Brisbane City's Water Story

The vision for Brisbane

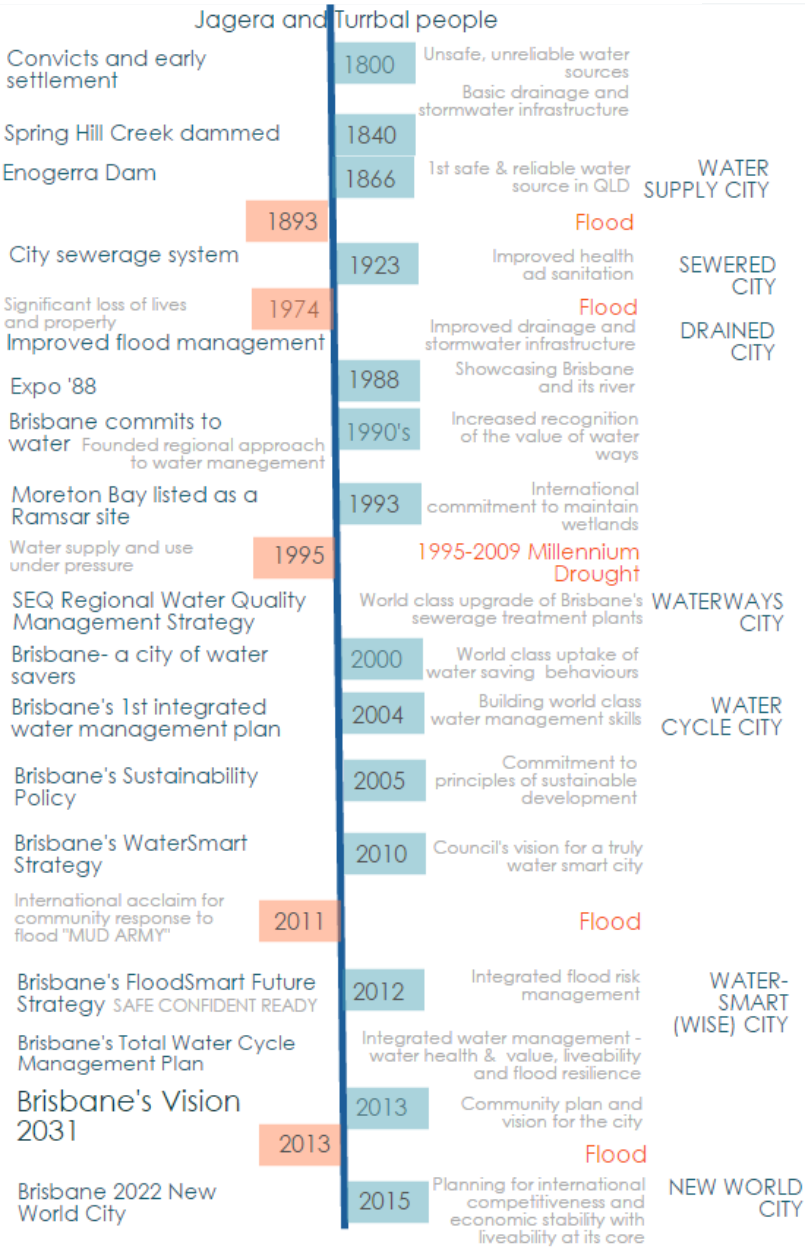
Brisbane City Council is Australia's biggest metropolitan local government with over 1 million residents, spanning an area of 1,350 km^2 and a local economy worth more than AU$146 billion. Brisbane City Council is proud to call Brisbane a water-smart and water-wise city.

Brisbane has come a long way on the water wise journey. From a small colonial outpost that struggled to provide its residents with clean drinking water during the early 1800s, we've become a sophisticated city that manages water at all stages of the water cycle and is known for its leading edge integrated management of water in flood and drought.

"Brisbane's water vision is that in 2031 our clean, green city provides sub-tropical open spaces and natural areas as breathing spaces for the city. Our river, creeks and bay are enhanced, protected and enjoyed by all. We are a city that values and respects the role that water plays in our city through times of drought and flood."
Brisbane Vision 2031

What frames our story?

Water defines Brisbane as a river city. It provides a sense of place through thousands of kilometres of waterways and sustains our population, biodiversity and natural areas. The health of our waterways and associated ecosystems underpins the liveability of our sub-tropical, clean green city.



We live on a flood plain and regularly deal with drought in ongoing variable climatic conditions. In the last two decades, Brisbane has experienced the Millennium Drought (1995 – 2009) and two significant floods (2011 and 2013) as well as more frequent and severe storms. This has highlighted the importance of managing water at all stages of the water cycle and has reshaped Brisbane's relationship with water. Brisbane has become a city of water savers with sharpened government policies on water conservation, recycling and reuse. Brisbane has learned to live with floods through increased flood awareness and preparedness to build a more resilient city.

As Australia's New World City, Brisbane is located in one of the fastest growing regions in Australia. Brisbane is renowned for its riverside location, sub-tropical climate and friendly relaxed lifestyle – all of which attract businesses, workers, students and tourists from across the world. Integrated management of our world class natural resources is essential to maintain our international competitiveness as a resilient and liveable city with access to timely and affordable water and waterway services.

A shared regional vision for planning in partnership

Regional collaboration is the hallmark of Brisbane's sustainable urban water story.

Brisbane City Council works in partnership with multiple stakeholders to ensure that it's fast growing sub-tropical city, prone to flood and drought, has secure, healthy and sustainable water resources. These partners include neighbouring local governments and other agencies such as:

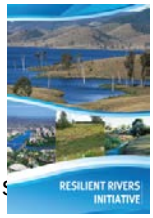
- South-East Queensland Council of Mayors and the Local Government Association of Queensland
- Water utilities including Queensland Urban Utilities
- Regional not-for-profit agencies and other learning institutions including Healthy Waterways and Catchments, the Australian Rivers Institute, the University of Queensland, Queensland University of Technology, Griffith University and the Cooperative Research Centre for Water Sensitive Cities
- The Queensland Government and its agencies including the bulk water supplier: Seqwater
- Community including residents, community groups, business, and industry and their peak associations.

Brisbane City Council has a long history of planning for water with our stakeholders and regional partners to realise our water smart vision. Each of our partners has similar or complimentary visions towards building a water wise city.

Healthy Rivers and Bay – Resilient Rivers Initiative

Our river, bay and waterways support the liveability and lifestyle of Brisbane as a river city. Water and waterways support a well-designed, sub-tropical city and green urban environment that are managed as recreational, economic and environmental assets to deliver value to business, industry, residents and nature alike.

The Resilient Initiative is a partnership between key regional waterway and catchment stakeholders led by the Council of Mayors (SEQ) aiming to improve and supporting the health of our waterways and secure our water s



Australian Rivers Institute
"Source to Sea"

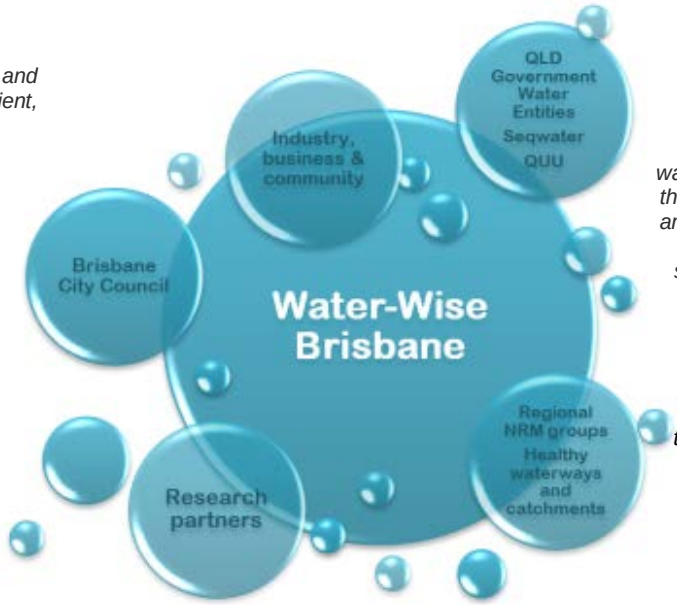
Brisbane City Council
A world-class WaterSmart city

CRC for Water Sensitive cities
We envision future cities and towns, and their regions, to be sustainable, resilient, productive and liveable

Smart Water Research Centre
A strategic partnership that builds, shares and applies new knowledge to improve water cycle management

Smart Water Research Centre
A scientific, policy relevant and solution oriented global water research programme for sustainable development

Seqwater
Healthy communities. Prosperous region Partnering to deliver safe, secure and cost-effective water and catchment services to our customers and communities



Queensland Urban Utilities (QUU)
Enrich quality of life. Excellence in water and sewerage services that meet the evolving needs of customers and enhance communities

Healthy Waterways and Catchments
(a merge between HWW and SEQ Catchments)
Providing the preeminent services for understanding and communicating about waterways and the natural assets that support them, and for connecting science, community and management to influence and deliver on-ground outcomes that address risks and secure the region's waterways and natural assets

Global Change Institute
To foster discovery, learning and engagement by creating, applying and transferring knowledge for innovative and integrated solutions to the multitude of global challenges currently facing global society

Governance and roles

LEVEL	ORGANISATION	ROLE and LEGISLATION	OUTCOME
Federal Australian Government	Dept. Agriculture and Water Resources	Federal policy position and compliance *Intergovernmental agreement on a National Water Initiative* *Australian Drinking Water quality Guidelines*	Shared commitment to increase the efficiency of Australia's water use Standards for drinking water
State Queensland Government		State policy position and compliance	
	Dept. of Environment and Heritage Protection	*Environmental Protection Policy (Water)*	Protecting the quality of natural waters in QLD
	Dept. of Infrastructure, Local Government and Planning	*City of Brisbane Act 2010*	Provides BCC's constitutions, responsibilities and powers.
	Dept. of Natural Resources and Mines	*Water Act 2000*	Regional water management and planning
	Dept. of Energy and Water Supply	*South East Queensland Water (Distribution and Retail Restructuring) Act 2009* *Water Supply (Safety and Reliability) Act 2008*	Allocating water resources and managing water demand in regional areas Oversees regulation of state-owned water entities
	Seqwater	Regional water security and supply and flood management	Safe and reliable water supply
Local Government	Queensland Urban Utilities	Council-owned water distributor-retailer and provider of sewerage services	Supply of water and sewerage services residential and business
	Brisbane City Council	Metropolitan Local Government City design, stormwater and flood management	Water-wise city design, waterway activation, stormwater and flood management

The Queensland Government is responsible for water security and water quality by setting policy direction and compliance. The regional collaborative model has been developed within the framework of multiple Queensland statutes and relies on clear roles, responsibilities, and tools which enable integration and a consistent approach towards excellence in water management.

The State agency, South-East Queensland Water (Seqwater), is responsible for the production and security of the regions potable water supply as well as its distribution, catchment health and upper catchment flood mitigation.

Brisbane City Council is responsible for stormwater and city management, while the local government owned water utility, Queensland Urban Utilities (QUU) is responsible for the distribution and retail supply of potable water and waste water management.

To support the management of the water cycle for Brisbane, Brisbane City Council works in partnership with South-East Queensland Council of Mayors and the Local Government Association of Queensland to assist in the development of a regional approach to water management that aims to deliver consistent water management across jurisdictions but geared to delivering local solutions.

Brisbane City Council also collaborates with globally recognised research institutes to understand and apply the science behind leading edge urban water management.

Brisbane's WaterSmart Strategy, TWCMP and Netserv Plans

An example of holistic Council strategic thinking and state legislation driving collaborative planning.

Keys tools which enable this regional collaborative governance model works include the Brisbane's WaterSmart Strategy, Total Water Cycle Management Plan (TWCMP) and Water Network Service Planning (Netserv Plan).

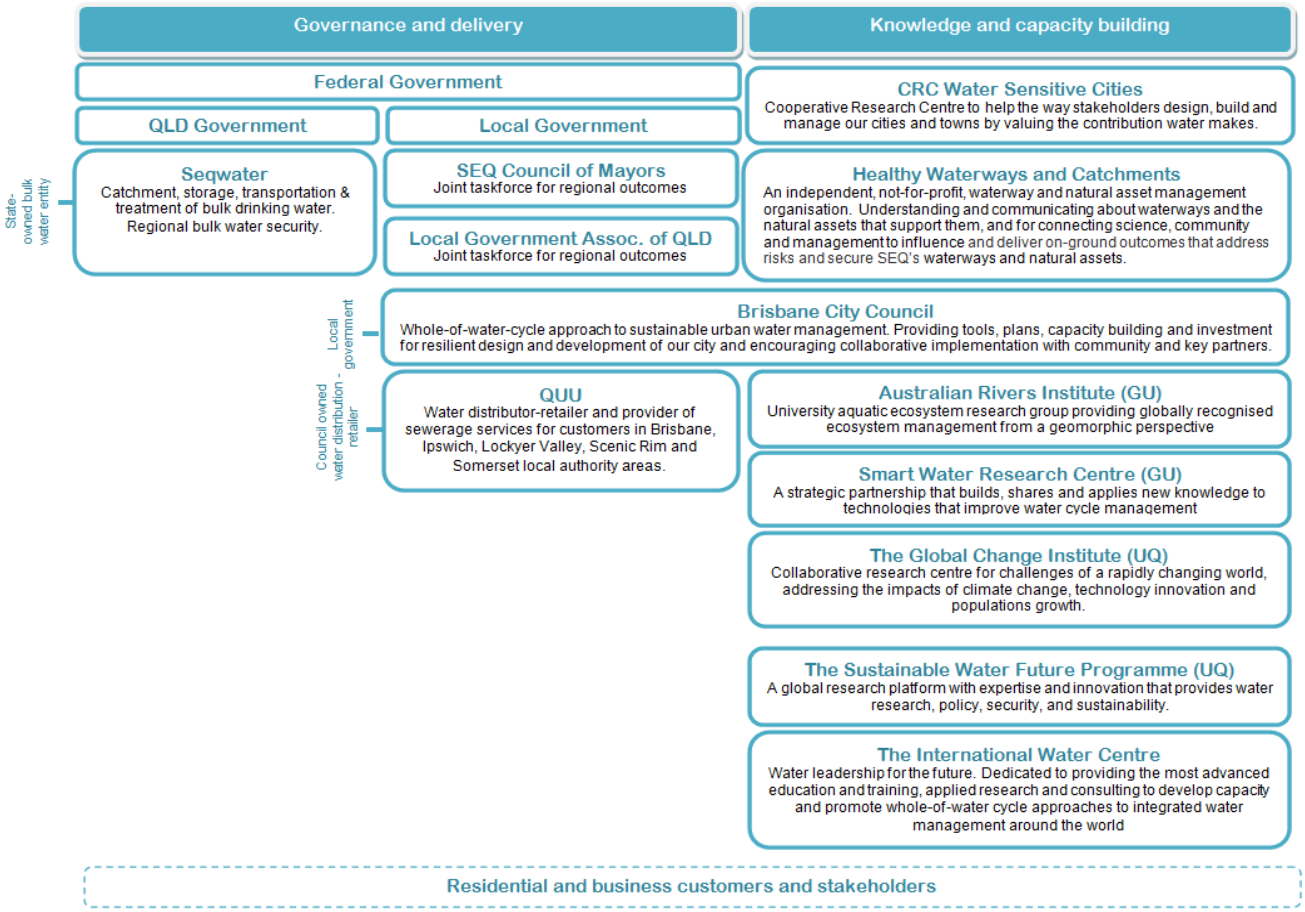
The State Environmental Protection Act authorises local governments in South-East Queensland to prepare Total Water Cycle Management Plans and gain endorsement from the relevant water utility before adopting them. Under the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*, water utilities are required to prepare a Water Netserv Plan and have them endorsed by relevant local government authorities before adopting them.

This framework ensures that agencies coordinate their services for the regional community.

Knowledge and Capacity

Brisbane as one of Australia's New World City based on its enviable sub-tropical lifestyle, natural assets, proven resilience to flood and drought. The city is now recognised as a global leader in water management and there are numerous globally recognised research institutes and programmes in Brisbane all of which conduct leading-edge integrated water management research, communication, collaboration and partnering that are supported by Brisbane City Council.

As a result, Brisbane has a very high local and globally-connected capacity within our region. This connectivity is able to tailor and implement the most innovative and suitable water solutions for Brisbane. Brisbane City Council also strives to engage with our community through consultation and involvement in water management thinking and decisions. This has resulted in a community focused, sustainable water management agenda for Brisbane with the added benefit of the development of a range of tradable services including tools, planning methodologies, and governance frameworks that would extend across a variety of water management issues including flooding, water scarcity and asset management all of which assist in making Brisbane a water-wise city.



Some of our key capability and knowledge centres have been listed above. To build local capability and share our knowledge and experiences with others Brisbane has hosted, and continues to host, a number of international conferences, including:

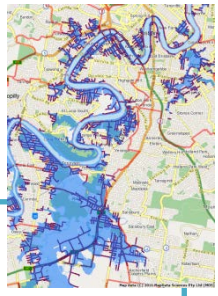
- **International Riversymposium**: The world's leading annual conference in river management, first held in Brisbane in 1998 and hosted by Brisbane every two years.
- **Floodplain Management Australia Conference**: Floodplain Management Australia (FMA) is committed to helping reduce the risks and impact of flooding on life and property. In 2015 the 55th FMA conference was hosted in Brisbane.
- **WASH**: The WASH (water, sanitation and hygiene) conference has been hosted in Brisbane in 2008, 2011, 2014 and 2016.
- **OzWater**: In 2014 Brisbane hosted OzWater, Australia's international water conference and trade exhibition run annually by the Australian Water Association.

Brisbane is also the home of the International Water Centre which provides premier international water courses and education programmes for building global water leaders through four leading Australian Universities (University of Queensland, Griffith University, Monash University and the University of Western Australia). These programmes include:

- Master of Integrated Water Management (The International WaterCentre)
- Graduate Certificate in Water Planning (The International WaterCentre)
- Water Leadership Program (The International WaterCentre)

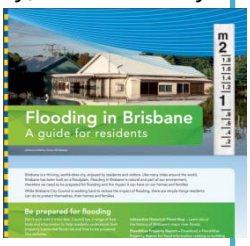
Planning and implementation tools

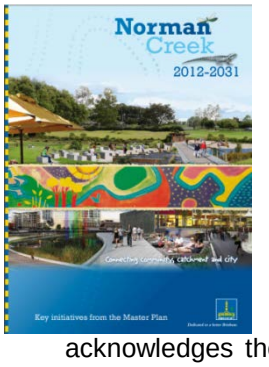
The population of South-East Queensland is forecast to grow from 3 million people in 2015 to 5 million people in 2041, and is consistently apprised since the 1980s as Australia's fastest growing urban community.



Planning for water is governed by the Queensland State Government in association with Brisbane City Council (for stormwater), Queensland Urban Utilities and Seqwater. Planning for any future water infrastructure requires a coordinated effort by all parties to ensure that our water is available when it is required to a quality fit-for-use, and a quantity to support a range of urban and industrial needs. A Queensland Government run process called Local Government Infrastructure Planning assists this future decision making process.

To assist in the future planning of the City, Brisbane City Council develops its statutory plan, *Brisbane City Plan 2014*, along with infrastructure plans, neighbourhood plans and master plans, all of which assist the Council to engage with its residents to build a 'Brisbane of tomorrow'. *Brisbane's City Plan 2014* was developed with extensive community consultation and with the support of two leading edge online tools enables residents to understand the impacts of water on their land and developments. Increased importance of biodiversity and natural assets in the City in collaboration with improved flood and sea level rise modelling has enabled more efficient and effective citywide land-use planning outcomes that will result in improved economic growth and the protection of our city's enviable way of life.





Norman Creek Catchment - a water wise city project in Brisbane

The Norman Creek catchment is one of the city's most urbanised places, separated from the Central Business District by the Brisbane River. The Norman Creek Master Plan acknowledges the rich urban fabric of the catchment and provides new opportunities to bring nature back into the city, re-establishing natural processes and reconnecting communities with their waterways.

"Living with flooding in our city – we are safe, confident, ready"

In January 2011, Brisbane experienced the second-highest flood since the beginning of the twentieth century. This resulted in major flooding through most of the Brisbane River catchment, inundating an estimated 22,000 residential properties and 7,600 businesses in metropolitan Brisbane and caused substantial damage to infrastructure, assets, waterways, parks and community areas. In the days immediately after the flood, Brisbane City Council and the State Government set out to ensure that Brisbane City Council and the city would be better prepared for natural disasters in the future. Brisbane City Council implemented a Temporary Local Planning Instrument to raise the residential planning flood level. This was further consolidated with the introduction of Flood Planning Areas and the Flood Overlay (waterway/creek) mapping in *Brisbane City Plan 2014*. This has assisted the City to move to a resilient Brisbane, being Safe, Confident and Ready for flooding and severe weather.

Lessons learnt

We have analysed over 50 years of flood information data and then remodelled the current flood risk and flood levels against current land use mapping (zoning). This resulted in the City's *FloodSmart Futures Plan* and four floodplain risk management tools including:

- Smart Planning and Building
- Well Maintained and Improved Structural Assets
- World Class Response and Recovery
- Educated & Resilient Community

Knowledge sharing platforms and transparency

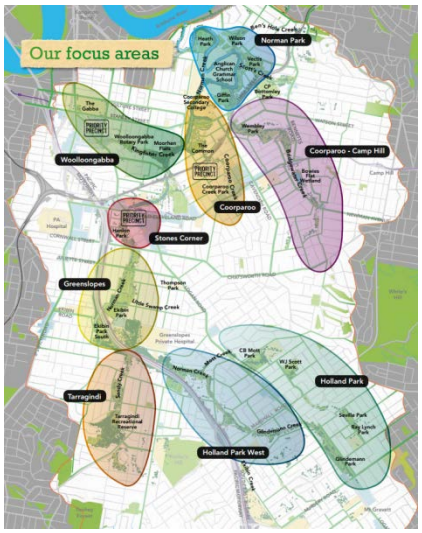
Over the past five years, Brisbane City Council has invested over $600 million towards flood management including new planning tools, online flood information as well as substantial on-ground works. Residents and businesses can now find online flood information and advice about:

- flood risk (flood awareness maps and floodwise property reports) and taking action
- preparing for storms and flooding
- Brisbane City Council's flood plans
- policy and projects, and
- recovery efforts from previous floods and severe weather events in 2011 and 2013.

Brisbane City Council has partnered with the Queensland Government's Early Warning Network service to provide Brisbane households with free severe weather alerts based on their location which also assists in our residents being safe confident and ready for severe weather.

Seqwater has now launched a new service allowing all residents across South-East Queensland to access notifications on flood water releases from all government owned dams in South_East Queensland.

Brisbane City Council embarked on Australia's first master plan for an entire waterway catchment and developed an overarching vision and master plan, providing a blueprint to guide long-term investment and coordinate community actions. *Norman Creek 2012-2031* is not just about rejuvenating local waterways. This project has been designed to achieve multiple outcomes for the city, from strengthening our economy to improving access and inclusion for all residents and making the city cleaner and greener.



Residents have been working for decades to green and restore local waterways, individually or as part of community groups such as the Norman Creek Catchment Coordinating Committee. Their passion inspired Brisbane City Council to embark on this ambitious project and its reality.

Delivering it will require not only substantial resources but unparalleled partnerships between residents, business and industry, government, and community groups, building on an already capable water wise community to plan and deliver a catchment-wide master plan.

To date some of the key initiatives to be completed from the first stage of implementing this masterplan that relate to the Principles for Water Wise Cities include:

Regenerative Water Services for All

- Stormwater drainage upgrades, creek widening, back flow devices, detention basin development and a floating weir stormwater harvesting system to reuse and use diverse sources of water
- Systems approach through Total Water Management plans and Netserv Plans.

Water Sensitive Urban Design

- Buy back and demolition of flood affected properties to enable a more resilient urban design
- Risk based development guidelines for properties within flood areas based on up-to-date flood modelling and flood resistant design standards
- Water sensitive urban design bioretention gardens and water smart trees pods which channel stormwater from roads to gardens for treatment and watering use
- Bikeways developed along creeks to improve safe access to waterways and associated open space
- Flood overlays within *Brisbane City Plan 2014*.

Basin connected cities

- Water quality improvement devices such as bioretention basins, creek filtration devices and grass swales as well as treatment of contaminated land protecting water quality
- Flood modelling and upgrade of key infrastructure such as a road bridge to improve flood resilience planning for extreme events

Water-wise Communities

- Catchment regeneration consistent with the masterplan by community catchment group funded by Brisbane City Council, SEQ Catchments, Brisbane Catchments Network, Jagera Daran Cultural Heritage Body and Queensland Urban Utilities.
- Development of a Flood Taskforce and then the delivery and implementation of a Flood Inquiry Report and Action Plan across all levels of Government.
- Online flood awareness tools based on improved flood knowledge
- Lord Mayor and Civic Cabinet championing water, drought and flood awareness, preparation and response.

Future funding a clean, green water wise city

The 2016 Brisbane City Council budget highlights Brisbane City Council's commitment to continuing to invest in a water wise city. Key investments over the next 4 years include:

- $648 million for waste management and collection
- $350 million for drainage maintenance and enhancement
- $50 million for our waterways
- $40 million for graffiti removal and litter prevention
- $24 million to deliver a 100% carbon neutral Council
- $650 million for suburban parks
- $120 million for acquiring bushland
- $20 million for park enhancement programs

Plus a commitment to revitalise the run-down Oxley Creek catchment into a 600 hectare world class green corridor and leisure landmark is now a reality with a commitment of $15 million over the next four years to make this project happen. This stage will form part of the $100 million, 20 year vision for a master planned precinct.