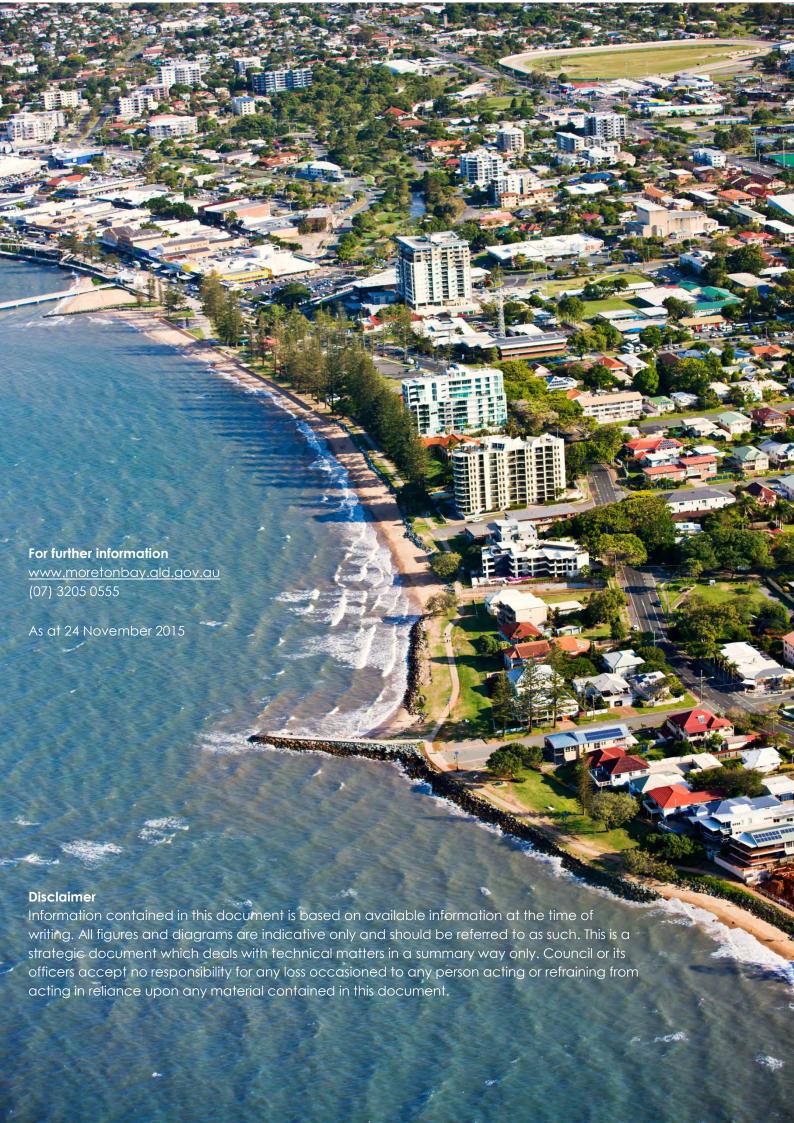


# Water Strategy

2012-2031





# **Contents**

Executive summary	1
Introduction	2
Water in the Moreton Bay Region	3
Ecological assets	3
Social assets	4
Economic assets	5
Overall MBRC Region Water Account	5
Why is water important to us?	6
What is a Water Strategy and what can it deliver?	8
Why is a Water Strategy important?	9
State and Federal requirements	9
Council's policy framework	10
Preparation of the Water Strategy	11
Our vision	12
Principles	13
Snapshot of the region	15
Regional profile	16
Responding to change	19
Key challenges for the regions' catchments, creeks and coast	20
Responding to user needs	23
Future directions	24
Opportunities for meeting user needs	25
A. Healthy waterways	26
B. Safe communities	28
C. Natural coastlines	30
Framework for delivery	32
Delivering the Strategy	33
Leadership and governance	39
iRIS and Council's capital works program	40
Planning Scheme	41
Targets and goals	42
Monitoring and review	42
Program action plan	42

# **Executive summary**

The Moreton Bay Region has a diverse network of waterways and coastal areas, from the upland streams of the D'Aguilar Range to the coastal rivers and Moreton Bay. The region's waterways and coastal foreshores are indispensable to our identity, lifestyle and economic prosperity.

Our region is facing unprecedented growth over the coming years, with the population expected to increase by 150,000 residents by 2031. This growth will present many challenges for Council to address and manage, including increased water demand, flooding impacts, climate change and the future health of our waterways and coastal foreshores.

A strong vision is required for the planning, development and management of all water resources across the region. Water provides economic, social and environmental benefits for our growing community and is vital to sustain all life. As a community we should look for ways to integrate and sustainably manage water resources and value the services that water provides to our region.

The Water Strategy has been developed to safeguard water security and increase waterway health. Council is committed to the Moreton Bay Region becoming a Water Sensitive Region.

The Strategy has been created using key values identified by residents of the Moreton Bay Region in the Community Plan, including:

- a healthy natural environment;
- quality recreation and cultural opportunities;
- Increasing the resilience of communities

These key values underpin all aspects of the Strategy.

The Strategy establishes the vision, fundamental principles and strategic outcomes to guide Council's integrated water management into the future. The Strategy is endorsed as a primary policy and will assist Council in making informed decisions to become a water sensitive region.

This strategy will also inform and lead the development of subsequent strategies and plans, including the Total Water Cycle Management Plan, Floodplain Risk Management Plan, and Shoreline Erosion Management Plans. These documents will outline the key actions and targets required to achieve a sustainable water future.



# Introduction



# Water in the Moreton Bay Region

The Moreton Bay Region has a diverse network of creeks, catchments and coastal areas that are central to the values and lifestyles of residents and visitors. These water assets are vital to the ecological, social and economic wellbeing of our community.

In total the Moreton Bay region has a total of 14 water catchments, with a total area of approximately 202,543 ha. Future land uses in the MBRC region is expected to consist of approximately 17% urban, 27% agriculture and 56% conservation area / green space.

## **Ecological assets**

Rivers, lakes, estuaries, floodplains and wetlands are essential natural assets that support diverse populations of animals and plants.

Wetlands are highly productive environments and have been exploited for their products for centuries. Mangrove swamps and tidal wetlands are breeding and nursery areas for many commercial fish species.

Waterways and floodplains also play a vital role in the movement and cycling of sediment and nutrients and strengthen the rich agricultural soils in many areas of the region. Rivers and wetlands are an important interface between the surrounding catchments and the downstream receiving waters of marine ecosystems or terminal lakes.

Estuaries provide an essential connection between catchments and downstream waters and are home to unique habitats of mangroves, coastal wetlands and marshes that are also vital spawning and nursery areas for fish.

> Rivers, estuaries and wetlands in a catchment



#### Catchment facts

Area: 202,543 ha

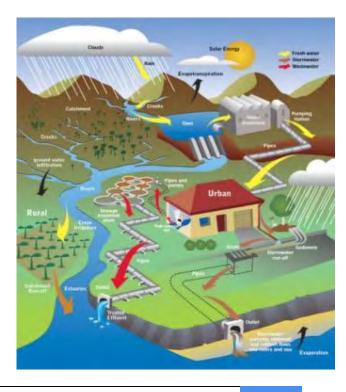
• 14 water catchments

• Future urban land use: 17%

Future agricultural land use: 27%

Future conservation / greenspace: 56%

- Surface water storages include North Pine Dam, Lake Kurwongbah, Woodford and Caboolture Weirs
- Groundwater storages include Bribie Island and Dayboro bore fields



Floodplains are areas that adjoin creeks, rivers or coastlines and include the footprint of all adjoining land that could experience inundation during a flood. Floodplains represent one of the most common landforms in the Moreton Bay region covering approximately 20% or 400 square kilometres.

The broadest floodplains in the region include the coastal floodplains of the Pine River, Hays Inlet, Caboolture River and Pumicestone Passage catchments and the westward flowing Stanley River. The floodplain in the urban setting is used for many activities including recreation and natural areas.

Improving the environmental condition of waterways is vital to sustaining vast populations of animals and plants, providing opportunities for recreational activities and supporting economic development through industries such as tourism and agriculture.

## Social assets

Waterways serve many functions; they are a place for people to relax, holiday, exercise, fish, bird watch, hike and swim.

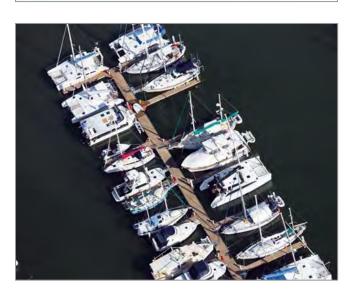
From cool mountain streams in the ranges to estuaries along the coastline, waterways support the well-being and productivity of individuals, communities and the regional economy.

There are many social benefits associated with waterways. Waterways act as a place for recreation and are often a hub or meeting place for local communities. Fishing, boating, swimming, canoeing and water-skiing are all popular recreational activities that occur on waterways.

For many, individual waterways hold significant memories and are often associated with their 'sense of place' and 'belonging'.







#### **Economic assets**

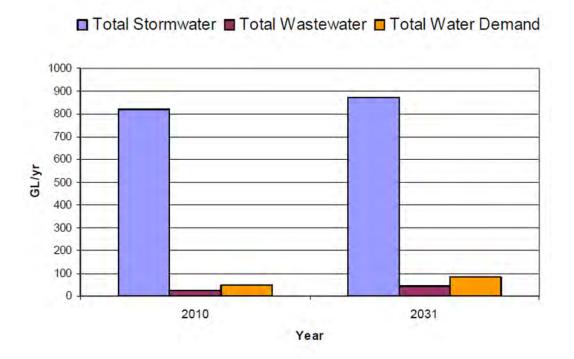
Healthy waterways provide the foundation for regional growth. Moreton Bay and its estuaries support major commercial and recreational fisheries and are extensively used for recreation. Agricultural activities are also heavily dependent on healthy waterways.

Moreton Bay supports a number of commercial and recreational (including charter) wild-harvest fisheries. These fisheries provide local employment directly on the industry and in associated businesses and services for the processing and sale of seafood as well as the purchase, repair and maintenance of fishing vessels and equipment.

In 2006, the commercial fisheries of the Moreton Bay region contributed 10% (\$18.5 million) to the overall Gross Value of Production (GVP) for seafood harvest in Queensland (GVP \$185 million).



# **Overall MBRC Region Water Account**



# Why is water important to us?

Rivers, estuaries and wetlands, play many important roles for recreation, economic growth and the environment. They provide the foundation of complex ecosystems and the region's productivity is supported by waterways and the resources they provide.

Waterways are also linked with a 'sense of place'. Just as our waterways connect land, towns and cities, so they connect individuals and communities.

Over the last decade floods, drought, king tides and storms have all impacted on the catchments, creeks and coast of the Moreton Bay Region. Add to these natural occurrences population growth, and we are continually placing increased pressure on the health and resilience of our waterways and coastal foreshores.

Waterways and coastal areas are important, not only because of the inherent value of their diverse ecosystems, but also for their role in providing water for the community, as well as recreational uses. To maintain these values and uses, we need to protect our streams and ensure they are in the best possible health.

Across South East Queensland, waterway health has been in decline in both urban and rural areas for a wide range of reasons. Demands for water have increased, the landform is becoming more urbanised, pollutant loads are rising and flow regimes are becoming more variable. The impacts of flooding and climate change are also of great concern to the community.

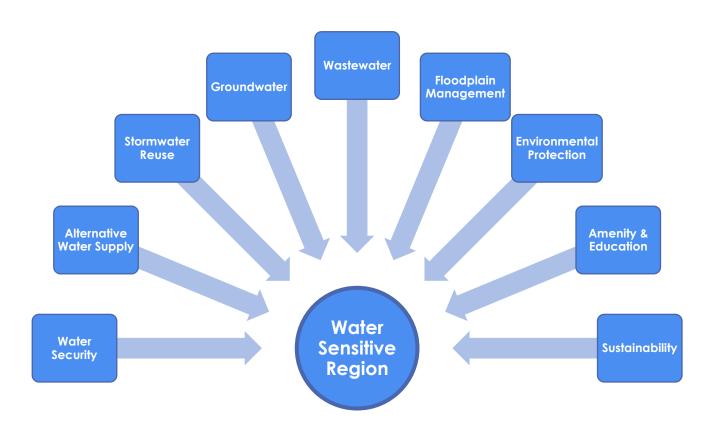
The Moreton Bay Regional Council area continues to be one of the fastest growing areas in Australia, with a projected additional 150,000 residents by 2031. This population growth will increase pressure on water resources and waterway health.

The development of an integrated water strategy is vital to achieve Council's goal of implementing "Water Sensitive City" principals to become a Water Sensitive Region.





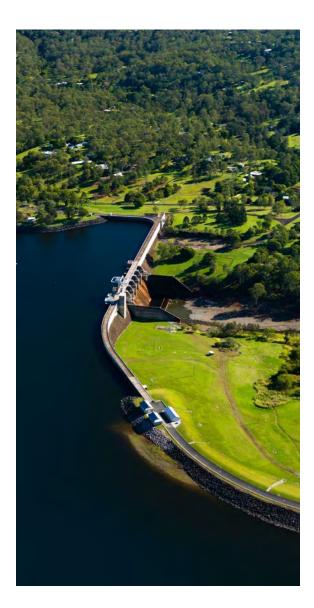






# What is a Water Strategy and what can it deliver?

Moreton Bay Regional Council's Water Strategy is a guide to planning, investment and operation of the region's water resources, including water cycle, coastal and floodplain management. The Strategy is part of Council's integrated strategic planning framework and seeks to effectively manage all aspects of the water cycle into the future.



#### The Strategy seeks to:

- align with the new Moreton Bay Regional Council's Planning Scheme to ensure waterway health, sustainable water management, flooding and coastal management are key elements of future planning;
- inform strategic planning initiatives in environmental, transport, open space, land use and asset management programs;
- identify further strategies, plans and policies required to achieve a Water Sensitive City;
- identify improved requirements for water management;
- improve the health of our waterways and ensure the availability of clean drinking water for the community;
- provide for increase recreational opportunities on our waterways;
- assist economic development for water related industries – tourism, agriculture and fishing;
- improve resilience to the impacts of climate change including erosion on the coast;
- safely manage flood and storm tide events;
- identify opportunities for collaboration with other Council programs and with external stakeholders:
- encourage sustainable water use.

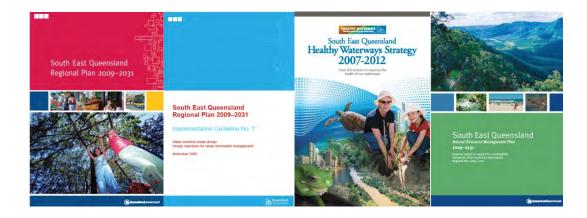
# Why is a Water Strategy important?

The strategy is the primary driver for how Council plans and delivers water solutions across the region. It will deliver the required needs for the community over the next 20 years. Water planning sits within a broad policy framework. The strategy will provide the platform to implement a range of Federal, State and Local policies and legislation.

# State and Federal requirements

Legislation and policy which are relevant in the context of water planning within the Moreton Bay Region include the following:

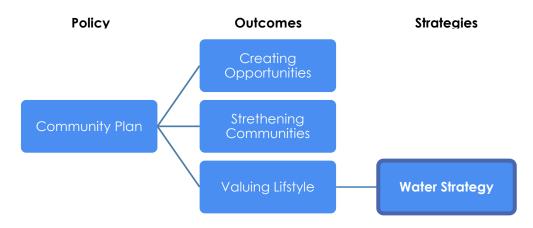
- Environmental Protection Act 1994
- Water Act 2000
- Water Supply (Safety and Reliability) Act 2008
- Public Health Regulation 2005
- Sustainable Planning Act 2009
- State Planning Policy 2014
- South East Queensland Regional Plan 2009-2031
- SEQ Regional Plan 2009-2031 Implementation Guideline No. 7: Water Sensitive Urban Design
- South East Queensland Water Strategy 2010
- South East Queensland Healthy Waterways Strategy 2007-2012
- South East Queensland Natural Resource Management Plan 2009-2031
- Regional Water Security Program for South East Queensland 2010
- Draft South East Queensland Climate Change Management Plan
- Water Resource (Moreton) Plan 2007
- Disaster Management Act 2003
- Coastal Protection and Management Act 1995
- Queensland Reconstruction Authority Act 2011
- National Water Quality Management Strategy
- Australian Drinking Water Guidelines 2011
- Guidelines for Managing Risks in Recreational Water
- National Guidelines for the National Flood Risk Information Program
- Floodplain Management in Australia: Best Practice Principles and Guidelines



# Council's policy framework

The primary driver for the preparation of the strategy is Council's Community Plan 2011 - 2021. Moreton Bay Region's Community Plan was developed in 2011 and was prepared in partnership with community groups, businesses, state agencies and local residents. The Plan identifies a number of community outcomes, themes and targets which water infrastructure can help deliver. The key theme and targets which are specific to the Water Strategy are listed below.

# **Council's Policy Framework**



#### Themes:

- Safe neighbourhoods by 2021 our residents will live in safe and resilient communities.
- Healthy natural environment by 2021 our residents will collectively contribute to creating a cleaner and healthier environment for future generations.
- Quality recreation and cultural opportunities by 2021 residents of all ages will have greater choice of recreation and cultural activities and events in the region.

Target 12:
Increase the resilience
of communities and
businesses to a disaster



Target 20:
Increase the health and resilience of waterways and coastal areas



Target 25:

Promote a safe and effective road network in the region (flood resilience)



Moreton Bay Regional Council Community Plan 2011 – 2021

# **Preparation of the Water Strategy**

The Water Strategy has been developed in three stages. First, Council's vision and principles for waterways in the region have been identified, based on the Community Plan.

Second, the existing and future water network has been examined through regional and catchment profiling to identify opportunities for Council to respond to growth and the needs of users.

Finally, a framework for delivery has been determined - recognising population growth but also identifying and understanding the varying needs and preferences of the community to achieve Council's vision.





Responding to User Needs

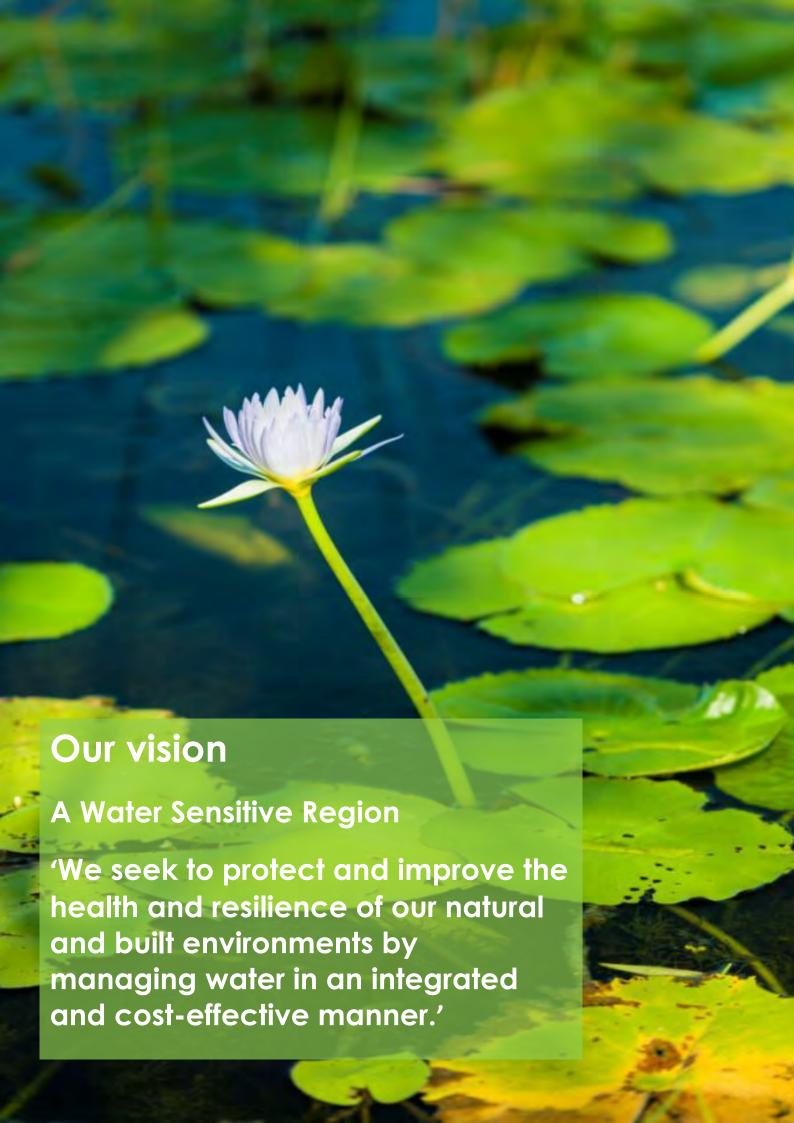


A Framework for Delivery









# **Principles**

By 2031, the Moreton Bay Region will be a Water Sensitive Region with adaptive, multifunctional infrastructure and water sensitive urban design. The actions of the Region will reinforce water sensitive cities values and behaviours and assist in achieving the broader strategic vision for the Region.

The strategic direction and vision of the Strategy will be achieved through the application of the following fundamental principles and strategic outcomes. Fundamental principles for the planning and design of the Moreton Bay region's water networks provide a framework to guide existing and future development.

# Moreton Bay Region is a Water Sensitive Region

A water sensitive region is one that is resilient to low water availability and the impacts of climate change. It is a region that utilises many different water sources. It manages its water to meet the needs of the environment and the community and improves the health of our waterways.

#### Fit for purpose

Water infrastructure will be integrated with adjoining land uses and infrastructure networks. Water supply and wastewater treatment will meet the needs of the community and the environment. Water quality and drainage infrastructure will cater for increases in runoff and pollutant loads as a result of growth.

#### Sustainable

The water network will be planned and designed to balance the cost implications with the service standards expected by both Council and the community. The water network will enhance the ecological values of the region and mitigate the impacts of flood hazards on critical infrastructure,

Sustainable projects are promoted to reduce ongoing financial costs.

#### Responsive to growth

The water network is designed to be responsive and adaptive to changes in land use (and built form). It caters for increased demand, mitigates impacts and provides economic and social benefits.







#### Water security

Potable mains water consumption will be reduced and alternative water sources provided through the use of rainwater, stormwater, recycled waste water and groundwater. Every opportunity to ensure the efficient use, reuse of water will be utilised.

# Waterway health

The ecological health and biodiversity of streams, creeks, rivers and bay – for amenity, recreation and economic values will be protected and enhanced.

Council projects and new developments will incorporate best practice stormwater management design, construction and maintenance principals.

# Floodplain management

People, property and infrastructure will be protected from the adverse impacts of flooding.

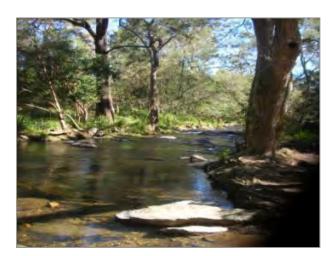
Urban form will be adapted to the natural movement of water.

# **Coastal protection**

The coastline and critical infrastructure will be protected from environmental processes such as storm tides, beach erosion and sea level rises.

Best practice management in Council projects and new developments will be incorporated.









# Regional profile

# The people of the Moreton Bay Region

The Moreton Bay Region stretches from the Hills District in the south to Woodford in the north. From as far west as Mount Glorious, to the shores of Moreton Bay. The region covers over 2,000 square kilometres and has an estimated resident population of 390,000 people (2011).

The Moreton Bay Region accounts for 19% of the population of greater Brisbane and is the third largest by population and third fastest growing local government area in Australia (2011).

# **Region summary**

- The Moreton Bay Region covers approximately 2,000 square kilometres.
- The region's population is approximately 390,000 people.
- The region is expected to grow by an additional 150,000 people by 2031.



#### Population and employment growth

The Moreton Bay Region has experienced rapid and sustained growth in population and jobs since the 1950's. Information on population and employment provides valuable insight about the residents in the region and how their lifestyle may be changing. This helps Council make informed decisions about policy and investment to intervene and influence the future direction for the region.

Until the year 2000, annual growth in both population and jobs tracked at a similar rate. Since 2000 job growth within the region has slowed, at the same time population growth has accelerated. 44% of all working Moreton Bay residents now commute outside our region to work.

This number is likely to double if the trend in jobs growth continues to 2031, a trend not encouraged by Council. Achieving a better balance is crucial to meeting the lifestyle aspirations of the region's residents and the economic outcomes sought by the business community.

This has implications on the lifestyle of our residents and all forms of infrastructure. As our residents spend more time travelling outside the region for work they have less social time. This can lead to a cycle of highs and lows on demand for infrastructure such as roads, community facilities and parks. These types of facilities can become very busy in peak periods.





#### Age and households

When compared to other local government areas within a similar distance to the Brisbane CBD (i.e. Logan and Ipswich), the Moreton Bay Region shows some unique trends in age distribution. The region has a very low number of people aged between 17 and 35, most likely because some young adults migrate away to take up social, educational and career opportunities elsewhere. We also see a lower number of infants below the age of 5.

From about 35 onwards, people tend to migrate into the region. These new residents, aged between 35 and 45, tend to be second or third home buyers, upgrading their homes from cheaper suburbs on the urban fringe or other local government areas like Logan and Ipswich. The majority of these new residents have families with children aged from 7 to 17. Consistent with trends across the greater Brisbane area they choose to live in single detached dwellings, particularly in the former Pine and Caboolture local government areas.

Although single detached dwellings make up the bulk of housing stock, the Redcliffe Peninsula provides the region with higher density living options and a greater diversity of housing choice than similar local governments.

The conclusions drawn from the age profile are supported by household distribution in the region. Over 70% of our residents are part of either two parent families or they share a house with another adult. Both of these groups tend to have more disposable income than singles and single parent families, which is why housing

prices are generally higher than equivalent local governments on the greater Brisbane fringe.

The age and household structure tells Council that we need to actively manage the region's water resources to ensure their security and sustainability to cater for the needs of the environment and the community.





#### Responding to change

Council's intent to achieve greater levels of job self-containment, accommodate significant population growth and respond to a changing age profile is addressed in Council's Strategic Framework. The Strategic Framework states how Council intends to intervene and respond to growth and changing community trends. This document is a key consideration in the development of the Water Strategy.

A key component of the Strategic Framework is place types – the different locations where we work, live and play. The place types are a future land use model which establishes the specific planning and design outcomes expected in a variety of locations throughout the region.

The Strategic Framework outlines the following key land use strategies to address regional trends:

- The bulk of new residential development will be accommodated within next generation suburban neighbourhoods each containing greater levels of services and facilities.
- The development of urban places adjoining activity centres and transport nodes which are intended to accommodate medium density residential development, increased urban business and employment opportunities.
- The development of vibrant and attractive activity centres providing a broader range of services, facilities, business and employment opportunities, centrally located within the transport network and easily accessible by residents in existing and new neighbourhoods.

 The development of major places for enterprise and employment alongside the major transport corridors that provide alternative employment destinations for residents of the region.

These land use strategies drive the outcomes of the Water Strategy and Council's investment and initiatives in developing places where business and private investment can prosper.

Council's strategy to deliver higher densities around activity centres and transport networks will change the region's profile by providing a diversity of housing choice to the market and encouraging the 17-35's to return. Higher densities will provide opportunities for our residents to 'age in place' in locations that have good access to transport options and community facilities tailored to their needs.

Moreton Bay
Regional Council
Planning Scheme

# Key challenges for the regions' catchments, creeks and coast

Population growth, urban expansion and infill development along with the predictions of climate change are expected to put increasing pressure on the region's waterways. With integrated planning and improved management, these waterways can be managed to ensure they continue to service the community both now and into the future. 7 key challenges will be addressed in the strategy;

- 1. **POPULATION GROWTH:** Poses a potential threat to the health of our waterways. The Moreton Bay region faces significant population growth and increasing diversity over the next 20 years. By 2031, the projected population for the MBRC area is expected to reach 585,000 (high growth rate scenario), a 58% increase from the current population (approximately 370,000). Increased urbanisation to meet the demand for housing, industry expansion and tourism growth will impact on water quality by increased urban pollution and leading to faster run-off and higher peak flows during storm events;
- 2. CLIMATE CHANGE: May have a profound effect on the region's water network, threatening availability, access and even quality. The future of our climate is uncertain, an increase in surface temperatures and variable rainfall patterns are likely to reduce environmental flows, water quality and supply (approx. 10% reduction), and affect natural ecosystems and recreation activities. While rainfall patterns are predicted to vary into the future it is likely that more intense rainfall events will occur with less mean annual rainfall. This may also mean a longer time spent in drought throughout the region.

With warmer temperature and possibly less rainfall comes a heightened risk of bushfires. An increase in the frequency of bushfires in catchments will result in short term turbidity and medium term reduced run-off as regrowth requires a greater quantity of water uptake. It is essential that these impacts are considered in any future modelling from a water supply perspective.





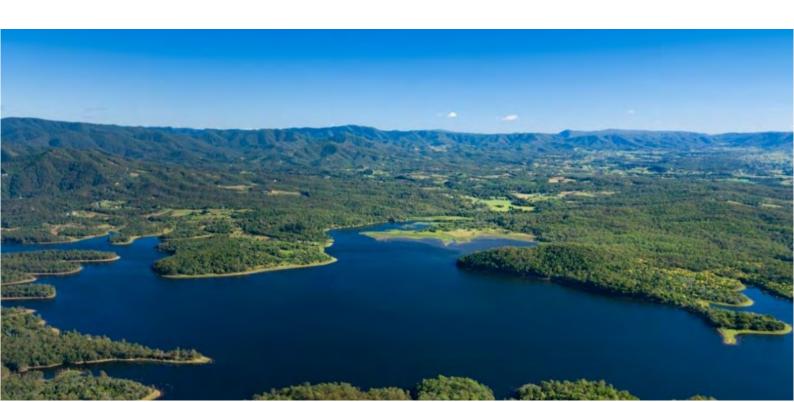
# Predicted impacts of climate change include:

- Increased surface temperatures and evaporation;
- More hot days and fewer cold nights;
- Decline in annual rainfall volume, with more droughts;
- More intense storm events;
- Rise in average sea level;
- Higher risk of storm surge and
- Increased risk of bushfire.

- 3. WATER SECURITY: Predicted population growth, climate change and competition between competing interest such as agriculture and urban water supplies have highlighted the importance of water security. Adequate planning is required to ensure the region's water resources are used efficiently and are able to cater for the needs of the community both now and into the future. It is also important to investigate other potential sources of potable water in the region (such as recycled water and stormwater harvesting) so that reliance on the current, largely catchment runoff-based sources is diversified.
- 4. RURAL AND URBAN RUN-OFF: A key challenge to maintaining waterway health is managing diffuse stormwater pollutant loads in both urban and non-urban areas. Run-off of sediments, nutrients and toxicants from agricultural lands and vegetated areas from activities associated with cropping and grazing as well as run-off from urban areas can have a devastating effect on water quality, living resources and habitats of the region's waterways.

Waterways in urban areas are often impacted by threats associated with urban expansion or infill development and the subsequent replacement of natural environment with impervious surfaces. As a result, many waterways in the urban areas of the region and the receiving environment are currently in a poor environmental state.





- 5. WATER CONSERVATION: The South East Queensland Regional Plan incorporates water saving targets designed to reduce residential and non-residential water demand. These targets are expected to affect future water demand in MBRC. Water Conservation will play a major role in minimising inefficient water use. This in affect may postpone or remove the need for future water infrastructure upgrades.
- 6. BEACH AND DUNE EROSION: The coastal foreshore is a dynamic environment. Natural forces of winds, waves and currents constantly shape the coastline, resulting in an ever-changing seascape. Constant tidal and wave action and large seas which are associated with tropical cyclones or intense low pressure systems, all contribute to beach and dune erosion. Erosion is a natural process that will continue to change our coastline, however as a result of climate change, mainly the prediction of sea level rise and increased storm severity, it is anticipated that the coastline is likely to change more rapidly than previously experienced.
- 7. FLOODPLAIN MANAGEMENT: A major flood can be devastating for communities and industry, while a minor flood can be beneficial to the natural environment and agricultural industries. The planning and design of floodplains is highly complex and needs to consider both the needs of the community

and the natural environment. The safety and maintenance requirements for flooding must be strictly adhered to.







# Responding to user needs



# **Future directions**

To meet the water requirements of a growing community, Council has developed the Water Strategy around existing and future user needs. This approach not only recognises the population growth but also identifies and understands the varying needs and preferences of the community.

This information allows Council to better manage the region's water resources required to service the needs of our community.



# Opportunities for meeting user needs

To achieve the vision and fundamental principles established above, Council has developed three themes for the Moreton Bay Regional water network. These themes provide a clear target to aim for when planning for water.

- A. Healthy waterways: It is vitality important that our waterways and catchments are managed to maintain and enhance healthy ecosystems that support the livelihoods and lifestyles of residents and visitors of the Moreton Bay Region.
- **B.** Safe communities: Floodplains in the region will be managed for the long-term benefit of the community such that hazards to people and damages to property and infrastructure are minimised and the intrinsic environmental values of the floodplain are protected.
- C. Natural coastlines: The coastal zone will be conserved in its natural state and existing urban areas are protected from environmental processes.

# Responding to these opportunities will include a combination of:

- Reducing urban and non-urban diffuse source pollution.
- Improving management via better modelling and evaluation.
- Increasing the commitment and capacity of the general community.







What we do in each water catchment has a direct impact on the health of our waterways. This is why it is important to manage the impacts of growth on waterway health. With over 1000 kilometres of waterways and one of the fastest growing regions in Australia, the management of each catchments and of the waterways itself is pivotal to preserving the qualities that make the Moreton Bay Region such an attractive place to live, work and play.

Key principles as described in the SEQ Regional Plan 2009-2031 include:

- Natural Cycles: Minimise the alteration of natural flow and water quality regimes.
- Sustainable Limits: Ensure that the volume of water extracted from a source is sustainable for the community and the environment.
- Water Conservation: Reduce demand by minimising water use and loses and maximising
  efficient use and re-use.
- Diversity in New Supplies: Consider potential sources of water when new supplies are needed, including reusing water and stormwater.
- Water Quality: Managing the water cycles at all phases to preserve water quality for the community and the environment.



#### We will:

1.1 Develop and implement a
Total Water Cycle
Management Plan for the
Moreton Bay Region in
partnership with Unitywater.



#### Floodplain Management

The vision for our floodplains should be followed using a value-based approach to the management of flood risk. This approach balances social, economic, environmental and flood risk parameters to determine whether a particular development or use of the floodplain is appropriate and sustainable. This avoids the unnecessary alienation of flood prone land. It also ensures that flood prone land is not the subject of uncontrolled development, inconsistent with its exposure to flooding.

- All levels of government and the local community know and accept their responsibilities for managing flood risk and all relevant agencies provide aid to the community in recovering from the devastating impacts of flooding.
- Flood risk and flood behaviour is understood and considered in a strategic manner in the development decision-making process.
- Land use planning and development controls minimise both the exposure of people to flood hazard and the potential damages to property and infrastructure.
- Floodplain management measures are assessed across a broad range of floods up to the Probable Maximum Flood (PMF). The PMF defines the extent of floodplain and management measures appropriate to the location and acceptable to the local community economically, socially and

- environmentally are used to manage flood risk.
- Agencies work in partnership to provide flood forecasting and warning systems and emergency response arrangements.

#### We will:

- 2.1 Develop a Floodplain Risk Management Framework.
- 2.2 Develop and maintain a Regional Floodplain Database.
- 2.3 Undertake a Floodplain Risk Management Study.
- 2.4 Develop and implement Floodplain Management Plans.





An attraction to living and working in the Moreton Bay Region is its coastal foreshores and access to Moreton Bay and Pumicestone Passage. With this attraction comes the need to ensure the coastal zone is conserved in its natural or non-urban state outside of existing urban areas.

A key function of coastal foreshores is the role they play in protecting the built environment. Heavily vegetated coastal dunes and rocky headlands have a great ability to absorb wave energy and prevent roads and houses from inundation.

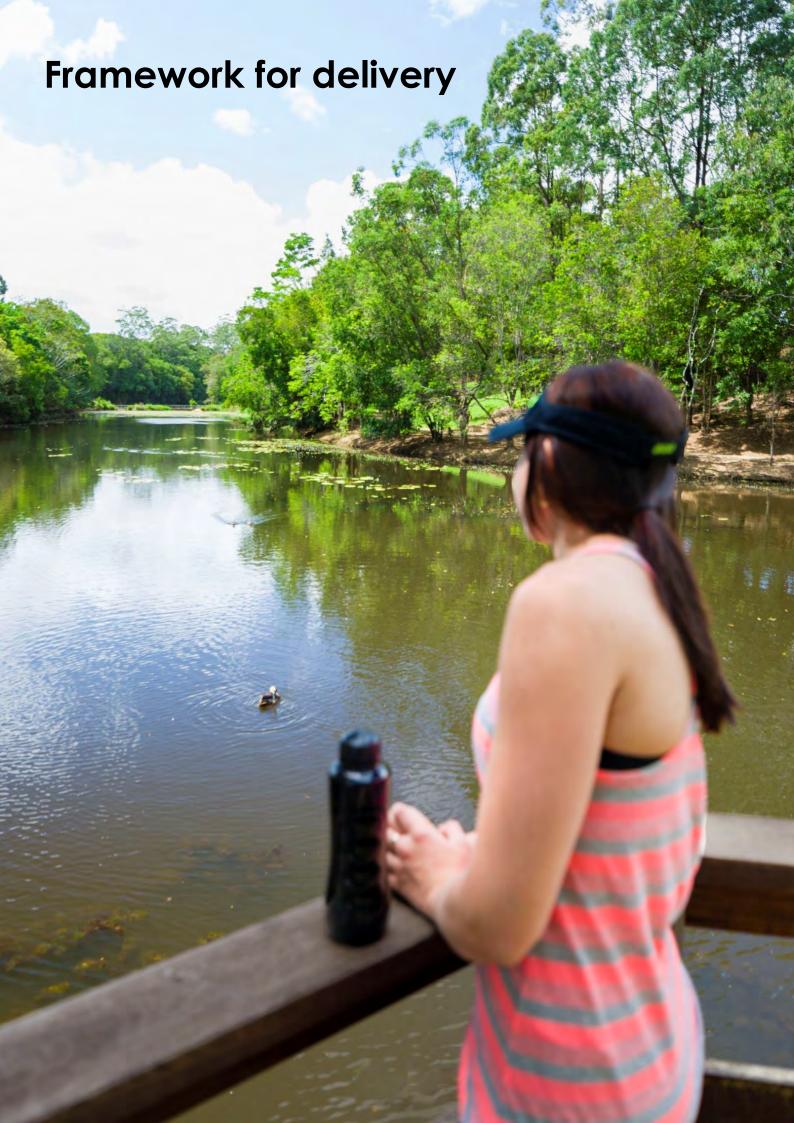
As the Moreton Bay Region continues to grow, the economic and social dependence of the coastal area also grows. Given their social, economic and environmental importance, the protection and improvement of coastal foreshore values is of upmost importance.



#### We will:

- 3.1 Develop a Storm Tide Management Study.
- 3.2 Develop a Coastal Management Strategy.
- 3.3 Develop Shoreline Erosion Management Plans.
- 3.4 Develop a Coastal Adaptation Plan.

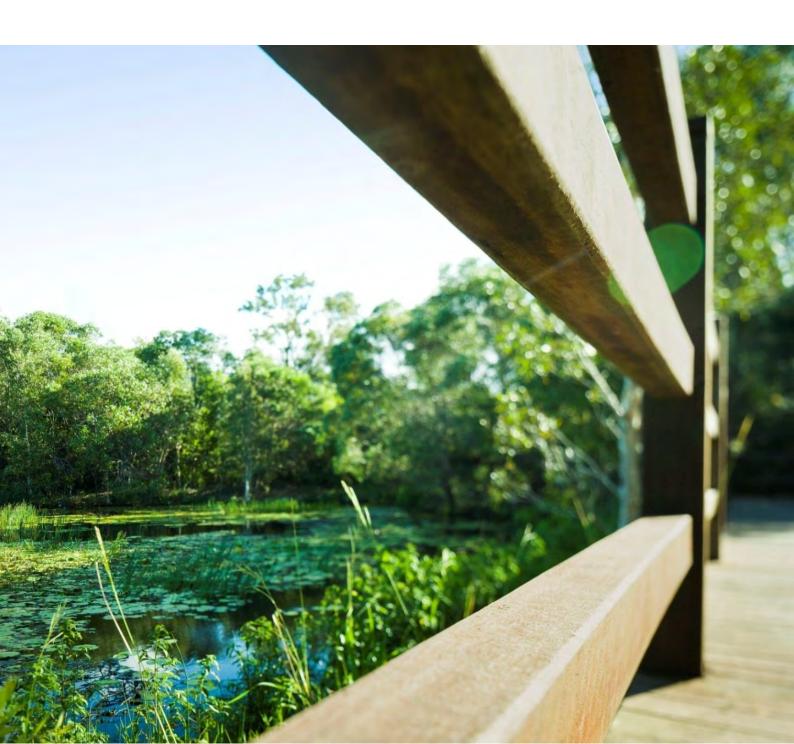




# **Delivering the Strategy**

Delivering our vision and responding to the needs in the region is the primary objective of this Strategy. This will provide our residents with a vibrant and integrated network of water infrastructure.

Delivery of the Strategy will be achieved through a series of programs with measurable targets and an ongoing monitoring and review schedule. The outcomes of this Strategy and future programs will inform Council's Integrated Regional Infrastructure Strategy (iRIS), Council's capital and operational works program, the Moreton Bay Planning Scheme and Priority Infrastructure Plan and other infrastructure network strategies currently in development.



#### Planning for the water cycle

The Total Water Cycle Management Plan (TWCM Plan) for Moreton Bay Regional Council identifies current and potential future issues and presents a range of solutions for each of the major catchments so that the impacts of a growing population can be managed in a way that is affordable and maintains or improves waterway health.

The TWCM Plan is being prepared to assist Council and other key stakeholders such as the water and sewerage service provider with the delivery and management of water cycle services in a way that is consistent with local community expectations and corporate objectives.

The Total Water Cycle Management Plan for the Moreton Bay Region will be presented in three parts:

 The Total Water Cycle Management Strategy describes current and emerging issues related to water management, determines the sustainable load of pollutants that

- waterways can carry, develops solutions to improve waterways, and undertakes a preliminary assessment of the feasibility of those solutions.
- Detailed Plan analyses the catchment solution sets in more detail, prepares cost estimates and models the impact of various possible solutions on waterway health. In most catchments it is clear that implementing the minimum requirements of the Queensland Development Code and the Urban Stormwater Planning Guidelines will be insufficient to halt the declining trend in water quality. Preferred management scenarios are developed for each catchment.
- The Total Water Cycle Management Implementation Plan lists the actions that need to be taken to enable the objectives of the TWCM Plan to be realised. The tasks are prioritised, and costed and identify the lead agency responsible for each task.



### Planning for our floodplains

The events of January 2011 and the subsequent Flood Commission of Inquiry Report and Reconstruction Authority publications identified the need to improve the understanding and management of floodplains across Queensland. Planning for floodplains of the Moreton Bay Region will cover storm tide, rivers, creeks and overland flow paths.

The Floodplain Risk Management Framework (FRMF) is being prepared to assist Council and other key stakeholders such as Emergency Management Queensland in understanding the characteristics of the floodplains with the Moreton Bay Region and inform the development of emergency response procedures.

The FRMF for the Moreton Bay Region will advocate a four step process:

- 1. Identify the Flood Risk
- •Investigate and describe flood behaviour for a range of probabilities;
- •Identify the flood impact area; and
- Document outcomes in the form of a <u>Flood Study</u>.
- 2. Analyse the Flood Risk
- Analyse consequence and risk using objective criteria;
- Confirm the greatest risks and range of available risk treatment measures; and
- •Document outcomes in the form of a Floodplain Risk Management Study.
- 3. Prepare a Plan
- Short-list, prioritise and adopt appropriate risk treatment measures;
- Prepare an implementation strategy including roles and responsibilities; and
- •Document outcomes in the form of a Floodplain Risk Management Plan.
- 4. Implement the Plan
- •Implement the Floodplain Risk Management Plan; and
- Regularly monitor and review the plan.



## Planning for our coast

Coastal processes are a highly unpredictable set of mechanisms that operate along the coastline. In an effort to protect our coastline from natural processes such as erosion, a number of Shoreline Erosion Management Plans have already been produced for the coastal areas within the Moreton Bay Local Government Area.

With a significant proportion of the urban area of the Moreton Bay Region located in a coastal plain, the impacts of climate change and coastal processes need to be understood and planned for to protect the qualities that make this region a highly sought location to live work and play.

Planning for our coast in the Moreton Bay Region will address short-term needs such as shoreline erosion while considering longer term requirements associated with climate change.





## **Partnerships**

There are many water facilities not owned by Council such as State Government, water retailers and community organisations that provide real benefit to the community. Rather than duplicating these facilities, Council will work with all community facility providers to ensure that community needs are addressed. This may involve partnering with State Government and private organisations to allow for general community use of private facilities, alternative management arrangements and the promotion of all facilities through Council.

## We will:

- 4.1 Partner with State Government, water retailers and community organisations.
- 4.2 Ensure that all water facilities are considered in the overall community infrastructure provision.



#### Public education and communication

Community education and awareness of water conservation and water quality improvement is primarily the role of the water retailers. Council will work in partnership with its water retailers to develop and implement water reduction programs and deliver relevant information to the community. This includes education and capacity building programs to promote water cycle management issues such as water efficiency, Water Sensitive Urban Design (WSUD) and water recycling.

Establishing a commitment by the community to take positive action to conserve water is critical to the long term sustainability of the region's water resources.

## We will:

5.1 Engage with the community to improve understanding of the various aspects of the water cycle.



## Leadership and governance

Moreton Bay Regional Council will advocate as policy the findings of this Strategy and its action plan. Council will champion the vision of achieving desired water infrastructure outcomes and will work to achieve the goals and targets expressed within the Strategy. Council will establish a cross departmental committee to implement and monitor the Strategy and action plan and ensure that the action plan is updated on an annual basis.

The design and delivery of projects needs to be reflective of the Strategy and principles that define the needs of the community. Council's design process will ensure that cost effective outcomes are established to address these user needs. This will include the establishment of a multidisciplinary design review panel that seek to ensure all needs have been considered throughout the process including project scoping, planning, concept design and detailed design.

The design review panel may include external agencies where collaboration on joint projects is undertaken, such as with various State Government departments.

Council will capacity build within its corporate structure to facilitate quality planning and design outcomes that are reflective of the vision and respond to the needs of the community

#### We will:

- 6.1 Adopt as Council policy the Moreton Bay Regional Council Water Strategy.
- 6.2 Assign responsibility for implementation of the Strategy within the organisation.
- 6.3 Establish cross departmental processes to ensure effective implementation of the Strategy.



## iRIS and Council's capital works program

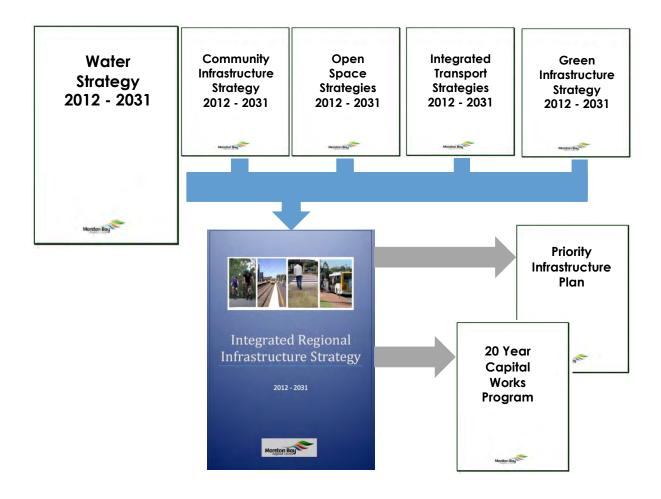
Moreton Bay Regional Council performs a leading role in coordinating the delivery of infrastructure for existing and new communities throughout the region. To do this more efficiently, we are preparing an integrated approach to infrastructure network planning.

The Integrated Regional Infrastructure Strategy, or 'iRIS', will combine Council's infrastructure priorities with the priorities of other infrastructure providers in the region, such as water, sewerage and energy. iRIS will coordinate the planning, design and construction process for all infrastructure networks. This will assist Council in

prioritising infrastructure projects based on a quadruple bottom line assessment that stimulates economic development, is socially equitable, environmentally robust and has a governance framework based on excellence and value for money.

The Water Strategy will inform the preparation of iRIS by identifying water resources required to meet changing community needs and determining how to appropriately manage these resources.

The outcomes of iRIS will guide Council's capital works program for the next 20 years.



## **Planning Scheme**

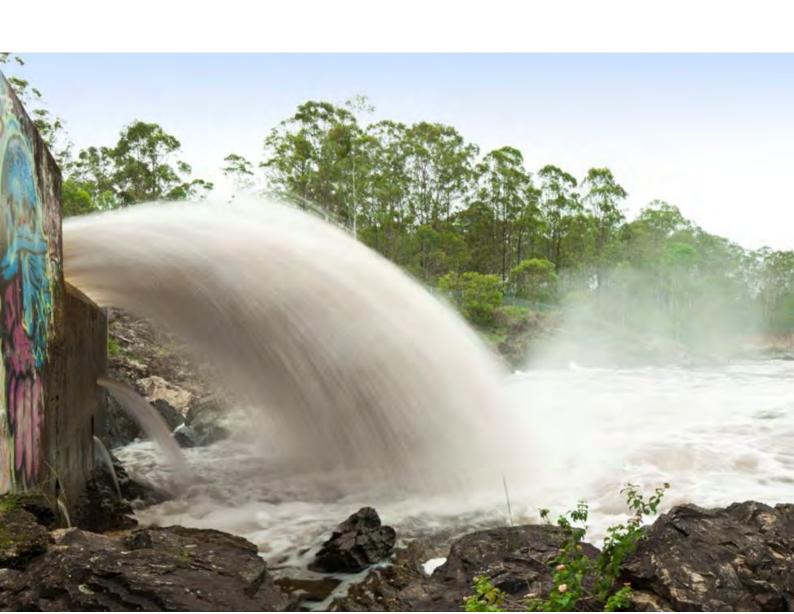
Moreton Bay Regional Council is planning for the future with a new regional planning scheme. The new Moreton Bay Planning Scheme will help to respond to growth and development across the region. Council has released the Strategic Framework which provides a vision and strategy for the region and will form part of the new Planning Scheme.

The Water Strategy will inform the development of the Planning Scheme, which will include new standards in water sensitive urban design. These standards include the use of bioretention systems, swales, gully baskets and permeable pavements.

## **Priority Infrastructure Plan**

The Water Strategy will also inform the development of a Priority infrastructure Plan (PIP). The PIP seeks to integrate land use and infrastructure planning by encouraging growth in areas where infrastructure exists or can be provided efficiently.

This Strategy will inform the PIP by determining future trunk and non-trunk water infrastructure requirements based on population growth and estimating the cost to provide this future infrastructure.



# Targets and goals



Moreton Bay Regional Council is working towards improving the provision and management of water infrastructure in the region. While Council is not the only provider of water infrastructure, we play a significant role in both provision and advocating for provision of facilities by the State Government and the private sector.

To meet the goals of this Strategy, Council has set short, medium and long term targets.

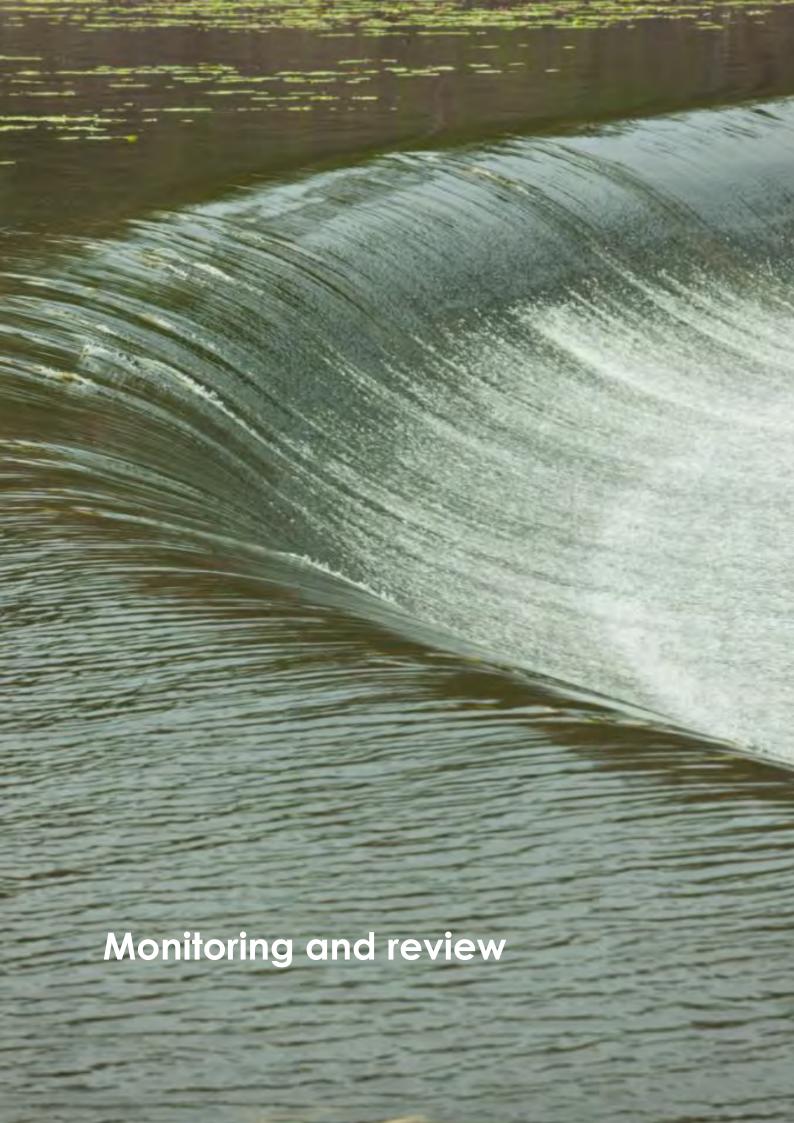


## Short Term to Medium Term Selective Key Targets 0-4 Years

- Provide clear and accessible information so that users can manage and use water resources in a manner that is consistent with sustainability of the resource.
- Develop a Coastal Management Strategy
- Develop a Coastal Adaptation Plan.
- Develop Shoreline Erosion Management Plans.
- Develop a Storm tide management Study.
- Develop a Storm tide management plan.
- Develop a Rural Best Management Practice Strategy.
- Develop a Floodplain Risk Management Framework.
- Develop a regional floodplain database (mapping).
- Develop Catchment Management Plans.
- Improved education and monitoring/enforcement of erosion and sediment control practices.
- Implement the outcomes of the water strategy into the planning scheme.

## Long Term Selective Key Targets – 5-10 years

- Implement a coastal management strategy.
- Implement a floodplain risk management plan.
- Implement Rural Best Management Practice framework.
- Implement Catchment Management Plans
- Implement emergency response plans and systems that enhance the regions ability to continue to function before, during and after flood events.
- Partner with State Government and private community organisations.
- Consider innovative funding methods to provide water infrastructure with the private sector.



To ensure we continue to meet the vision and actions proposed in this Strategy, evaluation and monitoring will be undertaken. This will allow Council to continually monitor its progress, be responsive to legislative change and remain current.



Monitor and refine strategy outputs as subsequent detailed strategies are completed to meet user needs

Regular monitoring of the strategy will be completed to ensure Council remains on track to achieve set targets and goals. Council will continuously improve the planning, funding and provision of water infrastructure and follow current best practice where feasible at all times.





Health	Healthy Waterways						
Action	ıs	Purpose	Timing	Responsibility	Status		
1.1	Develop and implement a	Total Water Cycle Management Plan					
1.1.1	Develop a total water cycle management strategy in accordance with the State guidelines.	This involved the identification of water cycle management drivers and issues in the MBRC region, development of solutions to address the identified issues, and preliminary assessment of these solutions resulting in a short list of solutions for further detailed analysis.	Complete	SPD ECM Unitywater	Completed		
1.1.2	Develop a total water cycle management detailed plan in accordance with the State guidelines.	This phase involves a detailed assessment of the costs and benefits of total water cycle management solutions. It identifies a preferred management scenario for each catchment to assist with Council's priority infrastructure planning.	Complete	SPD ECM Unitywater	Completed		
1.1.3	Develop a total water cycle management implementation plan in accordance with the State guidelines.	This plan will identify the infrastructure and programs required to deliver the preferred management scenarios identified in phase 2, including an estimate of costs and prioritised into a 20 year work program.	Complete	SPD ECM Unitywater	Completed		
1.1.4	Develop a total water cycle management monitoring and review plan in accordance with the State guidelines.	This plan will include development of monitoring programs to measure the efficacy of the proposed management scenarios and inform the TWCM review process.	Complete	SPD ECM CES Unitywater	Completed		

Safe C	Safe Communities						
Actions		Purpose	Timing	Responsibility	Status		
2.1	Develop a floodplain risk management framework.	The floodplain risk management framework sets out Council's approach to preparing the floodplain mapping, risk assessment and management study.	Complete	SPD, ECM	Completed		

Safe C	Safe Communities						
Action	ns	Purpose	Timing	Responsibility	Status		
2.2	Develop a regional floodplain database (mapping).	The regional floodplain database (mapping) are detailed flood models for each of the catchments within the Moreton Bay Region.	Complete	ECM	Completed		
2.3	Undertake a floodplain management study.	The floodplain management study analysis the risks to people and property utilizing the outputs of regional floodplain database and identifies management measures for the floodplain such as infrastructure, development limitations, and emergency response.	Complete (Phase 1)	ECM	Completed (Phase 1)		
2.4	Develop and implement a Floodplain Risk Management Plan	The floodplain management plan provides input into the strategic and statutory roles of Council and prioritises the range of management measures adopted from the Floodplain Risk Management Study.	Short	SPD,ECM	Completed (Interim Floodplain Risk Management Plan)		

Naturo	Natural Coastlines						
Action	s	Purpose	Timing	Responsibility	Status		
3.1	Develop a storm tide management study.	The storm tide management study analysis the risks to people, property and infrastructure utilizing the outputs of regional stormtide database and identifies management measures such as infrastructure, development limitations, and emergency response.	Complete	SPD,ECM	Completed		
3.2	Develop a Coastal Management Strategy	To meet requirements of the State Planning Policy mandatory requirements for Coastal Hazard.	Short	SPD, ECM	Not yet commenced		
3.3	Develop shoreline erosion management plans.	To meet requirements of the State Planning Policy mandatory requirements for Coastal Hazard and the undertaking of infrastructure works within the tidal zone.	short	SPD,ECM	Commenced		
3.4	Develop a coast adaption plan.	Develop an overarching strategy to guide the management of the Region's coastal areas.	Short	SPD,ECM	Not yet commenced		

Partne	Partnerships						
Action	s	Purpose	Timing	Responsibility	Status		
4.1	Partner with state govern	ment , water retailers and community organisations					
4.1.1	Establish a water reference group including members of the community.	The delivery of water facilities must reflect the evolving needs of a wide range of potential users. It is important to establish a mechanism to capture the interests of these users to inform the implementation of the strategy.	Short term and on- going	SPD	Not yet commenced		
4.1.2	Assign responsibility for state and federal water partnerships and funding resources.	Some components of the water network are outside the jurisdiction of the Council. It is important to engage the State and Federal Governments with regard to those elements that are their responsibility, and to ensure integration of initiatives of all levels of Government results in a seamless total network for the benefit of all users.	Short term and on- going	SPD in collaboration with ECM	Not yet commenced		
4.1.3	Partner with tourism operators to promote water related activities as visitor experience.	With Moreton Bay Region's scenic attractions along the coast and in the hinterland, there is a huge potential to capitalise on the visitor experience of these assets. The intent of partnering with tourism promoters and operators is to expand our ability to provide for the needs of these users.	Short	SPD, Tourism	Not yet commenced		
4.2	Ensure that all water facil	ities are considered in the overall community infrastructure provi	sion				
4.2.1	Partner with Unitywater in the development of a Regional Total Water Cycle Management plan.	This involved the identification of water cycle management drivers and issues in the MBRC region, development of solutions to address the identified issues, and preliminary assessment of these solutions resulting in a short list of solutions for further detailed analysis.	Complete	SPD, UW, ECM	completed		
4.2.2	Work with Unitywater on endorsement of the Water and Sewerage network services plan.	The purpose of the plan is to satisfy with the requirements of a Netserv Plan (Part A) as described in the South East Queensland Water (Distribution and Retail Restructuring) Act 2009.	Short	SPD, UW, ECM	commenced		
4.2.3	Develop a Total Water Cycle Management Plan that incorporates	To be developed in accordance with the TWCM Planning Guideline for South East Queensland (WBD, 2010a) in order to satisfy requirements of the Environmental Protection (Water)	Complete	SPD, UW, ECM	completed		

Partne	Partnerships							
Actions		Purpose	Timing	Responsibility	Status			
	all aspects of water, including sewerage.	Policy (2009).						
4.2.4	Partner with SEQ catchments to promote community use of Lake Samsonvale and Lake Kurwongbah.	To increase the levels of access to both Lake Samsonvale and Lake Kurwongbah while maintaining water security.	Short	SPD, SEQ Catchments	commenced			

Public	Public Education and Communication						
Action	s	Purpose	Timing	Responsibility	Status		
5.1	Engage with the commun	nity to improve understanding of water supply and demand issue	s and reduce	water consumpti	on.		
5.1.1	Engage with the community.	Regular community engagement ensures that water projects meet both the expectations of Council and the community. Council will undertake regular engagement with the community for all major parks projects using Councils "Think Out Loud" Community Engagement Framework with a focus on delivering user needs.	Ongoing	ECM, SPD	Not yet commenced		
5.1.2	Facilitate monthly water coordination meetings.	Regular internal coordination meetings will provide cross discipline discussion and coordination of water planning, delivery and management matters	Short term	SPD, ECM, CES	Not yet commenced		
5.1.3	Assign an education officer to undertake school and community education programs in relation to water conservation. Can extend to educational tours to water and	The role of the Education Officer is to assist with the development and delivery of education services specific to Moreton bay waterway initiatives. These include:  • Provision of educational services to enhance community awareness of water conservation and waste minimisation;  • Visiting and establishing a network of contacts at education facilities within the Moreton Bay region;  • Assessment of existing educational resources and develop	Short term	SPD	Not yet commenced		

Public	Public Education and Communication						
Actions		Purpose	Timing	Responsibility	Status		
	waste water facilities.	new resources as required; • Instilling a sense of stewardship, in children and the wider community, for the Moreton Bay region.					
5.1.4	Develop a waterways interactive mapping and information website.	The website will provide important information for visitors and residents regarding the regions water network.	Short term	SPD with advice from ECM	Not yet commenced		
5.1.5	Develop an education program and engage with industry on erosion and sediment control	Develop and deliver an effective educational and enforcement programs to increase the implementation of onsite erosion and sediment control practices, particularly during construction, to reduce the amount of sediment that enters the waterways during a rainfall event.	Short term	SPD, ECM, CES	Not yet commenced		

Leade	Leadership and governance						
Action	ns	Purpose	Timeframes	Responsibility	Status		
6.1	Adopt as Council policy	the Moreton Bay Regional Council Water Strategy					
6.1.1	Adopt the Water Strategy as Council Policy.	Council requires a policy position on water planning throughout the region. The Strategy will guide the future planning, delivery and management of the MBRC water Network.	Short term	SPD	Commenced		
6.1.2	Nominate a water champion within the elected members.	To advocate the vision of this Strategy Council requires a water advocate within the elected members.	Short term	SPD	Not yet commenced		
6.1.3	Develop internal policies and guidelines for best practice	Council is the best positioned to lead by example and demonstrate to industry the standards which are expected, particularly in relation to erosion and sediment control. Internal policy and directives are to be developed to guide the implementation of best practice on Council managed	Short term	SPD, ECM, CES	Not yet commenced		

Leadership and governance						
Action	ıs	Purpose	Timeframes	Responsibility	Status	
		projects.				
6.2	Assign responsibility for t	ne implementation of the Strategy within the organisation				
6.2.1	Assign overall responsibility for the implementation of the Water Strategy to the Director Strategic Planning and Development Services.	The Director will be responsible for the implementation of the Strategy.	Short term	SPD	Commenced	
6.2.2	Provide funding, resources and allocate responsibility to the Strategic Planning Department to facilitate and report on the implementation, monitoring and evaluation of the Strategy.	To ensure the Strategy is implemented and maintained throughout the life of the document a nominated officer position will be delegated responsibility by the Director of Strategic Planning and Development Services to facilitate delivery and reporting of the Strategy.	Short term	SPD	Commenced	
6.2.3	Provide an annual report to Council on the progress of the Strategy.	The annual report will provide an update to Councillors on the progress of the Strategy and will include where necessary recommendations to amend strategic responses and actions.	Short term	SPD	Not yet commenced	
6.3	Establish cross departme	ntal processes to ensure effective implementation of the Strateg	У			
6.3.1	Review and refine as necessary cross corporate and intra departmental processes.	To ensure best planning and design outcomes are being delivered to the community.	Short term	SPD with advice from ECM, CES, Major Projects	Not yet commenced	
6.3.2	Establish a cross	To facilitate and monitor the implementation of the Strategy	Short term	SPD, ECM,	Not yet	

Leade	Leadership and governance						
Action	ns	Purpose	Timeframes	Responsibility	Status		
	corporate water strategic implementation group.	and update the action plan annually.		CES, Major Projects	commenced		
6.3.3	Establish a cross departmental design review panel.	To ensure multi-disciplinary design outcomes are scoped, designed and delivered.	Short term	SPD, ECM, CES, Major Projects	Not yet commenced		
6.3.4	Introduce design and access statements as a component of the design and development process.	To ensure that each design meets Council's policies and visions and has been designed with consideration of adjoining land uses.	Short term	SPD, ECM, CES	Not yet commenced		
6.3.5	Develop PIDS for all major projects in the 5 year Capital Works Program.	To guide the implementation of the water Strategy, the PIDS provide the link between the strategic vision and objectives and the master planning and design for sites. The PIDS ensure that all work designed and programmed meets the objectives of the network planning.	Short term	SPD, ECM, CES	commenced		
6.3.6	Develop detailed design briefs for budgetary approved projects.	To ensure all user needs and integrated design elements have been addressed detailed design briefs will be written and reviewed by the design review panel prior to proceeding to detailed design for all approved capital works projects.	Short term	SPD, ECM, CES	Not yet commenced		