof area and local weather patterns in terms of rainwater collection potential. Compare this with your water usage to decide the required water tank.

See Watercare's tips for saving water at your workplace.



How can I stop pollution entering stormwater on my sites?

Your business may be collecting and reusing rainwater or it may be diverted into your local catchment via your stormwater system. Either way, there are steps you can take to reduce pollution.

- Install a pollution control device (or 'Litter Trap') in your site's stormwater drains.
- Install swales, detention ponds or rain gardens.
- Install sustainable wastewater management systems.
- Ensure your roofing material is in stable condition and/or painted.
- Fit your vehicle fleet with low copper brake pads to reduce the amount of heavy metals washing into the system.
- Do not discharge any contaminated water/liquids into stormwater drains.

What else can I do?

Support or get involved in planting native bush along waterways and wetlands to prevent further pollution and sediment flowing into the sea. [SBN's Million Metres Streams Project](#) is a great way for your organisation to help.

Useful resources

[Our Freshwater 2020](#) is a useful report produced jointly by the Ministry for the Environment and Stats NZ.

[Water Footprint Network](#) has a free assessment tool that provides an insight into how you use water throughout your supply chain.

Watercare's water efficiency programme [Be Waterwise for Businesses and Organisations](#).

[Sustainable wastewater management: A handbook for smaller communities](#) produced by the Ministry for the Environment.

[Stormwater360](#) offers solutions to some issues. Its products range

from screening or filtering of litter and sediment, to controlling stormwater runoff containing ultra-fine contaminants, soluble metals or nutrients. Water sensitive design information is included in the [Auckland Council Design Manual](#).

Case studies

Check out these case studies on water sensitive design:

[Flagship Education Centre, Sustainable Coastlines](#) is a purpose-built environmental education space that uses a [greywater wetland treatment system](#)

[Te Kura Whare](#) and the Flagship Education Centre are both examples of Living Buildings. This is the most rigorous sustainability benchmark in the world for buildings. At Te Kura Whare rainwater is captured and reused, and waste is treated naturally on site.

[Bayfair Shopping Centre](#) has a grey water and rain water harvesting system that has reduced the mall's consumption of drinkable water by about 60%.





sustainable.org.nz

Water *Wai*

SUSTAINABLE BUSINESS NETWORK

Address

Level 5
48 Emily Place
Auckland
1010

Postal address

PO Box 106983
Auckland 1143

Contact us

09 826 0394
office@sustainable.org.nz

Follow us

 [LinkedIn](#)

 [Facebook](#)

 [Instagram](#)