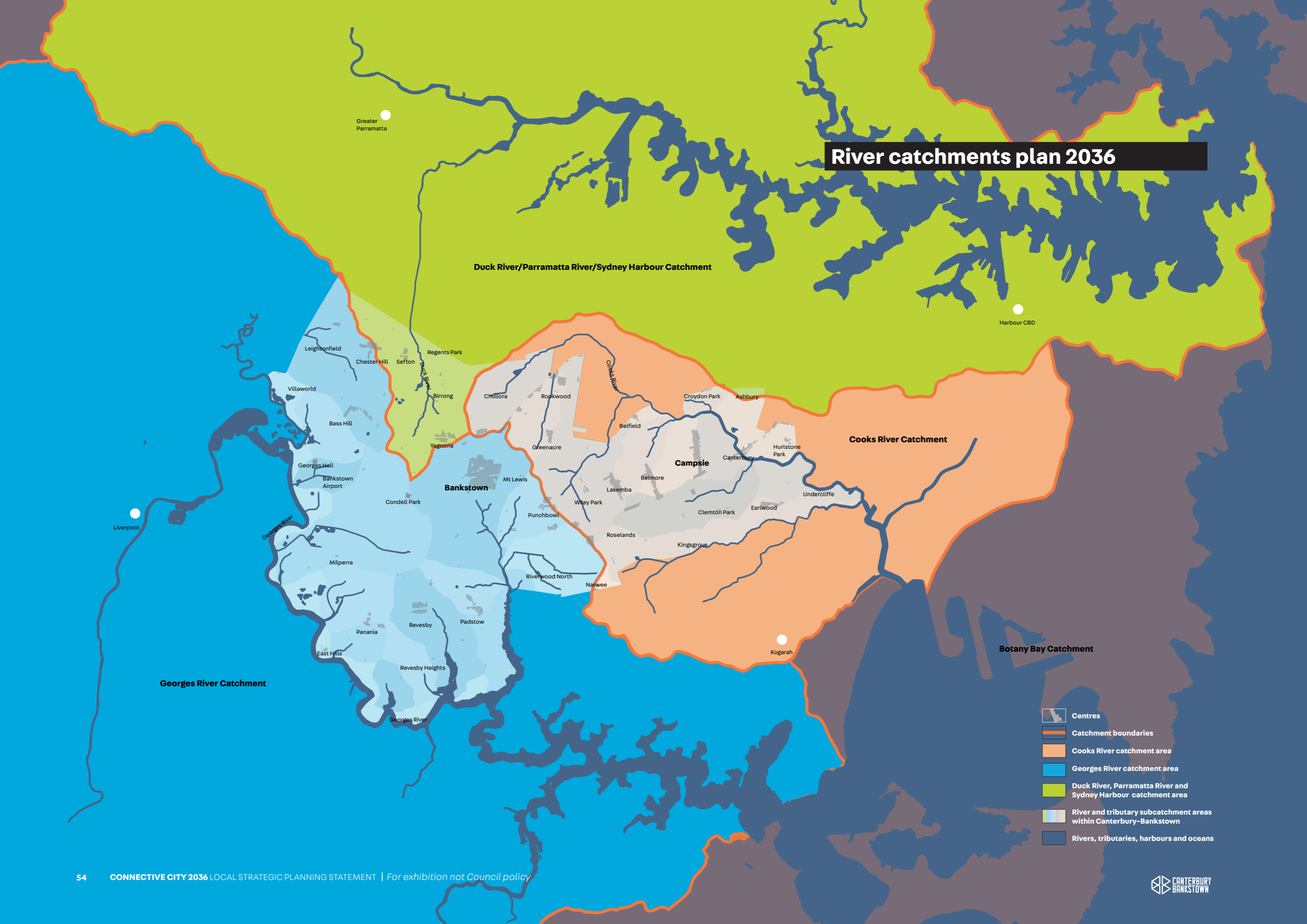


River catchments plan 2036



-  Centres
-  Catchment boundaries
-  Cooks River catchment area
-  Georges River catchment area
-  Duck River, Parramatta River and Sydney Harbour catchment area
-  River and tributary subcatchment areas within Canterbury-Bankstown
-  Rivers, tributaries, harbours and oceans

Evolution 4

Blue Web

At the heart of our vision is a city of three clean, healthy and living river systems which flow through the catchment and evoke a strong sense and spirit of place.



The Georges River has vast areas along its river banks of original vegetation. This will continue to be highly valued and protected.



Sydney Park is a beautiful natural park providing something for everyone within an ecological setting, and sets a quality precedent for interaction with water in a parkland setting.



The Cooks River mangroves restore water quality and create marine animal habitat.

Canterbury-Bankstown's suburban, urban and natural areas are celebrated as part of three waterway systems: the Cooks, Georges and Duck rivers.

Water in the City

In an urban landscape like Canterbury-Bankstown, water is critical to quality of life and making spaces and places better to live in. Without adequate water, vegetation and trees cannot grow, street and parks are too hot in summer and native animals cannot thrive.

As the City grows, all water must be used wisely as it is a valuable resource. Water can be utilised to celebrate open spaces and cultural places while making them more functional and attractive.

The City is bounded by the Georges, Cooks and Duck Rivers. This includes a third of the Cooks River waterway, the headwaters of the Duck River and significant tributaries and areas of the Georges River.

The impact of an urban environment on the health of these river systems is significant. These rivers connect to a vast network of creeks, wetlands, tributaries and streams. The catchment areas for these river systems cover the entire 110km² of the City area. In this regard, all activities that occur within the City have an impact on any one of the waterways. Like other natural features they form part of cultural identity and community character and must be integrated into the City's planning and design.

Determining factors

When the Georges River area was settled, many natural river edges and parklands were retained, making it a coveted area in Greater Sydney to live and visit. However, areas around the Duck and Cooks Rivers were farmed, industrialised and urbanised more heavily. The waterways suffered significant damage. Along the river and creeks clearing, channelling and dredging was undertaken to:

- Clean unusable river edges, wetlands, billabongs, creeks and streams; and
- Reduce flooding by encouraging fast flowing and unobstructed water flows from suburban areas to the ocean.

The gradual increase in hard surfaces has led to abnormal quantities of water rapidly reaching the rivers after rain, bringing pollutants and contributing to poor water quality in rivers, in the receiving waters of Sydney Harbour and Botany Bay, and, ultimately, in the ocean.

The natural environment associated with waterways has also been impacted with clearing of bushland, saltmarsh and mangroves that once offered habitat and water cleansing processes. Fragments of natural vegetation remain and while some wildlife has adapted, much has been lost.

Urban waterways can be restored as ecologically functional and liveable places. This requires multiple funding sources, partnerships with key land managers and a whole-of-city approach to value water in the landscape. Integrating waterwise practices in the design of buildings, parks and streets can be addressed in part through planning rules under the New Planning Framework.

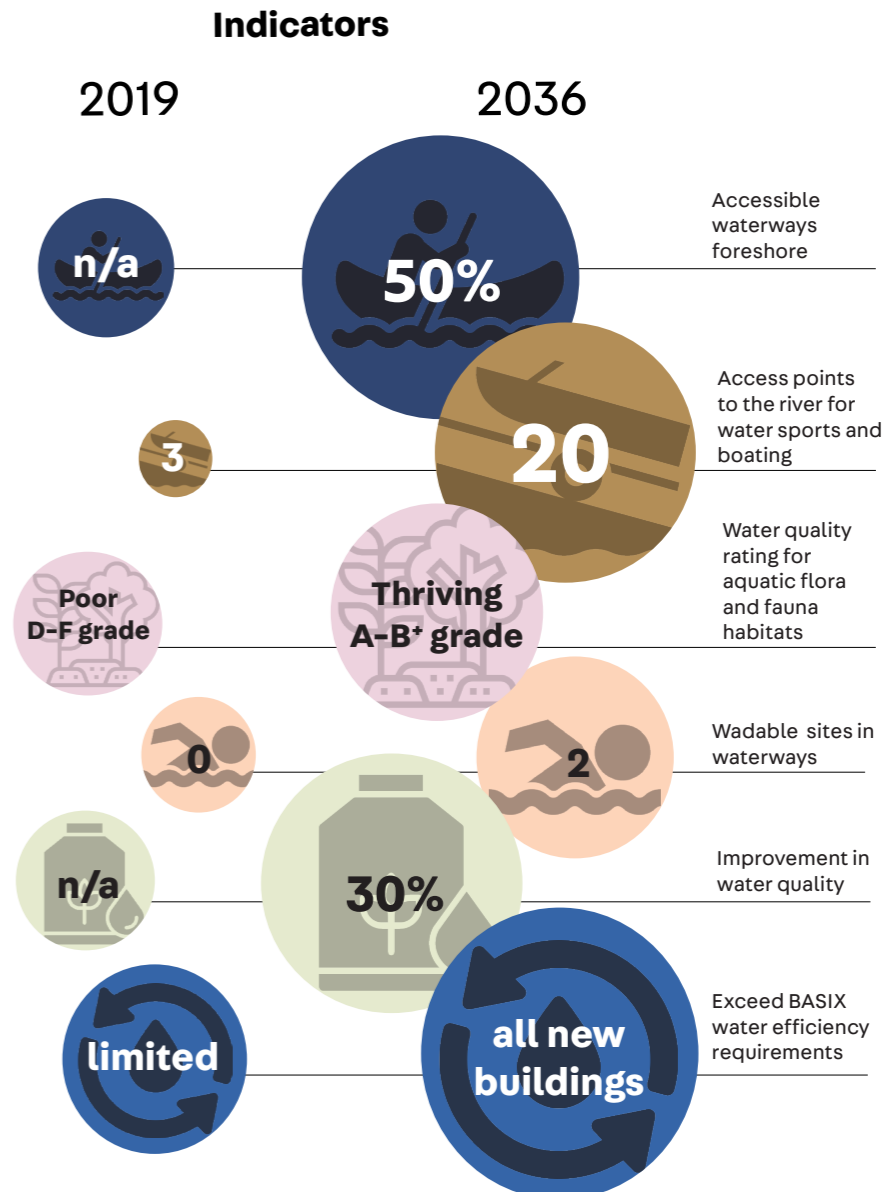
Demonstrating the need for a new water management approach, then establishing funding sources, are major challenges.

A water management revolution

Connective City 2036 heralds a new era for water management in the City and is intended to establish an ecological basis for open space and waterways.

By 2036, the City's streets and buildings will no longer back onto rivers and creeks but rather turn to face them, to celebrate them as a primary part of the City's identity and quality. The water cycle and water management infrastructure will be a visible and valued part of the urban landscape.

The health of waterways will be one of the essential considerations in guiding planning and development. Planning and design will consider the river as a living system rather than a waste water channel. Impacts on water quality, pollutions, ecology or flooding in local areas and receiving waters will be considered across all land within river catchment areas.



Icon made by Freepik, Scott de Jonge from www.flaticon.com

Connective City 2036 heralds a new era for water management in the City, which recognises and seeks to rectify past mistakes, and establishes a sound ecological basis for future management of open space and waterways.

Connective City 2036 aims for Canterbury-Bankstown to be a water-sensitive city with clean and healthy waterways that contribute to improving the receiving waters of Kamay/Botany Bay and Sydney Harbour. It takes a whole-of-catchment approach to ensuring clean, healthy and living waterways. The built up urban areas from the catchment to the rivers will provide opportunities to treat, slow, store or harvest water and reduce pollutants.

Community participation will be essential in the planning, design and creation of waterways and places. Drawing the community back to the waterways will reconnect residents to the river systems, and create a sense of ownership, connection and value. We will increase awareness of the location of and routes to waterways by greening of streets and parks that lead to waterways or that are located on tributaries and creeks.

Reconstructed wetlands and riparian areas

We have already worked with Sydney Water to balance flooding, urban stormwater, recreational space and ecology in places such as Cup and Saucer Creek, Earlwood, Gough Whitlam Park, Undercliffe and Yana Badu Wetlands, Chullora. Council has also rehabilitated and transformed Lake Gillawarna, Georges Hall within Mirambeena Regional Park.

While significant, these projects are largely located in the Cooks River catchment and only cover a small proportion of all the City's waterway systems. They do, however, demonstrate the immense transformational nature of greening water infrastructure to benefit ecological restoration, increase community pride and the liveability of places, reduce flooding, improve water quality and return endemic plant and animal species in abundance.

Public spaces along waterways will be multifunctional community places. The Georges, Cooks and Duck Rivers offer significant potential, with existing public open space along their banks linking up to form a fairly continuous green corridor with opportunities for new wetlands, revegetation and recreational areas.

These areas of open space are the primary opportunities to improve water management, ecological health, and reduce flooding through revegetation, reconstruction and interpretive improvements such as bush tracks and educational events.

A healthy ecosystem is an essential element of a liveable place. The presence of high-quality fragments of native landscapes in the riparian zones of river catchments provides opportunities to rebuild a functional network of ecological communities. Riparian zones, the lands adjoining bodies of water, will be considered as part of our catchment-based and land management approach. They will provide positive opportunities for people in urban areas to connect with nature and contribute to the aesthetics of the urban environment.

Community connections, waterways and natural areas

Ongoing engagement and greater recognition of the river systems will create a sense of ownership and encourage more people to support the care and cleanliness of rivers.

The Cooks, Georges and Duck Rivers are living historical artefacts to which many people over generations have formed a relationship, be it one of survival or aesthetics.

We will continue to recognise the Indigenous and ongoing human connection to water and work with the community to create and maintain connections. Where nature and urban areas have been disconnected, a holistic approach will allow for sustainable relationships between humans and the environment. Where rivers

have been concreted, they will be restored as dynamic and autonomous natural spaces.

Connecting with the community will be key, involving catchment management groups and building awareness among the general public.

Water cycle and water management infrastructure is visible in the urban landscape. Connections will focus on physical links between water, pathways and destinations. The traditional 'rain to drain' pathway will be modernised to repair and rehabilitate river flows and open channels to connect to new and existing public open spaces.

Our commitment to increasing public access to rivers and tributaries includes naturalising the banks and making them accessible to people of all abilities. We will employ Water Sensitive Urban Design, or WSUD, to highlight natural attributes of the water and expand naturalised banks and foreshores into the urban landscape.

As rivers and waterways become public spaces and part of the natural environment, they will contribute to urban sustainability and public health and help to future-proof the City against heat stress and heatwave events, providing cooler, shadier areas.

Grey to green infrastructure

The combined catchment areas of the Cooks, Georges and Ducks Rivers receive around double the amount of water in rainfall as the amount used to supply the whole of Sydney with water.

However, this water is not used as it is currently considered stormwater.

Stormwater engineering requires catchment areas to be designed to channel water out of urban areas, into streams and rivers and out to the sea as quickly as possible.

This results in hard surfaces, and concrete stormwater infrastructure channelling water rapidly away from urban areas and through to our waterways and eventually the ocean.

The results of this are:

- A significant waste of water that could be used in urban, suburban and natural areas;
- Scouring of natural waterways and rivers;
- Lack of ecological areas around the edges of rivers and waterways;
- Increase in flood risks and dangerous fast moving water; and
- Significant levels of urban pollutants throughout waterways, rivers and the ocean.

Much of this water could be harvested and used in the landscape and within the built environment for non-drinking purposes.

Our approach will represent a major shift, from 'rain to drain' to 'rain to grounds'. All water sources will be valued and we will work with water service providers such as Sydney Water to ensure that an integrated water servicing approach maximises community benefit.

Making rivers swimmable again requires efforts to reduce and delay stormwater runoff towards river systems through appropriate water sensitive urban design, catchment-based plans and managing water from source to sea.

Incorporating water in the City

Water sensitive urban design will be incorporated into suburban, high density and industrial developments to treat water before it reaches the rivers. This will:

- Provide water for lush, green landscapes;
- Improve biodiversity;
- Improve property landscape amenity
- Reduce the effects of urban heat; and
- Facilitate recreation.



Wolli Creek is the only National Park in the eastern part of the City.

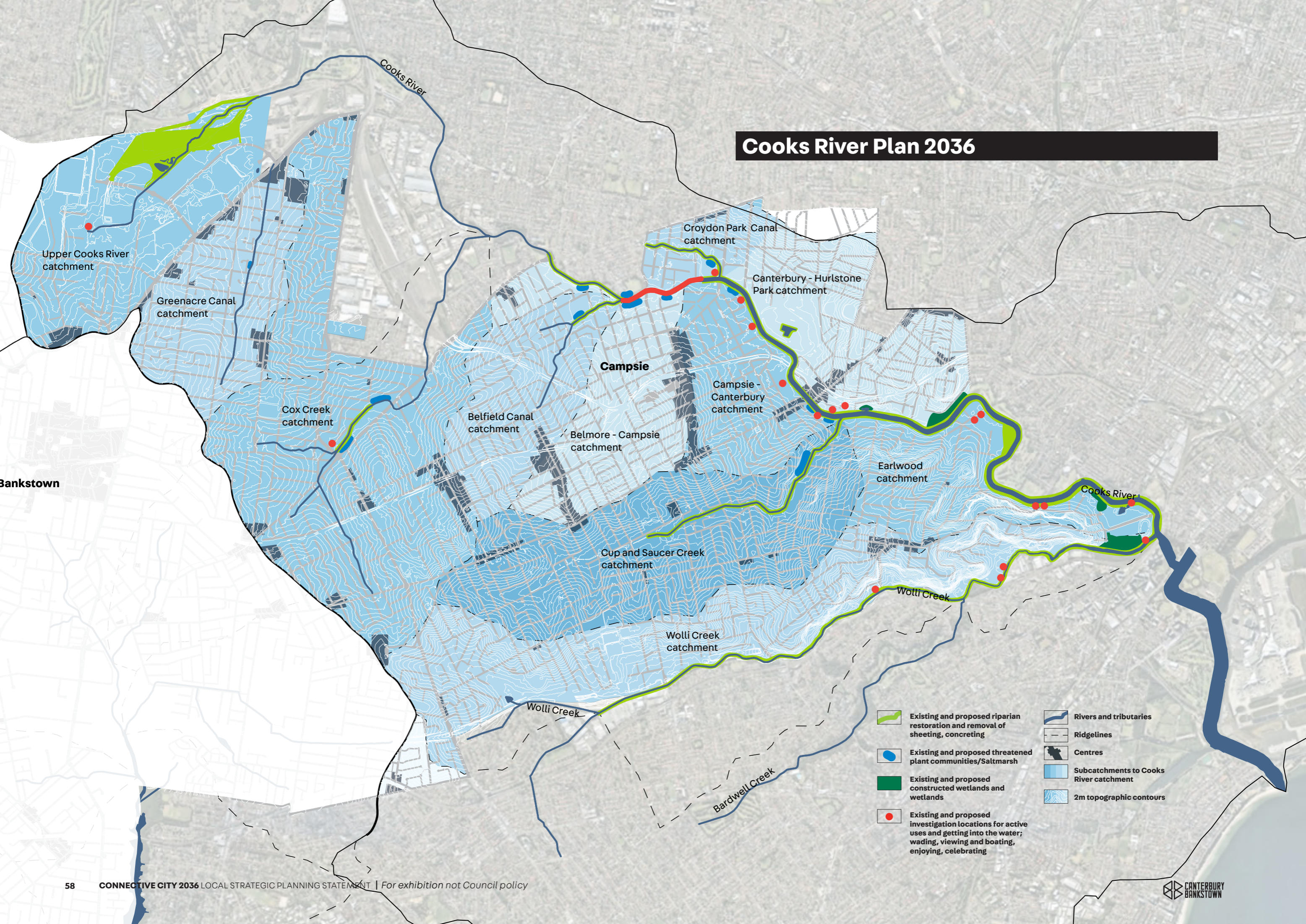


Flowering trees support a wide variety of insects and birds.



The Landing Lights is a spectacular wetland restoration project in Banksia, Sydney. This is now teeming with birds and other species and is a wonderful place to visit to enjoy and reconnect with the original ecology of the area.

Cooks River Plan 2036



- Existing and proposed riparian restoration and removal of sheeting, concreting
- Existing and proposed threatened plant communities/Saltmarsh
- Existing and proposed constructed wetlands and wetlands
- Existing and proposed investigation locations for active uses and getting into the water; wading, viewing and boating, enjoying, celebrating
- Rivers and tributaries
- Ridgelines
- Centres
- Subcatchments to Cooks River catchment
- 2m topographic contours

We anticipate that by 2036 Cooks River will be a treasured and healthy river valley that enriches the heart of Sydney.

The Cooks River is Sydney's inner city river system connecting the Eastern Harbour City to the South District and the Central City District through a network of waterways from Chullora to Botany Bay. With over half a million people living in the catchment it is a significant urban waterway that provides green places for everyone. Around 12 per cent of the catchment consists of waterways and parklands.

The Cooks River system comprises the waterway itself; open space directly adjacent to the waterway; and urban areas comprising industrial lands and high, medium and low density neighbourhoods. Several organisations are responsible for its management. It is a complex catchment environment. Actions on both land and water need to prioritise the consideration of impacts to the Cooks River system and, by 2036, the catchment should be working across the system to provide clean water into rivers.

Approximately 33 per cent of the Cooks River catchment flows through the City and this includes lands at the very top of the catchment at Chullora and Potts Hill, and freshwater streams such as Greenacre Creek, Cup and Saucer Creek and Coxs Creek.

Sydney Water has the care and control of around 80 per cent of waterway-related assets in the catchment while the remainder is shared among local councils and the NSW Government, requiring all organisations and levels of government to work closely together.

The City's extensive parklands along the main river channel and tributaries provide green biodiverse places like Tasker Park at Canterbury, Parry Park at Lakemba, Croydon Park, and Federation Reserve at Campsie. These are linked through the Green Grid, a network of public and private green places and connecting corridors across the City for biodiversity, cycling, walking, and passive and active recreation. The Green Web, across public and private lands, is essential to the liveability.

A whole-of-catchment approach

The complex catchment environment requires collective action and collaboration with neighbouring councils, Sydney Water and major landowners, so that everyone can achieve the community's vision for a healthy river valley.

We will work with the Cooks River Alliance to coordinate the delivery of the Cooks River Catchment Coastal Management Plan (CMP).

Through extensive consultation, the CMP will be a long-term strategy for the coordinated management of the waterway for 20 years, 50 years and beyond. It details how, when and by whom management actions are to be implemented, and the costs and proposed cost-sharing arrangements. The Alliance expects that Stage 4 – finalisation of the CMP – will be completed by December 2021.

A biodiverse river valley supporting a clean river

Central to the catchment is a river that is ecologically healthy, used by the community and rich in flora and fauna. The River itself will support an abundance of plants and aquatic animals.

The wetlands along the River and tributaries are important filters for water quality as well as for habitat. Within Council's lands are two offline constructed wetlands – Yana Badu at Chullora and Cup and Saucer Creek. Wetlands can also be areas for passive recreation and constructed wetlands can be a feature of the River's tributaries. Stormwater drains that lead to rivers can go from concrete drainage pipes back to creeks and rivulets and water slowed and filtered through rain gardens and other natural filter processes.

Mangroves and saltmarshes are also important habitats and water filters. Mangroves currently reach to Canterbury and salt marsh, once common, only occurs in a constructed area at Gough Whitlam Park. The River's edge and adjoining space can be transformed to make way for saltmarsh and mangrove.



Our river systems are home to a wide range of flora and fauna.



The green grid is a network of green places and connecting corridors for biodiversity, walking, and cycling.

The banks of the Cooks River and its tributaries were concreted during the 1930s and 1940s. Although small fragments of regrown vegetation remain, restoration of the entire Cooks River is a primary city-shaping project for *Connective City 2036*.



Providing opportunities for people to interact with water in various ways - from wading and kayaking to admiring the view - is a key outcome of this plan.



The fragments of remaining bushland include the endangered ecological communities of Cooks River Clay Plain Scrub Forest and Turpentine-Ironbark Forest. These occur from the top of the River at Chullora through to Campsie and Wolli Creek. In 2036 these remnant fragments will be contiguous with plant communities across public and private lands through the implementation of the Green Grid and other controls.

The Cooks River valley animals are diverse and live and pass through urban habitats as well as along the waterway's more natural area. These include small bush birds and many water birds, possums, flying foxes and micro bats, frogs and reptiles. To ensure future generations can also experience wildlife so close to the City, the quality and quantity of habitat needs to be increased.

Aboriginal ways of thinking are valued from Yana Badu to Kamay

The River and its creeks can provide a place for ongoing meaningful, mutually beneficial and sustainable relationships with Aboriginal people. These relationships contribute to reconciliation activities, Aboriginal leadership and other opportunities for Aboriginal people. The health of the River is intrinsic to Aboriginal reconciliation and understanding. By 2036, the River and its associated geographic locations would be recognised by Aboriginal names and the cultural significance of the River system well understood.

Cooperative approaches guide river restoration

The community's desire for a healthy River valley requires long-term resilient partnerships that create collaboration across government, industry and the community. These partnerships would support innovative funding models that activate the practical solutions that can restore the Cooks River system and provide the community with a liveable and healthy River valley.

For Yeramba Lagoon, the City will look to the State government to improve the health of the lagoon and bring activity to it.

A parallel approach for the Georges and Duck Rivers

With 61 per cent of the City flowing into the Georges River, and a significant number of parks and reserves dotted along the Georges River and Salt Pan Creek foreshore, the Georges River system plays a vital role in the lives of residents, workers and visitors. The health of the River is directly linked to the liveability of the City and a sustained, coordinated approach is needed. However, with a large proportion of the City flowing into the Georges River, the pressures on the river system are also great.

We will work with the Georges Riverkeeper and key partners to implement a catchment-wide program to better understand the scale and types of pressures, as well as to implement a plan to improve and sustain a healthier Georges River. This will improve open space linkages, visitor experiences and waterway health.

With a significant network of valuable open space along the creeks and main river channel of the Georges River, these assets need to be protected and sustained in terms of riparian restoration and bank stabilisation.

The Duck River starts at the top of the City and flows north into the Parramatta River through industrial, residential and parkland areas. It is often unacknowledged due to its relatively smaller size and historic lack of access, but it faces many of the same pressures.

We will work with the Parramatta River Catchment Group to improve awareness and celebrate the Duck River, and improve its health and amenity by reducing pollution, increase visitor access and improve community connections to the River.

EVOLUTION 4 - BLUE WEB

	PRIORITY	ACTIONS	CBCITY 2028	SOUTH DISTRICT PLAN	COLLABORATION	RESPONSIBILITY	TIME FRAME
METROPOLITAN	Achieve three healthy, clean and living river systems	Develop and implement whole-of-catchment plans for the Duck, Cooks and Georges River catchments that confirm water quality objectives and integrate coastal management and upper catchment priorities			Sydney Water, DPIE, TfNSW, Catchment Management Groups (Cooks River Alliance, Georges Riverkeeper, Parramatta Catchment Committees), CBC with other catchment Councils	CBC and relevant Catchment Management Group, Sydney Water	
		Develop and implement a sediment removal program from the City's creeks and waterways					
	Return rivers to their natural state and celebrate water within the City	Develop and implement a CBCity Catchment and Waterways Strategic Plan that prioritises key actions across the City			Sydney Water, DPIE, Catchment Management Committees	CBC	
	Connect the community's cultural, social and recreational life to rivers	Establish and support a whole-of-catchment community of interest for the Georges, Cooks and Parramatta River catchments			Other catchment Councils, Georges River environmental education centre.	CBC, Catchment Management Committees	
	Achieve metropolitan connections along the City's river systems and the Green Grid	Develop and implement active transport plans that link sections of the Cooks River, and connect sections of the Georges River with the Cooks and Duck River catchments			TfNSW, neighbouring Councils	CBC	
		Establish an active transport and natural corridor plan for the Sydenham to Bankstown urban renewal corridor that responds to water management at its core			CBC, DPIE, Sydney Metro, Inner West Council	TfNSW	
	Improve water quality when planning urban, suburban and natural places	Establish the Campsie precinct as a pilot initiative to becoming a water sensitive city that integrates best practice sustainable urban water management into place planning			CRC for Water Sensitive Cities, Cooks River Alliance, DPIE	CBC, Sydney Water	
Reframe water infrastructure from grey to green	Establish best practice planning controls for water sensitive urban design as key drivers in the Cooks River and Georges River Catchment Coastal Management Plans			DPIE, Catchment Management Committees, Sydney Water	CBC		
CITY SHAPING	Return rivers to their natural state and celebrate water within the City	Develop a naturalisation creek bank program for the Duck River sub-catchment that defines the waterways as key elements of the Parramatta River catchment			Sydney Water, DPIE, Catchment Management Committees	CBC	
		Undertake a City-wide catchment condition assessment to prioritise rehabilitation priorities			Catchment Management Committees	CBC	
		Develop and implement a Cooks River waterway naturalisation program. Develop and implement a Georges River bank stabilisation and riparian rehabilitation program to enhance the waterway and protect open space.			Catchment Management Committees	CBC, Sydney Water	
	Connect the community's cultural, social and recreational life to rivers	Deliver community and schools education programs that celebrate and teach the importance of living with healthy waterways			Catchment Management Committees	CBC	
	Transform the Cooks River into a healthy ecological system	Restore Yana Badu Wetlands (formerly Chullora wetlands) and improve community access to it. Improve the health of Yeramba Lagoon and bring activity to it.			CBC, major landholders, Cooks River Alliance, Strathfield Council	Sydney Water	
	Improve water quality when planning urban, suburban and natural places	Adopt a water sensitive city approach to precinct planning and urban design that sets sustainable urban water management as a core element			CRC for Water Sensitive Cities, DPIE	CBC	
Introduce best practice water sensitive urban design planning controls for development into Council's planning and strategic documents				Sydney Water, Catchment Management Committees	CBC		

Delivery: By 2021 (0-2 years) By 2021 and 2024 (2-5 years) Beyond 2025 (more than 5 years) South District Plan Directions: Please refer to pages 13-15. CBCity2028 Transformations: Please refer to pages 13-15.