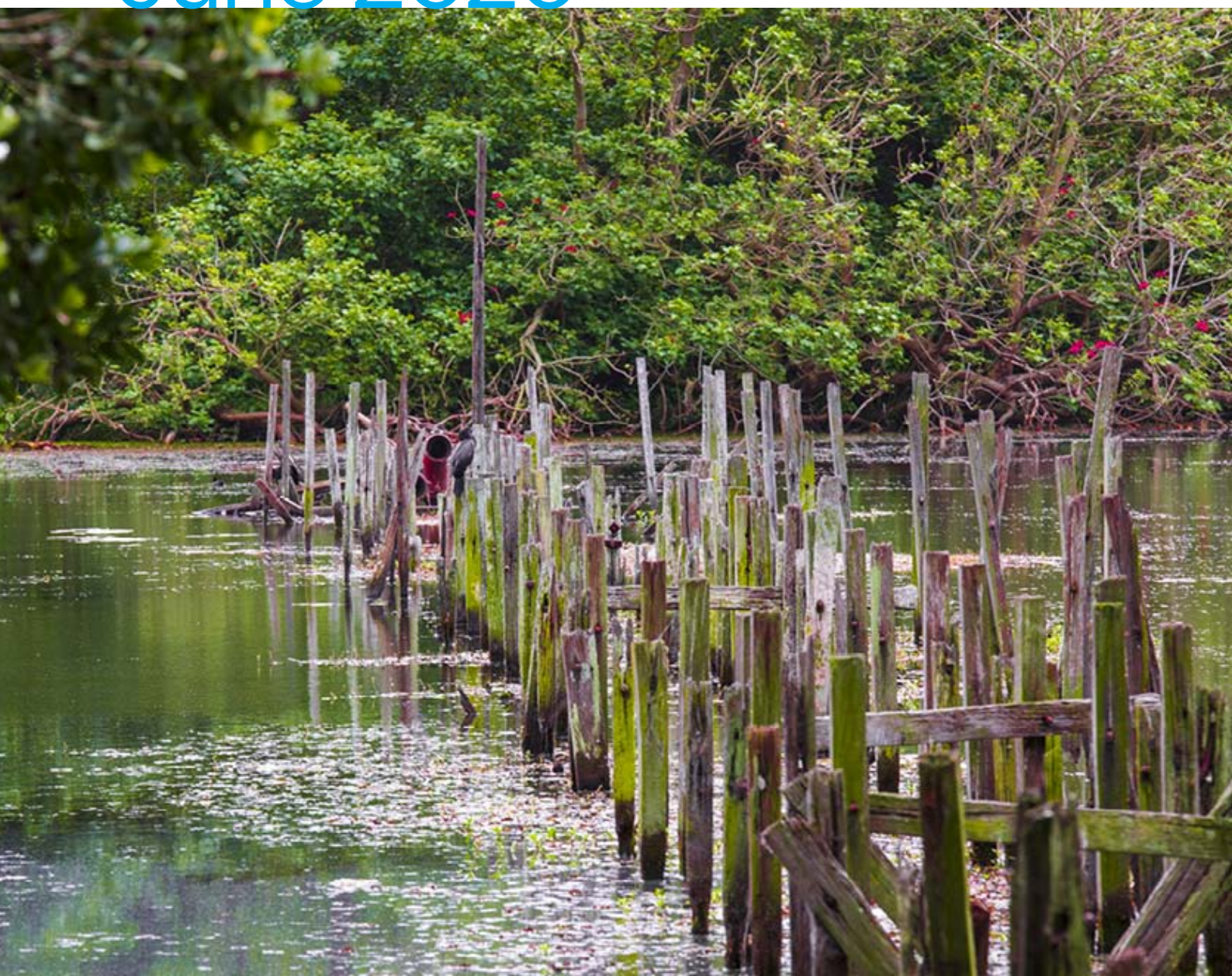
Bayside Council
Serving Our Community

WATER MANAGEMENT STRATEGY

June 2020



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Cooks River at Wolli Creek

DRAFT VISION FOR 2030

Bayside's waterways and foreshores are healthy, its water management systems and infrastructure are smart and resilient, and the community is actively engaged in water management

Introduction

BAYSIDE COUNCIL'S WATER MANAGEMENT STRATEGY HAS BEEN PREPARED TO DRIVE COUNCIL'S WATER MANAGEMENT AGENDA OVER THE NEXT TEN YEARS, SETTING SIX GOALS AND ESTABLISHING AN ACTION PLAN

The strategy has been developed based on input from a wide range of Council staff, to respond to the key water management challenges facing Council today, and establish a plan that steers the organisation towards their vision for water management in the LGA in 2030:

Bayside's waterways and foreshores are healthy, its water management systems and infrastructure are smart and resilient, and the community is actively engaged in water management

To work towards this vision, the Strategy sets six specific goals, which are listed in Table 1 below.

The Water Management Strategy is structured around each of these goals. Under each goal, the strategy:

- Explains the meaning of the goal.
- Includes specific quantifiable targets.
- Identifies actions to be taken, and their priority.
- Identifies a budget and responsibility for each action.

This document also includes:

- Introductory sections which set the context, in terms of the need for and purpose of the strategy.
- A high-level stakeholder engagement plan.

Table 1: Bayside Water Management Strategy Goals

KEY THEMES	GOALS FOR 2030
Community	The Bayside community is actively engaged in water management
Organisation	Bayside is recognised as a Water Smart City
Flooding and drainage	Improve flood risk management and drainage outcomes
Waterways and Foreshore	Improve the waterways and foreshores of Bayside LGA
Groundwater	Improve Council's management of groundwater resources, including the Botany Sands Aquifer, and advocate for its protection
Water use and consumption	No net increase in Council or total LGA water use in 2030, compared to 2016 baseline levels

NEED FOR THIS STRATEGY

WATERWAYS FEATURE AT THE HEART OF BAYSIDE LGA, SUPPORTING IMPORTANT ECOSYSTEMS AND COMMUNITY ACTIVITIES. HOWEVER NOT ALL BAYSIDE'S WATERWAYS ARE IN GOOD HEALTH, AND COUNCIL FACES CRUCIAL WATER MANAGEMENT CHALLENGES IN THE NEXT TEN YEARS

The Bayside Council area is surrounded and bisected by creeks, rivers and wetlands. The Georges River forms the southern boundary and the Cooks River divides the council area in two. Botany Bay (Figure 1) is the key receiving water and an important recreational water body for residents of the LGA and beyond.

A string of remnant wetlands known as the "Rockdale Wetlands Corridor" runs south from the Cooks to the Georges, while another set of wetlands, connected by an aquifer to Centennial Park, runs north east from the airport along Mill Pond Creek. There are also several other creeks and wetlands that drain into Botany Bay through the LGA, including Bardwell Creek, Wolli Creek (Figure 2), Alexandra Canal and Springvale Drain. These waterways and wetlands are shown in Figure 3.

While many of these waterways have been significantly modified since colonisation and urbanisation, they are still valued by the community as places for recreation and connection with nature, as well as for their intrinsic environmental values.

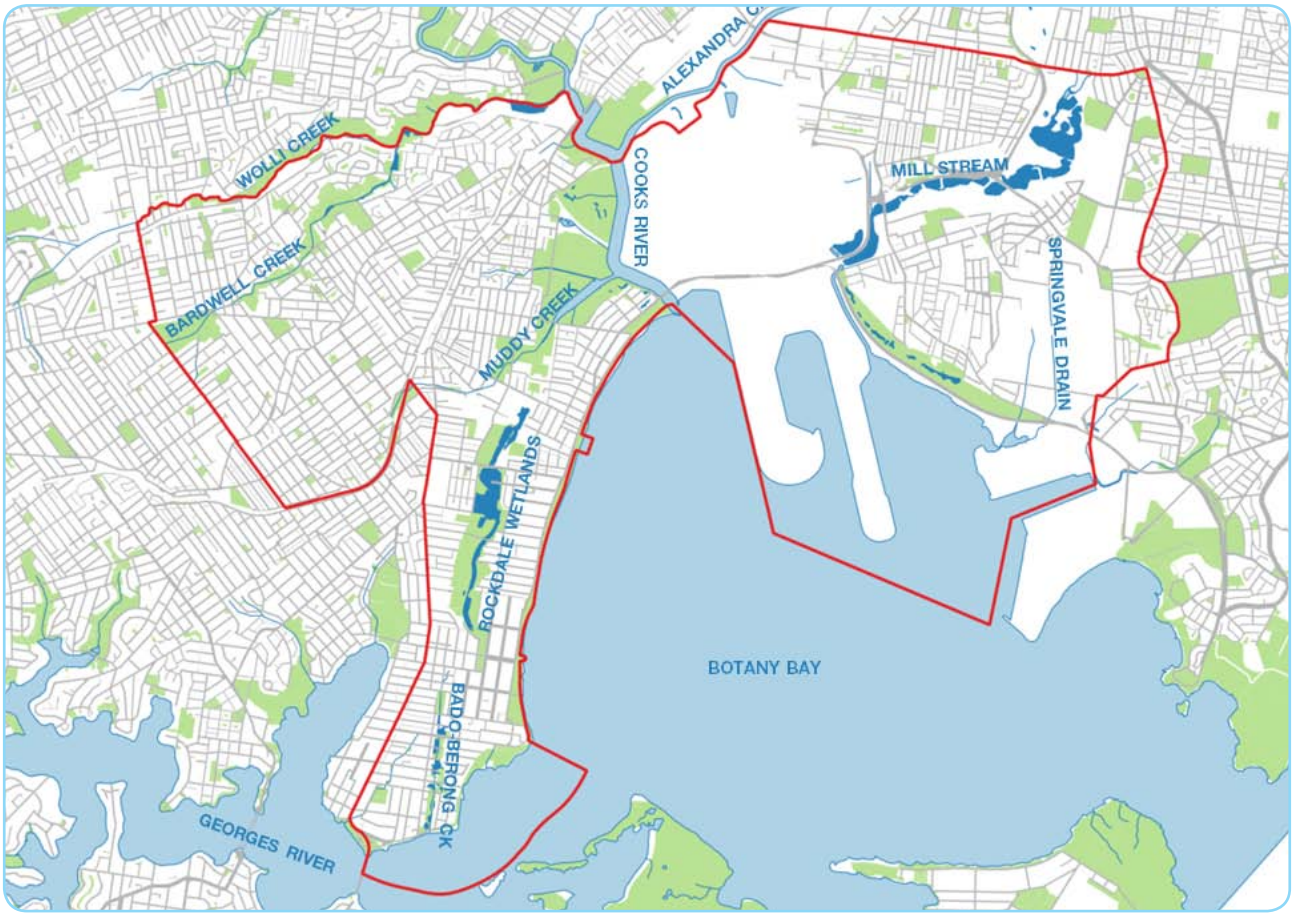
Bayside's 2018-2030 Community Strategic Plan identifies amongst its strategic directions that "Waterways and green corridors are regenerated and preserved".

A recent community survey undertaken for the development of the Bayside Local Strategic Planning Statement found that the community ranked "High quality natural environment" as the third-most important issue for Bayside, behind "Good public transport" and "Safety day and night". 69% of respondents ranked a high quality natural environment as very important, and a further 27% ranked it as important. The natural environment (specifically "parks, green spaces and the beach, natural environment and bushland, greenery in general") featured prominently among the top things people like about their suburb, and want to stay in the future.

Figure 1: Botany Bay

Figure 2: Paddling on Wolli Creek (photo credit NSW River Canoe Club)

Figure 3: Waterways of Bayside LGA



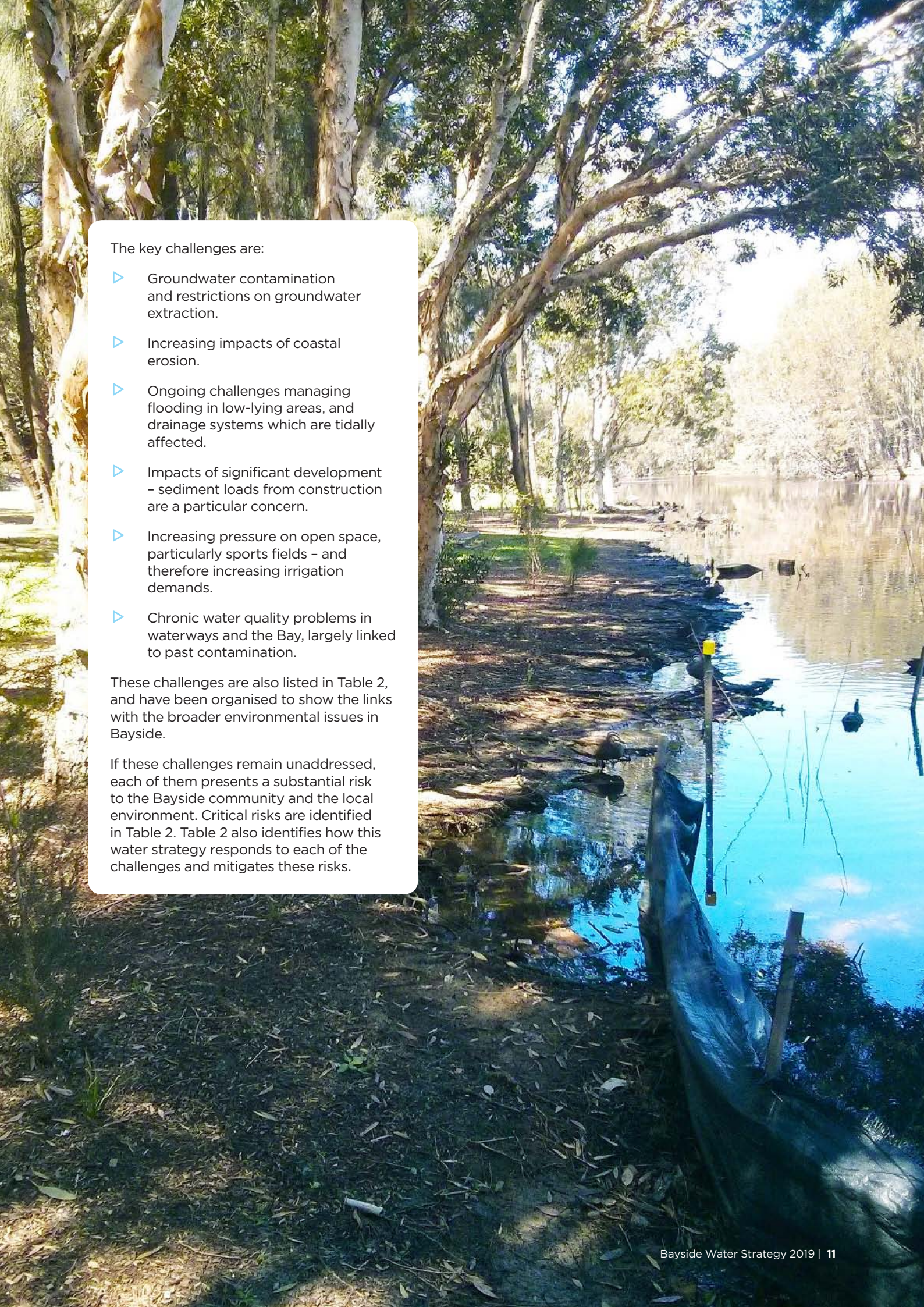
In response to the community survey and in recognition of the importance of water management to the Bayside LGA the Bayside's Local Strategic Planning Statement 2020 includes the below two priorities:

- Planning Priority B19 Protect and improve the health of Bayside's waterways and biodiversity.
- Planning Priority B23 Reduce carbon emissions through improved management of energy, water and waste.

As well as a number of overarching actions to improve water management in the Bayside LGA.

Bayside's 2019 "Background on Environmental Issues" discussion paper (Elton 2019) provides more detail on the environmental issues facing Bayside Council, and the community perspective on these issues. The eight issues identified in the discussion paper are listed in Table 2. Most of the eight issues explored in the document have strong links with water management, as shown in Table 2.

In a 2018 review of Council's water management practices, six key challenges were identified for water management in Bayside. These relate to physical and environmental factors which are creating water resource and management pressures within the Bayside LGA.



The key challenges are:

- Groundwater contamination and restrictions on groundwater extraction.
- Increasing impacts of coastal erosion.
- Ongoing challenges managing flooding in low-lying areas, and drainage systems which are tidally affected.
- Impacts of significant development – sediment loads from construction are a particular concern.
- Increasing pressure on open space, particularly sports fields – and therefore increasing irrigation demands.
- Chronic water quality problems in waterways and the Bay, largely linked to past contamination.

These challenges are also listed in Table 2, and have been organised to show the links with the broader environmental issues in Bayside.

If these challenges remain unaddressed, each of them presents a substantial risk to the Bayside community and the local environment. Critical risks are identified in Table 2. Table 2 also identifies how this water strategy responds to each of the challenges and mitigates these risks.

Table 2: Bayside's environmental issues and critical water management challenges, and ways in which this strategy addresses each challenge

ENVIRONMENTAL ISSUES IN BAYSIDE (ELTON 2019)	WATER MANAGEMENT IMPLICATIONS	SPECIFIC CHALLENGES	RISKS TO THE BAYSIDE COMMUNITY AND ENVIRONMENT	HOW THIS STRATEGY RESPONDS
Climate change adaptation and community resilience	Increased storm events and sea-level rise are likely to increase the severity of localised flooding and coastal erosion Severe climate events are also predicted to impact Bayside's existing high groundwater tables, increasing urban flooding and the potential for contaminants to reach surface waters	Increasing impacts of coastal erosion	Loss of amenity at beaches	**Goal 4** aims to improve Bayside's waterways and foreshores, including actions to address the impacts of coastal erosion. Lady Robinsons Beach is a particular focus
			Loss of coastal vegetation and habitat	
			Coastal infrastructure at risk of damage	
			Increased sedimentation in Botany Bay	
		Ongoing challenges managing flooding in low-lying areas and tidally affected drainage systems	Increased frequency and severity of flooding, blocking roads and pathways, depositing silt and debris and causing property damage	**Goal 3** is focused on flooding inundation and drainage, and includes actions to progress floodplain management and mitigation works
			More siltation in drainage systems	
Resource efficiency	Conserving water resources is a key priority, including increasing water efficiency and identifying options to recycle and reuse stormwater	Increasing pressure on open space, particularly sports fields	Increasing demand for water will increase Council's water bills	**Goal 6** is focused on managing water use across the LGA and within Council's operations. It includes actions to investigate efficiency improvements and alternative water sources for irrigation
			Fields irrigated with drinking water will be exposed to water restrictions in times of drought	

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ENVIRONMENTAL ISSUES IN BAYSIDE (ELTON 2019)	WATER MANAGEMENT IMPLICATIONS	SPECIFIC CHALLENGES	RISKS TO THE BAYSIDE COMMUNITY AND ENVIRONMENT	HOW THIS STRATEGY RESPONDS
Waterways	Bayside's waterways are a key part of Greater Sydney's Blue Grid, with high social and environmental value	Impacts of significant development – sediment loads from construction are a particular concern	Poorly managed building sites generate high sediment loads, which wash off into drainage systems and waterways when it rains	**Goal 2** aims to improve organisational capacity, including capacity for development assessment and compliance
Green corridors, open spaces and urban tree canopy	Bayside's green corridors are aligned with waterways – refer to Figure 3 High quality open space and a healthy tree canopy also rely on water		Permanent or temporary basement dewatering also presents the risk of pumping out poor quality groundwater into the drainage system, where it is conveyed to waterways	**Goal 4** aims to improve Bayside's waterways and foreshores, including actions to address water quality at key sites
Biodiversity	Bayside's biodiversity corridors are also aligned with waterways and the Botany Bay foreshore	Chronic water quality problems in waterways and the Bay, largely linked to past contamination	Chronic water quality problems are likely to persist unless the sources and movement of contaminants can be addressed	**Under Goal 4** there are a specific set of actions to improve catchment management in new development

ENVIRONMENTAL ISSUES IN BAYSIDE (ELTON 2019)	WATER MANAGEMENT IMPLICATIONS	SPECIFIC CHALLENGES	RISKS TO THE BAYSIDE COMMUNITY AND ENVIRONMENT	HOW THIS STRATEGY RESPONDS
Land contamination	Groundwater contamination is a key issue for Bayside, which is linked with both water supply and surface water quality. Acid sulphate soils are also common in the LGA, with water quality implications	Groundwater contamination and restrictions on groundwater extraction	Residential groundwater extraction from the Botany Sands Aquifer has already been banned Bayside Council still relies heavily on groundwater for irrigation. If Council is required to use drinking water for these areas, it would significantly increase Council's water bills, which could increase by up to 180%	**Goal 5** focuses on groundwater management and identifies actions Council can take to improve the management of the Botany Sands Aquifer and other groundwater resources in the area
Air pollution	Many urban air pollutants also build up on impervious surfaces, from where they are washed into waterways in rain events			Actions to improve stormwater quality are included **under Goal 4**
Scenic and cultural landscapes	Bayside's coastline and riparian areas are defining features of the LGA. Places like Botany Bay and the Cooks River are culturally and scenically important			Goal 1 is focused on improving community engagement in water management. The cultural importance of waterways in the LGA is a strong starting point for engagement

PURPOSE OF THIS STRATEGY

THIS STRATEGY AIMS TO ALIGN WATER MANAGEMENT ACTIVITIES ACROSS DIFFERENT SECTIONS OF COUNCIL, ESTABLISH WATER MANAGEMENT PRIORITIES AND FACILITATE ENGAGEMENT WITH RELEVANT STAKEHOLDERS

Water management responsibilities in Council are spread across numerous departments. Table 3 provides a reference list of the council departments involved in water management, with a description of each department's role.

Beyond Council, there are also many other organisations with water management roles in the LGA, including:

- Sydney Water is a major landowner in the LGA with responsibility for some large drainage systems. Sydney water also owns and manages water supply and wastewater networks.
- Sydney Airport Corporation Limited (SACL) is a major land owner in the LGA, with responsibility for airport related drainage systems.
- NSW Environmental Protection Agency (EPA) as the regulator responsible for the Protection of the Environment Operations Act, which includes provisions relating to point-source waterway pollution and groundwater contamination.
- Beyond the foreshore, most of Botany Bay is managed by NSW State Government. Beachwatch sites are monitored by the NSW EPA and the Transport for NSW (Roads and Maritime) are responsible for direct users of Botany Bay such as recreational boating and jet skiers.
- NSW Department of Primary Industries – Fisheries has a role protecting fish habitat in some of Bayside's waterways.
- NSW Department of Primary Industries – Office of Water manages groundwater licences.

Another important feature of Bayside LGA at present are several significant State-led infrastructure projects, as well as significant private development.

With so many players, co-ordination between different sections of Council and different stakeholder organisations becomes an important factor in reaching Council's water management goals.

DELIVERING THE STRATEGY

BAYSIDE FACES COMPLEX WATER MANAGEMENT CHALLENGES, BUT RESOURCES ARE LIMITED. REALISING THE 2030 VISION WILL REQUIRE A SMART, STRATEGIC APPROACH THAT BUILDS ON BAYSIDE'S STRENGTHS

Bayside Council has existing budgets for water management, and is already working to improve water management on several fronts. Under each goal, this document highlights some of Council's recent achievements.

However Bayside's water management challenges are complex and realising the 2030 vision will require substantial action. Council's resources are limited, and actions need to be considered carefully to make the most of available resources.

Four main approaches have shaped the action plans proposed in this strategy:

1 VARIED ACTIONS FOR COMPLEX CHALLENGES

Complex problems lack clear or simple solutions, and therefore under each goal, a multi-pronged approach has been proposed. Tackling each goal on multiple fronts may spread Council's resources over more activities, however it also:

- Allows different departments and units within the organisation to play different roles that all work towards the same goals.
- Enables a flexible approach where the focus can shift depending on resources and opportunities available.

2 SMART ALLOCATION OF EXISTING RESOURCES

Actions proposed in this strategy consider where Council can apply existing resources to have the greatest effect.

This means:

- Actions that build on existing Council programs, processes and activities, at small marginal cost.
- Actions likely to result in a clear 'win', such as on-ground works in critical areas.
- Actions to build knowledge, so that future resource allocation can be based on better information.
- Actions to build organisational capacity, where the investment is returned in a higher functioning organisation that is more prepared to tackle the next challenge.

3 PURSUIT OF ADDITIONAL RESOURCES

The strategy includes actions to pursue additional funding for water management activities.

4 A COLLABORATIVE APPROACH

Council is one of many players in water management, and the chances of realising the 2030 vision will be improved if Council works collaboratively with the community and other stakeholders, so that:

- All are working consistently towards shared goals.
- Each organisation undertakes actions most suited to their role and organisational capacity.
- Everyone is learning from each other and building a shared capacity for improved water management.

Cooks River
Bank Restoration Works at Wolli Creek

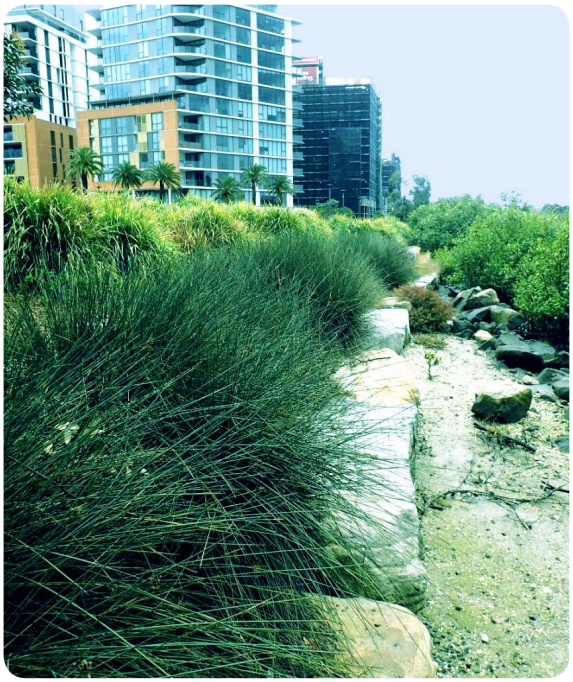
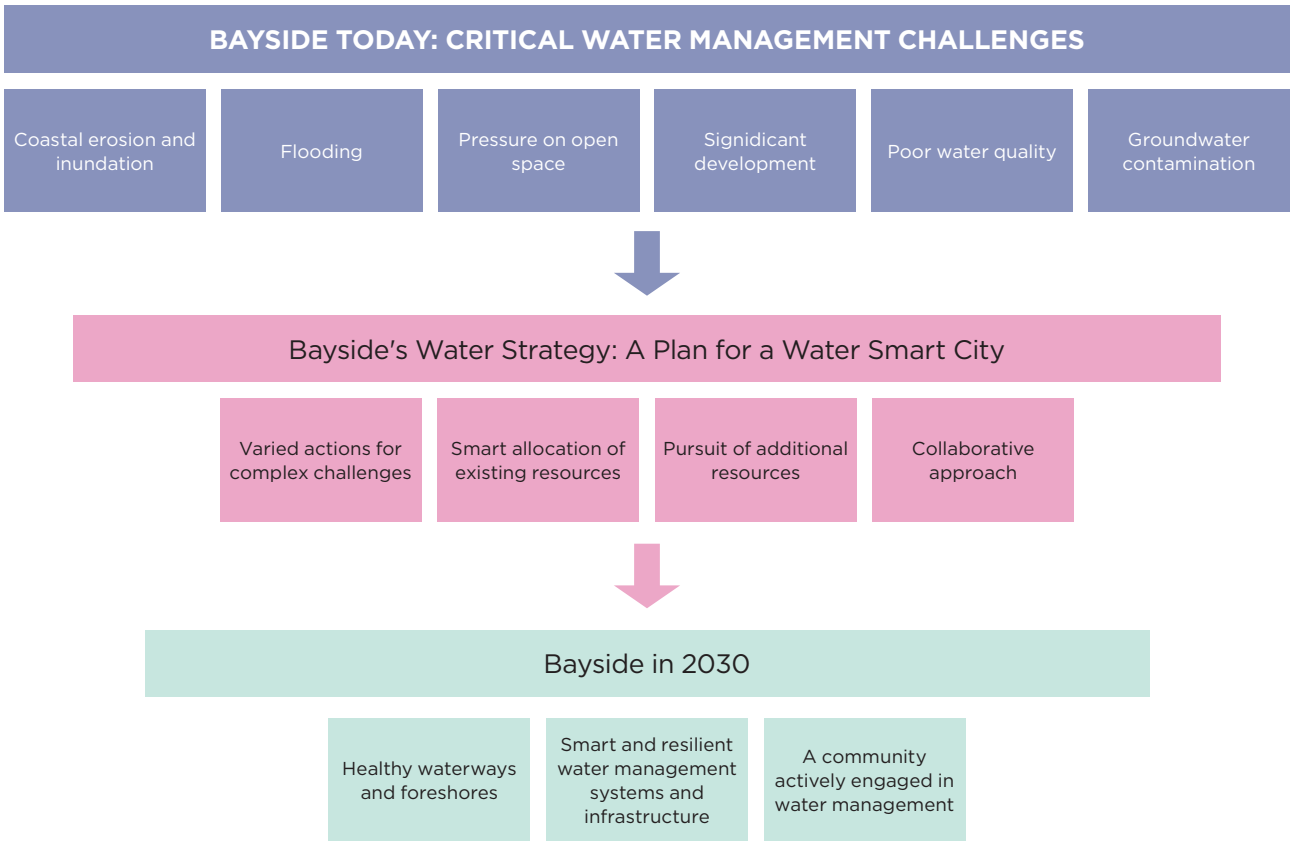


Figure 4: Bird life at Landing Lights Wetland (photo credit David Noble)

Figure 5: A strategic approach to water management in Bayside



THEME 1 COMMUNITY

GOAL 1: THE BAYSIDE COMMUNITY IS ACTIVELY ENGAGED IN WATER MANAGEMENT

As noted previously, a recent community survey in the Bayside LGA identified that a large proportion of the Bayside community sees a high quality natural environment as very important, and many of the environmental issues facing Bayside are strongly linked with water management.

Bayside's community includes residents, community organisations, government institutions, businesses and workers, developers and visitors to the area. Different sectors of the community have different roles, but all can play a part in water management.

A community actively engaged in water management means:

- A community with a high degree of awareness and understanding of water management issues in Bayside.
- A community with improved perceptions of Council's water management achievements and positive outcomes.
- Active community members taking a level of ownership over waterways – e.g. participating in environmental monitoring, restoration activities and planning for waterway improvements.
- Active community members supporting Council's water management activities and driving the agenda for improved water management.

COUNCIL'S ROLE

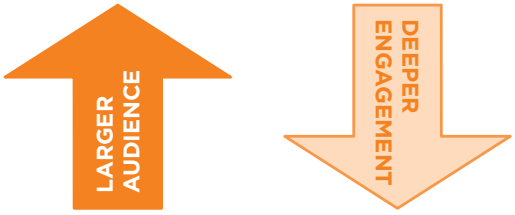
Council engages with the community at a range of levels, for example:

- Sharing information via media such as paper and electronic newsletters, social media, council's website.
- Consultation on specific projects and initiatives via the "have your say" website and other channels.
- Providing community grants.
- Running community events.
- Dealing with community enquiries and complaints.

Therefore there are many ways in which Council can potentially facilitate more active community engagement in water management.

A well-designed community engagement strategy ideally works at a few levels, including:

- Providing information via various media channels.
- Consulting to seek input or feedback on specific policies, plans or projects.
- Active participation in planning, decision-making, workshops, etc.
- Partnership in environmental stewardship, citizen science, etc.



ACHIEVEMENTS TO DATE

- **Bushcare**
  Bayside Council co-ordinates community bushcare groups including groups at Lambert Road Reserve, Hawthorne Street, Binnamittalong Gardens, Sir Joseph Banks Park and Stotts Reserve.

- **Citizen Science**
  Bayside Council supports the Rockdale Flock birdwatching group with funding.

- **Community Water Sensitive Urban Design (WSUD) Workshop**
  Bayside Council has run community workshops on WSUD and water efficiency.

- **Collaborative Catchment Planning:**
  In 2009, Rockdale Council worked with the Cooks River Sustainability Initiative (CRSI), as well as Hurstville and Canterbury Councils, to prepare a collaborative subcatchment plan for the Upper Wolli Creek subcatchment, which straddles the three LGAs. The collaborative planning process involved community and other stakeholders taking part in vision sessions and planning forums to develop the catchment plan.

- **Activities and Engagement**
  Bayside Council runs public tours of Bayside's wetlands.

Bayside Council has strong and ongoing support for Clean Up Australia day activities. In 2018 Bayside Council's Clean Up Australia activities were a major success, particularly in waterways and foreshore areas with volunteers cleaning 4 beach areas and 2 rivers/creeks.

PROPOSED ACTIONS

To work towards a community actively engaged in water management, actions are proposed in four different areas. These represent four different levels of community engagement:

- Providing information invites passive engagement with water management activities.

- Consultation invites input or feedback, usually undertaken in relation to specific policies, plans or projects.

- Active participation typically involves face-to-face engagement, which could include educational activities, or opportunities for more meaningful input into planning, design or decision making processes.

- Partnership involves working together to achieve mutual benefits or agreed goals.

An engagement program which spans this range of activities can include both broad engagement that reaches a large number of people, as well as deep engagement with those people who have an appetite to be more involved.

Council's top three priority actions for community engagement in water management are:

- Develop a community engagement program that includes residents, businesses, visitors to the area and educational establishments, using a variety of media formats.

- Run workshops for residents, businesses and educational establishments, on sustainable water ideas they can implement at home/in their premises, including rainwater tanks and rain gardens.

- Explore and develop partnerships with local educational establishments and other community organisations for education and advocacy on water management and environmental issues. Include public demonstrations to show the quantity and types of pollutants washed down our drainage systems and collected in our Stormwater Quality Improvement Devices (SQIDs) when they are cleaned out.

Other actions are listed in next page.

Table 4: Action Plan to Improve Community Engagement in Water Management

ACTION TYPES	SPECIFIC ACTIONS
Providing information via various media channels	✦ Utilise Resilient Sydney Platform to focus community engagement ✦ Develop a community engagement program that includes residents, businesses, visitors to the area and educational establishments, using a variety of media formats ✦ Share water-related news stories, including positive stories of Council's projects and achievements. Aim for four stories each year, which can be shared in the community newsletter, on Council's website and via social media ✦ Review and update Council's online information for residents businesses, and educational establishments on actions they can take to save water, reduce stormwater runoff, reduce water pollution, protect groundwater, etc ✦ Have a water presence at major Council events (e.g. festivals) ✦ Publish regular updates on the implementation of this strategic plan ✦ Develop new drain stencils that are locally relevant and undertake targeted drain stencilling in areas with larger quantities of litter
Consulting to seek input or feedback on specific policies, plans or projects	✦ Continue undertaking surveys to gauge community satisfaction with Council's water management activities ✦ As part of proposed waterway improvement projects (refer to Goal 4) consult with interested community members and relevant community groups on the development of plans/concept designs
Active participation in planning, decision-making, workshops, etc	✦ Run workshops for residents, businesses and educational establishments, on sustainable water ideas they can implement at home/in their premises, including rainwater tanks and rain gardens. The residential workshops could be connected with a rainwater tank rebate program (refer to Goal 6). Trial two each year and review depending on interest ✦ Expand walking tours with a waterway and water management focus including environmental, water quality and water efficiency themes ✦ Host at least one public event each year with a water theme, e.g. as part of National Water Week, the Cooks River Wurridjal Festival, or a new event focused on one or more of Bayside's waterways ✦ When waterway improvement projects (refer to Goal 4) are developed, invite active community participation in planning and design. For example this could include drop-in sessions, online engagement, workshops, focus groups, etc. ✦ When waterway improvement projects (refer to Goal 4) are completed, invite community participation in an opening event, which could include planting or other hands-on activities, and invite ongoing participation in weeding, litter removal, monitoring or other appropriate maintenance activities
Partnership in environmental stewardship, citizen science, etc	✦ Identify potential locations for 5 new bushcare groups, including locations with a waterway focus. Gauge community interest and establish groups when there is sufficient interest, with a priority of creating a wetland care group ✦ Support and further develop relevant citizen science projects in the LGA, including citizen science for migratory bird watching ✦ Explore and develop partnerships with local schools and other community organisations for education and advocacy on water management and environmental issues. Activities to undertake together may include events, art projects, citizen science, drain stencilling, educational workshops/walks, public demonstrations to show the quantity and types of pollutants washed down our drainage systems and collected in our SQIDs when they are cleaned out

MEASURING PROGRESS

Proposed indicators and targets for this goal are:

- By 2030, Council is actively and regularly sharing water management stories, including success stories, via its various media channels. Target four water stories per year.
- By 2030, community satisfaction surveys show over 60% satisfaction with Council's waterway management (i.e. a mean satisfaction rating of over 3.75 out of 5).
- By 2030, over 1500 residents and/or workers per annum will have participated in a water-related Council initiative such as a workshop, litter pick or native planting and riparian vegetation regeneration.

Figure 6: Community engagement in Bayside

Botany Wetlands

THEME 2
ORGANISATION

GOAL 2: BAYSIDE IS RECOGNISED AS A WATER SMART CITY

Bayside Council envisages a "water smart" city as a city that:

- Uses water wisely.
- Manages water resources sustainably.
- Looks after its waterways in a manner that supports both healthy ecosystems and liveable places.
- Facilitates the best possible water management outcomes in new development.
- Plans and designs public domain projects in a "water sensitive" manner.
- Has resilient water management systems and infrastructure.
- Plans ahead, allocates funding efficiently, monitors outcomes and continuously improves.

COUNCIL'S ROLE

As noted above, Council has many water management roles spread across multiple departments. While each individual department has its own responsibilities, a water smart city should also be focused on integration. To become recognised as a water smart city will require:

- Leadership, long-term vision and commitment.
- Knowledge, skills and organisational capacity.
- Internal systems and processes that support effective decision making.
- Effective cross-sector institutional arrangements and processes.
- Public engagement, participation and transparency.

ACHIEVEMENTS TO DATE

- **Regional Alliances**
  Bayside is a member of the Sydney Coastal Councils Group, the Cooks River Alliance and the Georges Riverkeeper – regional organisations which connect Bayside to a larger community of practice focused on best practice water management.
- **Media Stories**
  Bayside Council's Landing Lights Wetland restoration project features in several short videos published online by the former "RCC news" as well as one on the Cooks River Alliance website.
- **Monitoring**
  Bayside Council manages its own water use with a water use monitoring system in place. Bayside Council is investigating how to improve its water quality monitoring program.
- **Annual Reporting**
  Bayside Council's Annual Report includes a section (Theme 3) on "Sustainable and Value Natural Environment", which highlights Council's achievements in the last 12 months.
- **Leading by Example**
  Bayside Council has an annual program to install water efficiency devices in Council facilities.
- **Planning and Development**
  Bayside Council has planning controls for water quality.

PROPOSED ACTIONS

For Bayside to become recognised as a Water Smart City, several approaches are recommended to build organisational capacity in different ways:

- Building leadership, long-term vision and commitment.
- Building knowledge, skills and staff capacity.
- Developing internal systems and processes that support effective decision making.
- Developing effective cross-sector institutional arrangements and processes.
- Undertaking public engagement, participation and transparency.

Council's top three priority actions are:

1. Identify additional funding sources.
2. Develop a capacity building strategy for all key operational/admin staff, to improve knowledge and understanding of best practice water management.
3. Identify opportunities to integrate information technology (IT) into water management decisions.

Other actions are listed in below.

Table 5: Action plan to build Bayside's capacity as a water smart city

ACTION TYPES	SPECIFIC ACTIONS
Building leadership, long-term vision and commitment	✦ Adopt this water strategy and publish it in an engaging format ✦ Present the strategy to senior staff and Councillors, so they are clear on how the strategy will help Bayside Council address the critical environmental issues facing the LGA ✦ Celebrate water management successes internally and with public news stories ✦ Identify emerging water management champions in Council and invest in their leadership training and support ✦ Develop an Environmentally Sustainable Development (ESD) policy
Building knowledge, skills and staff capacity	✦ Create an integrated water working group (or continue the Water Strategy working group) as a forum for Council staff to discuss water management issues, track the implementation of this strategy and respond to new issues as they arise ✦ Develop a capacity building strategy for all key operational/admin staff, to improve knowledge and understanding of best practice water management ✦ Identify Bayside Council water management champions, and support water champions to participate in relevant events, conferences and awards including Stormwater NSW, Floodplain Management Association and Splash network events

ACTION TYPES	SPECIFIC ACTIONS
Develop internal systems and processes that support effective decision making	✦ Identify opportunities to integrate information technology (IT) into water management decisions, e.g. smart irrigation systems and smart meters. ✦ Implement water smart city policy to make WSUD automatic, integrated and normal in all development processes and projects ✦ Develop Bayside's Sea Level Rise policy ✦ Identify and advocate for additional funding sources for infrastructure including WSUD ✦ Develop guidelines to support allocation of Council's stormwater levy in line with organisational priorities ✦ As part of the planned LEP and DCP update process, incorporate best practice water management planning controls ✦ Monitor and enforce regulations and planning controls ✦ Mandate that all contracts for large water using sites are required to have KPI's related to water usage and management ✦ Integrate sustainable water management into Council processes for projects and maintenance programs including procurement (sustainable purchasing requirements), park upgrades and building upgrades, public domain plans and guidelines ✦ Undertake reviews of technology to improve water management and encourage modular installation of water efficiency measures at Council's top water use sites
Develop effective cross-sector institutional arrangements and processes	✦ Continue an active involvement in the Sydney Coastal Councils Group, the Cooks River Alliance and the Georges Riverkeeper ✦ Build on the existing working relationship with Sydney Water, exploring opportunities for collaboration in the following areas: ✧ Waterway improvement projects in Sydney Water drainage catchments ✧ Water efficiency (refer to Goal 6) ✧ Wastewater overflows (advocate to Sydney Water for improved sewer maintenance to reduce dry weather overflows) ✦ Build a stronger working relationship with other major land managers including Sydney Airport Corporation and Port Authority of NSW ✦ Build stronger institutional arrangements in groundwater management – refer to Goal 5 ✦ Develop links and collaborations with university and educational/research institutions such as University of New South Wales (UNSW) for water quality and groundwater activities and studies ✦ In Planned Precincts, work with owther stakeholders to implement best practice WSUD
Undertake public engagement, participation and transparency	✦ Report on progress towards implementing this plan ✦ Report on spending associated with Council's stormwater levy ✦ Reporting on the Bayside Flood Risk Management Plan (FRMP) and continued implementation: undertake monitoring, evaluation and reporting of improved flood mitigation in Bayside LGA ✦ Continue to undertake regular community satisfaction surveys, ensuring relevant environmental issues are included in the survey questions

MEASURING PROGRESS

Proposed indicators and targets for this goal are:

- Majority of Council staff, councillors, community and Local Government NSW (LGNSW) association can identify Bayside as a water smart city in survey and interview responses by 2030.
- Bayside Council featured as a water smart city by national water organisations and networks such as the Cooperative Research Centre for Water Sensitive Cities, the Australian Stormwater Industry Association, Floodplain Management Australia, and the Australian Water Association.
- Council's guidelines, manuals and technical specifications reflect Council's water smart approach with WSUD incorporated as a standard level of practice.

Figure 7: Vegetation restoration at Botany Wetlands

THEME 3 FLOODING AND DRAINAGE

GOAL 3: IMPROVE FLOOD RISK MANAGEMENT AND DRAINAGE OUTCOMES

Urban drainage systems include:

- The stormwater drainage (pit and pipe) network, which usually conveys flows in most storm events, generally up to an annual exceedance probability around 5-10%.
- Stormwater channels and overland flowpaths, which convey flood flows that exceed the capacity of the pit and pipe system. Overland flowpaths may include roadways, open space and flowpaths though private land.

The management objectives for each system are somewhat different: Council manages the stormwater drainage network to maintain its capacity in the storm events it's designed for, to manage the frequency and severity of "nuisance" flooding; while floodplain risk management is focused on reducing risks to life and property during large to extreme rainfall and flooding events.

Sea level rise is a key consideration in floodplain risk management, particularly for low-lying coastal areas.

COUNCIL'S ROLE

Council is a major owner of public stormwater drainage infrastructure in the LGA. Sydney Water, Port Authority of NSW and the Sydney Airport Corporation are other notable owners of stormwater drainage assets, including critical pipes and channels located downstream of Council infrastructure.

The focus of routine operation and maintenance is on maintaining system capacity, and long-term maintenance also includes asset renewals and upgrades. Upgrades are prioritised to improve system capacity where it is needed most.

Council's role in floodplain management is described in the NSW Floodplain Development Manual (2005). It includes:

- A role in land use planning and development.
- Preparation of floodplain risk management plans.
- Incorporating provisions of floodplain risk management plans into Local Environment Plans, Development Control Plans and policies
- Inclusion of flood related information on planning certificates.
- A role in flood mitigation, including investigation, design, construction and maintenance of flood mitigation works.
- A role in community flood education.

A role in emergency response, including:

- Acting as a representative on the local emergency management committee.
- Preparing the local flood plan under the guidance of the SES.
- Supporting the SES with resources during flood emergencies.
- Post-flood data collection and reviews of flood behaviour.

ACHIEVEMENTS TO DATE

Floodplain Management Planning

- Established Bayside Flood Risk Management committee.
- Established program of flood studies, floodplain risk management studies and plans, including flood studies completed for all eight major catchments.
- Existing planning controls are being improved and are working towards best practice management benchmarks.

ASSET MANAGEMENT

- All drainage networks have been mapped.
- Council has an established drainage maintenance program.

PROPOSED ACTIONS

The range of actions proposed to improve flood risk management and drainage outcomes reflect the different roles that Council plays in floodplain management.

Council's top three primary priority actions are:

1. Undertake stormwater drainage system condition assessment across the whole LGA including all WSUD and SQID devices.
2. Prepare and update floodplain risk management studies and plans.
3. Undertake works for Bonar Street stormwater upgrades.

MEASURING PROGRESS

Proposed indicators and targets for this goal are:

- Increased community awareness of flood risk with 20% increase of flood prone houses having a household Flood Plan and can identify potential evacuation routes.
- Critical asset operations are identified and maintenance strategies are effective.

Other actions are listed in next page.

Table 6: Action plan to improve flooding and drainage outcomes

ACTION TYPES	SPECIFIC ACTIONS
Asset management	✦ Undertake stormwater drainage system condition assessment across the whole LGA including all WSUD and SQID devices ✦ Following condition assessment, identify maintenance/renewal works required and prioritise actions
Floodplain management planning	✦ Continue Council's established floodplain risk management planning process: ✧ Prepare and update floodplain risk management studies and plans, e.g. update FRMS and FRMP for certain areas within Bayside ✧ Plan for the effects of climate change ✧ Co-ordinate the Bayside Floodplain Risk Management Committee ✦ When the Bayside Local Environment Plans, Development Control Plans and policies are updated, incorporate the latest provisions recommended in FRMPs, as well as best practice stormwater codes and design standards ✦ Enforce overland flowpaths in development controls and approvals ✦ Include flood related information on planning certificates
Flood mitigation and drainage upgrade works	✦ Prepare program for implementation of actions identified within the Floodplain Risk Management Study and Plan (FRMS and FRMP). Current priorities are: ✧ Bonar Street stormwater upgrade ✧ Dominey Reserve flood detention basin ✧ Arncliffe Street stormwater upgrade ✧ Flood protection works in Hale Street, Botany ✧ Investigate Mascot flood mitigation options ✦ Identify strategic drainage upgrade projects which can potentially be integrated into major redevelopment – be ready to negotiate with developers and build strategic works in from early planning stage ✦ Investigate the use of WSUD approaches to reduce flooding and overland flow
Community flood education	✦ Develop a Bayside Flood Education Strategy with stakeholders such as SES, Sydney Water and Resilient Sydney ✦ Build and utilise website resources for flood risk management
Emergency response	✦ Acting as a representative on the local emergency management committee ✦ Preparing the local flood plan under the guidance of the SES ✦ Supporting the SES with resources during flood emergencies ✦ Post-flood data collection and reviews of flood behaviour

THEME 4 WATERWAYS AND FORESHORES

GOAL 4: IMPROVE THE WATERWAYS AND FORESHORES OF BAYSIDE LGA

Improving Bayside's waterways and foreshores includes the following aspects:

- Water quality.
- Waterway and foreshore stability, including protection from coastal erosion.
- Ecosystem health and biodiversity in the aquatic, riparian and foreshore zones.
- Public amenity and recreational opportunities in and around waterways, along the foreshore and in Botany Bay.

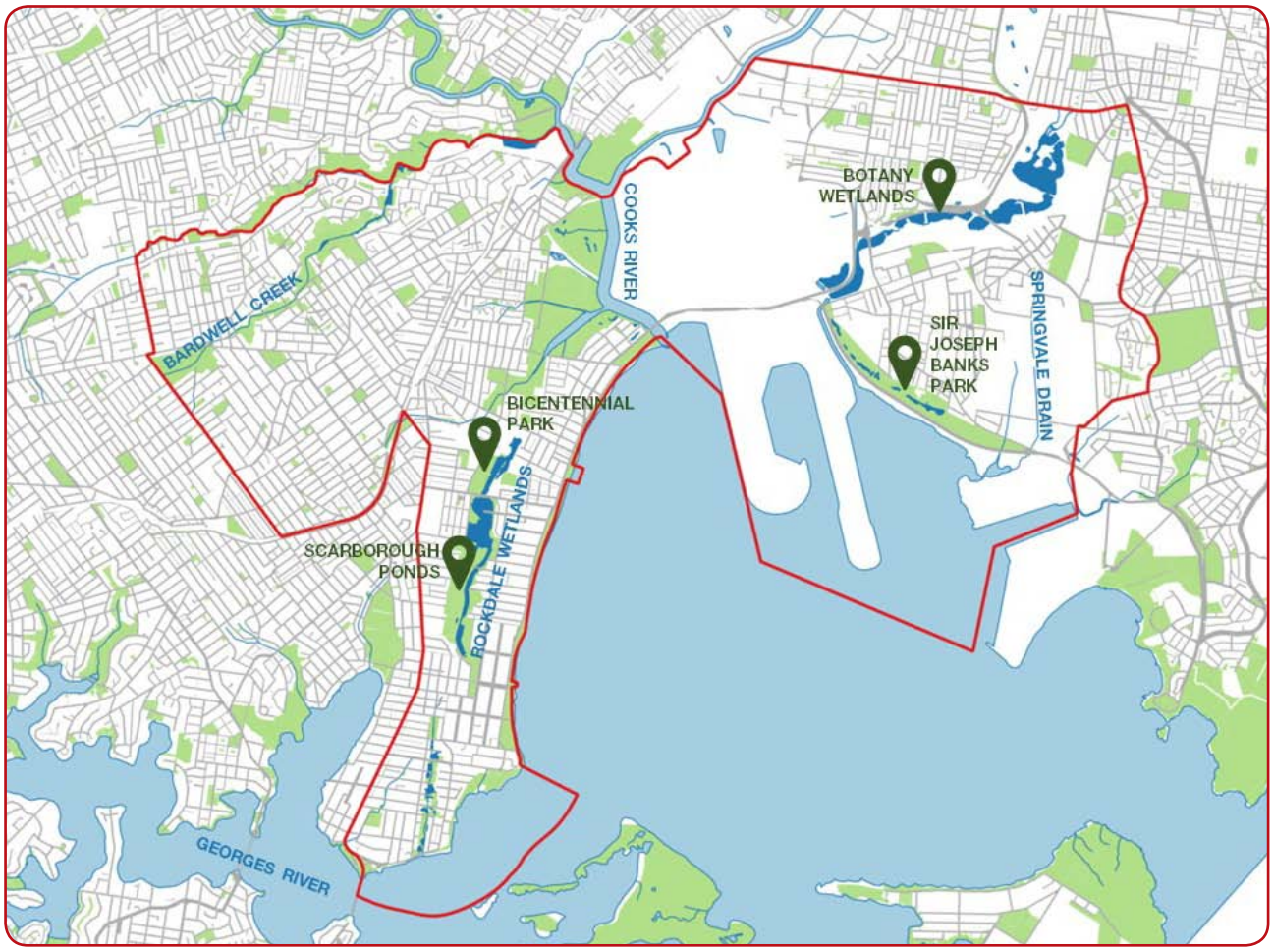
The focus will differ at different sites, depending on the specific issues at each site.

Key sites in the LGA where there are opportunities for improvement are:

- Sir Joseph Banks Park.
- Bayside coastal foreshore.
- Rockdale wetlands corridor.
- Springvale Drain.
- Bicentennial Park.
- Botany Wetlands.
- Scarborough Ponds.
- Georges River.
- Cooks River.
- Bardwell Creek.

These locations are shown in Figure 8.

Figure 8: Key waterway sites with opportunities for improvement



COUNCIL'S ROLE

Waterways in Bayside have multiple different owners and managers, including Bayside Council, Sydney Water and Sydney Airports Corporation.

Within waterways under Council's care and control, Council undertakes maintenance such as weed and sediment removal to maintain hydraulic capacity. Staff reported that this was largely undertaken reactively to address complaints and flooding problems.

Where waterways intersect natural areas, Council undertakes natural restoration activities within and adjacent to waterways. Where waterways intersect parklands, Council maintains the land up to the waterway banks.

A large part of the Botany Bay foreshore is within Bayside Council's area. The western foreshore is covered by the Georges River Coastal Zone Management Plan, but there is no equivalent for the north-eastern foreshore. Beyond the foreshore, most of Botany Bay is managed by NSW State Government.

Council plays an active role in managing surface water quality. Four key areas of Council practice are water quality monitoring, stormwater pollution control, water body management and response to water quality incidents.

At the key sites listed above, Council is therefore generally involved in the following capacities, though other organisations are also often involved in overlapping roles:

- As a land owner and asset manager, which includes management of infrastructure, vegetation, water bodies and recreational uses.
- Managing stormwater runoff in upstream catchments.
- Undertaking monitoring of both water quality and ecosystem health.

ACHIEVEMENTS TO DATE

- **Waterway/Estuary and Wetland Restoration**
  At Sir Joseph Banks Park and Scarborough Ponds, Council has installed aerators and a floating reed bed to reduce the occurrence of stratification, anoxic conditions and fish kills.
- **Catchment Management**
  Council has DCP controls including OSD, rainwater tanks, absorption systems, stormwater quality targets consistent with the recommendations of the Botany Bay Water Quality Improvement Program.

  Bayside Council has contributed to the Georges River Coastal Zone Management Plan, and is currently commencing the Cooks River Coastal Management Program with the Cooks River Alliance.
- **Routine Maintenance**
  Operations include cleaning SQIDs, sediment traps, trash racks and booms, cleaning up beaches and parks.
- **WSUD**
  Council has installed a number of WSUD devices including 21 rainwater tanks, 7 infiltration systems and 2 rain gardens (raingarden at Gilchrist Park and Bexley North, raingarden and wetland at Coolibah Reserve, absorption pits in Peter Depena Reserve and Bona Reserve, San Souci).

  A number of Council staff have attended WSUD training.
- **Bushcare**
  Council has undertaken riparian zone regeneration works, including maintenance.

  Vulnerability mapping for foreshore erosion protection and restoration has been completed within the former Botany LGA, including areas impacted by sea level rise and increased storm surge/wave action.
- **Water Quality Monitoring**
  Council has previously undertaken extensive water quality monitoring studies.

PROPOSED ACTIONS

The plan to improve Bayside's waterways and foreshores include actions to:

- Improve public connection and access along waterways and foreshores.
- Protect existing values and restore degraded sites.
- Improve catchment management in both the public and private domains, to reduce the impacts of stormwater runoff
- Monitor waterway and ecosystem health.

Council's top three priority actions are:

1. Advocate for beach nourishment and associated works for all swimming and recreational areas along Lady Robinsons Beach.
2. Collaborate with Sydney Water on their Muddy Creek naturalisation project and extend the proposed Sydney Water works currently from Bestic St, Banksia to Ador Ave Reserve, Rockdale upstream to Bay Street, Rockdale.
3. Develop Green Grid master plans for waterways and key sites.

Other actions are listed in next page.

Table 7: Action plan to improve waterways and foreshores

ACTION TYPES	SPECIFIC ACTIONS
Public connection and access	✦ Develop a Foreshore Access Strategy to investigate opportunities and barriers for continuous foreshore access, identify "missing links" and strategic opportunities to improve access, and assess priority within a strategic framework ✦ Develop a Green Grid implementation strategy to establish planning and design principles for green grid corridors (which are aligned with waterways)
Foreshore protection and restoration	✦ Integrate foreshore erosion protection and restoration plan, into the development of regional Coastal Management Programs including: ✧ Review condition of existing seawalls, beaches and other foreshores, including both stability and habitat value ✧ Review vulnerability mapping as part of the updates to Coastal Management Programs: identify areas likely to be impacted by sea level rise and/or increased storm surge/wave action ✧ Identify and prioritise erosion protection, seawall renewal/upgrade improvement works ✧ Identify and prioritise weed management, revegetation and habitat improvement works ✦ Complete revegetation works ✦ Restrict access through existing sand dunes in Cook Park ✦ Implement Coastal Erosion Projects: ✧ **Grant 1:** Ramsgate Baths – Beach Nourishment Project ✧ **Grant 2:** Lady Robinsons Beach – Investigation and Design Study
Waterway/ estuary and wetland restoration	✦ Develop Green Grid master plans for the priority Green Grid corridors and key sites named and mapped above, identifying goals for each waterway/wetland and strategies to improve water quality, bed and bank stability, ecosystem health and biodiversity, public amenity and recreation ✦ Identify and prioritise water quality improvement projects in Bayside's catchments, including SQIDs, constructed wetlands and bioretention systems ✦ Identify locations for and undertake targeted rehabilitation, creation and enhancement of estuarine wetland communities (saltmarsh, mangrove, seagrass) and adjacent riparian vegetation. Consider impacts of sea level rise – identify areas of estuarine vegetation where there is the potential for retreat ✦ Undertake a condition assessment of waterways, identifying areas of erosion and associated risks (Bardwell Creek is a priority) ✦ Complete waterway and wetland restoration works, prioritising works in the Georges River Coastal Zone Management Plan (Scarborough Park ponds, Bado Berong Creek (Scott Park), Goomun Creek), and actions to be identified in the proposed Cooks River Coastal Management Program

ACTION TYPES	SPECIFIC ACTIONS
Waterway/ estuary and wetland restoration	✦ Collaborate with Sydney Water on their Muddy Creek naturalisation project and extend the works upstream to Bay Street ✦ Identify waterway/wetland improvement opportunities associated with F6 works and work with Transport NSW for these to be enabled as part of the F6 project ✦ Construction of offline water quality improvement in Coolibah Reserve ✦ Identify and make priority list of Stormwater Quality Improvement Device (SQID) projects in LGA ✦ Develop and implement a Sir Joseph Banks wetland water quality project ✦ Advocate for wetland/waterways improvements as part of State Significant Development and State Significant Infrastructure proposals
Catchment management – new development	✦ Ensure stormwater technical specifications and requirements in revised LEP and DCP are consistent, best practice and based on the Botany Bay and Catchment Water Quality Improvement Plan or adopted best practice specifications ✦ Update planning controls to best practice for climate change ✦ Review relevant previous development applications and audit existing private stormwater quality treatment systems to identify issues and opportunities for improvement ✦ Develop guidance material to provide to developers including how to reduce water usage ✦ Increase enforcement of best practice sediment and erosion control measures on building sites
Catchment management – Council sites	✦ As part of the proposed Environmentally Sustainable Development (ESD) policy (refer to Goal 2), ensure new or renewed local council infrastructure (i.e. roads, drainage, car parks, buildings, footpaths, bike paths, etc.), parks and open space or natural area restoration projects are designed from a WSUD perspective and meet the stormwater pollutant load reduction targets ✦ Include WSUD objectives and targets in relevant design briefs for Council public domain ✦ Ensure best practice sediment and erosion controls are in place for all public domain construction sites ✦ Review and optimise Council street sweeping schedules/routes to ensure protection of waterways from sediments and nutrients are maximised ✦ Integrate water play in open space and water influenced landscaping into Bayside's urban design
Monitoring	✦ Investigate options to undertake simple, cost-effective waterway health monitoring that could be used as an indicator and measure of improvement as projects are implemented ✦ Monitor key aquatic and water-dependent species including migratory water birds – consider use of citizen science in this area (refer also to Goal 1)

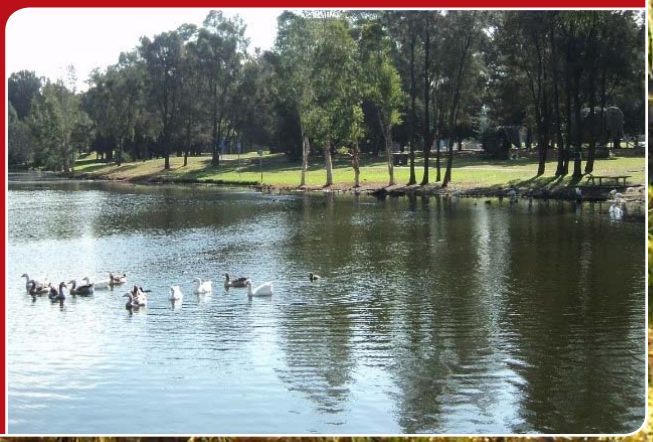
MEASURING PROGRESS

Proposed indicators and targets for this goal.

Implementation and/or advocacy of major improvement projects in at least five of the following key sites by 2030:

- Sir Joseph Banks Park, Bayside coastal foreshore, Rockdale wetlands corridor, Springvale Drain, Bicentennial Park, Botany Wetlands, Scarborough Ponds, Georges River, Cooks River, Bardwell Creek.
- Establishment of partnerships with major land owners (Sydney Airport Corporation and Sydney Water) for improvement of waterways and foreshore and non-Council-owned assets.

Figure 9: Sir Joseph Banks Reserve



THEME 5
GROUNDWATER

GOAL 5: BAYSIDE COUNCIL TO MINIMISE IMPACT ON GROUNDWATER RESOURCES, INCLUDING THE BOTANY SANDS AQUIFER WITHIN THE LGA, AND ADVOCATE FOR ITS PROTECTION

A large part of the Bayside LGA is underlain by the Botany Sands aquifer, which is a significant aquifer extending from Botany Bay to the north, as far as Alexandria and Centennial Park.

The Botany Sands aquifer is a significant water resource for Council, particularly in the eastern part of Bayside. However the Botany Sands aquifer, as well as other groundwater in the LGA, is severely impacted by contamination. There are restrictions on groundwater use in the Botany Sands Aquifer, and active remediation efforts are underway at key sites, however some of Bayside's waterways and water bodies remain chronically affected by poor groundwater quality, both in the Botany Sands area and elsewhere.

Council will therefore aim to implement management control actions to minimise risk to the groundwater system in the LGA, through both Council operations and developments within the area.

COUNCIL'S ROLE

Council extracts groundwater from licenced bores, regulated by the NSW Department of Primary Industries' Office of Water (DPI Water). An estimated 290ML per year from bores on the eastern side of the Bayside LGA are used for irrigation of parks and open space. Most of the main sporting fields and streetscape plantings on the eastern side of the Bayside LGA are irrigated using bore water main sporting fields and streetscape plantings on the east side of the LGA are irrigated using bore water.

The quality of groundwater and drawdown effect of Council's water use is monitored and controlled by DPI Water. Council relies on State Government to provide direction on suitability of use and the total allocation.

Through its role in development approvals, Council is involved in managing the impacts of development on groundwater. When groundwater is intercepted by the development (e.g. for basement construction) the development needs to be assessed for potential impacts on the aquifer. These developments are referred to DPI Water for assessment of groundwater issues.

As a groundwater user and manager of waterways within the LGA, Bayside Council has an interest in improving the management of the Botany Sands Aquifer. However Council lacks statutory authority or a clearly defined role in groundwater management.

ACHIEVEMENTS TO DATE

Groundwater data is located in development applications, within geotechnical reports and detailed site assessments, which identify the locations and quality of groundwater and soils.

Bayside has planning controls to minimise the impacts of groundwater on development.

Health risk assessments for groundwater use have been completed by former Botany Council for some parks.

PROPOSED ACTIONS

Council can minimise impacts on groundwater by:

- Building organisational knowledge of the local groundwater systems.
- Managing the impacts of development.

Beyond this, Council will also advocate for the protection of the Botany Sands Aquifer, which requires the collaboration of multiple stakeholders.

Council's top three priority actions are:

1. Review available groundwater information to assess suitability of groundwater for irrigation of Council's parks.
2. Audit all of Council's existing groundwater licences and groundwater assets and develop a program to get them fully operational within five years of the audit.
3. Collate reports with groundwater data from information associated with development applications.

Other actions are listed below.

MEASURING PROGRESS

Proposed indicators and targets for this goal are:

- Increased knowledge base relating to groundwater resources and groundwater management within Council.
- Established partnerships with key stakeholders for advocacy, protection and remediation of groundwater resources.

Table 8: Action plan to minimise impact on groundwater and advocate for groundwater protection

ACTION TYPES	SPECIFIC ACTIONS
Knowledge Building	✦ Update groundwater databases held by Council, such as data from Council's bores, groundwater reports associated with development applications and any other available sources, to assist in planning controls and Council projects. ✦ Incorporate groundwater information from studies (including numerous studies undertaken by UNSW Water Research Laboratory) and data, relevant to Bayside. This may include information on: ✧ Groundwater recharge zones, flow patterns and contamination movement within the LGA ✧ Any known impact of contaminated groundwater on water quality in waterways and wetlands ✧ Suitability for irrigation of Council's parks. ✦ Audit all of Council's existing groundwater licences and groundwater assets and develop a program to get them fully operational within five years of the audit
Management	✦ Map groundwater recharge zones and implement measures to facilitate and encourage groundwater recharge in the LGA ✦ Develop planning controls to encourage groundwater recharge. These should be linked with WSUD controls ✦ Review groundwater clauses in LEP and DCP to ensure they provide the best possible outcomes for the aquifer, and that they protect environmental and community health ✦ When writing other Council technical guidelines and policies, consider groundwater where applicable. Consider recharge opportunities, contamination risks, structures below ground and dewatering requirements ✦ Identify potential groundwater interception and/or remediation options which would improve water quality in waterways and wetlands, e.g. leachate prevention ✦ Enhance compliance of groundwater management (testing and treatment) as a part of dewatering activities in developments
Leadership and Advocacy	✦ Engage with relevant stakeholders in the management of groundwater contamination (e.g. Orica, Sydney Airport Corporation, Port Authority of NSW, NSW Environmental Protection Authority). ✦ Engage with relevant stakeholders including state government, neighbouring councils, and major landholders, in the sustainable management of the Botany Sands Aquifer ✦ Raise public interest in the protection and restoration of the aquifer, e.g. via Council's media channels and events ✦ Through the Coastal Management Program, advocate for groundwater to have a higher status in environmental planning and protection frameworks and activities

THEME 6
WATER USE

GOAL 6: NO NET INCREASE IN COUNCIL OR TOTAL LGA WATER USE IN 2030, COMPARED TO 2016 BASELINE LEVELS

Currently, Council uses approximately 160 ML of mains water per year (based on complete financial years 2013/2014 – 2016/2017).

Across the LGA as a whole, water use needs to be quantified.

There are upwards pressures on water use, both on Council's water use and in the LGA as a whole:

- Increasing development.
- Increasing pressure on open space.
- Demand for higher level of service at sports fields and public amenities.

Therefore meeting this goal is likely to require a significant effort to counteract these pressures. To meet the goal, water efficiency measures and alternative water supplies will both need to be vigorously pursued.

COUNCIL'S ROLE

Council has 343 water accounts with Sydney Water - water is used at almost every Council facility. Larger parks have irrigation systems, bubblers and toilet blocks. Council and community buildings use water in bathrooms, kitchens and landscape irrigation.

Council activities that impact on water use include facility upgrades, creation of new facilities, and irrigation practices. In planting designs, the use of low water consumption species is promoted wherever possible. WSUD methods are integrated where possible and feasible.

Council uses Planet Footprint to track cost and consumption data council facilities, and this data is reported in the quarterly water and energy reports submitted to the Council Executive. Cost is only monitored for reporting purposes.

Across the LGA, Council's role is indirect. Reducing its own water use sets a good example, and beyond this, Council can influence water use in the LGA as a whole via:

- Development controls.
- Targeted programs assisting different types of end users to reduce their water demands.
- Community education/awareness campaigns.

Council's efforts in this area would be strengthened by a partnership with Sydney Water, who also run water efficiency programs and campaigns.

ACHIEVEMENTS TO DATE

- **Water Use Monitoring and Review**
  Council currently tracks drinking water use at all of its sites, via Planet Footprint. This data is reported in quarterly reports submitted to the council Executive. All of Council's water meters are also mapped in GIS.

- **Water Efficiency**
  Regular applications of "Hydretain" (a proprietary soil amendment designed to attract ambient water molecules into the soil matrix, thereby reducing the need for irrigation) at some parks is expected to result in potential savings of up to 50% water usage due to increased efficacy of irrigation practices along with the tangible benefit of improved health of vegetation and increased stress tolerance.

  To reduce water consumption and utilise alternate water sources, Council has installed rainwater tanks at a number of locations.

PROPOSED ACTIONS

To manage Council's water use, the following strategies are proposed:

- Utilise Resilient Sydney Platform to enhance community engagement.
- Monitoring and review of water use to identify opportunities to reduce demands.
- Actions to improve water efficiency.
- Investigation of alternative water supply options.

Across the LGA as a whole, the proposed actions include policy and program measures to support the Bayside community to manage water use.

Council's top three priority actions are:

1. Develop benchmarks and compare existing water use to relevant benchmarks for similar sites/facilities.
2. Upgrade Council facilities with water efficient infrastructure.
3. Work with council staff to identify potential options for supplementing water supplies with alternative sources at Council's top 25 water use sites. Include industrial sites that can be used for rainwater harvesting and consider wastewater recycling in conjunction with Sydney Water.

Other actions are listed below.

MEASURING PROGRESS

Proposed indicators and targets for this goal are:

- No change in Council's total water consumption from mains supply compared to a 2018 baseline.
- No change in the total LGA-wide water consumption from mains supply compared to a 2018 baseline.
- Community satisfaction survey shows increased awareness of the need to reduce water use.

Table 9: Action plan to manage water use

ACTION TYPES	SPECIFIC ACTIONS
Water use monitoring and review – Council sites	✦ Undertake a review of Council's water use to identify opportunities for improvement. Study should include: ✧ Developing benchmarks and comparing existing water use to relevant benchmarks for similar sites/facilities ✧ Discussing water use with operations and maintenance staff, to identify known issues affecting water use ✦ Install real time meters at Council's top 10 water use sites
Water efficiency – Council sites	✦ Target sites with higher than expected water use for a water use audit, including detailed monitoring, leak detection and system testing ✦ Review irrigation practices at sports fields and identify opportunities for efficiency improvement ✦ Identify and support water champions within Council operations and parks staff ✦ Include KPI's in relevant job descriptions with water management responsibilities ✦ Integrate water efficiency measures and potentially rainwater tanks into facility upgrades (e.g. the Botany Aquatic Centre, Bayside PCYC upgrade, Cahill Park café. ✦ Smart irrigation implementation at all new fields and those being transferred to new irrigation systems
Alternative water supplies for Council sites	✦ Work with council staff to identify potential options for supplementing water supplies with alternative sources at Council's top 25 water use sites. This will identify: ✧ Existing and potential future water demands ✧ End uses that could potentially be supplied with non-potable water ✧ Potential sources including rainwater (including from adjacent sites, e.g. roof runoff from industrial sites) and stormwater as well as groundwater extraction (where this is not already in place) and wastewater recycling. ✧ Local (single park) projects and potential regional schemes, connected to multiple parks in the same area ✧ Review other existing rainwater tank installations and where they are not working, understand what went wrong so that Council can avoid the same issues in the future ✧ Upgrade Council facilities with water efficient infrastructure ✧ Advocate to Sydney Water to explore opportunities for sewer mining in Bayside LGA

ACTION TYPES	SPECIFIC ACTIONS
LGA water use	✦ Gather data on LGA water use over recent years. Plot potential future water use based on expected population and land use change ✦ Planned Precincts to have improved water efficiency, based on learnings of other developments such as the Sydenham-Bankstown urban growth corridor ✦ Implement stricter DCP controls for water efficiency/alternative supplies, e.g. targeting "better than BASIX" in large developments or major redevelopment precincts ✦ Advocate for a state-wide increase in the BASIX water target and for a wider range of development types to be included in the targets ✦ Support Sydney Water's WaterFix program for residential strata buildings (by sharing data and identifying and recruiting potential candidates to the program) ✦ Develop a program targeting businesses (focus on large water users but potentially include broader outreach to small businesses) to help them identify and implement water saving measures ✦ Develop a rainwater tank program, to support residents to install tanks and keep them operating ✦ Develop a demand management behaviour change and advocacy program ✦ Liaise with water-starved councils on water saving initiatives

Figure 9: Booralee Park, Botany

Bayside Council
Serving Our Community

Bayside Customer Service Centres
Rockdale Library, 444-446 Princes Highway, Rockdale
Westfield Eastgardens, 152 Bunnerong Road, Eastgardens
Monday to Friday 8:30am – 4:30pm, Saturday 9am – 1pm

Phone **1300 581 299** | **9562 1666**
Email **council@bayside.nsw.gov.au**
Web **www.bayside.nsw.gov.au**