Supporting the liveability of Brisbane by managing water sustainably

That’s why we are water smart

Dedicated to a better Brisbane
Brisbane is a vibrant, creative and youthful city. It is the heart of Queensland’s economic activity and is located in the most rapidly growing region in Australia, South East Queensland. Brisbane’s population is expected to grow from 1 million to 1.2 million people by 2026. Its subtropical climate, rolling hills, beautiful bushland, river, waterways and bay, and diversity of cultures have shaped the city to what it is today and will continue to influence it’s future.

Water is the essential ingredient of our city. It provides a sense of place as well as being vital for all life. To manage our water resources sustainably we will need to be future-focussed and innovative in our solutions.

We as a community must recognise and begin to address the challenges of adapting to the pressures of increased growth, improving waterway health across the region and delivering economic prosperity through sustainable water management. We sit on the cusp of opportunity, innovation and integration. As a community we should strive to adapt to our changing climate and we must look for ways to integrate water back into our streets, parklands and buildings, valuing the ecosystem services that water provides to our city.

We recognise that a regional approach to managing water resources is required. From waterway health to water supply, Brisbane’s water resources are inextricably linked across South East Queensland. Recently, the delivery of water services in South East Queensland has passed from councils to new regional water service institutions. This means that Brisbane City Council and the community will need to continually adapt the way we plan and manage our water resources to realise the vision of Brisbane as a water smart city.

To the reader it is recommended that this strategy be read as a whole rather than in discrete sections. This strategy builds upon the work of the Water for Today and Tomorrow (2005) and Dedicated to a WaterSmart City (2008) strategies, and it reflects the concerns, aspirations and desires of the Brisbane community and many professionals from across the country. Brisbane’s WaterSmart Strategy delivers a new water vision for Brisbane.

Our vision is to support the liveability of Brisbane by managing water sustainably.

The WaterSmart Strategy will guide Brisbane’s community in achieving this vision. It sets clear goals, outcomes and actions for Council, our partners and the community to deliver on sustainable water management into the future.

Chapter 1
Brisbane’s water strategy

The history, principles, challenges and approaches to water management in Brisbane.

Chapter 2
Goals, outcomes and key actions

A water smart community – A community that is connected to water, participates in decision making and takes action to manage water sustainably.

Well-designed subtropical city – Designing and reorienting our city with water in mind.

A healthy river and bay – Improving the health and resilience of our local waterways, the Brisbane River and Moreton Bay.

Sustainable water use – Sustainably managing our water, ensuring we have what we need now and for future generations.

Chapter 3
Implementation and delivery

Defines the responsibilities of Council, our partners and the Brisbane community to deliver and continually improve upon the WaterSmart Strategy.

1. Council acknowledges the input of the Expert Review Panel - Dr Tony Wong, Dr Rebekah Brown, Professor Tim Smith, Mr Tad Bagdan, Mr Phillip Follent and Mr Michael Rayner - to this WaterSmart Strategy.
We recognise water is essential for life. It is vital for our health and wellbeing, for agriculture, fisheries, industry and transportation in the city and across South East Queensland. Water is central to our identity as Brisbane, the river city.
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Message from the Lord Mayor

Water is our most precious resource. Our bay, river and environmental waterways are not only important to our unique lifestyle, they are integral to the economic wellbeing of Brisbane and South East Queensland.

It is critical we protect and manage these resources in partnership across South East Queensland to ensure we continue to use and enjoy them into the future.

Brisbane, Australia’s New World City is committed to getting smarter about water. This means researching, exploring and delivering innovative solutions that use water creatively and sensitively in the design of smart spaces, while managing flood risks to ensure the safety of people and properties. It is important we ensure the sustainability of our water resources – water for people, for our environment and for a healthy economy.

The leadership provided by the WaterSmart Strategy demonstrates Council’s commitment and initiative in the water management arena. It is leadership which has seen Brisbane recognised as a leader in sustainable practices, after being named Australia’s Most Sustainable City in 2014.

The strategy builds upon an already strong foundation Council has established in partnership with Brisbane residents. The outcomes Council has delivered for our city include flood risk management such as Council’s Flood Action Plan and our FloodSmart Future Strategy. Council has also demonstrated a continued investment in major and local drainage projects and waterways each year through the Annual Budget.

The WaterSmart Strategy provides vision and focus for managing our water resources into the future. It recognises the need to work together as a community across Brisbane and South East Queensland. With your support, Brisbane and the region can continue to enjoy its great subtropical lifestyle and show the world how to best manage our most precious resource.

Graham Quirk
Lord Mayor

Message from the Chairman, Environment, Parks and Sustainability Committee

Being water smart is critical to Brisbane’s future liveability. Good water management will support a sustainable natural environment and enduring healthy ecosystems that we can continue to benefit from and enjoy.

Brisbane’s WaterSmart Strategy attempts to bring all the issues around water together. These include valuing and protecting the social amenity our waterways provide as well as being flood prepared, conserving water, improving the health of our waterways and designing our buildings, roads, and public spaces to be water sensitive.

Council’s significant investment has seen the development of a range of actions that have been delivered over the last couple of years. Council’s Flood Action Plan and FloodSmart Futures Strategy sees Council take a risk-based management approach to facing issues around flooding in the city. As Brisbane is built on a flood plain, the threat of flooding will always be present.

Through the development of tools such as Council’s Flood Awareness Maps, FloodWise Property Reports and Early Alert Warning System residents have never been more prepared for their flood risk. On top of this, continued investment in drainage projects as well as backflow prevention devices will see improved flood mitigation outcomes across the city.

The WaterSmart Strategy builds on the great work we have already done to educate and involve the community in water issues and water management. But the work is not yet complete. Council will continue to work together with the residents of Brisbane to come to the best outcome to make sure that Brisbane continues to be a water smart city.

Councillor Matthew Bourke
Chairman
Environment, Parks and Sustainability Committee
Message from the Chief Executive Officer

Brisbane City Council is proud to release this, the redevelopment of our WaterSmart Strategy. It is the result of the latest thinking and technologies available. It brings together the ways good water management can deliver Council’s vision for Brisbane – to be Australia’s most sustainable city – and demonstrates how critical water is to the city’s prosperity and subtropical lifestyle.

Our redeveloped WaterSmart Strategy reflects the changes in our city and the new pressures that are in place.

It captures the stories of Brisbane people, stories about the importance of water in our lives, stories about caring for, using and enjoying water. The water stories of our indigenous people are culturally rich, particularly insightful, and offer us some perspective on how we rise to meet the challenges before us.

Our redeveloped WaterSmart Strategy also gives insight into how we might manage our water into the future.

Council has an outstanding record in water management. We have led the way in water sensitive urban design, created programs to rehabilitate and enhance our waterways, helped develop a water savvy community, and provided accurate and timely information to our community on flooding issues.

On behalf of Brisbane City Council, I would like to thank all those who have contributed to the development of this new strategy – the community of Brisbane, private organisations including planners, architects and technical experts, government professionals and Council staff.

Together we can continue to make a difference to the liveability of Brisbane.

Colin Jensen
Chief Executive Officer
Chapter 1
Brisbane’s water strategy

Prior to and since European settlement, managing water has been central to the prosperity of Brisbane. Water has shaped Brisbane’s development. Much of Brisbane is in the lower part of the Brisbane River catchment – the floodplains – meaning we are a flood prone city. The city’s subtropical outdoor lifestyle and growth – characteristics that make Brisbane a great place to live, work and play – have been underpinned by an abundance of water. Good management of water is integral to achieving our bold ambition for Brisbane, defined in *Our Shared Vision - Living in Brisbane 2026*.

This WaterSmart Strategy sets out how we – Council, our partners and the community – will manage water sustainably into the future. It shows the role water plays in delivering a liveable city and is a guide for the actions that we will take.

**Brisbane’s water story so far**

**Pre-settlement**

Prior to Brisbane being used as a gaol site for convicts from 1824, the land, the bay, the river and its tributaries were the source and support of life in all its dimensions for the Jagera and Turrbal groups.

**The first water supply**

Every city needs a safe, secure and reliable source of drinking water. In the 1840s, a small creek running from Spring Hill through what is now the Roma Street Parklands and on to City Hall was dammed, providing the first major source of water for Brisbane.

*A quote for the image*

Tell the story, sing the song of dreamtime serpent
Moving sandstone cliffs to lay the seed
For the River People…”

Thea Biesheuvel
excerpt from Brisbane’s Dreamtime Song
A sewerage system for Brisbane

The health of a city relies on the health of its people. Since the first connection in 1923, Brisbane has developed a sewerage system to efficiently remove wastewater from properties using the best technology available to protect the health of Brisbane’s people.

Flood water rising

The 1974 floods had a major effect on Brisbane with lives lost and properties damaged. While stormwater pipes and culverts were built from the early days of Brisbane’s settlement, major effort went into modifying many of Brisbane’s waterways after 1974. Infrastructure and standards for local drainage across the city were also improved. These actions have enhanced our city’s ability to manage flood risk.

Waterways valued

The 1990s saw Brisbane’s community and political leaders recognise the social and environmental value of our waterways. Council subsequently changed the way the waterways were managed. This brought about substantial improvements in the health of the city’s waterways, making them available to the community, once again, to use for recreation, fishing and many other activities.

Water cycle city

Water is one resource that is fully connected. Everything we do to change one part of the water cycle changes all other parts. Council’s previous water strategies moved Brisbane’s policy and practice towards managing all of our water resources in an integrated way, sharing this role with our partners and the Brisbane community. We are now a ‘water cycle city’. This is demonstrated by many of the great projects that have been implemented. Some developments in Brisbane are incorporating rainwater tanks, stormwater harvesting and natural water treatment devices in and around buildings and surrounding public spaces. They are examples of integrated, water cycle solutions.

The Water Cycle
Brisbane’s perspective is now changing

The Brisbane community, recent water management reforms and the national push for real sustainability in Australia’s ever growing cities are telling us that it’s time to change the way we manage water in Brisbane. From now on we will focus our water management on the long-term wellbeing of the Brisbane community and the city’s liveability. Water will be valued for all the benefits it brings, not just as a commodity.

It will be essential to partner with people to foster involvement and innovation, and to help people take action in managing water sustainably. There are also long-term challenges faced by Brisbane – a growing population in a more dense built form, the effects of climate change, the complexity of water being linked to nearly all the aspects of our lives, legacies to address and the growing number of parties involved in governing and managing water across the region. With challenges come opportunities for innovation and change.

We will continue to build on the great work achieved throughout Brisbane’s water story. We will focus on more than providing secure sources of water, more than basic public health, more than infrastructure for flood mitigation, and more than rehabilitation just for ecological benefits.

We will continue to learn from the wealth of research available and from international and local water management examples.

The focus is now on Brisbane evolving the ‘water cycle city’ to become the ‘water smart city’ to support Brisbane’s subtropical lifestyle and our community values and economic aspirations.

To do this we recognise that water is essential for our subtropical vegetation, for cooling our city now and into the future. The city’s identity and sense of place is shaped by water, the river and Moreton Bay. Brisbane’s overland flow paths, waterways and floodplains are an integral part of our open space. Our water ecosystems and waterways are critical for Brisbane’s biodiversity and the health of Moreton Bay – where we work, live and play. Secure, affordable and diverse water supplies will be integral to sustained business growth and investment in Brisbane. A water smart city recognises the multiple benefits and values of water to make Brisbane Australia’s most liveable and sustainable city.

Our vision is to support the liveability of Brisbane by managing water sustainably.
A water smart city understands our dependence on water. We look at ways to replicate our natural systems in our urban environment.

Maree
Brisbane resident

Our principles

Community connection

Being water smart means being connected with Brisbane’s landscape through living with and making room for water. Our values, behaviours and the way we shape Brisbane rely on this connection. It means being empowered to actively participate in managing the city’s liveability.

Intergenerational equity

Being water smart means managing the water cycle to meet our community values and aspirations now and for generations to come. It means making decisions that are fair for each one of the many diverse groups of people that make up the Brisbane community. It means making decisions for today without taking away from tomorrow.

Resilience, adaptiveness

People change, cities change, our climate is changing. Being water smart means being able to anticipate, cope with and recover when change arises. It means being resilient. It means adapting to change before, during and after it occurs. Our ability to do this underpins the continued economic growth and subtropical lifestyle of our city, allowing it to remain a great place to live, work and play.

Brisbane is a catchment

Everything is within a catchment and any action we take changes the way that catchment works. Being water smart means managing everything we do within the context of a catchment – making room for the way water moves through and interacts with Brisbane’s landscape. This includes using the features and properties of the catchment when making decisions. It means fostering partnership with all levels of government, residents, land managers, business and industry across the entire catchment.

Ecosystem services

Everything has its place in an ecosystem, including the buildings and urban spaces of Brisbane. Ecosystems provide many benefits for people and the natural environment. Being water smart means recognising this and actively working towards managing water as a determining feature in improving the ecosystem services that our built and natural places provide.

These principles, our city’s water story and the current challenges and opportunities we are facing drive the actions we will take to support the liveability of Brisbane by managing water sustainably.
Challenges and opportunities

Growth and a changing character of development

Growth will continue at a fast pace in Brisbane with the Queensland Government’s South East Queensland Regional Plan 2009 - 2031 specifying the city to expect a further 156,000 new dwellings by 2031. The number of jobs in Brisbane will grow faster than its population meaning we will be catering for many more people than actually live here. All of this growth can put more strain on our waterways and our water sources. Additionally, Brisbane has largely exhausted sites for greenfield development. This means that into the future, the city will see more development occurring within existing areas. This is a major change for Brisbane but it presents the investment opportunities for sustainable urban water management.

A more dense built form provides opportunities for creative use of water in private and public spaces. Spaces that are cooling, pleasant and provide for recreation can be developed while treating and reusing water on-site.

We will also need to be responsive to the different water values and behaviours that a changing population brings. We have the opportunity to reflect these changes through our development.

A changing climate

The future of our climate is unpredictable. It is likely to include higher temperatures, longer dry periods, rising sea levels and when rainfall occurs, it is likely to be more intense. This may mean Brisbane’s natural cycle of drought and flooding rains will become more extreme, resulting in harsher dry periods followed by intense, heavier rainfall.

A changing climate can provide the opportunity for us to be innovative in our solutions. Brisbane is committed to adapting the way we manage public spaces, buildings, waterways, overland flow paths and Brisbane’s floodplains to make the city and its people more resilient to change.

Legacy issues

Many past decisions about how water was managed in our landscape have had lasting effects – both good and bad. Much of Brisbane’s built form will not significantly change in the immediate future, meaning that the effects of declining waterway health and localised flooding need to be remedied if we are to achieve the outcome Brisbane desires. We will need to mend past problems by retro-fitting and redesigning Brisbane’s built form to recognise, use and work with the existing features of Brisbane’s landscape. Building stormwater treatment devices in buildings, roads and public spaces.

Our future decisions have the opportunity to provide multiple benefits, ensuring our built form is more resilient to change and is adaptable in meeting the expectations of the Brisbane community.
We have made some good progress in understanding the carbon footprint left in the production of many goods and services. We need to now look at our ‘water’ footprint too. Only then will we truly gauge how much water we use each day."

Paul
Brisbane resident

Water is a part of everything

Water is a fundamental element of almost everything – from the food we eat to the concrete in our buildings. It’s also used in manufacturing – for example, to produce the chairs we sit on.

In the consumption of food and goods, Brisbane is using water from catchments well outside of our city boundaries. It is also exporting water through the products we manufacture here. Brisbane contributes to water flows in catchments outside our city boundaries too.

Into the future, comprehensive management of water will need to be conscious of the whole water system – inside and outside of Brisbane – through understanding and valuing water in its many forms, for its many benefits.

Council will need to work with the Brisbane community to foster this understanding and help people take action in managing water sustainably.

Changing governance for water management

The water cycle operates beyond the boundaries of our city. Our water supply comes from a number of sources across South East Queensland and this will occur even more often under the regional water grid arrangements. This, coupled with the strengths and needs of Brisbane as Queensland’s capital city, means that there are many people and organisations that have an interest in or will benefit from managing water sustainably in Brisbane. We can best answer the city’s water issues by managing water on a regional basis. On 1 July 2010, South East Queensland’s water and wastewater services were fully separated from local government.

We must build our focus on partnerships, proactively fostering regional collaboration on water issues. It is important Council plays a lead role, working with the Brisbane community to get real outcomes on the ground and to ensure the voice of the Brisbane community is heard as we work with our many partners.

We will foster new governance structures that help us to efficiently manage water issues with our many partners and the Brisbane community. This will take time, resources and effort and will be critical to successfully delivering multiple benefits in our built and natural environments.

"We have made some good progress in understanding the carbon footprint left in the production of many goods and services. We need to now look at our ‘water’ footprint too. Only then will we truly gauge how much water we use each day."

Paul
Brisbane resident
Council’s approach

Collaborative and engaging

Our community is a key partner in the planning and work we do for the city. Council will engage the many different sectors of the Brisbane community – residents, visitors, students, businesses, industry and professionals to understand the ever-changing values, perceptions and expectations associated with sustainable water management. We will involve people in making decisions and taking action, fostering partnerships for key activities.

Integrative

The decisions Council makes and the solutions we deliver will ensure water is managed sustainably across disciplines, meeting the needs of the Brisbane community now and into the future. We will work with our partners and the community to develop clear and appropriate policy, plans and innovative on-ground solutions that use our knowledge of water to deliver multiple benefits. We will be outcome focused.

Flexible, multi-functional

Council will ensure that the many benefits of water are incorporated into the design and construction of buildings, places and spaces to provide for the changing needs of Brisbane’s growing population.

We strive to plan well for our future and for future generations. We will be responsive to changing and emerging situations. What we create now will not limit Brisbane’s future.

Innovative

Brisbane will change. This change will be triggered by shifting perspectives, behaviours, technology, designs and decisions. Council is focused on finding solutions and fixing problems. We are capable of acting on ideas to make real differences for the Brisbane community. We will actively seek to create innovative solutions specific for Brisbane and our subtropical climate.
The Brisbane River, at the heart of the city, is fed by the creeks and streams of the catchment that extends inland to Cunningham's Gap. In Brisbane’s northern suburbs, some creeks and wetlands are part of the Pine River catchment. Both rivers flow into Moreton Bay.
The WaterSmart Strategy shares the same bold aspirations for Brisbane expressed in Our Shared Vision: Living in Brisbane 2026 which are:

- well-designed subtropical city
- effective growth management
- connected and engaged communities
- green and biodiverse city
- healthy river and bay
- sustainable water use
- safe communities
- learning and informed communities
- food in the city
- green and active transport
- cooperative governance
- outstanding city profile
- healthy economy
- active and healthy communities
- better public health.

The WaterSmart Strategy contains four goals that are fundamental to managing water sustainably in Brisbane. These are:

- a water smart community
- well-designed subtropical city
- a healthy river and bay
- sustainable water use.

This chapter outlines the outcomes and key actions that will support the achievement of these goals.
A water smart community

Over 90,000 rainwater tanks have been installed under Council’s Rainwater Tank Rebate Program

During the recent drought the Brisbane community made a profound change to its water consumption habits in response to falling water levels in our water supply dams. The per capita consumption of water fell from approximately 300 litres per person per day to as little as 127 litres per person per day. This achievement demonstrated to the region and the nation that, when required, the community can act quickly and effectively to address critical water challenges.

Recognising the important role of the community in managing water sustainability, Council will continue to support and build a water smart community which is resilient to future water challenges and enjoys water’s contribution, in all its forms, to the city’s identity.

To do this Council and our partners will ensure that the community is:

» informed about how its wellbeing links to water supply, our waterways and waterway health

» resourced to play a strong role in the changes planned for water sources, water in our built form and in waterway design and rehabilitation

» connected to the processes of water planning and decision making

» engaged with and taking action at neighbourhood level.

Outcomes

Council will achieve the following outcomes to support and build a water smart Brisbane community.

1. People have a good grasp of the scope of water management for the region and have a collective ambition for Brisbane to be a water smart community.

2. The community engages in strategic and practical initiatives, at household through to regional levels, to drive sustainable water management.

3. Council leads by example, regulates, collaborates and facilitates Brisbane’s progress to a water smart community.
A city and its people can be resilient to floods knowing that it’s natural and the city doesn’t need to stop.

Stephen
Brisbane resident

Approach

» Facilitate people’s personal connection and sense of place to water and the landscape (e.g. connect people to their local creek).

» Demonstrate to the Brisbane community that Council is taking action to manage water sustainably.

» Inform, resource and connect people (e.g. through building awareness, facilitating training, preparing guidelines and providing access to networks) to increase community self-reliance in managing water sustainably and to assist people to take action through regulation and government direction.

» Support leaders, community groups and organisations to extend their influence and networks and to connect them into decision making.

Case study: Council builds and shares knowledge on flooding

Council’s online Flood Flag Map provides vital information on flood risks across the city. These maps show river, creek, storm tide and overland flow path flooding and are used for determining building and development levels. The Flood Flag Map gives the community easy and quick access to information about their properties’ flood risk so they can make better investment decisions for their future. Since its release more than 90,000 maps have been downloaded by the community. Property owners, builders and developers can now make informed decisions and be better prepared for summer storms in regards to purchasing, renting, building or renovating their property.

Sharing information enables people to appreciate the benefits of a water smart lifestyle and to be more resilient.
“What I love about Brisbane is that it starts raining, the temperature doesn’t change, who cares, you can just get dry in the next half hour anyway!”

Jasmina
Brisbane resident

Key actions

Outcome 1
People have a good grasp of the scope of water management for the region and have a collective ambition for Brisbane to be a water smart community.

» Develop education and information programs that work with existing ‘key communities’ – such as creek catchment groups, schools and universities – to disseminate information and engage younger community members to create lifelong water smart learning.

» Integrate water-related engagement and communication programs across Council (such as seasonal water campaigns, the Green Heart program and neighbourhood planning engagement) to ensure people can make well-informed judgements in managing water to support Brisbane’s liveability.

Outcome 2
The community engages in strategic and practical initiatives, at household through to regional levels, to drive sustainable water management.

» Make ‘WaterSmart’ real by promoting the ways in which Council, businesses and residents are being smart about managing water for Brisbane’s liveability.

» Provide opportunities for different sectors of the Brisbane community to collaborate in mutually beneficial activities. For example, community catchment groups, schools and community gardens working together to rehabilitate waterways and harvest stormwater for producing food in the city.
Council’s innovative Creek Catchment Ranger Program employs 11 officers to work with community catchment groups across Brisbane. By working in partnership, Council and the groups have achieved nationally recognised success in improving the health of Brisbane’s waterways.

Outcome 3

Council leads by example, regulates, collaborates and facilitates Brisbane’s progress to a water smart community.

» Create a dialogue between professional groups in Council to evaluate technical and community-focussed solutions for managing water sustainably to support the liveability of Brisbane. For example, working together across our functions of policy development, regulation, asset management, land use planning and community development to determine the best range of water solutions that will deliver many benefits for the city.

» Build and foster strong relationships with our partners and the Brisbane community by building up new and existing institutions (such as the Healthy Waterways Partnership, community groups or new locally oriented community and business institutions) that operate at different scales locally, in our city, the South East Queensland region, across Queensland and the nation.

Links to Our Shared Vision: Living in Brisbane 2026

Learning and informed communities

» Fostering life-long, shared learning on water issues

» Providing information to help people make well informed decisions

Connected and engaged communities

» Community participation and action in public decision making

» Celebrating water

Cooperative governance

» Collaborative, regional approach to managing issues

» Building excellent governance arrangements
Brisbane’s subtropical climate provides unique opportunities to use water and water spaces to introduce innovative and sustainable design in Brisbane’s built environment.

With its lifestyle appeal, Brisbane has experienced rapid, sustained expansion. The city has matured and our resources and natural and built areas now receive greater pressure for their use. This has encouraged us to start designing and building multi-use spaces, a direction that will continue into the future as we seek to sustainably accommodate an expanding population.

A well-designed, subtropical city will need to:

» provide vibrant liveable spaces using accessible water features for social benefits, climate cooling and lush subtropical vegetation

» connect us to local environments – overland flow paths, waterways and floodplains as public and private open space and active transport corridors

» recognise the economic benefits of our water and waterways

» design in a flexible and forward thinking, multidisciplinary manner to avoid problems for future generations and to be able to adapt solutions to new technologies and ways of thinking.

Brisbane will integrate and take opportunities from the way water moves through our landscape, making room for water, to deliver a sustainable and adaptive built form.

Outcomes

1. Water and waterways are determining factors in the design of Brisbane’s built form.

2. Flooding is managed effectively so the Brisbane community and our built form adapt to the natural movement of water.

3. Systems and processes are in place to support the effective, integrated management and implementation of on-ground solutions.
Approach

» Orientate our built form and development with overland flow paths, waterways and floodplains to enhance open space and biodiversity corridors and connections.

» Integrate management for water with all of Council’s planning and infrastructure development to ensure water solutions provide multiple benefits to the Brisbane and regional community whenever Council plans or delivers infrastructure.

» Understand the effects that climate change will have on Brisbane and manage these effects through adapting policy, planning, and the design and delivery of on-ground actions and engagement programs.

» Manage flooding through minimising, accepting and controlling flood risks, ensuring Brisbane continues to function effectively before, during and after flood events.

» Improve safe access to waterways for the Brisbane community, ensuring waterways are available as places for recreation, amenity and community gathering where appropriate.

Case study: the changing role of the urban landscape

Award-winning water sensitive urban design measures have been incorporated into the new Willawong Bus Depot. Stormwater is treated in a number of rainwater gardens that clean water through natural processes before flowing to a nearby wetland where it can be used for irrigation. Roof water and recycled water is captured, treated and reused throughout the site. These designs help achieve significant reductions in water use and runoff from paved areas contributing to improved waterway health.
We live in a subtropical climate; so rain, when it comes, is often as a summer storm, with heavy downpours filling the drains and bringing us relief from the heat and humidity.

**Key actions**

**Outcome 1**

**Water and waterways are determining factors in the design of Brisbane’s built form.**

- Develop demonstration projects and vision scenarios for development types.
- Commit specialists to the design of new developments and major government projects to address the multi-faceted issues associated with waterways, wetlands, floodplains and the waterways corridor.
- Undertake a ‘Water Futures’ program using: strategic citywide mapping of opportunities and constraints for implementing water cycle and multi-functional solutions (e.g. best streets for stormwater gardens marked with streets that need streetscape improvements), traffic calming and high-profile urban developments;
- An annually updated water smart assessment of the city that supports the local economy, encourages the smart use of scarce resources and protects and enhances our natural environment.

**Outcome 2**

Focussing is managed effectively so that the Brisbane community and our urban form adopt the natural movement of water:

- Through maps, models and other tools, improve community understanding of how water moves through our landscape and floodplains locally and across the city.
- Ensure emergency response plans and systems support Brisbane’s ability to continue effectively functioning before, during and after flood events.
- Work with the Queensland Government, regional organisations, professional bodies and industry to determine acceptable solutions for water sensitive development that ensure in and around floodplains and overland flow paths.
- Appropriate use of alternative water sources includes the demand on town water supplies.

A WaterSmart community

Being WaterSmart means our community is engaged in a well-informed and informed discourse about water. They need to use water responsibly and plan our waterways for the full range of benefits they bring – as places to recreate and enjoy, to travel through or to use together as a community. People can be both world class and water smart.

- People are connected to Brisbane’s waterways.
- Brisbane’s waterways bring to the surface Forgotten water ways and links between communities and key destinations.
- Beneath the Urban form are water smart urban renewal and strategic planning areas.
- Imagining our WaterSmart future

**Our vision** is to support the liveability of Brisbane by managing water sustainably. A WaterSmart city will be a vibrant city that supports the local economy, encourages the smart use of scarce resources and protects and enhances our natural environment.

**What might a WaterSmart city look like?**

**How do we transition to a WaterSmart city?**

Waterways brought to the surface provide green links between communities and key destinations for people.

A new and improved green infrastructure emerges as we value the natural environment and landscape value, creating a strong sense of place and improving people’s experience of the city. They include:

- Specially technical drawings and content provided by AECOM.
A WaterSmart community
- Community activity (e.g. community designed water gardens)
- Efficient reuse of available water sources
- Local food production
- Footpath tree plant and street tree frame for community
- Local management of stormwater and green infrastructure
- Rainwater harvesting and treatment

Well-designed subtropical city
- Stormwater designed to create adaptive and responsive environments
- Cool commuting options
- Porous paths provide safe and comfortable environments
- Flexible facades
- Buildings designed for subtropical microclimate and human comfort
- Shaded streets influencing local microclimate
- Community gathering space
- Urban Common (formal and informal)
- Post-industrial reuse of building
- Local food production
- Alternative water supplies
- Fit-for-purpose reuse of waterways in revegetating waterways
- Community actively involved

WaterSmart Buildings
- A healthy river and bay
- Enhanced water collection
- Floodplain protection
- Enhanced stormwater management
- Upstream catchments retrofitted
- Environmental flows management
- Mitigation:
  - Biofiltration of stormwater
  - Interconnected vegetation corridors
  - Retained water in the landscape
  - Waterway health

Sustainable water use
- Rainwater collection
- Renewable energy
- Greywater & blackwater treatment
- Recycled water
- Runoff and as an alternative water supply
- Stormwater harvesting to reduce flood risk
- Suitable treated waste water used for commercial and industrial purposes
- Potential uses between different land uses

Approach
- Orientate our built form and development with overland flow paths, waterways and floodplains to enhance open space and community conditions and connections.
- Integrate management for water with all of Council’s planning and infrastructure development to ensure water solutions provide multiple benefits to the Brisbane and regional community wherever Council plans or delivers infrastructure.
- Understand the effects that climate change will have on Brisbane and manage these effects through adapting policy planning, and the design and delivery of on-ground actions and engagement programs.
- Manage flooding through mitigating, accepting and controlling flood risk, ensuring Brisbane continues to function effectively before, during and after flood events.
- Understand the effects that climate change will have on Brisbane and manage these effects through adapting policy planning, and the design and delivery of on-ground actions and engagement programs.
- Improve safe access to waterways for the Brisbane community, ensuring waterways are available as places for recreation, amenity and community gathering where appropriate.

Case study: the changing role of the urban landscape
- Award-winning water sensitive urban design measures have been incorporated into the new Willawong Bus Depot. Stormwater is treated in a number of rainwater gardens that drain water through natural processes before flowing to a nearby wetland where it can be used for irrigation. Roof water and recycled water is captured, treated and reused throughout the site. These designs help achieve significant reductions in water use and runoff from paved areas contributing to improved waterway health.
We live in a subtropical climate, so rain, when it comes, is often as a summer storm, with heavy downpours filling the drains and bringing us relief from the heat and humidity.

**Key actions**

**Outcome 1**

*Water and waterways are determining factors in the design of Brisbane’s built form.*

- Develop key demonstration projects and vision scenarios for development types. Communicate to professionals across the development industry and government the multiple benefits that our floodplains, waterway corridors, overland flow paths provide including as places for open space, natural cooling and active transport.

- Undertake a ‘Water Futures’ program using:
  - strategic citywide mapping of opportunities and constraints for implementing water cycle and multi-functional solutions (e.g. best streets for stormwater gardens married with streets that need street trees, traffic calming or in high-profile urban destinations)
  - an annually updated water smart assessment framework that will demonstrate the targets, issues and routes to identifying, planning for and implementing water solutions for neighbourhood, urban renewal and strategic planning areas.

**Outcome 2**

*Flooding is managed effectively so that the Brisbane community and our urban form adapt to the natural movement of water.*

- Through maps, models and other tools, improve community understanding of how water moves through overland flow paths and floodplains locally and across the city.

- Ensure emergency response plans and systems support Brisbane’s ability to continue effectively functioning before, during and after flood events.

- Work with the Queensland Government, regional organisations, professional bodies, business and industry to determine acceptable solutions for redevelopment that occurs in and around floodplains and overland flow paths. The acceptable solutions will take into account the future effects of climate change, the multiple benefits of these spaces (including open space and biodiversity) and management of flood risks.
Brisbane City Council has recently completed a major upgrade of Brisbane’s Chinatown Mall. This redevelopment demonstrates Council’s commitment to the incorporation of Water Sensitive Urban Design into the improvements of a public space. These Water Sensitive Urban Design elements include stormwater harvesting, treatment and reuse all within a highly urbanised site. The redeveloped Brisbane Chinatown Mall has become a major attraction in Brisbane and an important part of the revitalisation of Fortitude Valley.

Outcome 3

Systems and processes are in place to support the effective, integrated management and implementation of on-ground solutions.

- Apply emerging green infrastructure standards to infrastructure projects and benchmark such projects against nationally and internationally recognised innovative water solutions.

- Implement and adapt the public benefits assessment framework to help decision-makers prioritise program and project investments – such as the waterway health enhancement program and capital works – to maximise the multiple benefits our water solutions provide.

- Implement and use best practice asset management systems for all of Council’s natural and built assets, including waterways and new and emerging natural or ‘soft’ infrastructure solutions such as bioretention basins and stormwater gardens.

Links to Our Shared Vision: Living in Brisbane 2026

Outstanding city profile

- Design for our subtropical environment
- Celebrating water
- Sustainable development

Effective growth management

- Innovative subtropical design/urban form
- Vibrant and active urban spaces

Healthy economy

- Water security
- Outstanding city profile through subtropical design and urban form, promoting eco-efficiencies and enhancing surrounding environment

Safe communities

- Flood mitigation and community awareness

Active and healthy communities

- Integrated water smart design of open space and active travel facilities
A healthy river and bay

Brisbane’s creeks, the Brisbane River and Moreton Bay are a part of our city’s identity, with Moreton Bay recognised internationally under the Ramsar Convention for values to migrating birds. Our waterways define our subtropical lifestyle helping to make Brisbane a great place to live.

Over the past 10 years Council has completed wastewater treatment plant upgrades worth more than $300 million. These upgrades have significantly improved water quality around and downstream from discharge points, helping to improve the health of our waterways. However, the health of our waterways continues to decline. Monitoring from the Healthy Waterways Partnerships makes clear the link between growth and development and the negative impacts our waterways are experiencing. Climate change impacts are adding pressures on Brisbane’s waterways through sea level rise, more creek bank erosion, increased weed infestations and possible changes to vegetation cover.

Our challenge is to bring together community support and action, in partnership with Council’s actions and the great work being done across the South East Queensland region to reverse this decline. Partnered action in rehabilitating our creeks, the Brisbane River and Moreton Bay needs to focus on improving the amenity, recreation, social and economic values of our waterways while securing their vital ecological and floodplain functions.

To achieve this, we will undertake action to realise the following outcomes.

**Outcomes**

1. Brisbane’s waterways are healthy and resilient and able to adapt to pressures and change.
2. Brisbane’s waterways provide for multiple benefits including high amenity, recreation and economic values while securing vital ecological and floodplain functions.
3. Brisbane’s built form delivers on the principles of the natural water cycle to ensure appropriate environmental flows and to improve water quality.
“Waterways were a great marker for people to have their boundaries, and if they were close to a border, the rivers were shared by people of both tribes.”

Uncle Nurden Serico
Aboriginal Elder

Approach

» Facilitate community understanding of waterway health across the catchment and of the many ways the community can contribute to improving.

» Better understand the hydrology and environmental flows that are needed to support the health of Brisbane’s waterways and their ability to provide for multiple benefits.

» Work in partnership with regional communities, organisations and the Queensland Government to reduce the water pollution entering Brisbane’s waterways, including implementing best practice erosion and sediment control in all development and re-naturalising stormwater drainage paths.

» Ensure all capital works (including stormwater, waterway enhancement, transport and community facilities infrastructure) contribute to the rehabilitation of Brisbane’s waterways and their ecological, floodplain, amenity, recreational, social and economic functions.

Case study: what are environmental flows?

Every waterway has a natural, seasonal flow pattern that supports and maintains its ecological health and function. These natural flow regimes are called environmental flows.

In collaboration with its partners the Healthy Waterways Partnership, Australian Rivers Institute, CSIRO and Queensland Government, Council is undertaking a four year project to determine the best possible flows required to maintain and improve the health of our urban waterways. The outcomes of the project will inform management actions within Brisbane’s waterways.
**Key actions**

**Outcome 1**

Brisbane’s waterways are healthy and resilient and able to adapt to pressures and change.

» Develop and implement an optimal health framework for all of Brisbane’s waterways. The framework will determine the preferred level of ecosystem health for each waterway based on its individual characteristics, its capacity to cope with pressures and change, and the social benefits and use of the waterway. The framework will include waterway health indicators which can be used by the community, Council and other organisations to measure progress.

» Work with regional and national partners to increase the level of investment in stormwater pollution reduction solutions and rehabilitation works in high pollutant load generating catchments that flow into the Brisbane River and Moreton Bay.

**Outcome 2**

Brisbane’s waterways provide for multiple benefits including high amenity, recreation and economic values while securing vital ecological and floodplain functions.

» Improve our understanding (through social research and community engagement) of the interrelationship between location specific and citywide community values and priorities. Adapt our investment to reflect this understanding.

» Identify the ecosystem functions and services that Brisbane’s waterways and wetlands provide and assess their likely change over time due to climate change and growth impacts. Use this information to inform the use of waterways and wetlands as determining factors in the design of Brisbane’s built form.
Council developed and implemented the award winning Waterway Health Enhance Prioritisation Program in five of Brisbane’s key local creek catchments. In partnership with the community, the Program directs where Council and community waterway enhancements should occur to achieve the best ecological result for our creeks.

Outcome 3

Brisbane’s built form delivers on the principles of the natural water cycle to ensure appropriate environmental flows and to improve water quality.

» Provide resources (including standard drawings, and support for industry-led educational resources, guidelines, appropriate rating tools and training) to assist the development industry, residents and businesses in implementing solutions that reduce stormwater pollution and re-naturalise stormwater flows within all developments.

» Work with regional partners and the development industry to develop and implement a program of integrated capital works focusing on solutions that reduce stormwater pollution and damaging flows, providing multiple benefits such as street trees for leafy subtropical boulevards and local streets, climate cooling, traffic calming and stormwater capture for public space irrigation.

Links to Our Shared Vision: Living in Brisbane 2026

Green and biodiverse city

» Waterway rehabilitation
» Flora and fauna connectivity along waterway corridors

Green and active transport

» Integrated transport solutions that are socially, economically and environmentally sustainable
» Clean and green modes of transport for healthy waterways

Active and healthy communities

» Citywide network of major urban parks, metropolitan nature-adventure parks

Outstanding city profile

» Moreton Bay, internationally significant, major tourist destination
Sustainable water use

Water supply in South East Queensland has changed and will continue to change in the face of population growth and the unpredictable effects of climate change on Brisbane’s natural cycle of drought and flood.

During South East Queensland’s recent drought, our entire community significantly changed the way it used water, with consumption falling from 300 litres per day to as low as 127 litres per person per day. Efficient water use, water saving behaviours and the use of alternative water sources are now the norm for the Brisbane community. The new South East Queensland water grid provides an increasingly secure drinking water supply.

Complementing our regional objectives and the expectations of the Brisbane community, Brisbane is seeking to further build resilience and reduce risks in its water supply system. Our focus will be on using local, alternative water sources (including stormwater, groundwater, greywater, wastewater recycling and desalination) to provide not only a source of water for consumption, but sources that improve our natural environment and the social benefits of our built and natural spaces.

This focus will see Brisbane using water to enhance its subtropical lifestyle – water for subtropical vegetation, for climate cooling, for industry and businesses, and many other uses. Examples include harvesting stormwater in a park to provide water for irrigation and treating captured stormwater through a constructed wetland which is designed with boardwalks and places for people to gather.

Council will work towards the following outcomes and strategic actions in partnership with the Brisbane community to improve how we source and use water.

**Outcomes**

1. The community supports and uses a diverse mix of alternative water sources, improving our resilience to the effects that drought and climate change will have on our water supply systems.

2. The community uses water from all sources efficiently and effectively.

3. Brisbane’s use of water from all sources is sustainable, balanced with environmental needs.

**How will we know we are there?**

» By 2012, the average annual use of the reticulated water supply by Brisbane’s community will be within 10 per cent of 200 litres per person per day during periods when no restrictions are in place.

» By 2012, Brisbane will be recognised as Australia’s most water smart city, encouraging more efficient multiple uses of water and ensuring viable fit-for-purpose water supplies are widely available and utilised.

Water feature in Brisbane’s Chinatown Mall uses harvested stormwater
Case study: stormwater harvesting in Brisbane

Public places – parks, sports fields, visitor facilities, closed landfills, streetscapes/road reserves and major commercial projects – all provide potential sites to harvest stormwater. Harvesting stormwater helps reduce demand on drinking water supplies, improves security of our water supplies and reduces the amount of pollutants that flow from our urban landscape into our creeks and waterways.

Council led the way in conserving our precious water resources during the recent millennium drought. Council slashed its pre-drought water consumption by up to 60% through delivering a range of alternative water sources and instituting efficient water practices in Council owned parks, sports fields, visitor facilities, closed landfills, streets and major commercial buildings.

Brisbane City Council is working to deliver a number of projects including demonstration sites, fact sheets and guidelines to assist organisations and businesses in implementing stormwater harvesting and sustainable water management.
We should make sure all our public buildings have systems to collect rain water and to use it effectively. We should encourage businesses to take a similar approach, where practical.

Trevor
Brisbane resident

Key actions

Outcome 1
The community supports and uses a diverse mix of alternative water sources, improving our resilience to the effects that drought and climate change will have on our water supply systems.

» Investigate and map alternative water sources in Brisbane based on their suitability regarding physical availability, associated regulations, community acceptance, technical ability to use and the economic viability of each source.

» Demonstrate leadership by using alternative water sources in Council buildings and spaces to further our understanding of how to make available alternative water sources for all of Brisbane.

Outcome 2
The community uses water from all sources efficiently and effectively.

» Engage and partner with the Brisbane community to facilitate the acceptance, understanding and implementation of alternative water sources, such as wastewater recycling, rainwater harvesting or stormwater capture via wetlands, in new and existing developments and in shared public resources such as parks, plazas and open spaces.

» Assist developers, designers and builders (through guidelines, partnered projects and incentives) in implementing design solutions that significantly demonstrate or increase the uptake of alternative water sources such as stormwater harvesting or greywater recycling within buildings for green walls, climate cooling, landscape irrigation and urban food production.
Outcome 3

Brisbane’s use of water from all sources is sustainable, balanced with environmental needs.

» Work with regional partners and the Queensland Government, fostering strong intergovernmental support and alignment to integrate water supply, environmental flows and water quality information, ensuring adequate volumes of the right quality of water are available at the right times to support ecological processes.

» Led by the Queensland Government, Council will partner with other South East Queensland local governments, regional partners and Queensland Urban Utilities to develop a total water cycle management framework. This framework will be used by all parties to deliver integrated water, wastewater and water quality plans for sub-regional areas and the Brisbane local government area.

Links to Our Shared Vision:
Living in Brisbane 2026

Better public health
» All alternative water sources meet public health standards for their end use
» Clean and healthy waterways for community use

Effective growth management
» Water security
» Sustainable development
» Timely infrastructure provision
» Innovative subtropical design/urban form

Food in the city
» Water supplies for urban agriculture and for supporting Brisbane’s food bowl
Chapter 3
Implementation and delivery

The WaterSmart Strategy has a lifetime of five years. A detailed Program Implementation Document is being developed that complements the WaterSmart Strategy and will be a constantly upgraded document. This is part of Council’s normal corporate planning and budget cycle process with actions and projects mapped out over the five year period.

Delivery will be integrated across Council’s many business areas and its external partners. Some aspects of delivery are related to Council’s legislative requirements, eg. City Plan.

Crucial to the implementation and delivery of the strategy partnership is the need to foster a culture of evaluation and adaptive learning. We will be transparent in reporting on our successes and learnings, developing a new reporting tool for the Brisbane community.

In time, we will bring together our understanding of the effects of our actions, our learnings and new found perspectives to redevelop the strategy once again.
If we plant more paperbark trees, more eucalyptus trees, more she-oak pine and ground cover... that’ll purify the land and filter the water before it hits our main gullies and streams.”

Uncle Joseph William Kirk
Aboriginal Elder

WaterSmart Strategy Chapter 3

Walton Bridge Reserve, The Gap
## Implementation and delivery diagram

The purpose of this diagram is to provide a quick guide to see how the strategy relates to you or your interests.

<table>
<thead>
<tr>
<th>Sphere of Action</th>
<th>Residents / Businesses</th>
<th>Neighbourhoods / Communities</th>
<th>Council / Citywide</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A water smart community</strong></td>
<td>Promote where community sectors are being water smart</td>
<td>Work with communities and universities to develop education and information programs for life-long learning</td>
<td>Provide clear and accessible information to Brisbane’s community</td>
</tr>
<tr>
<td></td>
<td>Engage people in decision making</td>
<td>Connect leaders and communities to decision making</td>
<td></td>
</tr>
<tr>
<td><strong>Well-designed subtropical city</strong></td>
<td>Understand where opportunities and constraints lie for delivering water solutions that provide many benefits in neighbourhood and infrastructure planning</td>
<td>Orienteate development and our built form around overland flow paths, waterways and floodplains</td>
<td>Ensure emergency response plans and systems support the city’s ability to continue effectively functioning before, during and after flood events</td>
</tr>
<tr>
<td></td>
<td>Improve community understanding of the many roles of overland flow paths, waterways and floodplains</td>
<td>Determine acceptable solutions – providing multiple community benefits – for redevelopment in floodplains</td>
<td></td>
</tr>
<tr>
<td><strong>A healthy river and bay</strong></td>
<td>Provide resources to assist the development industry, residents and businesses in building a built form that delivers on the principles of the natural water cycle</td>
<td>Improve understanding of community values and priorities in water and broader city issues</td>
<td>Implement capital works to improve the health and community interaction with Brisbane’s waterways</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use neighbourhood planning to identify and implement solutions to improve the health of our waterways</td>
<td></td>
</tr>
<tr>
<td><strong>Sustainable water use</strong></td>
<td>Provide information and resources to help residents and businesses accept alternative water sources and to implement and effectively use alternatives</td>
<td>Work with communities of interest and locality to identify, implement and continually maintain alternative water sources</td>
<td>Implement innovative and new alternative water sources and technologies in Council buildings</td>
</tr>
<tr>
<td></td>
<td>Provide targeted incentives for innovative solutions</td>
<td>Show how water resources can be equitably shared and managed between many buildings and users through precinct scale alternative water sources</td>
<td>Provide information on where alternative water sources can be found and used</td>
</tr>
</tbody>
</table>

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2016 – Redevelop the WaterSmart Strategy
## South East Queensland/Region

- Foster cooperative governance across South East Queensland
- Help build new institutions and ways of governing for community participation in water management

## Queensland

- Represent the Brisbane community in integrated urban water cycle management issues
- Understand social and government trends and new ways of engaging communities

## Australia

- Contribute to and learn from the Monash University led Water Sensitive Cities Research Program
- Contribute to and learn from the National Urban Water Governance Research Program
- Involve and leadership in national water research agendas

## Evaluation/Improve

<table>
<thead>
<tr>
<th>South East Queensland/Region</th>
<th>Queensland</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foster cooperative governance across South East Queensland</td>
<td>Represent the Brisbane community in integrated urban water cycle management issues</td>
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</tr>
<tr>
<td>Help build new institutions and ways of governing for community participation in water management</td>
<td>Understand social and government trends and new ways of engaging communities</td>
<td>Contribute to and learn from the National Urban Water Governance Research Program</td>
</tr>
<tr>
<td>Represent the Brisbane community on intergovernmental water management and South East Queensland regional and sub-regional planning issues including working with:</td>
<td>Contribute to and learn from the Monash University led Water Sensitive Cities Research Program</td>
<td>Involve and leadership in national water research agendas</td>
</tr>
<tr>
<td>» Department of Environment and Resource Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>» Department of Infrastructure and Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner to increase investment in reducing pollutant loads entering Brisbane’s waterways from outside our local government area</td>
<td>Work with research institutions and organisations to learn and apply tools and solutions for improving waterway health</td>
<td></td>
</tr>
<tr>
<td>Work with the Water by Design Program to implement best practice in stormwater management</td>
<td>Represent community interests in decisions that effect the health of our creeks, the Brisbane River and Moreton Bay</td>
<td></td>
</tr>
<tr>
<td>Work with our partners - including the Queensland Water Commission, Queensland Urban Utilities and the Department of Environment and Resource Management - to develop and implement total water cycle management that delivers water supply, sewerage and water quality solutions for sub-regional and local areas</td>
<td>Learn from the implementation of alternative water sources across Australia and apply learnings to Brisbane’s situation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contribute to the national dialogue on integrated urban water cycle management issues</td>
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</tr>
</tbody>
</table>
What can you do to be water smart?

The future liveability of Brisbane will be influenced by your actions. Here are some of the ways you can help support the sustainability of Brisbane and care for our precious water resources.

At home

» Create a raingarden in your yard – it’s easy.
Raingardens take stormwater through specially designed garden beds which slows down the water, keeping our creeks healthy and your gardens greener.

» Grow a water smart garden.
Use fertilisers sparingly on your garden and lawn. Plant species that are native to the area to help conserve water. Permeable surfaces such as gravel, pebbles, or spaced pavers allow rainwater to seep through into the ground.

» Be FloodWise.
The FloodWise Property Report is a free report available to help you understand possible flooding risks to your property. A Flood Flag Map shows areas of possible flooding from overland flow, creeks, rivers and storm tides. Both these sources of information are invaluable when building or renovating. Visit www.brisbane.qld.gov.au/floodwise.

» Make your house water smart.
Install an approved greywater system. Water from the laundry and showers can then be safely reused for the garden or toilet flushing. Harvest the rainwater from your roof by installing a tank. Be sure to check with your plumber on how to do this correctly. When renovating or building, ask your builder or developer to incorporate water smart features.

» Keep sediment out of our waterways.
When building, renovating or landscaping, stop erosion of soil from your property by installing a sediment fence, and using turf strips or coarse gravel to stabilise the soil.

Want to be more involved?

To find out more useful information and resources on water management in Brisbane visit: www.brisbane.qld.gov.au
In your neighbourhood/community

» **Enjoy your local creek.**
  It is the perfect place for a relaxing and enjoyable afternoon.

» **Link your community project to the environment.**
  Planting trees and weeding, creating art work and educational activities, help others better appreciate our local waterways. Contact your local Creek Catchment Ranger and catchment group for projects you can collaborate on. They would love the extra hands!

At work

» **Be a water smart workplace.**
  Harvest the stormwater from your buildings and paved areas, and reuse for irrigation or washing down vehicles. Create raingardens. Investigate other Water Sensitive Urban Design opportunities. And don’t forget to be FloodWise.

» **Care for your local waterway.**
  Start a creek care group at work so you can keep rubbish and weeds out of the creek, help re-establish native vegetation, and educate your fellow workers.

» **Support local water smart projects.**
  Being a good corporate citizen is good for your business’ profile.

» **Be a water smart professional body.**
  Encourage your colleagues to learn more about how water can be positively used in the design of private and public spaces.

In your school

» **Make your school water smart.**

» **Be a part of Council’s Catchment Kids program.**
  This is a free, year-long environmental education program.

With Council

» **Council welcomes input from all parts of our community.**
asset management systems
A system that involves the combination of management, financial, economic, engineering, and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner.

blackwater
Wastewater that contains material from toilets or food preparation areas and may contain pathogens.

catchment
An area of land bounded by natural features such as hills, from which water flows to a common point, usually ending in a river or creek and eventually the sea.

citywide outcome
A statement of what is sought to be achieved to deliver Council’s vision for Brisbane in 2026.

climate change
Any change in climate over time, whether due to natural variability or as a result of human activity.

climate cooling
For this strategy this means a fall in the average atmospheric temperature of a given area or generally.

community
A term used broadly which extends beyond the view of residents in a neighbourhood. A community can be defined as a group of people united by at least one common characteristic such as geography, shared interests, values, experiences or traditions. For Brisbane this includes residents, visitors, students, businesses, industry and professionals.

ecosystem
An interdependent and dynamic system of living organisms within a physical and geographic environment.

ecosystem health
A measure of the ability of an ecosystem to be productive, its biological diversity and its resilience to change.

ecosystem services
Benefits people obtain from ecosystems. See the SEQ Ecosystem Services Project for more information www.seqcatchments.com.au

environmental flows
The flows of water in our streams and rivers that are necessary to maintain aquatic ecosystems.

estuary
Part of the tidal river where the sea water mixes with fresh water.

fit-for-use
For the purpose of this strategy this means that a source of water (e.g. recycled water) and the quality (e.g. class A) of the water from that source is suitable for the intended use (e.g. dust suppression) of the water. This incorporates the
The need for the quality and application of the water to be in a manner that will not harm the health of people using the space or product to which the water is applied.

future-proof
Designed not to be obsolete in the future.

flood event
Inundation from Brisbane River, creek, overland flow or storm surge.

flood mitigation
Works carried out to reduce the impacts of flooding.

floodplain
The areas adjacent to the defined bed and banks of a watercourse or channel that are subject to periodic flooding.

greenfield
A parcel of land not previously developed beyond that of agriculture or forestry use; virgin land. In South East Queensland Regional Plan 2009-2031: ‘areas of undeveloped land in the urban footprint suitable for urban development’.

greywater
Wastewater from baths, showers and laundries. It does not include wastewater from toilets or food preparation areas.

groundwater
Water in the saturated zone beneath the land surface.

infill development
New development that occurs within established urban areas where the site or area is either vacant or has previously been used for another purpose. The scale of development can range from the creation of one additional residential lot to a major mixed-use redevelopment.

in-stream fauna
Animals that live in our waterways such as fish, snails and insects.

integrated water cycle management
The integration of urban planning with the management, protection and conservation of the urban water cycle so that water is used optimally – Australian Government National Water Commission.

natural water cycle
Also known as the ‘water cycle’ or ‘hydrologic cycle’. The continuous process by which water is circulated throughout the Earth and its atmosphere. The Earth’s water enters the atmosphere through evaporation from bodies of water and from ground surfaces. Plants and animals also add water vapour to the air by transpiration. As it rises into the atmosphere, the water vapor condenses to form clouds. Rain and other forms of precipitation return it to the Earth, where it flows into bodies of water and into the ground, beginning the cycle again.

“I remember swimming in Kedron Brook after school in the late ‘50s – it was a bush creek then with no houses around. The group of us who lived in the street would walk across the paddocks and up the pipe and dive off the end into the creek. There was a deep water hole there. We met a lot of green tree snakes while we were swimming – very scary at first.”

Tad
Brisbane resident
overland flow path
Where piped drainage exists, the path where flood waters exceeding the capacity of the underground drainage system would flow. Where no piped drainage system or other form of defined watercourse exists, the path taken by surface run-off from higher parts of the catchment. This does not include a watercourse or gully with well-defined banks.

pervious areas
A permeable surface area (e.g. landscaped parkland) that allows the entry of water into the soil, reducing the quantity and rate of stormwater runoff when compared to impervious surfaces.

point source pollution
A single point of pollutant discharge. For example, effluent from a sewage treatment plant or an industrial wastewater treatment plant.

total water cycle management
Recognises the interrelationships between the human uses of water and its role in the environment. Key principles include: natural cycles (minimising the alteration to natural flow and water quality regimes); sustainable limits (ensuring that the volume of water extracted from a source is sustainable for the community and the environment); demand management (reducing demand by minimising water use and losses and maximising efficient use and re-use); diversity in new supplies (considering all potential sources of water when new supplies are needed, including re-using water and stormwater) and water quality (managing the water cycle at all phases to preserve water quality for the community and the environment) – South East Queensland Regional Plan 2009-2031.

urban form
The structure of the city as a whole, encapsulating areas of high growth (centres, corridors), gradual growth (suburban areas) and key facilities and employment areas such as the Australian Trade Coast and Brisbane Airport. Also referred to as ‘CityShape’.

wastewater
The spent or used water generated on premises from residential, industrial, commercial or manufacturing activities. Wastewater that contains a broad spectrum of contaminants resulting from the mixing of wastewaters from different sources.

water sensitive urban design
The integration of urban planning with the management, protection and conservation of the urban water cycle, ensuring that urban water management is sensitive to natural hydrological and ecological systems. At the development scale it is a planning and design approach that integrates water cycle management into the built form.
of houses, allotments, streets, suburbs, master-planned communities and structure plan areas. It aims to avoid or minimise the effects of development on the natural water cycle and environmental values.

**waterway**

A passage for water or a body of water, including all orders of perennial and ephemeral streams, rivers and other wetlands, and bays. This includes Moreton Bay and all estuaries, marine waters and foreshores.

**waterway corridor**

An area on a map designated to protect and enhance the water flow, water quality, ecology, recreational and amenity value of Brisbane’s waterways.

**waterway health**

Is the overall health of the waterway, typically measured through a combination of physical, chemical, and biological indicators of water quality present or absent and aesthetics. It can be represented through a range of riparian zone ecosystem services such as stream bank stability, connectivity to the land and other waterways and sub surface nitrogen removal.

**waterway rehabilitation**

Waterway rehabilitation refers to the planning, preventative and intervention measures to protect the health of our waterways, their catchments and their surrounds.

**wellbeing**

Human wellbeing has multiple constituents. These include basic materials for a good life, freedom with choice, health, good social relations and security. Wellbeing is at the opposite end of a continuum from poverty, which has been defined as a “pronounced deprivation in wellbeing”. The constituents of wellbeing, as experienced and perceived by people, are situation-dependent, reflecting local geography, culture and ecological circumstances – *Millennium Report 2000*.

**wetland**

An area of permanent or periodic inundation, whether natural or artificial, with water that is static or flowing, fresh, brackish or salt, including areas of marine water to the depth of six metres. This definition includes waterways.
Appendix A – Water management policy & law

Brisbane’s water resources are subject to different laws, policies and governance structures of the Australian and Queensland Governments as well as those of Council. While not in a position of direct control across all aspects of the water cycle, Council can influence progress towards the ideas of a water smart city in a significant way through its role in land use decisions, neighbourhood planning, asset management, waterways, stormwater and flood risk management and community capacity building for sustainability. The local tier of government is best positioned to address local planning and implementation aspects of transitioning to a water smart city.

The various laws, policies, governance structures and planning initiatives that form a critical part of the context of managing the water cycle for Brisbane are summarised here.
NATIONAL
NATIONAL WATER COMMISSION: National Water Initiative
The blueprint for water reform in Australia. Australian Government agreement on a number of actions to achieve more efficient and sustainable water management practices

NATIONAL URBAN WATER GOVERNANCE PROGRAM
Facilitates progress towards water sensitive cities through a number of research projects investigating urban water governance across Australia and overseas

STATE
ENVIRONMENTAL PROTECTION ACT 1994
Establishes environmental duty of care and the framework for protection of environmental values and water quality objectives

SUSTAINABLE PLANNING ACT 2009
Establishes the planning and development assessment framework for the State and the ability for the Queensland Government to prepare state planning policies

WATER ACT 2000
Gives all rights to use, flow and control water in Queensland to the State

WATER SUPPLY (SAFETY AND RELIABILITY) ACT 2008
Establishes regulatory frameworks for recycled water and drinking water to ensure the long-term security of water supplies across Queensland

SEQ WATER (RESTRUCTURING) ACT 2007
SEQ WATER (DISTRIBUTION AND RETAIL RESTRUCTURING) ACT 2009
SEQ WATER (DISTRIBUTION AND RETAIL RESTRUCTURING) NOTICE 2010
Facilitates the restructure of the water industry in SEQ

COASTAL PROTECTION AND MANAGEMENT ACT 1995
Establishes the outcomes sought from planning, development assessment and management of coastal resources including waterways that flow to the coast

FISHERIES ACT 1994
Establishes the management, use, development and protection of fisheries resources and fish habitats

QUEENSLAND WATER COMMISSION
Responsible for achieving safe, secure and sustainable supplies of water, focusing on South East Queensland

DEPARTMENT OF ENVIRONMENT AND RESOURCES MANAGEMENT
Role is to conserve and manage Queensland’s natural environment for the benefit of all Queenslanders

DEPARTMENT OF INFRASTRUCTURE AND PLANNING
Brings together planning, local government and infrastructure responsibilities to deliver integrated solutions, face the State’s population and economic challenges, and secure a sustainable future for Queensland

QUEENSLAND BULK WATER AUTHORITY
QUEENSLAND BULK WATER TRANSPORT AUTHORITY
QUEENSLAND MANUFACTURED WATER AUTHORITY
Responsible for catchment protection, drinking water treatment and the supply of bulk water and manufactured water

REGIONAL
SOUTH EAST QUEENSLAND REGIONAL PLAN 2009-2031
Provides a guide for growth and development in the region for the next two decades

SOUTH EAST QUEENSLAND WATER STRATEGY
Sets a new approach to regional water planning. Designed to meet the region’s water supply needs for the next 50 years

SEQ GRID MANAGER
Responsible for the operation of the water grid and market

SEQ DISTRIBUTOR-RETAIL AUTHORITIES (UNITY WATER, QUEENSLAND URBAN UTILITIES, ALL CONNEX)
Responsible for water and wastewater services including trade waste, water demand management, water and wastewater related development decisions, infrastructure planning and funding

SOUTH EAST QUEENSLAND NATURAL RESOURCE MANAGEMENT PLAN 2009-2031
Establishes a single set of targets to assist in implementing regional outcomes, principles and policies

SOUTH EAST QUEENSLAND HEALTHY WATERWAY’S STRATEGY 2007-2012
Focuses on leadership, commitment and voluntary cooperation to understand, plan and manage the use of the precious waterways and catchments of South East Queensland

SOUTH EAST QUEENSLAND CLIMATE CHANGE MANAGEMENT PLAN (draft)
Contains proposed actions to reduce emissions and help the region to become more resilient to the impacts of climate change

“By 2026, our waterways and catchments will be healthy ecosystems supporting the livelihoods and lifestyles of people in South East Queensland, and will be managed through collaboration between community, government and industry”