

Submission on the draft Greater Sydney Water Strategy
(Department of Planning, Industry and Environment,
September 2021)



Submission prepared by:

Blue Mountains City Council

29 November 2021



Executive Summary

“The recent drought from 2017 to February 2020 brought water security in Greater Sydney into sharp focus. Storage levels dropped by 50% of full dam capacity in two and a half years”

The clear message is that if it does not rain for 5 years we run out of stored water, a catastrophic event. If we have a major fire in year 5, we have two compounding catastrophic events. Our strategic risk assessment is that this scenario is likely to be almost certain within the next 20 years.

The primary strategy of moving to sources independent of rainfall is strongly supported as the resilient approach aligned with planetary health objectives. This aligns with strategies in other countries that are applying a mix of solutions including desalination, indirect and direct reuse as essential and successful elements of a water circular economy to achieve planetary health. We endorse and support initiatives in the strategy that that develop resilient infrastructure planning for climate change and apply new thinking and international collaboration. The need for infrastructure to plan for climate change was highlighted in the NSW Auditor-General’s Performance Report released 7 September 2021, *“Managing climate risks to assets and services.”*

Blue Mountains City Council would very much welcome working in partnership with Government as we continue our priority focus on implementing our Water Sensitive Blue Mountains Strategic Plan with a focus on managing precious water resources to support planetary health in a World Heritage environment and to implement circular economy. This is something we have to do given our unique geographic position as joint custodians of a World Heritage Area next to a city of five million people that is expected to grow by another million by 2036. Our Blue Mountains Planetary Health Initiative includes collaboration with universities, thought leaders and governments to invest in fit for the future projects. The initiatives where we need your collaboration as a whole of government approach include:

- applying circular economy principles to integrate blue (water) green (biodiversity), grey (built infrastructure) and red (management of fire),
- projects for direct re-use for non-potable uses such as watering and cleaning, and
- pilot projects for direct potable re-use working in partnership with a growing number of international initiatives such as Netherlands and California.

We are strongly opposed to raising the dam wall because the marginal increase in storage capacity comes at great financial cost and even greater planetary health and cultural cost. Raising the dam wall is not a fit for the future solution. This is covered in the detail of our submission. A fit for the future project must improve biodiversity, protect cultural heritage, improve planetary health and achieve circular economy of water assets.

The Challenge

The primary challenge as we move to sources independent of rainfall is poor community understanding of:

1. the value of water as a scarce and essential resource to be managed in a circular economy
2. our proven technical capacity to successfully treat all water to drinking quality, and
3. the necessity of moving from centralised to decentralised infrastructure for telecommunications, energy and water.

This challenge of developing community understanding and acceptance is solvable through a staged approach and collaboration with international leaders at a pace that brings our community with us

on a journey of better understanding. Key communication strategies need to develop understanding that indirect potable reuse (IPR) is already in place in Sydney and most other Cities in the world and that direct potable reuse (DPR) is a key strategy in other countries including the Netherlands and California USA.

Infrastructure strategy development must recognise that community attitudes can change in one drought and fire season, but infrastructure strategies have lead times in excess of 5 years. A drought that lasts more than 4 years will dramatically change public opinion in years 5 and 6 when water runs out and major fires take hold. Technical conservatism and inertia can be addressed by international collaboration. The best minds in the world are working together to find solutions to a global problem and Sydney is not alone or unique. We need to work together to better manage water for planetary health and the wellbeing of future generations.

1. Introduction

The Department of Planning, Industry and Environment (DPIE) has released the draft Greater Sydney Water Strategy (the Strategy) for comment and review. It is understood that, following this period of public exhibition, in early 2022 a ‘what we heard’ report will be published, followed by the adoption of the final strategy and associated implementation plan.

The strategy has been developed in order to address the significant water challenges facing Greater Sydney in the context of a changing climate and a growing population.

Blue Mountains City Council (Council) acknowledges the need to respond to these water challenges in Greater Sydney. The value of developing an overall strategic position for water management in Greater Sydney is vitally important. Council therefore appreciates and values the opportunity to participate in the development of the strategy review.

The role of strategic planning in water management is well understood in a Blue Mountains context. Our exceptional location within a World Heritage Area (the only Australian urban area located within a World Heritage Area and one of only two such cities in the world) and upstream of the drinking water catchment for Sydney, requires an appropriately tailored response to the way we live in this world-renowned landscape, and hence the way we use the urban land within this environment, both now and into the future.

The majority of the comments in this submission are informed by this location and our careful management of an urban corridor which is an upstream generator of potential impacts on the World Heritage Area and Sydney’s drinking water catchment.

This unique position is currently reflected in the strong planning controls in Blue Mountains Local Environmental Plan 2015 (LEP 2015), including the strongest local stormwater provisions and the only schedule of significant vegetation communities in a LEP in NSW. These controls are fundamental to the management of the urban corridor in the Blue Mountains. They control and influence both the quantity and quality of stormwater runoff into the GBMWhA which also includes larger areas of the drinking water catchment for Sydney.

This submission is not considered an exhaustive review and provides a broad overview of a number of the recommendation made with supporting detail as appropriate. Comment is provided against relevant sections of the strategy.

Council’s position:

- Council recommends the State Government assist in transitioning all Local Government Areas in Greater Sydney towards being water sensitive cities, with water savings, WSUD, stormwater harvesting and reuse, protecting waterways and enhancing liveability. Such an approach speaks directly to the Premier’s Priority for cooling and greening Greater Sydney with increased tree canopy and green spaces.
- Council recommends the introduction of a specific ecosystem function objective for the Strategy, to sit alongside the proposed economic and growth drivers for the strategy. Further, the State Government should support other Councils in adopting a similar overarching framework so that

the value and rights of nature are guaranteed, protected and given equal footing with economic considerations.

- Council supports innovative technological approaches to providing non rainfall dependant water sources including: new sustainable DeSal plants using off the grid energy from solar, offshore wind turbines, wave energy and hydrogen fuel cell to store and provide power for off peak usage. Treating all the wastewater that is currently being pumped into our oceans to a high standard using sustainable Reverse Osmosis (RO) systems powered by off grid sustainable energy sources, including biofuel from the black solid waste generated during the RO filtration process and using the recycled purified water for industry, irrigation and groundwater recharge. Storing all this freshwater into Sydney extensive aquifer systems will future proof our city by allowing for sustainable use of groundwater during prolonged drought to supplement the DeSal plants hence avoiding the need to expand or enhance obsolete surface storage dams. Having these alternative water sources will also alleviate the need to raise Warragamba Dam so that dam levels can be permanently lowered to mitigate the flood risk from extreme flooding events saving billions of dollars and saving World Heritage and sacred Gundungarra country from inundation along with the loss on biodiversity along the riparian zone in the network of 65kms wild waterways.
- Council generally supports the storage of recycled purified wastewater water in groundwater aquifers as part of the overall management strategy. However, the careful management of mining impacts, along with management of ground water extraction licences, is essential to the success of this approach.
- Council supports the goal of improving water management outcomes for Aboriginal people and request that you honour this by abandoning the plans to raise the Warragamba Dam wall by 14 metres flooding thousands of ha of country, 65 km of wild rivers and cultural ancestral pathways and numerous sacred sites. Implementing a range of non-rainfall dependant alternatives including new sustainable Desal plants will allow for the dam levels to be dropped by 12 metres providing ample flood mitigation protection while negating the expense of raising the dam wall.
- Council requests clarification regarding the legislative framework on water management in Sydney, particularly how this strategy works with State Environmental Planning Policies existing (Drinking Water) and proposed (Environment, Design and Place) as well as the relationship with the review of both the Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources 2011 and Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources 2011

1. Water Sensitive Blue Mountains Strategic Plan (September 2019)

This award winning strategic plan is a foundational plan for Council, adopted in September 2019 and prepared with support from WaterNSW and the CRC for Water Sensitive Cities.

The Water Sensitive Blue Mountains Strategic Plan has the following key aims, where the protection and care of water is firmly situated within an understanding of Ngurra (Country) and sustainability.

The key aims are:

- to protect our natural water resources and care for Ngurra (Country);
- to manage our water resources and assets more efficiently and sustainably;
- to deliver better outcomes for the city with regards to water security, liveability, flood risk management, climate change resilience, waterway health, aquatic biodiversity, water literacy and connected communities;
- to mitigate the impact of existing and future urban development on our waterways through best practice water sensitive urban design and stormwater management;
- to ensure the quality and quantity of surface and groundwater is not adversely altered, and groundwater is sustainably managed; and
- to manage increasing urban heat island effects in our urban centres.

A water sensitive approach is defined as having four main components: water efficiency, water reuse, best practice stormwater management and a water-literate community. A water sensitive approach replicates the natural water cycle, improves urban amenity, and protects downstream waterways. These are all stated aims of the draft Strategy and yet this water sensitive approach, supported by extensive research by the CRC for Water Sensitive Cities (a federally supported CRS since 2012), appears not to have been considered in the development of the draft Greater Sydney Water Strategy. Any reference to water sensitive is alongside urban design, which is only part of the approach adopted by Council in its Water Sensitive Blue Mountains Strategic Plan.

As a first step to becoming a truly water sensitive city, Council recommends the State Government support all local government areas in Greater Sydney in developing a water sensitive strategic plans similar to the support offered in the late 1990s where the Government mandated that all Councils develop a Stormwater Management Plan and funded a dedicated officer position for 3 years to develop and implement the plan. This can be easily achieved due to the plethora of highly developed resource materials, case studies and research prepared by the CRC WSC, designed to support local and state Governments transitioning towards being water sensitive cities.

2. Draft Greater Sydney Water Strategy: Water for a Resilient City

Council is generally supportive of the objectives of the draft Water Strategy as shown below. However it is concerning no objective speaks specifically to an environmental outcome. The dominance of financial and economic outcomes in both the significant issues identified, and the resulting priorities and actions, are reflective of this policy setting and speak to the importance of having a high level objective around ecosystem function and health. If the Greater Sydney Water Strategy does not have a clear objective of supporting ecosystem function and health then the credibility of the strategy and its understanding of the role of water, needs to be seriously questioned.

Objectives of the Greater Sydney Water Strategy

The strategy will:



Support economic growth and community wellbeing by providing confidence in the security and sustainability of Greater Sydney's water supply to meet growth and adapt to a changing climate by 2040 and beyond.



Support delivery of the **Greater Sydney Region Plan—Metropolis of Three Cities** and the Premier's Priorities for greening the city.



Identify the **strategic pathways to ensure the right investment decisions are made at the right time** in consultation with customers and the community.



Set the pathways to **identify highest economic value and most affordable** investment portfolios for water infrastructure.

Council also recently adopted the Rights of Nature framework, a rapidly growing international movement that aims to ensure a safe and healthy future for our planet by encouraging humanity to reorient its relationship with nature, from an essentially exploitative one, to one that recognises the importance of all life on earth.

Another recent policy position adopted by Council is around Planetary Health, which provides an alternative framework for decision making. This framework, alongside key principles in the Water Sensitive Blue Mountains Strategic Plan, informed key principles and actions in the Local Strategic Planning Statement of Council adopted in 2020 and responding to the Western City District Plan.

Council recommends the introduction of a specific ecosystem function objective for the Strategy, to sit alongside the proposed economic and growth drivers for the strategy. Further, the State Government should support other Councils in adopting a similar overarching framework so that the value and rights of nature are guaranteed, protected and given equal footing with economic considerations.

3. Needing a new approach to the water challenges facing Greater Sydney

Servicing a growing population

Council supports the decentralisation of all new sewerage infrastructure and retrofits of existing systems to allow for purified water treatment and reuse for industry, irrigation and other non-potable water requirements, allowing for clean environmental flows into natural waterways and groundwater recharge to ensure long term water security of our precious aquifers.

Council recommends that all new major land releases and housing developments be built in areas outside identified flood zones, thus preventing future catastrophes that will come with increasing large storm events linked to climate change. For all new major greenfield housing developments, it is recommended that alternative small scale treatments systems are installed and that reuse systems are mandated for all new housing developments similar to Rouse Hill.

Sydney has one of the longest sewerage systems in the world, extending from Blacktown to Manly, so decentralising this system will make recycled purified treated wastewater available to the local government areas the long sewage line passes through for local use for industry, irrigation of public spaces, creating blue green corridors and future proofing our city during times of prolonged drought.

Building resilience to drought and a changing climate

Council supports the Government in adopting new emerging sustainable technologies to future proof our water supplies - so that we don't have to rely on surface dam storage systems that in most years evaporate much more water than is captured and are at risk of failure during prolonged droughts, which are increasing in duration and scale due to climate change. This includes not augmenting existing dams, including Warragamba to prevent the inundation of thousands of hectares of sacred Gundungarra country and flooding of 56km of wild rivers.

Council recommends the construction of a network of sustainable DeSal plants powered by off the grid energy sources including offshore wind turbine farms, wave energy technology and solar farms - which can all be used to split water and create hydrogen during times of excess energy production by these sustainable alternative energy systems, that can create hydrogen fuel cell banks that can run the plants during the time the sun, wind or waves are not able to produce energy. This would also assist in Australia meeting it Cop25 targets and achieving carbon neutrality by 2050.

Supporting the economy and jobs

Currently we are pumping thousands of KL of sewage (which is 99.9998% fresh water) out to the ocean through 4 major outlets. All this valuable fresh water should be treated to a high standard using green sustainable reverse osmosis (RO) technology (powered by wind, solar, waves and hydrogen) and using this treated water for industry, irrigation, firefighting and providing environment flows to natural waterways.

Similar to groundwater recharge systems in Perth, which pump 3 Billion litres of purified wastewater into groundwater aquifers, Sydney can adopt a similar model and pump purified recycled wastewater water from the four major STPs and store it as groundwater. With surface storage proving ever more unreliable and unsustainable especially during increasing temperatures and prolonged drought associated with climate change, storing water in the ground is world best practice in arid environments.

All these innovations once implemented would create thousands of long term jobs for our local economy and make Sydney a world class sustainable tourist destination similar to Singapore, Copenhagen and other leading sustainable cities.

Putting water at the heart of our city and communities

Council's recently adopted Water Sensitive Blue Mountains Strategic Plan and Living Sustainably Local Strategic Planning Statement (LSPS) put water at the heart of our city and community and encourage the State Government to offer a range of water sensitive grants (similar to those offered for stormwater in the past) to allow local government to use Water Sensitive Urban Design principles in all infrastructure projects and retrofits.

Supporting local governments to create stormwater harvesting reuse schemes, build green infrastructure to combat extreme heat days and the heat island effect, having clean healthy

waterways that support community recreational pursuits, will result in significant water savings, raise water literacy in the community and create green liveable cities for present and future generations.

Improving water management outcomes for Aboriginal people

Council is of the strong position that the above priority is in direct contradiction to the proposed raising of Warragamba Dam to mitigate flood risks - as it poses an unacceptable loss of Aboriginal Cultural Values and inadequate anthropological and archaeological assessment.

The Gundungurra Traditional Owners have advised Council that the areas subject to inundation from the Warragamba Dam Wall Raising, including the Coss' and Wollondilly Rivers and Burragorang Valley, are highly significant parts of their Country, being the living embodiment of the significant creation stories about the formation of the landscape by ancestral beings.

This creation story, known as 'The Journey of Gurangatch and Mirrigan' shapes how Gundungurra people understand this part of Country, and has been retold over countless generations.

In addition to these values, Council understands that innumerable well preserved Gundungurra cultural sites have been identified within the proposed flood zone and that these are considered by the Gundungurra people to be the tangible manifestations of their intangible ancestral creation story. This has been more fully expressed in the recent Aboriginal Place nomination lodged with the NSW Government by the Gundungurra people, which received the full support of Council but which has, to date, been ignored by the Department. Council notes that the majority of the Registered Aboriginal Parties (RAPs) considering the proposal to raise the dam for flood mitigation, will cause further accumulation of impacts to Aboriginal cultural heritage that was previously affected by the original construction of Warragamba Dam. The associated permanent upstream inundation from water storage will impact 19 dreamtime story sites within the upstream area which were all at least partially impacted by Lake Burragorang.

Council does not support the view of the EIS (currently on public exhibition) that the damage from the dam wall raising on the indigenous cultural values of the Gundungurra First Nation are acceptable and instead supports the view of the Gundungurra First Nation RAPs - that the raising of the dam wall, and the resultant predicted flood zones, poses a serious and irreparable threat to the significant tangible and intangible Aboriginal Cultural values of Gundungurra Country.

It is Council's view that the raising of Warragamba Dam wall will not only result in the loss of spectacular and extant cultural landscapes, now so rare within close proximity to Sydney, and as such an important cultural symbol but will also have a profound impact on the health and well-being of Gundungurra people suffering the resultant cultural loss.

Given the above, Council accepts the views of the Gundungurra people that the cultural heritage assessments done to support the EIS on exhibition, whether anthropological or archaeological, are inadequate and not proportionate to the context and importance of this rich cultural landscape.

Council's ongoing consultation with Gundungurra Traditional Owners on the Aboriginal Cultural Heritage Report, indicates the traditional owners dissatisfaction with the assessment process, the

Aboriginal Cultural Heritage Report conclusions and with the lack of compensation or redress for damage to loss of cultural sites and native title rights.

In particular, Traditional Owners have communicated their dissatisfaction publicly at the inadequate resources directed to the assessment of the Aboriginal Cultural values of the inundated area. This follows on from their earlier criticisms of the draft Aboriginal Cultural Heritage Assessment Report, described by Traditional Owners as “inadequate” and “hard to follow”, and in addition to only surveying a small, supposedly representative, proportion (26%) of the total area impacted. Symptomatic of the inadequate consultation was the 40 days provided to respond to a large and complex draft 2000 page report. Further detail on this issue will be contained in a separate submission to the EIS for the Dam Wall raising, currently on exhibition.

The concern of Council remains that this priority in the draft Strategy is in direct contradiction to the proposed raising of Warragamba Dam to mitigate flood risks as it poses an unacceptable loss of Aboriginal Cultural Values and inadequate anthropological and archaeological assessment.

We need to invest in our water system and services

Council agrees with the need to invest in sustainable and long term water systems and services. We request that the Government stops the practice of constantly demanding special dividend payments from Sydney Water to top up Government coffers and allow the water rates paid by our community to be used to create a robust, innovative and sustainable wastewater treated systems that use off the grid energy sources to purify the wastewater using RO technology, recycling the solid waste for fertilizers or to create biofuel to power the energy intensive RO systems.

4. What is needed to achieve

Priority 1: We understand how much water we need and when

Council recommends a total review of the water licencing system in Greater Sydney. This will help ensure prevention of the over-extraction of groundwater and surface water by private individuals and companies under the basic rights to water, especially in perched aquifer systems in the GBMWHA that threaten environmental flows and put all of our Groundwater Dependant Ecosystems (GDE's) at risk, especially during times of prolonged droughts. Council also requests a continuation on the moratorium on commercial groundwater licences that threaten our ancient perched groundwater reserves that provide the base flows to all of our World Heritage waterways and that support ecotourism – a significant backbone of our Blue Mountains economy.

Priority 2: Our water systems are sustainable for the long term and resilient to extreme events

Council supports the development of non-rainfall dependant technologies to secure long term water requirements into the future. This includes building a network of DeSal plants powered by sustainable green energy alternatives including offshore wind turbines, large solar farms, wave energy and hydrogen fuel cells, to ensure the long term future of Sydney fresh water supply into the future for the increasing population numbers. Using alternative energy sources will offset the embodied energy in systems such as DeSal and purified wastewater reuse being pumped into aquifers (both requiring reverse osmosis with very high energy demands and large potential carbon

footprint). This will also assist in Australia meeting its target of becoming carbon neutral by 2050 and create local business and employment opportunities to boost our economy.

Priority 3: Our city is green and liveable

Council supports the transition of all LGA's within Greater Sydney towards a water sensitive future and requests funding from the State Government for dedicated water sensitive officer positions to develop and implement water sensitive strategic plans in each LGA - ensuring our cities are green, heat island and bushfire resilient and to protect waterway health and support aquatic recreational use, enhancing the liveability of our cities. Funding and/ or a grants program to support local governments in implementing priority actions in their water sensitive strategic plans, will save billions of litres of potable water and take pressure off the system while the longer term sustainable DeSal and groundwater recharge infrastructure is being built.

Council notes the important role being given to a draft State Environment Planning Policy, for Design and Place, in the draft Strategy that is not yet on public exhibition. As the content, direction and controls of this SEPP are not available for comment, Council is unable to make any further remarks and feels this represents a lack of strategic direction and cooperation within the Department.

Priority 4: Our waterways and landscapes are healthy

Waterway and ecosystem health are paramount to ensuring that essential but often undervalued ecosystem services are continued to be delivered now and for future generations. Healthy waterways and catchments underpin the health of natural systems as well as healthy liveable cities supporting a range of essential commercial (healthy robust sustainable fisheries) and recreational activities (boating, fishing, wild swimming and passive recreational pursuits including bird watching and waterway walking trails). **Research has predicted that the biggest loss of biodiversity as a result of climate change will come from aquatic ecosystems.**

One of the biggest threats to Sydney's water supplies not mentioned in the Draft Strategy is the impacts from long wall mining with coal leases being extended in drinking water catchments. Of great concern, over 93% of Sydney's drinking water catchments have been approved for coal mining licences. Council recommends a moratorium on all future expansions of long wall coal mining and a permanent ban on all fracking activities in Sydney's drinking water catchments and a review of all current licences to ensure that there is a genuine Neutral or Beneficial Effect (NoRBE) as required by WaterNSW legislation.

By creating a network of non-rainfall dependent water sources, including decentralising wastewater treatment systems, and using the purified treated wastewater to support environmental flows to Greater Sydney waterways, it may be possible to ensure that Sydney is a world leader in sustainable water management.

Council also requests clarification regarding the legislative framework on water management in Sydney, particularly how this strategy works with State Environmental Planning Policies existing (Drinking Water) and proposed (Environment, Design and Place), as well as the relationship with the review of both the Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources 2011 and Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources

2011. It is also concerning that there is no mention the Drinking Water SEPP in the draft Strategy at all, nor the important regulatory role of NoRBE as required under that instrument.

All of these inter-related policies and legislation need to be seen as part of an interconnected management system. It is only in that context that major infrastructure moves, such as the proposed raising of Warragamba Dam Wall, can be seen in context.

That such an overview was not contained in, or referred to in the draft Strategy is regarded as a significant oversight, particularly as the draft Strategy is considering formally incorporating water use and management within urban design frameworks and land use planning instruments as part of the NSW planning system.

Priority 5: Water management and services meet community needs

Creating a network of innovative sustainable water management systems, including off grid DeSal, recycled purified wastewater to recharge and store for future use in Sydney’s aquifers, will ensure Sydney is in a position to meet the demands of an additional one million residents and provide green sustainable jobs in a circular economy with water at the forefront through reuse schemes and green alternative power infrastructure that future proof our city and enshrine it as a world leader in water management.

By adopting Water Sensitive Urban Design we can turn our cities into “sponges” that hold water in the landscape by harvesting and reusing groundwater and wastewater supplemented by DeSal, creating healthy blue green corridors, mitigating climate change including impact of bushfires, flooding, extreme heat days and heat island effect, greener landscapes that enhance the liveability of our cities. Having this network of sustainable non rainfall dependant water sources will future proof Sydney and alleviate the need for severe water restrictions as well as providing the water necessary for bushfire fighting.

Figure 49 in the draft Strategy shows a best practice vision that our Council has adopted through our Water sensitive Blue Mountains strategic Plan, commitment to carbon neutrality, rights of animals and no net loss of biodiversity in all infrastructure projects.

As previously mentioned, Council has recently adopted these principles of Planetary Health and encourages other LGAs and the State Government to follow suit. This would be best demonstrated by supporting a dedicated water sensitive officer position for all LGAs funded by the State Government, along with grant funding to implement water sensitive outcomes for their communities including mandating rainwater harvesting by increasing the minimum BASIX requirement for rainwater tank sizing to at least 25kl, stormwater harvesting and reuse, sustainable groundwater sharing plans with using purified wastewater to recharge aquifers, and stormwater treatment systems that include biofilter raingardens to mitigate the impacts of urban runoff.