



Ku-ring-gai Council

Water Sensitive City Policy

Version Number 1

Adopted: 9 August 2016

Effective: 10 August 2016



Water Sensitive City Policy

Table of Contents

Controlled Document Information	3
Authorisation Details	3
Related Document Information, Standards & References	3
Version History	5
Policy	6
Purpose	6
Objectives	6
Scope	6
Responsibilities	6
Policy Statement	7
Background	7
Rationale for the transition to a Water Sensitive City	8
Benefits of a Water Sensitive City	9
Implementation program	9
Implementation activities	9
Legislative framework	18
Associated documents	18
Definitions	19
References	20

Controlled Document Information

Authorisation Details

This is a Controlled Document. Before using this document check it is the latest version by referring to Council's Controlled Document Register. Unless otherwise indicated, printed or downloaded versions of this document are uncontrolled.			
Controlled Document Number:	114	TRIM Record No:	2015/055251
Controlled Document Type:	Policy		
Controlled Document Name:	Water Sensitive City Policy		
Version Number:	1		
Department:	Strategy and Environment		
Distribution:	Internal and External		
Review Period: Max < 4 years	Not applicable	Next Review Date:	2019
Document Status:	Approved		
Approval Type:	Adopted by Council		
Version Start Date:	10/08/2016	Version End Date:	2019

Related Document Information, Standards & References

Related Legislation:	<p>Commonwealth</p> <ul style="list-style-type: none"> • <i>Ecological Protection and Biodiversity Conservation Act 1999</i> <p>New South Wales</p> <ul style="list-style-type: none"> • <i>Administration Amendment (Water and Energy) Act 2005</i> • <i>Environmental Planning and Assessment Act 1979</i> • <i>Fisheries Management Act 1994</i> • <i>Local Government Act 1993</i> • <i>Local Land Services Act 2013</i> • <i>Protection of the Environment Administration Act 1993</i> • <i>Sydney Water Act 1994</i> • <i>Threatened Species Conservation Act 1995</i> • <i>Water Management Act 2000</i> • <i>Water Industry Competition Act 2006</i>
Related Policies (Council & Internal)	<ul style="list-style-type: none"> • Biodiversity Policy (2016) • Fauna Management Policy (2016) • Ku-ring-gai Local Environmental Plan (2015) • Ku-ring-gai Local Environmental Plan (Local Centres) (2012) • Ku-ring-gai Development Control Plan (2015) (2016 update pending) • Ku-ring-gai Local Centres Development Control Plan (2013) (2016 update pending) • Ku-ring-gai Council Development Control Plan 47 – Water Management (2005) • Easement Management Policy (2013)

Related Documents - Procedures, Guidelines, Forms, WHS Modules/PCD's, Risk Assessments, Work Method Statements, etc	<ul style="list-style-type: none"> • Climate Change Adaptation Strategy (2016) • Water Sensitive City Strategy (2016) • Corporate Sustainability Action Plan (2015) • Drainage works and maintenance policy and procedures (2013) • Ku-ring-gai Council Drainage Asset Management Plan (2014)
Other References	<ul style="list-style-type: none"> • <i>Australian Guidelines for Water Recycling Stormwater Harvesting and Reuse</i>, National Water Quality Management Strategy. Document No 23 (2009) Natural Resource Management Ministerial Council; Environment Protection and Heritage Council; National Health and Medical Research Council. • <i>Australia's National Strategy for Ecologically Sustainable Development</i> (1992). • <i>Intergovernmental agreement on a national water initiative</i> (2004). • <i>Institutional and Regulatory Models for Integrated Urban Water Cycle Management – Issues and Scoping paper</i> (2007) National Water Initiative. • <i>Managing Urban Stormwater: An Integrated Approach</i> (2007) Sydney Metropolitan Catchment Management Authority and Department of Environment and Climate change (consultation draft, October 2007). • <i>Managing Urban Stormwater: Harvesting and Reuse</i> (2006) Department of Environment and Conservation and Stormwater Trust. • <i>DPI (Office of Water) Controlled Activities On Waterfront Land</i> • <i>The Australian CRC for Water Sensitive Cities</i> (2016) https://watersensitivecities.org.au/

Version History

Version Number	Version Start Date	Version End Date	Author	Details and Comments
1	10/08/2016	(date version ceased to be in effect)	Marnie Kikken Sophia Findlay Suzy Lykos	First version

Policy

Purpose

To adopt and implement the management principles of a Water Sensitive City by responding to the issues of water conservation and water security, flooding risks, degradation of urban waterways and rising temperatures in a way that enhances the liveability of Ku-ring-gai.

This Policy replaces Council's Riparian Policy (2004), Integrated Water Cycle Management Policy (2008) and Interim Water and Recycling and Reuse Policy (2011).

Objectives

The objectives of this Policy are to:

1. Protect, conserve and improve the condition of our waterways and riparian corridors, including native biodiversity
2. Manage the quantity, frequency and quality of stormwater runoff to improve ecological stream health
3. Reduce Council and the community's potable water use by diversifying water sources at different scales in fit-for-purpose applications and increasing water efficiency
4. Deliver programs that support and enable a continued shift in the community to more water sensitive practices
5. Integrate water infrastructure within the urban landscape to enhance the liveability of Ku-ring-gai, including stormwater treatment, flood protection, heat mitigation, ecological health, microclimate and landscape amenity

Scope

This Policy covers those activities over which Ku-ring-gai Council has direct control and/or for which it has approval and regulatory responsibilities. Council will advocate for policies and reforms that affect Council's urban water management program.

Responsibilities

Specific responsibility for the implementation of this Policy lies with the following sections of Council:

- Environment & Sustainability
- Development & Regulation
- Projects Operations
- Strategic Projects
- Engineering Services
- Information Technology (including Land Information)
- Community & Recreation Services
- Procurement & Contracts
- Finance
- Open Space Operations
- Waste Operations
- People & Culture
- Urban Planning & Heritage
- Corporate Communications

Council's Manager Environment and Sustainability has overall responsibility for compliance with this Policy.

Policy Statement

Background

The management of water in Sydney is separated by various legislative and administrative arrangements. Having traditionally focused on the management of stormwater to control flooding, Council’s water management program has evolved over time into the coordinated management of all components of the water cycle, including water consumption, rainwater, stormwater, wastewater and groundwater, to secure a range of benefits for the wider community and our catchments.

Climate change, coupled with Ku-ring-gai’s increasing population and the associated intensification of development and demand for potable water, has increased the demand for potable water and highlighted the value of all forms of water as a resource.

Ku-ring-gai has been at the forefront of urban water management in a local government context. Ku-ring-gai was one of the first councils to incorporate controls for On Site Detention (OSD) into a water management Development Control Plan, to manage flash flooding from increased development and connectivity to the drainage system.

Ku-ring-gai also took up the challenge of the NSW Stormwater Trust from the late 1990s to improve water quality in the state’s rivers, harbours and beaches, by installing Gross Pollutant Traps (GPTs) to reduce the amount of pollutants entering our waterways. Following this, Ku-ring-gai adopted a Riparian Policy in 2004, which guided the management of waterways and riparian areas, including providing development controls for riparian setbacks.

However, the key issue affecting urban streams is altered flow regimes caused by increased hard impervious surfaces and piped systems from development. Waterways and riparian systems in Ku-ring-gai experience increased physical, chemical and biological disturbances. In recent years, the Integrated Water Cycle Management Policy has incorporated water re-use and biofiltration technologies to mitigate the impacts of urbanisation on our natural waterways and to provide fit-for-purpose water applications for sporting field irrigation and toilet flushing.

These developments have seen Ku-ring-gai progress along the urban water management transition framework, from a Drained City towards a Water Cycle City, as depicted in the Figure 1 below.

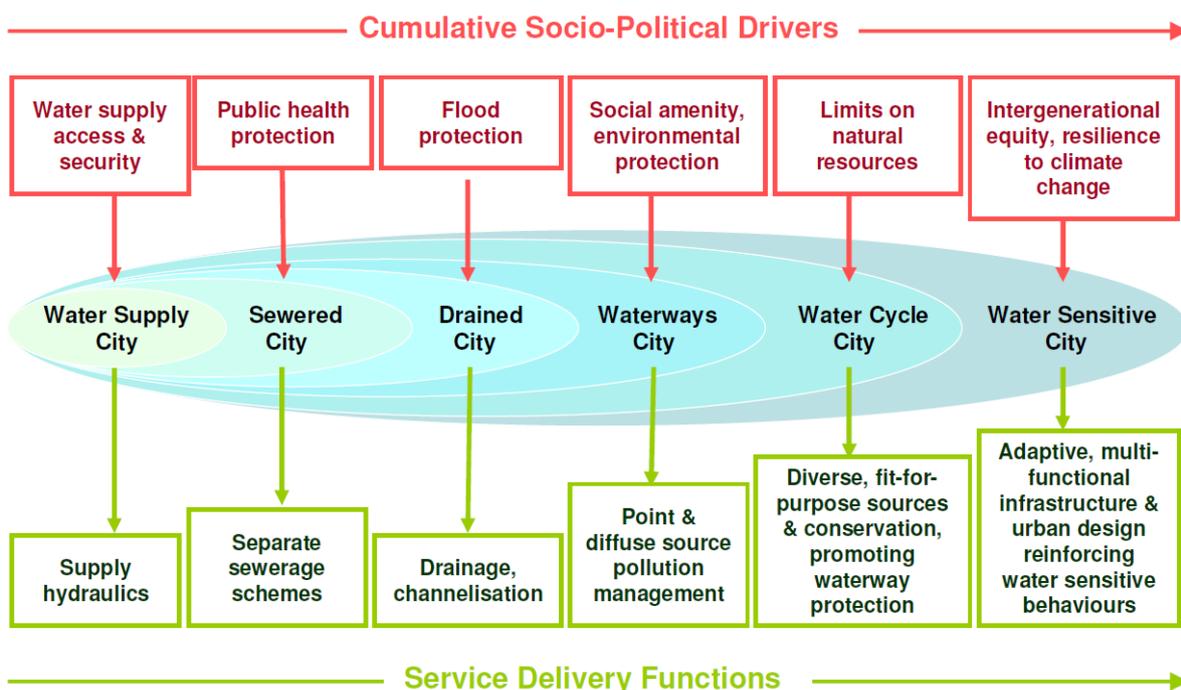


Figure 1: Urban Water Management Transitions Framework (Brown et al. 2009)

This is a Controlled Document. Before using this document check it is the latest version by referring to Council’s Controlled Document Register. Unless otherwise indicated, printed or downloaded versions of this document are uncontrolled.

Rationale for the transition to a Water Sensitive City

The next step to improve water management in Ku-ring-gai is to progress Council's management model further towards a Water Sensitive City (WSC).

First introduced into the Australian urban water sector through the Council of Australian Government's National Water Initiative agreement, the concept of a Water Sensitive City represents a new water management paradigm, providing a tangible vision from which new design principles, management frameworks and technological innovations can be developed as a direction for a sustainable water future.

“Water sensitive cities are resilient, liveable, productive and sustainable. They interact with the urban hydrological cycle in ways that: provide the water security essential for economic prosperity through efficient use of the diversity of water resources available; enhance and protect the health of watercourses and wetlands; mitigate flood risk and damage; and create public spaces that harvest, clean and recycle water. Its strategies and systems for water management contribute to biodiversity, carbon sequestration and reduction of urban heat island effects” (CRC for Water Sensitive Cities, 2016).

A WSC combines physical infrastructure (water sensitive urban design and integrated water cycle management) with social systems (governance and engagement), to create a city in which the connections that people have with their water infrastructure and services enhances their value and quality of life.

A Water Sensitive City is structured around three principles (or pillars) (Wong *et al.* 2013), that collectively enhance urban liveability, sustainability, productivity and resilience:

Pillar 1: Cities as Water Supply Catchments: in which all the available water resources are considered valuable supply sources, including wastewater, rainwater, stormwater and ground water. Infrastructure systems integrate both centralised and decentralised technologies to utilise these resources at different scales in fit-for-purpose applications.

Pillar 2: Cities Providing Ecosystem Services: in which water infrastructure and the urban landscape are designed both functionally and aesthetically. These integrated systems provide multiple benefits, including stormwater treatment, flood protection, heat mitigation, ecological health and landscape amenity.

Pillar 3: Cities Comprising Water Sensitive Communities: in which people appreciate the many values of water, feel connected to their local water environments and engage in water-conscious behaviours. Organisations and professionals that influence water management exhibit policies and practices that lead to water sensitive outcomes.

The attributes of a Water Sensitive City include:

- Multiple sources of water considered over long time frames;
- Adaptive, integrated, sustainable management of the total water cycle designed to secure a higher level of resilience to future uncertainties in climate;
- Interdisciplinary, multi-stakeholder learning across social, technical, economic, design, ecological spheres;
- Diverse, flexible solutions at multiple scales;
- Co-management of water between government, business and communities; and
- Risk shared and diversified via private and public instruments. (Wong *et al.* 2013)

Their application is highly context specific, depending on local characteristics, conditions and perspectives.

Benefits of a Water Sensitive City

Many benefits arise from transitioning to a Water Sensitive City. Not only does a Water Sensitive City provide the water supply diversity, waterway protection and conservation provisions of a Water Cycle City, but also goes further to more deeply embed the benefits of strategic water use into society.

Engaging the community to increase understanding of the complexities of water management provides benefits beyond alternative water supplies and protection of the natural environment and addresses human health and well-being as part of the water cycle. Incorporating these aspects into urban design enables the community to receive multiple physical and emotional benefits.

“Stormwater provides an additional and abundant source of water to support the greening of cities, which in turn proves benefits in creating more liveable cities and resilient urban environments, including:

- *Improved human thermal comfort to reduce heat related stress and mortality;*
- *Decreased total stormwater runoff and improved flow regimes (more natural high-flows and low-flows) for urban waterways;*
- *Sustaining a healthy waterway through maintaining ecological complexity and channel stability;*
- *Productive vegetation and increased carbon sequestration;*
- *Improved air quality through deposition; and*
- *Improved amenity of the landscape.”* (Wong *et al.* 2013, p13)

This policy seeks to ensure that Ku-ring-gai Council continues to progress along the continuum of urban water management towards a Water Sensitive City and that Council contributes to Sydney’s transition to a Water Sensitive City.

Implementation program

This policy responds to the long term objectives of Council’s Our Community Our Future – Community Strategic Plan 2030, namely:

- A community empowered with knowledge, learning and information that benefits the environment
- Our natural waterways and riparian areas are enhanced and protected
- A community progressively reducing its consumption of resources and leading in recycling and reuse
- The built environment delivers attractive, interactive and sustainable living and working environments.”

Management principles

Council will adopt the following management principles in implementing this Policy:

1. Council moves towards creating a liveable and sustainable city;
2. The water cycle is well managed, using fit for purpose water applications to meet the needs of the community and the environment;
3. Infrastructure planning and development are coordinated and consider the value of water and the multiple benefits that can be delivered;
4. There is development of the necessary knowledge, skills and capacity across Council staff and the community;
5. The community is engaged and involved with decision making relating to council’s water management activities; and
6. Council provides leadership in water sensitive policy, planning and implementation.

Implementation activities

Activities will be implemented across a number of sections of Council, categorised under the three pillars of a Water Sensitive City. These activities and the sections of Council responsible for contributing to their implementation are listed in the following tables:

Council’s Water Sensitive City Strategy (pending) will support this policy, by providing water management targets, further details of management activities and their timeframes, funding requirements for the implementation of management activities and detailed monitoring and evaluation requirements.

PILLAR 1: Cities as Water Supply Catchments

Pillar 1: Cities as Water Supply Catchments Management Activities	Environment & Sustainability	Development & Regulation	Projects Operations	Strategic Projects	Engineering Services	Information Technology	Community & Recreation Services	Procurement and contracts	Finance	Open Space Operations	Waste Operations	People & Culture	Urban Planning & Heritage	Corporate Communications
Stormwater harvesting & reuse program														
1. Identify and prioritise individual water management (eg. water recycling, stormwater harvesting, WSUD) projects	✓		✓	✓	✓								✓	
2. Develop and implement management plans for each water recycling and reuse site	✓	✓			✓		✓			✓				
3. Apply the latest water re-use regulations and guidelines in the planning and ongoing management of recycling and re-use systems	✓	✓	✓	✓	✓		✓			✓			✓	
4. Conduct regular audits of water recycling and reuse systems as resources permit.	✓	✓								✓				
5. Ensure staff and community members are able to make informed decisions regarding recycling, reuse and treatment infrastructure, including the safety considerations for these systems	✓	✓	✓	✓	✓					✓	✓		✓	
Water savings program														
1. Shift to sustainable alternative water supplies that reduce reliance on potable water	✓				✓		✓			✓			✓	
2. Implement a prioritised retrofit program of water efficiency measures in Council buildings	✓				✓		✓			✓				

This is a Controlled Document. Before using this document check it is the latest version by referring to Council’s Controlled Document Register. Unless otherwise indicated, printed or downloaded versions of this document are uncontrolled.

<p>Pillar 1: Cities as Water Supply Catchments</p> <p>Management Activities</p>	<p>Environment & Sustainability</p>	<p>Development & Regulation</p>	<p>Projects Operations</p>	<p>Strategic Projects</p>	<p>Engineering Services</p>	<p>Information Technology</p>	<p>Community & Recreation Services</p>	<p>Procurement and contracts</p>	<p>Finance</p>	<p>Open Space Operations</p>	<p>Waste Operations</p>	<p>People & Culture</p>	<p>Urban Planning & Heritage</p>	<p>Corporate Communications</p>
<p>3. Opportunistically retrofit existing services (plumbing, drainage, irrigation and water services) as they are upgraded</p>			✓		✓					✓				
<p>4. Undertake regular water audits of recreational facilities and amenities, including the Ku-ring-gai Fitness and Aquatic Centre. Continue investigations to re-use pool waste water</p>	✓						✓							
<p>5. Investigate the feasibility of a real-time water use monitoring system across Council's highest water using facilities</p>	✓				✓					✓				
<p>6. Implement review of water metering accounts throughout the LGA to establish trends and address anomalies and unexpected data results. Audit as resources permit</p>	✓				✓					✓				
<p>7. Facilitate community water tank uptake</p>	✓													
<p>8. Conduct stormwater infrastructure monitoring, upgrades and maintenance</p>	✓				✓			✓		✓	✓			
<p>Flood risk management program</p>														
<p>1. Continue to undertake and implement flood studies and plans</p>	✓		✓	✓	✓								✓	
<p>2. Flood mapping is made available to the community through Council's website</p>	✓					✓								
<p>3. Incorporate flood information into LEP and DCP and planning certificates, where appropriate</p>	✓												✓	
<p>4. Prioritise and deliver flood mitigation works to reduce risk of damage to properties and key assets in the area</p>	✓		✓	✓	✓								✓	

<p align="center">Pillar 1: Cities as Water Supply Catchments Management Activities</p>	<p align="center">Environment & Sustainability</p>	<p align="center">Development & Regulation</p>	<p align="center">Projects Operations</p>	<p align="center">Strategic Projects</p>	<p align="center">Engineering Services</p>	<p align="center">Information Technology</p>	<p align="center">Community & Recreation Services</p>	<p align="center">Procurement and contracts</p>	<p align="center">Finance</p>	<p align="center">Open Space Operations</p>	<p align="center">Waste Operations</p>	<p align="center">People & Culture</p>	<p align="center">Urban Planning & Heritage</p>	<p align="center">Corporate Communications</p>
WSUD program														
1. Maintain functionality and effectiveness of WSUD assets	✓		✓							✓	✓			
2. Develop and implement a joint planning process for new Council stormwater projects/assets	✓		✓		✓					✓	✓			
3. Develop and implement water sensitive design standards for major strategic projects and assets managed by Council, as resources permit	✓			✓	✓					✓			✓	
4. Investigate the development of standard contract requirements for capital works projects to set minimum standards for water management performance	✓		✓	✓	✓		✓						✓	
5. Apply the Drainage Works and Maintenance Policy and Procedures	✓				✓					✓				
6. Continue to provide and review GPT and street sweeping maintenance	✓										✓			
7. Ensure all Council projects address DCP requirements	✓		✓	✓	✓					✓			✓	
8. Incorporate WSUD into the ongoing implementation and management of the drainage, roads and streetscape capital and maintenance works	✓		✓	✓	✓								✓	

This is a Controlled Document. Before using this document check it is the latest version by referring to Council's Controlled Document Register. Unless otherwise indicated, printed or downloaded versions of this document are uncontrolled.

PILLAR 2: Cities Providing Ecosystem Services

Pillar 2: Cities Providing Ecosystem Services Management Activities	Environment & Sustainability	Development & Regulation	Projects Operations	Strategic Projects	Engineering Services	Information Technology	Community & Recreation Services	Procurement and contracts	Finance	Open Space Operations	Waste Operations	People & Culture	Urban Planning & Heritage	Corporate Communications
Riparian & waterway protection														
1. Conduct riparian lands mapping and condition assessment	✓	✓				✓								
2. Prevent further piping and channelling of watercourses and remediate existing piped and channelised systems, where possible	✓	✓	✓	✓	✓					✓			✓	
3. Investigate ground-water related ecosystems to inform and guide planning and management as resources permit	✓	✓												
4. Determine the appropriate design of WSUD asset performance under projected ranges of climate change as resources permit														
Catchment management program														
1. Reduce the quantity of stormwater runoff and the amount of impervious surfaces, particularly those which are directly connected to waterways, to protect waterways from structural/geophysical and ecological damage	✓	✓		✓	✓					✓			✓	
2. Identify and prioritise waterway interventions for maintenance and upgrades (eg protection, rehabilitation, remediation)	✓	✓		✓						✓			✓	
3. Restore stream health ecological values and functions through catchment wide stormwater retention and harvesting	✓	✓	✓		✓					✓				
4. Identify and address areas which represent high sources of pollution as priority areas for water treatments and programs	✓			✓						✓			✓	
5. Implement the WSUD program to enhance catchment health	✓	✓			✓			✓					✓	

This is a Controlled Document. Before using this document check it is the latest version by referring to Council's Controlled Document Register. Unless otherwise indicated, printed or downloaded versions of this document are uncontrolled.

<p>Pillar 2: Cities Providing Ecosystem Services Management Activities</p>	<p>Environment & Sustainability</p>	<p>Development & Regulation</p>	<p>Projects Operations</p>	<p>Strategic Projects</p>	<p>Engineering Services</p>	<p>Information Technology</p>	<p>Community & Recreation Services</p>	<p>Procurement and contracts</p>	<p>Finance</p>	<p>Open Space Operations</p>	<p>Waste Operations</p>	<p>People & Culture</p>	<p>Urban Planning & Heritage</p>	<p>Corporate Communications</p>
<p>6. Implement flood mitigation activities that protect natural watercourses and riparian lands</p>	<p>✓</p>	<p>✓</p>			<p>✓</p>								<p>✓</p>	
<p>7. Conduct waterway / catchment health reporting</p>	<p>✓</p>													
<p>8. Improve erosion and sediment control practices and ensure minimum regulatory standards or better are met for all activities and developments within the LGA, using methods appropriate for the soils and environmental conditions within Ku-ring-gai</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>					<p>✓</p>				
<p>Micro climate management</p>														
<p>1. Investigate thermal mapping for the LGA</p>	<p>✓</p>					<p>✓</p>								
<p>2. Investigate the use of green infrastructure in precinct developments</p>	<p>✓</p>	<p>✓</p>		<p>✓</p>						<p>✓</p>			<p>✓</p>	
<p>3. Investigate the use of water in the landscape to mitigate against and adapt to the impacts of climate change</p>	<p>✓</p>									<p>✓</p>				

PILLAR 3: Cities Compromising Water Sensitive Communities

<p>Pillar 3: Cities Compromising Water Sensitive Communities</p> <p>Management Activities</p>	<p>Environment & Sustainability</p>	<p>Development & Regulation</p>	<p>Projects Operations</p>	<p>Strategic Projects</p>	<p>Engineering Services</p>	<p>Information Technology</p>	<p>Community & Recreation Services</p>	<p>Procurement and contracts</p>	<p>Finance</p>	<p>Open Space Operations</p>	<p>Waste Operations</p>	<p>People & Culture</p>	<p>Urban Planning & Heritage</p>	<p>Corporate Communications</p>
Advocacy & partnerships														
<p>1. Proactively engage with State and Federal Government and other relevant agencies to influence policies and reforms that affect Council’s water management program</p>	✓									✓				
<p>2. Participate in and support research programs relating to water management, such as the CRC for Water Sensitive Cities</p>	✓									✓				
<p>3. Develop effective partnerships with education and research organisations to advance urban water management in Ku-ring-gai</p>	✓									✓				
<p>4. Partnership with other organisations, where appropriate, to deliver water management programs</p>	✓													
Staff & community education														
<p>1. Deliver programs and educational resources to facilitate a continued shift in the community to more water sensitive practices</p>	✓													✓
<p>2. Provide capacity building opportunities for water professionals in Council</p>	✓													
Enforcement of water management controls														
<p>1. Ensure regulation of community water management activities (e.g. sediment erosion control, piping of waterways etc.)</p>		✓												
<p>2. Investigate auditing of water management requirements conditioned in development applications (e.g. OSD, treatment devices etc.) as resources permit</p>	✓	✓												
<p>3. Water management and riparian objectives are incorporated and</p>	✓	✓											✓	

This is a Controlled Document. Before using this document check it is the latest version by referring to Council’s Controlled Document Register. Unless otherwise indicated, printed or downloaded versions of this document are uncontrolled.

<p>Pillar 3: Cities Compromising Water Sensitive Communities Management Activities</p>	<p>Environment & Sustainability</p>	<p>Development & Regulation</p>	<p>Projects Operations</p>	<p>Strategic Projects</p>	<p>Engineering Services</p>	<p>Information Technology</p>	<p>Community & Recreation Services</p>	<p>Procurement and contracts</p>	<p>Finance</p>	<p>Open Space Operations</p>	<p>Waste Operations</p>	<p>People & Culture</p>	<p>Urban Planning & Heritage</p>	<p>Corporate Communications</p>
<p>enforced through planning controls</p>														
<p>4. Continue to integrate flood study mapping and controls into planning controls</p>	<p>✓</p>	<p>✓</p>										<p>✓</p>		

Monitoring and evaluation

Council will monitor and report against this policy as follows:

Objective	Measure	Timeframe
Protect, conserve and improve the condition of our waterways and riparian corridors to increase native biodiversity	<p>Incorporation of riparian provisions within Council planning documents</p> <p>Waterway stability and riparian works delivered</p> <p>Results of aquatic macroinvertebrate monitoring and water quality sampling</p>	Annually
Manage the quantity, frequency and quality of stormwater runoff to improve ecological stream health	<p>Incorporation of stormwater quality and flow provisions within Council planning documents</p> <p>Water quality and flow projects, including stormwater filtration and GPT construction and maintenance, delivered</p> <p>Management plans developed and results of monitoring of water re-use</p>	Annually
Decrease Council and the community's potable water use by diversifying water sources at different scales in fit-for-purpose applications	<p>Results of stormwater and rainwater harvesting projects delivered</p> <p>Results of Council's water efficiency works program</p>	Annually
Deliver programs that support and enable a continued shift in the community to more water sensitive practices	Number of rainwater tank installations (and capacity) through Council's Water Smart program	Annually
Integrate water infrastructure within the urban landscape to enhance the liveability of Ku-ring-gai, including stormwater treatment, flood protection, heat mitigation, ecological health, microclimate and landscape amenity	<p>Incorporation of riparian, stormwater quality, flow, flood and microclimate provisions within planning documents</p> <p>Demonstration and results of the integration of water infrastructure within the urban landscape through capital works program</p>	Annually

Legislative framework

- *Ecological Protection and Biodiversity Conservation Act 1999*
- *Administration Amendment (Water and Energy) Act 2005*
- *Environmental Planning and Assessment Act 1979*
- *Fisheries Management Act 1994*
- *Local Government Act 1993*
- *Local Land Services Act 2013*
- *Protection of the Environment Administration Act 1993*
- *Sydney Water Act 1994*
- *Threatened Species Conservation Act 1995*
- *Water Management Act 2000*
- *Water Industry Competition Act 2006*

Associated documents

- Biodiversity Policy (2016)
- Climate Change Adaptation Strategy (2016)
- Fauna Management Policy (2016)
- Ku-ring-gai Local Environmental Plan (2015)
- Ku-ring-gai Local Environmental Plan (Local Centres) (2012)
- Ku-ring-gai Development Control Plan (2015) (2016 update pending)
- Ku-ring-gai Local Centres Development Control Plan (2013) (2016 update pending)
- Ku-ring-gai Council Development Control Plan 47 – Water Management (2005)
- Water Sensitive City Strategy (pending)
- Corporate Sustainability Action Plan (2015)
- Drainage works and maintenance policy and procedures (2013)
- Ku-ring-gai Council Drainage Asset Management Plan (2014)
- Easement Management Policy (2013)

Definitions

Term / Abbreviation	Definition
Ecologically sustainable development:	Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.
Integrated water cycle management	Management of all sources of water to ensure that optimal use is obtained within the catchment resource context. This includes consideration of traditionally compartmentalised sectors (potable water, sewerage, stormwater) in an integrated manner by recognising the inherent connections and the opportunities to optimise the resource.
Potable water	Water supplied for drinking purposes.
Stormwater	Runoff from rainfall events that is conveyed separately from sewerage.
Water Sensitive Urban Design	The integration of urban planning with the management, protection and conservation of the urban water cycle, that ensures urban water management is sensitive to natural hydrological and ecological processes.
Water recycling	Treatment and reuse of water from the sewerage system.
Water reuse	Utilisation of water for domestic or commercial purposes, which would otherwise be discharged to stormwater systems.

References

Brown RR1, Keath N, Wong TH. 2009; *Urban water management in cities: historical, current and future regimes*. Water Science and Technology. 59(5):847-55

CRC for Water Sensitive Cities (2016) *What is a Water Sensitive City?*

<http://watersensitivecities.org.au/what-is-a-water-sensitive-city/> (Accessed 18 May 2016)

Wong T.H.F., Allen R., Brown R.R., Deletić A., Gangadharan L., Gernjak W., Jakob C., Johnstone P., Reeder M., Tapper N., Vietz, G. and Walsh C.J. (2013) *blueprint2013 – Stormwater Management in a Water Sensitive City*. Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities, ISBN 978---1---921912---02---3, July 2013