

INTEGRATED WATER CYCLE MANAGEMENT STRATEGY

REPORT INFORMATION

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Date of Meeting	23 August 2023
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SUMMARY OF REPORT

This report presents the Integrated Water Cycle Management Strategy, *Our Water Our Future 2050*, ('Strategy') to Council for adoption following its public exhibition.

RECOMMENDATION

That Council adopt the Integrated Water Cycle Management Strategy provided in Attachment 1.

FINANCIAL / RESOURCE IMPLICATIONS

There are no direct financial implications in adopting the strategy. The projects identified in the Strategy will have significant long-term financial implications for Council. Financial impacts have been identified during the development of the Strategy and long-term financial modelling was undertaken to inform a preferred scenario presented in the Strategy. Once initiated, these projects will each be managed using the project management framework, including use of project gateways, with regular reporting to council.

LEGAL IMPLICATIONS

Adopting the strategy is a critical step in complying with the *Regulatory and assurance framework for local water utilities* (Department of Planning and Environment (DPE), July 2022).

RISK IMPLICATIONS

The Strategy addresses medium to long-term risks associated with the provision of water and sewerage services. Delaying adoption of the Strategy would risk delaying the delivery of critical water security projects, resulting in unexpended grant funding and increased risk of severe water shortages in the future.

BACKGROUND

The shared vision of water sector stakeholders, including local water utilities, is:

Safe, secure, sustainable and affordable water and sewerage services for healthy and resilient communities, businesses and the environment, now and into the future. (DPE 2022)

Our Water Our Future 2050 sets out our 30-year plan for the sustainable and affordable delivery of MidCoast's water services. The Strategy and supporting documents have been workshopped with Councillors during the year and some have been involved in the Our Water Our Future group community workshops.

DISCUSSION

The journey of Our Water Our Future first began in 2008. The strategy was implemented and then further updated and reviewed in 2015. Legislative changes, local government reform and rising trends in climate change raised the need to revisit the strategy.

MidCoast is challenged both by a growing population and the impacts of climate change, increasing our vulnerability to the impact of drought. The population we service with water and sewer supplies is expected to grow by approximately 48% by 2051. To meet this, we have considered a broad range of options with all solutions being on the table. Our early engagement and key stakeholder consultation has helped to distil the options into a preferred scenario that is sustainable and cost-effective.

In developing this strategy, we focused on the biggest water-related challenge we face over the next 30 years, water security. We also considered how we should approach the issues of managing our effluent sustainably, dealing with the impacts of climate change, and providing water and sewer connections for our unsewered villages. The draft Strategy was developed following an analysis of all of these issues considering their economic, environmental, governance, and social benefits and costs, in collaboration with the MidCoast community, our regulators and specialists. Our Water Our Future will guide how we respond to these challenges over the next 30 years.

During the preparation of the strategy, we have sought to:

- Identify the full range of values and uses of water within the water cycle, from catchment to tap,
- Understand our community's values in relation to water,
- Make better decisions and arrive at lower-cost solutions through our evaluation of options, and
- Integrate water planning with the management of other natural resources.

The Strategy includes the 13 supporting documents in the appendices including the *Drought Contingency and Emergency Response Plan*.

Our blueprint for the future is underpinned by two plans that we will deliver in parallel. The first involves the continued delivery of our existing water and sewer services, with an increased focus on water conservation and demand management. The second is the building of resilience into our water sources.

Our adaptive plan for the next 30 years involves:

- Constructing off-river storage dams for the Manning, Bulahdelah, Gloucester and Stroud water supply schemes
- Additional water recycling to provide cost-effective irrigation for public open spaces
- Projects that help us achieve our Net Zero greenhouse gas emissions targets by 2040
- Delivering sewer services to high-risk unsewered villages where funding allows
- Continuing to target leakages in our network and with our customers
- Continuing our water education and behavioural change programs
- Progressing cost-effective water conservation measures
- Integrating catchment management initiatives into our water management
- Inflow and infiltration reduction program for the sewer network
- Minimising the impacts of development on stormwater runoff to protect the aesthetic, recreational and ecological value of our waterways.

Since the draft version of the Strategy was placed on public exhibition, there has been additional information added and changes made to some of the secure yield figures in the Water Yield Assessment Report (Appendix I) following a review and feedback from DPE. However, these changes have not resulted in any changes being made to the main Strategy document.

CONSULTATION

The table below outlines the community consultation and engagement undertaken during development of the Strategy. In particular, the activities to engage the younger generations should be noted. Water and sewer solutions tend to be very long-lived infrastructure, with the impacts

spreading across multiple generations. Hence, the effort put into engaging with this demographic of our population. Based on the success of the Youth Hackathon for water, another similar event is being organised for later this year with a sustainability theme.

Date	Event	Details
28 July 2022	First Our Water Our Future Group community workshop	This is our focus group for the development of the strategy. It has members from various cross sections of our community, including MidCoast community members, our regulators and specialists.
11 November 2022	Youth Hackathon for water	Fifty senior high school students split into nine teams and developed creative solutions to solve water security, effluent management and climate change issues.
October 2022 - March 2023	Online engagement to better understand community values and sentiment	Values survey that asked: which of the following factors is most important to you when considering water and sewer services: social, economic, governance and environment?
December 2022 - February 2023	Children's illustration competition	Encouraging children to consider the importance of water and present their ideas in a creative format.
28 February 2023	Second Our Water Our Future Group workshop	Group provided feedback on their priorities and concerns for the four different scenarios. The feedback was integrated into the QBL assessment to identify the preferred IWCM strategy.
17 March - 16 April 2023	Online engagement and community pop-ups	Information on short-listed options and survey response questions on our website, supported by eight pop-up sessions across the MidCoast.
3 July – 6 August 2023	Public exhibition of draft strategy	The strategy was available on the Have Your Say page as well as the <i>Options and Scenarios Report</i> and 13 other supporting documents including the <i>Drought Contingency and Emergency Response Plan</i> .

The community were advised of the public exhibition period through media releases, social media posts, advertising, newsletters, and direct email. Attachment 2 presents the feedback received during this period, which is summarised below.

Submissions

During the public exhibition period a total of fifteen (15) submissions were received from the community. Council values feedback from all members of the community. Council received feedback from a wide variety of people through various engagement processes and through various stages of the strategy development. Council acknowledges there will be conflicting views in the community depending on personal needs and experiences. Therefore, feedback has been taken into consideration to adopt a strategy that balances the needs of the community, the requirements of regulators, and Council's capability to deliver.

Of the 15 submissions received, two submissions were blank, while another two submissions represented general comments unrelated to the strategy. These four submissions were not included in the following table. Comments from submissions are addressed below and are responded to separately. There were no changes made to Our Water Our Future 2050 resulting from the submissions received during the public exhibition phase.

Comments / Concerns (paraphrased)	Responses
The push from individuals from North Arm Cove for water and sewerage services to be provided is not representative of all those who reside in these areas. There are many residents who prefer to be self-sufficient and prefer to not be connected to town water. During a drought, there is the option to purchase water carted from the Tea Gardens aquifer supply.	Council has adopted a risk-based approach to help identify and prioritise unserviced villages in need of sewerage services based on public health and environmental risks. Council currently has no plans to provide reticulated water and sewerage to North Arm Cove over the next 30-years
Relying on water carting during droughts is not preferred. Suggests Council to investigate options to 'drought-proof' each unserviced village. This includes investigation of providing reticulated water and preparing individual village drought response plans. Suggests Include firefighting water demands and preparedness options for villages, specifically for villages with one road accesses. This includes dedicated tanks at selected locations for firefighting.	Council currently has no responsibility for water supply outside of the reticulated network. During a drought, people that rely on rainwater tanks rely on water tankered from Council's water distribution network should their tanks run low. Unserviced villages have been prioritised in terms of environmental and health risk for managing wastewater on-site. However, there has been no risk assessment undertaken for providing reticulated water to unserviced villages. Council currently has no plans to provide reticulated water to unserviced villages over the next 30-years.
Identifies two strategic priorities for unserviced villages, specifically North Arm Cove. Water security: the strategy does not consider water security for unserviced villages. Recommends the strategy complete detailed water security study for unserviced villages. Provision of sewerage services: recommends a detailed study for providing sewage services to the top 10 high risk unserviced villages. After the above, recommends an implementation plan for the top 10 high risk villages; followed by all remaining unserviced villages. The long term financial modelling in the strategy includes an amount for sewage at Coomba Park between 2049 and 2052. No participants from North Arm Cove were invited to workshops or pop-up stalls.	Council currently has no responsibility for water supply outside of the reticulated network. During a drought, people that rely on rainwater tanks rely on water tankered from Council's water distribution network should their tanks run low. Unserviced villages have been prioritised in terms of environmental and health risk for managing wastewater on-site. However, there has been no risk assessment undertaken for providing reticulated water to unserviced villages. The <i>Unsewered Villages Wastewater Risk Assessment Report</i> (Appendix C) presents a risk assessment of unserviced villages. Coomba Park has been identified as the highest risk, with North Arm Cove ranked second, alongside seven other unserviced villages. The report indicates that the cost of providing North Arm Cove with sewerage services (cluster system) is estimated to be \$16 to \$25 million or \$39k to \$61k per lot. This cost is unaffordable to Council's rate payers. In years gone by, backlog sewerage schemes were funded under the NSW Country Towns Water Supply and Sewerage Program which reduced the cost to ratepayers. It may be possible to obtain funding in the future under the Safe and Secure Water Program, however the provision of sewerage to unserviced villages in the MidCoast does not sit high on DPE's priority list compared to our water security issues. Allowance was made in the financial modelling undertaken as part of the strategy for sewerage services at Coomba Park at the end of the 30-year strategy timeframe. This shows that it is affordable to address the highest risk unserviced village in approximately 30 years, provided all the assumptions, inputs and planned works do not change significantly. The project was not explicitly part the main strategy document due to future uncertainty of organisational priorities. The pop-up stalls were held at local markets across the MidCoast. The Our Water Our Future group that participated in the workshops was established by inviting approximately 300 people who'd completed the community water survey in 2021 and via a call for expressions of interest advertised on social

	media. Care was taken to ensure that the group had members from across the LGA although it was not possible to have each of our 195 towns and localities represented. Targeted community consultation for North Arm Cove would occur in the future should a decision be made provide the area with sewerage services.
Prefer dam over desalination due to the increased cost of desalination for residents of the community.	The strategy has identified storage dams as the preferred water security solution for the Bulahdelah, Gloucester, Manning and Stroud water supply schemes. The next step requires undertaking further investigations for environmental approvals to confirm the feasibility of this solution for all schemes. If environmental approvals are not gained, the alternative pathway of building a new desalination plant will then be considered as per the adopted strategy. In terms of cost viability, the strategy took into consideration the community's affordability and willingness to pay in the financial assessment. Feedback from community consultation received through 'Have your say' page indicated 60% of the respondents are willing to pay more for water security and/or expansion of recycled water. The typical residential water bill under a desalination scenario was assessed to be higher when compared with the Peg Leg Creek off-stream storage dam scenario as presented in the Options and Scenarios Report, Table 8-5. Council will be completing a comprehensive review of water and sewer pricing which will also cover equity and hardship issues.
Support for increased recycled water and a dam for the Manning. Notes the need for a sustainable price for water for residents who are financially stressed.	
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Noted that a dam is cheaper, however much less reliable than desalination in water shortage periods.	It is acknowledged that off-stream storage dams are a climate dependent solution and that desalination is climate independent solution. All options assessed for securing water supply were assessed using water yield modelling based on the 5/10/10 level of service design rule. This is set by the Department of Planning and Environment (DPE), who regulate strategic planning for town water supplies in NSW covered under the <i>Regulatory and assurance framework for local water utilities</i> . The modelling identified the storage size required for each scheme to sufficiently meet the demands of the region under drought conditions for the next 30 years.
Important for water sources that minimise environmental impact. A dam has environmental impact but relies much less on electricity than desalination.	A Quadruple Bottom Line assessment was completed for all shortlisted options. This comparative assessment considered factors including environmental costs and benefits. All options were reviewed for impacts during construction and for ongoing operation. To ensure environmental risks are managed appropriately, Council will complete an environmental impact statement for the solution to be implemented. Council also plans to investigate opportunities for reducing carbon emissions through alternative power supply options such as solar.
Identifies the Tea Gardens bore field as a climate independent supply. Requests that the Tea Gardens Water Supply has water restrictions not linked to water restrictions in Council's five other water supply systems. States that many residents moved to Tea Gardens / Hawks Nest to avoid water restrictions that apply to most areas of NSW.	The Tea Gardens bore field is not a climate independent supply. The bore field is recharged from both rainfall and groundwater. Council is committed to providing equitable services to its community where practical. The <i>Drought Contingency and Emergency Response Plan</i> was developed to achieve a consistent service area approach where appropriate, allowing for some flexibility for individual triggers. The restrictions for Tea Gardens - Hawks Nest were assessed to be consistent with the Manning Water Supply Scheme and were therefore adopted ' <i>As per Manning Water Supply Drought Level for consistency or location specific situation</i> '.
Support for expanding recycled water use to irrigate open spaces, for agriculture and bioenergy crops uses. This includes subsoil irrigation methods.	Council will be considering options to expand recycled water for irrigation, including subsoil irrigation. However, Council has experience with subsoil irrigation and found that ongoing maintenance costs were high due to the subsoil irrigation equipment being frequently damaged and clogged. Council will also consider options to expand recycled water for crop uses. Council currently supplies recycled water to non-food crops, such as the woodlot close to Dawson STP. Council also supplies recycled water for pasture or fodder crop irrigation, including at Dawson, Gloucester, Lansdowne and Coopernook. Council does not supply recycled water to commercial food crops.
The strategy is a short document compared to other documents prepared by Council.	The strategy focuses on how Council arrived at the strategy and what it includes. All technical information is to be captured in detail in Appendix A to Appendix M and the <i>Options and Scenarios Report</i> .
A "rainfall dependent" strategy is a concern and water security as the objective is obviously in jeopardy.	The strategy has both climate dependent and climate independent adaptive pathways. The preferred pathways are to construct off-stream storages first for the Manning, Bulahdelah, Stroud and Gloucester. In the longer-term, the adaptive pathways include purified recycled water, desalination and groundwater exploration.

	Water security is measured against the 5/10/10 level of service design rule. All feasible options for providing water security (such as dams or desalination) would be sized to meet this level of service rule.
Has the strategy gone through an adequate risk assessment given the short-term crisis we are heading towards, let alone a 30 year scenario?	The Issues Paper, established in the early stages for the development of the strategy, comprised of a water and sewerage services analysis. The paper included a performance assessment of the system with regards to capacity and capability for the projected 30-year growth. The strategy was developed in response to the key strategic issues and risks identified in the paper. The <i>Drought Contingency and Emergency Response Plan</i> (Appendix M of the Strategy) addresses short-term risks. The <i>Drought Contingency and Emergency Response Plan</i> is Council's short-term plan to address water security until the off-stream storage dams are constructed and filled.
The strategy reveals an enormous, short-term need for maintenance/repair/replacement of the existing infrastructure. Questions Council's financial viability with this responsibility.	The long-term financial plan covers Council's planned expenditure to meet the renewal and replacement requirements of Council's infrastructure over the 30-year time frame. Council's water and sewer price path includes maintenance and renewal of assets over the period of the strategy, to ensure Council is financially sustainable for the delivery of water and sewerage services.
The 5/10/10 level of service (LOS) rule itself needs a rethink and reassessment.	The 5/10/10 level of service design rule is set by DPE, who regulate strategic planning for town water supplies in NSW. It is a requirement that Council completes the strategic planning under the <i>Regulatory and assurance framework</i> . This level of service design rule enables different options to be compared for providing water security to a scheme. https://www.industry.nsw.gov.au/data/assets/pdf_file/0007/547297/guidance-understanding-water-security.pdf
The whole strategy is too stretched out. We need real action of significance to occur now and in the next 5-10 years maximum not 30 years down the track if we are to address water security and be more resilient. Putting purified recycled water in at 2050 will be too late. There is a need for other storage sites/methods, for storing river water and purified recycled water.	The <i>Drought Contingency and Emergency Response Plan</i> is Council's short-term plan to address water security until the off-stream storage dams are constructed and filled. The <i>Drought Contingency and Emergency Response Plan</i> includes planning for an emergency desalination plant, the expansion of the Napiac bore field and water carting to smaller schemes, if required in the short term. All water security infrastructure options, including dams, purified recycled water schemes and desalination, take a very long time to plan, obtain approvals and be constructed. Due to the nature of Council's sewer schemes (13 spread out across the LGA), the purified recycled water scheme would only be able to supply 10-20% of the water security requirement at 2050. Therefore, even if Council built this now (which is not possible due to planning and delivery pathway requirements), Council would need either a dam or desalination plant as well. This is why the strategy is to build the dam first, followed by purified recycled water towards the latter-end of the strategy period.
Questions recycled water as being high cost when schemes already exist and could be expanded. Increasing recycled water for agriculture and public space irrigation is essential now. From 25% to 40% isn't a high enough target.	Council looked at recycled water expansion of both: • Opportunities to expand existing schemes, and • New recycled water schemes. It is more financially viable to expand existing recycled water networks. We have explored these based on the forecast effluent volumes in 2050. However, in the last drought we could not produce enough recycled water to meet demand from our existing end users. Therefore, in the majority of our existing recycled water schemes, the extra investment in expanding these to new end users won't realise the benefit during dry periods, as there won't be any extra effluent available to recycle to supply the new end users. To reach 40% or go further, we would need to construct new schemes from STPs that do not currently recycle effluent. Increasing water recycling for agriculture and public greening is important, however this needs to be balanced with the cost impact on the rate payer. The last four recycled water schemes were constructed as state funding was available for the capital cost. Currently, there is no funding for recycled water for non-drinking projects.
Why are we waiting for a regulatory framework for PRW? How difficult would it be to develop one 'in-house'? Council can surely do something about this.	The state and federal governments are responsible for setting a regulatory framework for potable and non-potable water quality such as the Australian Drinking Water Guidelines and Australian Guidelines for Water Recycling. Currently, there is no developed framework or existing schemes for purified recycled water in NSW. Other than the challenge of acquiring an operating licence and approvals without a supporting regulatory framework, there are multiple other considerations that need addressing for a purified recycled water scheme. Although the feedback from the community showed a positive response for purified recycled water, the broader community needs to be
Given our current changing circumstances, we need to go	

beyond storage dams. The community has given clear directions (recycle, develop PRW and yes, we'll have to pay for it). This needs to be part of the strategy today, not 10, 20 and 30 years down the track, if we are to have any real water security and develop resilience.	consulted and educated to build community acceptance across the region. Pilot projects to confirm the viability and feasibility of the solution may need to be undertaken. These considerations require extensive efforts in terms of resourcing and budget by Council. It is more financially beneficial for a small water utility like MidCoast Council to expend efforts on purified recycled water scheme once it has been developed to a successful stage either by government or a bigger water utility like Sydney Water.
Within Council there has always been a 'plan' to develop a dam(s). When asked 'dam' or 'desalination', many people revert to what they know. The results for dams are hardly surprising. What was more compelling was the strong support for recycling, support for purified recycled water and for paying more.	Extensive stakeholder consultation was carried out for the development of the strategy. Engagement with external stakeholders commenced at the start of the process and included MidCoast community members, Aboriginal elders, local agencies and students. The engagement process included informative workshops and communication materials, such as fact sheets and information on the Have Your Say Page to support the questions being asked during community consultation. The purpose of these was to give the community an opportunity to provide informed and educated feedback. The feedback received did indicate a strong desire in the community for increased recycling and support for purified recycled water. Expansion of recycling for community purposes did not provide a great water security benefit. As such, the typical residential bill would be impacted by both water security projects and expansion of recycled water services. A significant portion of the MidCoast region demographic however falls under the low household income bracket. The adopted solution therefore needs to reflect a balance between community's willingness to pay and community's affordability. The concept of a second off-stream storage dam for the Manning scheme has been around since 1985 and the Peg Leg site was first assessed at a very high level in 1999. While options for sites had been looked at in the past, there has not been a 'plan' to construct a second dam for the Manning scheme. The Strategy is the first plan that has identified an off-stream storage dam at Peg Leg Creek as the preferred solution to address water security in the Manning.
The Greater Hunter Regional Water Strategy claimed that "Council's strategy commits to investigating additional options such as enhanced storage or recycled water within five years" (p.43). The next 5 years will be very telling about whether Council has been able to deliver an effective strategy which has seen improved water security.	Council has achieved the commitment to investigating additional options such as enhanced storage or recycled water within five years – the result of this is <i>Our Water Our Future 2050</i>. The planning and delivery pathway for construction of a new dam cannot be restricted to a 5-year timeframe as it is unrealistic given the complexity of infrastructure. The strategy developed has a 30-year outlook and works to be delivered are captured in the Capital and Operating Plan. Progress will be monitored via this plan through monthly reporting. Key performance indicators will be reviewed to assist in tracking progress against defined targets and ensuring strategic objectives are on track to be met.

ALIGNMENT WITH COMMUNITY PLAN/OPERATIONAL PLAN

The Integrated Water Cycle Management Strategy, *Our Water Our Future 2050*, aligns with the following objectives of MidCoast Council's Community Strategic Plan:

Community Outcome 1: A resilient and socially connected community.

1.4 We protect the health and safety of our communities.

Community Outcome 2: An integrated and considered approach to managing our natural and built environments.

2.1 We protect, manage and restore our natural environment and our biodiversity.

2.2 We understand and manage environment and climate change risks and impacts.

2.3 Council works towards net zero emissions.

2.4 We have an adequate and reliable water supply.

2.5 We balance the needs of our natural and built environment.

LIST OF ATTACHMENTS

The following attachments are available on the meeting page of Council's website under the 'Attachments to Agenda' heading. The copy of Attachment 2 on the website has had the personal information redacted to protect the privacy of the members of the public providing submissions.

Attachment 1 – Our Water Our Future 2050 – final version including appendices.

Attachment 2 - Submissions