

Outcome	Risk		Functional Area of Council	Adaptation Initiatives			
	Extreme Weather leading to:	Issue		Area	Current Status of initiatives	Short Term (0-4 years)	Medium Term (> 8 years)
Increased frequency and level of flooding	Damage to property and infrastructure in flood prone areas		Policy	<p>Update Council's planning certificate notations as flood prone land is identified in flood studies (section 149) planning certificates and update development controls in Council's Development Control plan</p> <p>Increase Council understanding of sea-level rise and related risks particularly in relation to flood prone areas of Council by reviewing latest scientific findings and recent government policies on Climate Change adaptation.[i]</p>	<p>Continue update, review and implementation of planning controls and section 149 certificate planning notations in response to Floodplain Risk Management Studies and Plans.</p> <p>Continued upgrading of buildings and infrastructure to build resilience at identified flood prone areas of Council</p>	<p>Update land use planning guidelines (DCP and LEP) to ensure newly identified climate change risks are accounted for into the future</p> <p>Continue to update, review and implementation of planning controls and section 149 certificate planning notations in response to Floodplain Risk Management Studies and Plans.</p>	
			Engagement	<p>An approach for the development of relevant floodplain management studies has been established in accordance with the NSW Floodplain Development Manual. There are 10 major catchments across the City. Flood studies have been completed for 4 catchments including Green Square / West Kensington, Coogee Bay, Maroubra Bay and Centennial Park. Flood studies will continue to be undertaken on a priority basis.</p> <p>Floodplain Risk Management Studies and Plans will be undertaken for catchments that have had flood studies adopted.</p> <p>Further information on the flood studies can be found at: http://www.randwick.nsw.gov.au/environment-and-sustainability/what-were-doing/managing-flooding</p>	<p>Continue to undertake Flood Studies on a priority basis.</p> <p>Continue to undertake Floodplain Risk Management Studies and Plans where Flood Studies are adopted.</p> <p>Commence to implement engineering works based on recommendations from the Floodplain Risk Management Studies and Plans</p> <p>Development of communications consultation plan to inform and facilitate follow up to the relevant Flood Studies.</p>	<p>On-going community education as required</p> <p>Holistic approach to flood management which mitigates the risk or impacts of extreme weather events.</p> <p>Continued active involvement and engagement of the Sydney Coastal Council Group</p> <p>Continue to undertake Flood Studies on a priority basis.</p> <p>Continue to undertake Floodplain Risk Management Studies and Plans where Flood Studies are adopted.</p> <p>Commence to implement engineering works based on recommendations from the Floodplain Risk Management Studies and Plans</p>	
				<p>Flood prone land identified through flood studies are updated in Council's Development Control Plan (DCP)</p> <p>Updates on Floodplain studies and management will be reported in State of the Environment reports and City Plan review</p>	<p>Regular updating of Council's DCP based on new findings from flood studies</p> <p>Regular updating of floodplain studies and management to be reported in State of Environment reports and City Plan review</p>		
				Communications	Technical Services + Sustainability		
Heat Stress	Impacts on human health and well-being/related impacts		Policy	<p>Climate change controls such as flood management, climate change resilient building design are incorporated into the latest comprehensive Development Control Plan (DCP) with strategic input from the NSW Department of Planning and Infrastructure. These documents can be found of Council's website under Planning Strategies and Controls</p> <p>Local Emergency Management Committee (LEMC) includes climate change related risks into the Disaster Plan (DISPLAN) - improve Council preparedness to respond on relevant issues.</p> <p>Emergency management information can be found on Council's website under Community Safety - Emergency Management.</p>	<p>Review relevant Council documents to ensure effective guidelines and information for owner builders / developers.</p> <p>Inform or utilise NSW Department of Planning as part of the review</p> <p>Utilise current Emergency Management Guideline as part of the review.</p> <p>Council to explore potential partnerships with local developers to show case a "climate change resilient" development.</p>	<p>Update the guidelines (and therefore DCP) to ensure newly identified climate change risks are accounted for where appropriate.</p> <p>Review the education strategy, Emergency Management Plan and Disaster Plan regularly, keeping abreast of new knowledge regarding climate change and learning from experience.</p>	

Damage to Life, Property and Environment

being/related impacts on fauna and flora				Continue to consider climate change in risk assessment process for infrastructure planning and development projects (Refer to OEH supported Australian Green Infrastructure Council guidelines for Climate Change Adaptation: http://www.agic.net.au/agic_climate_change_adaptation_guideline_for_infrastructure_november_2010.pdf)		
	Engagement	Infrastructure Services + Office of GM	Under the funding of the State Emergency Management Program, A new project titled 'Emergency Management Planning – Piloting a Health Check for Local Government' was created to develop and test approaches for measuring the capability and resilience of Local Government, and their communities, to fulfil their roles in emergency management. Council is actively involved by being part of the steering committee for this project.	Advocate for the Local Emergency Management Committee to review the Local Disaster Plan Improve alert systems prior to and during disasters within the LGA	Review the education strategy, Emergency Management Plan and Disaster Plan regularly, keeping abreast of new knowledge regarding climate change and learning from experience.	
	Communications	Sustainability + Communications	SCCG has created a regional education program aimed at improving / empowering the community to understand and respond to climate change risks (specifically heat related stress see SCCG Human Health fact sheet and NSW Health's 'Beat the Heat' campaign webpage: http://www.health.nsw.gov.au/environment/beattheheat/pages/default.aspx)	Advocate for existing education material /program on climate change risks to be shared amongst the community and be ready to respond to any potential natural disaster such as flooding and drought	Review the education strategy , keeping abreast of new knowledge regarding climate change and updating education materials accordingly.	
Power Outage/Increased energy demand	Loss of power and related community and infrastructure impacts	Policy	Business continuity plan - Council has put in place business continuity and disaster recovery plan which will ensure the continuity of Council operations in event of natural disaster or events such as power outage. Resilience in Buildings - Additional energy saving measures including insulation are included in the revised comprehensive DCP which will assist existing and new developments to be more energy efficient and climate resilient.	Update the Disaster Plan to account for increased incidence of power outage Continued implementation of DCP to help build resilience in buildings by becoming energy efficient and climate resilient.	Review of DCP to incentivise landowners to install renewable energy systems to reduce energy consumption from the grid.	
		Engagement	Technical Services + Sustainability	Energy and Greenhouse Management Plan - Council to undertake actions identified in the plan in collaboration with capital works to increase energy efficiency, reduce energy demand and expand renewable energy options for Council buildings and facilities.	Continued implementation of engineering solutions and capital works to improve Council/community resilience against unexpected outage events to secure power supply Council to investigate community scale renewable energy technologies to decrease reliance on the national energy grid (i.e. community solar, etc.)	Continue capital improvements Continued investigation of large-scale renewable technologies to decrease reliance on the National Energy Grid (i.e. solar farm, wind power along the coast etc.)
		Communications	Sustainability	Incentives for energy efficiency and renewable energy - Consider incentives to residents and community for capital improvements in the community sector and residential properties to reduce energy demand and consumption		
Less water availability due to below average rainfall within the LGA and surrounding catchments. Council is striving to become more 'water self-sufficient'	Policy	Infrastructure Services + Technical Services + Sustainability	Undertake relevant studies to examine mean and peak flows of the local drainage network(ii) Incorporate policies which ensure that the water resources and / or flooding implications of new developments are assessed.	Continued implementation through Council's " <i>Sustaining our City</i> " program	Water sensitive urban design planning.	
	Engagement	Sustainability + Infrastructure Services	Water Management Plan – Implementing the water management plan which implement water efficiency measures across Council sites as well as identifying and installation of recycled waters systems to reduce reliance on mains water. Understanding existing vulnerabilities to climate and identify Council's water availability 'critical threshold' and water requirement	Continuation of the Water Management Plan	Review the Water Management Plan , keeping abreast of new knowledge regarding climate change and aligning plan with latest available science.	
	Communications	Sustainability + Communications	Incentives for water efficiency and rainwater tanks - Consider incentives to residents and residential properties to reduce water consumption and use recycled water through the installation of rainwater tanks Encourage residents through campaign such as Sydney Water's 'Every Drop Count' program to reduce water consumption to behavioural change	Continuation of relevant education programs.	Review the education programs , keeping abreast of new knowledge regarding climate change and learning from experience	

Decreased water availability - lower rainfall leading to drought conditions	Decreased biodiversity resilience and changes in the distribution of plant and animal species	Policy	Infrastructure Services + Strategic Planning + Sustainability	Draft LEP has identified areas of high biodiversity value which will formally acknowledge and potentially mapping those corridors for conservation and adaptation	Formally acknowledge and map corridors for conservation and adaptation through implementation of LEP	Improve the understanding and application of research and scientific developments into the long term impacts of climate change on the biodiversity and environmental sustainability of Randwick City
				Council's Street Tree Masterplan addresses important concerns including urban water management and has selected tree species that are responsive to Precinct character such as topography, soil type, aspect, resilience to climate change and potential carbon sequestration Consideration of Climate Change adaptation as part of the draft biodiversity strategy Reference to NSW studies of climate change impacts on biodiversity: http://www.environment.nsw.gov.au/biodiversity/climatechange.htm	Continued implementation and updating of relevant plans and strategies as appropriate. Finalisation of Biodiversity Strategy which include conservation strategy under climate change adaptation	
		Engagement	Infrastructure Services + Sustainability + Strategic Planning	Implement and further advance conservation management planning through Plans of Management process for local reserves, coastal areas and other Government lands Tree management initiating program to determine native tree species that are climate change resilient and its potential carbon sequestration	Continue to protect the biodiversity values of the coastal, urban and inland environments Continue undertaking revegetation initiatives Management and plantation of trees that are climate change resilient, determine its potential carbon sequestration and assist in reducing 'urban heat island' effect (refer to 'heat stress' section)	Review Plan of Management based on new research and scientific developments in climate change and its impacts on biodiversity Review actions and initiatives to determine its effectiveness and ensure current actions are achieving its adaptation objectives based on new research and scientific developments.
		Communications	Infrastructure Services + Sustainability	Continue to encourage and provide incentives to private land conservation through Council's Native Havens program.		
Coastal erosion from storm surges	Impacts on coastal areas	Engagement	Strategic Planning + Technical Services	Development and implementation of an LGA-specific Coastal Management Plan for Open Space has been replaced with a number of strategic planning processes and implementation of catchment-wide Flood Studies[iii]. Geotechnical and risk assessments have been conducted for cliffs and coastal areas as part of the process to mitigate against coastal erosion. Studies indicate minimal risk on coastal properties. Dune studies have been completed for Maroubra dunes Plan of management completed for Coogee, Maroubra and Clovelly.	Consider priorities established in terms of the relevant flood studies i.e. Coogee and Maroubra. Establish appropriate level of resourcing and commence implementation of first level priorities Review, update and implement priorities as required	
					Australian Government sea level rise maps http://www.ozcoasts.gov.au/climate/sd_visual.jsp http://www.environment.nsw.gov.au/climateChange/impactprofile.htm	
		Policy	Technical Services + Infrastructure Services	Develop a strategy guided by Management Executive for the resourcing and programming of the necessary capital works (engineering works) to minimise the risks and implications of extreme storm / rain events on local infrastructure based on current policies and studies.	Heighten community awareness and attractiveness of capital works projects to minimise the impacts of storm / high rainfall events on local infrastructure. Consider initiatives in light of State Government ground water studies or policy implications especially in relation to the Botany Aquifer.	Additional capital works improvements in light of priorities established.
		Communication			Consider initiatives in light of relevant modelling or studies of local impacts (e.g. Maroubra Dune system)	

[i] In response to NSW Government's recent rejection of sea level rise planning benchmarks for 2050 and 2100, Council has endorsed the continued application of the former NSW Sea Level Rise Policy Statement pending further state government guidelines and a review of their application to Randwick City. (Refer to M4/13. Miscellaneous Report - Former NSW Sea Level Rise Benchmarks (F2006/00362))

[ii] Engage 1 x FTE for the follow up of the Randwick City Plan (20 Year Strategy) to reduce reliance on potable water and / or bore water over the long term

[iii] During the Adaptation workshops it was established that a number of Council service areas are considering issues related to coastal impacts, but primarily driven by studies of upstream related impacts, especially flooding from extreme rainfall events. Coastal erosion as such is not seen as the key issue so working through priority implementation program for the relevant flood studies is seen as the m
Engage 1 x FTE to develop and implement the plan. This resource should also be aware and apply for relevant Government funding to progress the plan and achieve outcomes

[iv] The Climate Change Adaptation Roadmap is a "live" document which will be review on a regular basis to reflect its relevance based on latest scientific studies or policies.