



Feedback to Draft Water Strategy

TO: Department of Planning, Industry and Environment (DPIE)

FROM: Eric Ruiz
Principal Coordinator - Stormwater & Waterways Management

DATE: 8 November 2021

SUBJECT: Greater Sydney Draft Water Strategy

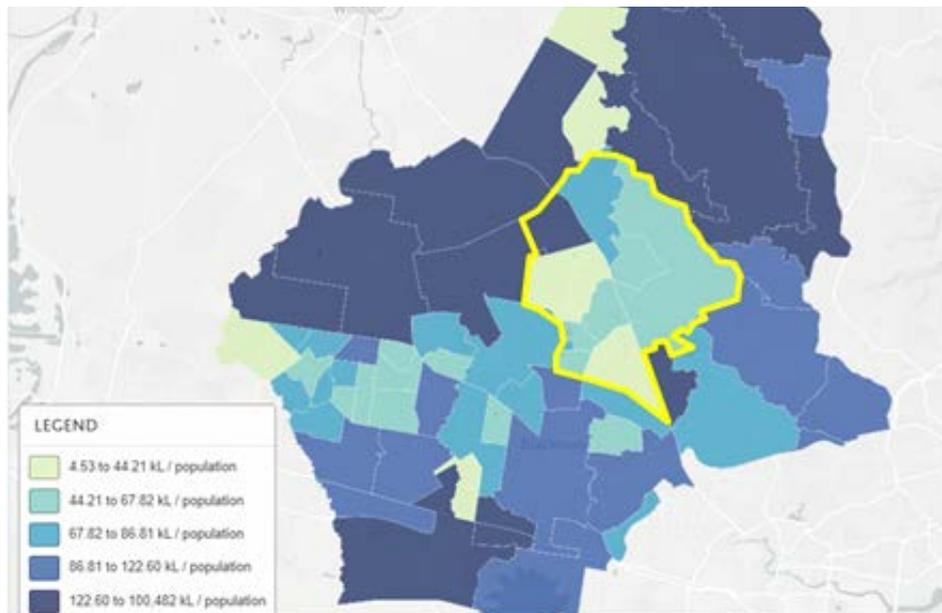
OUR REF: ECM 19783039

The Hills Shire Council (THSC) appreciates the opportunity to provide comments on the Draft Greater Sydney Water Strategy, which we understand will be implemented in the next 40 years to ensure resilience in water supply for the ever-growing Greater Sydney population.

Based on our review of the draft strategy we provide below our comments we hope DPIE will consider in its final version.

- The intent of the draft Greater Sydney Water Strategy is understood and many aspects align with THSC's local strategic framework, particularly objectives relating to supporting economic growth and improving liveability for the community.
- The Hills Shire Local Strategic Planning Statement was made on 6 March 2020 and sets planning priorities and corresponding actions for the next 5 years. It is supported by an Environment Strategy adopted by Council on 22 October 2019 which provides the strategic context for management and protection of the Shire's environment focusing on biodiversity and natural resources and how we can protect and enhance the natural environment whilst reducing our water, energy use and waste generation.
<https://www.thehills.nsw.gov.au/Building/Planning-Guidelines/Local-Strategic-Planning>
- In terms of the land use planning framework, the DPIE's desire to integrate water cycle management with land use planning and formally incorporate considerations within planning instruments and the proposed Design and Place SEPP, is noted.
- Whilst appreciating that the document is a higher level strategy, there appears to be minimal information available at this stage on potential planning instrument changes, the nature of requirements (including targets), whether new provisions will be mandatory or optional, whether there will be capacity to tailor any provisions to local circumstances and funding sources. In this regard, care is needed in setting requirements or suggesting treatments to ensure they are able to be implemented and do not create onerous life cycle costs for Council.

- As policy and implementation options are further developed, opportunity for further review and feedback is respectfully requested to enable a better understanding of the potential implications (or opportunities) for Council.
- Our experience here at The Hills tells us that residents who have access to the recycled water network tend to use less potable water than residents who do not have access to it. Below is a map of annual potable water use per resident for The Hills and Blacktown LGAs, with the Rouse Hill Recycled water network highlighted in yellow. Any expansion of this network would greatly benefit more of our residents and the environment.



- There is anecdotal evidence that some residents who are supplied with recycled water for washing, toilet flushing and outdoor use do not use this water as intended. These residents switch their water pipes at construction stage and do not end up using the recycled water for its intended uses, which increases potable water consumption. Greater education is required for builders, plumbers and home owners to ensure that the recycled water, rather than potable water is used wherever it is appropriate.
- The strategy has mentioned climate variability as one of the driving factors for seeking new approaches to secure the water supply of Greater Sydney. The variability of Australian climate particularly along the eastern seaboard is influenced by various global ocean-atmospheric phenomena including the El Niño Southern Oscillation (ENSO), Indian Ocean Dipole (IOD) and the Interdecadal Pacific Oscillation (IPO). Research has shown these phenomena are linked to the occurrence of extreme climatic events (i.e. droughts and flooding) in NSW. The onset of these phenomena is a precursor to the incidence of prolonged dry and wet periods and hence the strategy could benefit from the following:
 - Adequate lead time between the precursor phenomenon and onset of drought will allow more proactive rather than reactive strategies in mitigating the effects of prolonged droughts;
 - Advice can be sought from experts in the field of climatic and hydrologic forecasting. Linkage with research community, either from the academe or private consulting, can play an important role in developing forecasting models to inform the strategy; and
 - To ensure a high level of success for any drought mitigation strategy, climatic forecasting needs to be robust and reliable. More funding should be allocated for research that will establish the correlation between the various global ocean-atmospheric phenomena and Australian climate.

- Groundwater or bore holes located upstream of dams can be explored as a source to supplement water reserves during prolonged drought periods. There would be no need to pump the water back to the dams as the extracted water can be discharged into creeks and tributaries that discharge into the reservoirs.
- Harvesting and reuse of rainwater is to be encouraged if not made mandatory especially for new building developments. Harvested water can be used for non-potable uses including the irrigation of the site's landscaped spaces. This helps achieve the strategy's aims of reducing potable water consumption and greening of urban areas.
- Size of rainwater harvesting tank should be proportional to the size of landscaped spaces. Where on-site stormwater detention (OSD) tank is required, the storage capacity for the rainwater tank should at least be double the OSD tank's size.
- Although still dependent on rainfall, the construction of new dams means more stored water that can be made available to the community during periods of long drought.
- Consider the following renewal/augmentation works to maintain if not increase the storage capacity of existing water supply reservoirs:
 - Dredging or removal of accumulated silt and debris;
 - Excavating shallow sections or steepening edges of the reservoir;
 - Reducing evaporation losses (e.g. planting more trees along the edge, minimise the creation of shallow areas, preventing growth of water plants, surface covering); and
 - Where feasible, cloud seeding within catchments upstream of the dam.
- If the existing desalination plant is to increase its production capacity and exceeds the demand for water, can excess water be either pumped into reservoirs e.g. Prospect Reservoir or stored in additional in both in-ground and above-ground storages that are located close to the end-users?
- If there are desalination plants to be added in the future, they should be located further to the west. Although pumping costs could be higher due to the significant distance from the ocean, locating them closer to end-users could offer some advantages. Also, building them closer to Warragamba Dam and Prospect Reservoir will allow excess desalinated seawater to be stored in these reservoirs for use during droughts.
- Has there been any study that has collected and analysed data related to the cost of reduced business activity, lost opportunities and lower well-being due to extended water restrictions? This information can assist in balancing between the options of spending more on additional infrastructure or continue resorting to the enforcement of water restrictions during prolonged droughts.
- Regional dry detention basins have the potential to be used as temporary storages for stormwater that can be used for irrigation purposes during drought periods. Instead of allowing the basin to totally empty out, its outlet structure can be configured so that it is capable of being shut to allow the retention of incoming flows. However, as detention basins have the primary purpose of flood control and mitigation benefitting the downstream areas, the shifting of the basin's function from detention to retention depends heavily on the accuracy of climatic forecasting.
- Can the timing and level of water restrictions be varied based on geographic and developmental considerations? For example, the imposition of less stringent water restrictions could be delayed in areas that are dominated by industries that rely heavily on water.

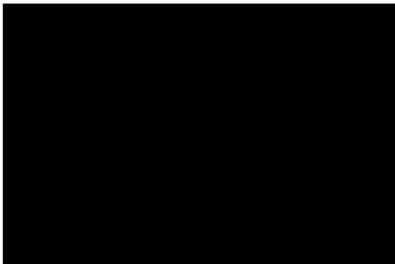
- The suggested 50% permeability or perviousness requirement for new developments would be restrictive in terms of developable footprint especially for medium-density residential lots that are already shrinking in size. This requirement is more palatable to low density residential developments or lot sizes with areas greater than 600 m².
- The strategy has not mentioned or provided information about the bottled water industry particularly on what percentage of the drinking water market it supplies and the sources of water being used by the industry.
- A strategy that embodies the principles of an Integrated Water Cycle Management (IWCM) is ideal for a water-resilient community but will only be feasible for new developments and could be hard to achieve in existing urban areas.
- Acceptance by the public on the consumption of purified recycled water may be difficult but not impossible. The following strategies can be considered:
 - To consume purified recycled water by itself will not be an ‘appetising’ proposition for the community. However, combining it initially in minute amounts with normal mains water may gain some acceptance and allow the public to realise its benefits. Slowly graduating into higher proportions and ultimately 100% by its own, purified recycled water can eventually gain wider acceptance by the community;
 - Public awareness and education campaigns in the media, using high profile personalities could help drive the message across;
 - Teaching water recycling in schools;
 - Impose cheaper rates for purified recycled water;
 - Public consultation and engagement can be undertaken in the middle of prolonged drought to gain support; and
 - Learn from other countries who have successfully accepted purified recycled water for drinking.
- To encourage less usage of water by households especially during periods of prolonged droughts:
 - Impose higher water rates during droughts in parallel with water restrictions;
 - Depending on the household size, a monthly or quarterly consumption rate of water consumption can be set. Water consumed below this amount will be charged by the standard rate. A higher rate will be charged to water in excess of the base volume; and
 - Intelligent water metering can assist property owners with monitoring their water usage and could give out warning messages when consumption is in exceedance of normal level of usage.
- Make it easier for the public to report leakages, illegal connections and breaches of water restriction rules. A designated number similar to ‘000’ can be allocated for such calls.
- Conflicting information
 - Page 13, first paragraph at right column (and in other sections of the strategy) – *“Changing the approach to operation of the Sydney Desalination Plant can produce an additional **20 GL/year...**”*
 - Page 28, second paragraph at left column – *“The plant can produce up to **250 million litres per day** of drinking water—equivalent to about 15% of Sydney’s current daily water demand. The plant was designed with the future in mind which means **its capacity can be doubled** more quickly than the time it would take to build a new plant.”*

Assuming whole year round production, the current production rate of 250 ML/day translates to **91 ML/year**. If daily production rate is doubled, this means the desalination plant can produce an additional 91 ML/year not 20 GL/year as mentioned on Page 13.

- Typographical error:
 - Page 83, third bullet item at left column – “*maximising **previous** land surface area*”. It should read ‘**pervious**’.

Thank you for your consideration of the above matters. Should you wish to discuss this matter further, please feel free to contact me on [REDACTED] or [REDACTED].

Yours faithfully



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