BRAIDWOOD COMMUNITY ASSOCIATION

COMMENTS ON THE PALERANG COMMUNITIES INTEGRATED WATER CYCLE MANAGEMENT (IWCM) ISSUES PAPER 2025

INTRODUCTION

The Braidwood Community Association (BCA) welcomes the opportunity to comment on the Palerang Communities Integrated Water Cycle Management (IWCM) Issues Paper 2025.

It also expresses its appreciation to Gordon Cunningham, Manager Utilities, for the information he provided in response to questions posed by the BCA.

The BCA notes that we were promised by Council staff that this review would be completed in 2023-24, and now it will essentially be considered in 2025-26, so it is well overdue.

This is a very substantial and technical report by NSW Public Works and totals 255 pages. The BCA notes that it was initially drafted in March 2024, although was not finalised until 27 March 2025. As a result, some of the reference points have moved on – notably it refers to the 2023 Braidwood Structure Plan Discussion Paper (p49) and not the 2024 Draft Braidwood Structure Plan, even though it was released in December 2024, months before the Issues Paper was approved.

SUMMARY

The report highlights 34 unresolved issues and 12 resolved issues relating to water supply schemes and sewerage schemes across Palerang. Some are generic issues, while others relate to particular locations.

Many of the issues relate to regulatory, quality or operational issues. The BCA believes that Council staff have the experience and capacity to address such issues once they are aware of the issues.

So, the BCA will limit its comments to just 4 issues: Best Practice Pricing (BASIX and Water Tanks); Security of Bungendore's and Braidwood's Water Supply; and the related population forecasts.

The Issues Paper criticizes Council for contravening the BASIX requirements for the minimum rainwater tank size for new dwellings. The BCA acknowledges that there is an important difference between requiring new dwellings to have larger tanks and encouraging them and this would increase the difficulty in setting prices, but it hopes that this is not a reason to discourage residents from having larger water tanks.

Non-Revenue Water (NRW) is an important issue for Braidwood, accounting for a staggering 39% of all water produced. The BCA commends Council staff action to try to reduce NRW. Successfully addressing this issue will delay the need for new infrastructure and save users money.

The need for a Queanbeyan to Bungendore bulk water pipeline is the biggest issue for the Palerang water supply scheme. What concerns the BCA is the cost of the pipeline and the imposition it will have on Braidwood residents. The potential cost of depreciation and interest on loans could be $7.7m pa which is $2,500 pa per water user if the cost is borne just by Palerang users and $270 pa per household if spread across the whole of QPRC.

The Issues Paper identifies capacity limits in the Braidwood's Water Supply as new issues. This is largely because it has increased the projected population growth since the previous IWCM Plan. It only provides one population growth scenario, stated to be 2.5% pa, but is actually 2.2% pa. The Draft Structure Plan contained a range of population projections from 0.99% pa through to 4.125% pa with an average growth rate of 2.55% pa.

The BCA believes it would be very helpful to all concerned if the Issues Paper considered a range of population growth rates so that the sensitivity of when the current infrastructure becomes inadequate as a result of population growth rate could be understood.

The BCA's main concern is that the Issues Paper does not consider the ceasing of Braidwood's water supply during intense droughts as happened in 2019-20 to be an issue.

Even the short-term solution proposed by a report yet to be scrutinised indicates that it will fail to meet its goal of avoiding Stage 4 water restrictions.

For the great majority of the population of QPRC the concept of having Stage 3, let alone Stage 4, restrictions is unthinkable. So why is it acceptable for Braidwood?

The Issues Paper identifies a number of capacity limitations in the Braidwood sewerage system. The BCA is concerned that these are not highlighted as issues, even though they will require capital investment in the foreseeable future, depending on future population growth.

Best Practice Pricing (BASIX and Water Tanks)

The Issues Paper criticizes Council's 2015 Palerang DCP for increasing the minimum rainwater tank size for new dwellings which apparently contravene the BASIX requirements. It argues that if new houses use more of their own water in wet years and rely on town water in dry years this increases the difficulty of achieving an average of 50% of revenue from usage.

The BCA acknowledges that there is an important difference between requiring new dwellings to have larger tanks and encouraging them and this would increase the difficulty in setting prices, but it hopes that this is not a reason to discourage residents from having larger water tanks.

It also notes that should the Palerang Water Fund be merged with Queanbeyan Water Fund, it would not be 50% but 70% of revenue from usage that will be the target. This would further discourage usage of water.

Performance - leaks (Non-Revenue Water)

Non-Revenue Water (NRW) is an important issue for Braidwood, accounting for a staggering 39% of all water produced or 249 L/connection/day.

The Issues Paper suggests that achieving a lower level of NRW of 99.8 L/connection/day [1] could postpone the need for new infrastructure by around 6 years.

At one level this is an ambitious target to set but given the NSW State median NRW is 74 L/connection/day and the QPRC's average NRW is 46 L/connection/day there could well be scope to achieve an even better outcome, further deferring the need for new infrastructure.

The BCA commends Council staff's actions to try to reduce the level of NRW and leakages in revenue water which would also have the effect of postponing the need for new infrastructure as well as saving the users money. These actions include:

- Rolling out new electronic revenue water meters (NBiOT) with a focus on Braidwood initially. These are more accurate than the previous mechanical ones (which may not detect very low flow rates) and record usage every half an hour. Council staff have been using this facility to detect potential water leaks and have been alerting users.
- Looking at potential leaks within Council's own trunk water system by laboriously isolating sections of the town's water supply at night to try and pinpoint "zones" of consumption contributors.
- Considering permanently and physically isolating the interconnection between the service reservoirs and the former raw water that used to supply the town. This is to eliminate any possibility of the reservoir supply "bleeding" back into the off-stream storage dam.

[1] The Low NRW case is based on the lowest NRW per billing period from December 2017 to December 2022 and the High NRW case is based on the highest NRW per billing period from December 2017 to December 2022 which was 253.2 L/connection/day.

Security of Bungendore's Water Supply

This is the biggest issue for the Palerang water supply scheme. The BCA will not comment on the need for a Queanbeyan to Bungendore (Q2B) bulk water pipeline. This is an issue for the residents of Bungendore to comment on, and we hope they are fully engaged in this issue.

What concerns the BCA is the cost of the pipeline and the imposition it will have on Braidwood residents. The cost of this pipeline appears to be escalating. Initially the cost was estimated $65m in 2023, this then increased to $77.8m in a report to Council in April 2025, but including the inherent and contingent risks the cost was estimated at between $99.8m and $108.8m. The BCA notes that the cost of $99.8m was included in the QPRC Long-Term Financial Plan 2025-35 which suggests this is the real current cost estimate.

QPRC staff and Councillors will need to be on the top of their game to manage such a huge investment over such a short period to avoid further cost blowouts.

While it may be the intention that this pipeline will be largely funded by grants and developer contributions, there will be still very significant costs on users. This will be because such a large increase in assets will significantly increase the depreciation allowance. Further, the stream of developer contributions will only commence after the pipeline is built. In the interim the funds will need to be borrowed, and users will have to pay the interest on these loans.

If these were borne by just by the households with water services in Palerang (3,054), the cost per household for depreciation and loans could be in the order of $2,500 per household[2]. But if it was across all households with water services in QPRC (28,410), the cost per household would be reduced to $270 per household. This underlines the need to have a single water fund for QPRC.

The BCA notes that Council has not yet formally voted to approve the Q2B pipeline. It urges Council to carefully consider the cost impost on users in Braidwood and elsewhere of this pipeline before making a decision.

Security of Braidwood's Water Supply

Population growth rate.

While the report states it is based on a population growth rate of 2.5% pa, Table 4-12 (p62) and 4-13 (p63), show this only applies from 2031 onwards and prior to that the population growth rate used is 0.8% pa. The compound growth rate between 2021 and 2051 being 2.2% pa over the whole period and not 2.5% pa as stated.

As noted above, the Issues Paper unfortunately does not use the Draft Structure Plan as a reference. This is disappointing as the Draft Structure Plan contained a range of population projections from 0.99% pa through to 4.125% pa with an average growth rate of 2.55% pa.

The BCA believes it would be very helpful to all concerned if the Issues Paper considered a range of population growth rates so that the sensitivity of when the current infrastructure becomes inadequate as a result population growth rate could be understood.

Unfortunately, the complexities of the calculations of the projections of both water[3] and sewage demands are such that it is not easy to accurately replicate the calculations with different population growth rates without access to the models used by NSW Public Works.

The BCA also notes that there is some uncertainty around the starting point of projections, as the last census results were most likely adversely impacted by the Covid restrictions in place at the time and understated the Braidwood population[4]. On the other hand, the closure of the Dargues gold mine in 2024 has had a negative impact on the Braidwood population. The next

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2 Assumptions – Straight line deprecation: $100m over 20 years = $5m pa; Loan: $50m at 5.4% = $2.7m pa.

3 eg Allowance is made in the calculations for new houses to have lower water usage than existing houses due to modern water saving BASIX requirements.

4 eg As a tourist town holiday accommodation is important. Most Airbnb properties were likely to have been vacant at that time due to the movement restrictions understating the population for Braidwood.

Census in 2026 will provide a better guide to what is actually happening with population growth.

Licensed entitlement, WTP capacity and reservoir capacity
The Issues Paper concludes for Braidwood that the Licensed entitlement (360ML/yr) becomes insufficient by 2041 under the high Non-Revenue Water (NRW) scenario but not until after 2048 under the low NRW scenario. It also finds that the peak day demand is expected to exceed the Water Treatment Plant (WTP) capacity (2 ML/day) by 2040 and the reservoir capacity (2.6 ML/day) by 2049 (p132). This is identified as a new issue.

This suggests that, with the assumed population growth and making an allowance for Climate Change, some form of extension of the WTP capacity will be needed by 2040 and additional water sources shortly after. This is identified as a new issue.

Drought Proofing Braidwood's Water Supply
During the last drought the town of Braidwood reached Stage 4 water restrictions in late 2019/ early 2020. This was due to the Shoalhaven River ceasing to flow and the off-river storage dam of 72ML capacity being insufficient to meet demand. The restrictions were only lifted because thankfully the drought broke.

It should be noted that during times of drought the Braidwood dam supplies more than just Braidwood town, but also rural residents who have run out of water. So, it's importance as a vital source of water is heightened during times of drought.

During this period, Council staff used their best endeavours to extract water from pools in the river. This was not sufficient to meet the reduced demand arising from the water restrictions. Water extraction appears to have been most difficult during the period from 24 December 2019 to 22 January 2020. During that 30-day period no water was extracted for 20 days, with an average extraction rate of 93kL per day over the period, compared to the reduced demand of 488kL. Water was carted after this period on 13 days with an average quantity of 239kL per day, still well short of demand.

Despite four years of wet weather, drought-proofing Braidwood's water supply remains one of the most important issues which the Braidwood Community wants to be addressed, ranking third in the BCA survey of priority issues.

The Issues Paper is virtually silent on this, save for a short paragraph in section 6.8.2 on secure yield:

'Secure yield analysis was undertaken for Braidwood in 2020. The estimated secure yield under the 5/10/10 rule[5] *is 320 ML/year…'*

We assume this refers to the *Braidwood Water Supply – Water Security Assessment and Drought Contingency Plan* report dated March 2021. This report was not released until 2023 and only then because the BCA pushed for its release.

The report implicitly concludes that an improved restriction policy would provide a short-term solution during any future drought, with water restrictions implemented well in advance of a serious water shortage.

The proposed new water restriction policy introduces Stage 1 water restrictions when the dam is at 85% full by volume[6], Stage 2 at 75%, Stage 3 at 65% and Stage 4 at 50%. In the last

[5] "a 5/10/10 design approach requires the total time (duration) spent in drought restrictions should be no more than 5% of the time, the restrictions should not apply more frequently than 10% of years, and when they do apply, should provide 90% of the unrestricted dry year demand (severity = 10% reduction in demand) through a repetition of the worst drought on record commencing at the time restrictions are introduced."

[6] Council staff usually measure water levels linearly. Given dams are wider at the top than the bottom, these levels do not align with volume levels. Therefore, an algorithm will need to be applied to match these restriction thresholds.

drought stage 1 was introduced at 60% (but it was not necessarily the trigger), stage 2 at 54%, stage 3 at 46% and stage 4 at 35%.

This proposed new water restriction policy is intended to avoid using stage 4 restrictions. The BCA fully supports this goal but notes that the reports hydrology modelling of this option (Table 7) shows that for 4 days there would be stage 4 restrictions, which is a marked improvement on the 35 days which occurred, but it fails to meet the goal. The BCA contends that as the population grows, such a policy will become less effective.

This report has never been publicly scrutinised, with the BCA questioning some of its findings. The BCA notes that the document *Guidance on strategic planning outcome - Understanding water security*, which elaborates on the 5/10/10 design approach introduced by the draft NSW Guidelines for Assuring Future Urban Water Security (2013), does not appear to consider the possibility of the cessation of flows as is the case for Braidwood.

Moreover, the model and the input data are not provided. Effectively it is a 'black box' approach which is not open to scrutiny.

For the great majority of the population of QPRC the concept of having Stage 3, let alone Stage 4, restrictions is unthinkable. So why is it acceptable for Braidwood?

What is of concern is that the Issues Paper simply does not consider this matter, despite Council being well aware of the concerns of the Braidwood Community.

Braidwood Sewerage Scheme

According to the Issues Paper*,' The new treatment plant has a civil and hydraulic capacity of 3,000 equivalent persons (EP) and electrical and mechanical equipment capacity for 2,000 EP.'* and *'The Braidwood STP* [Sewerage Treatment Plant] *with design capacity of 2,000 EP' (p183). It also states, 'The total Equivalent Person (EP) for the Braidwood sewerage scheme has been estimated as 1,755 EP'* (p188).

Under the population growth assumption, it estimates that '*The STP EP load will reach the current treatment capacity with the installed aeration system (2,000 EP) in 2032 and the design capacity of 3,000 EP in 2048*' (p193).

It also projects the Average dry weather flow (ADWF) using two methods[7]. It finds '*Using the first method, the hydraulic capacity of the plant will be reached in about 2047 (slightly before the nutrient capacity is reached in 2048), using the second method, the hydraulic capacity will be reached in 2043*' (p193).

The BCA is concerned that the Issues Paper does not identify these capacity limitations in the Braidwood sewerage system as issues, even though they will require capital investment in the foreseeable future.

Thank you for your consideration.

Submitted by Sue Murray
BCA President
On behalf of the Braidwood Community Association

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[7] Using both the current ADWF plus 180 L/EP/day for growth (Table 9-7) and 220 L/EP/day for all users (Table 9-8).