

Name of wastewater treatment plant	Penrith Water Reclamation Plant
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System Summary	Projected				
	2026	2031	2036	2046	2056
Penrith WRP ADWF (ML/d)	28.8	32.2	35.0	35.5	35.6
North Richmond load (EP _{cod})	196,423	219,050	237,766	240,952	241,578

Treatment capacity constraints for 2022 – 2036	Estimated year of exceedance
Biosolids stabilisation capacity	2025
Secondary treatment aeration system capacity constraint	2032
Additional treatment processes are needed for Total Nitrogen compliance under the Hawkesbury Nepean framework.	2024

Summary of servicing strategy for 2022 – 2036
<p>Continue supply of treated effluent to St Mary AWTP, supply to local recycled water customers, and discharge to waterway as per the current EPL. To meet the Total nitrogen compliance under the Hawkesbury Nepean framework, supplemental carbon dosing system needs to be installed before mid-2024.</p> <p>The Biosolids Dewatering Program funded by the Renewal and Reliability Project. Following this, staged implementation of RO for load compliance across the Yarramundi bubble is needed. Scale of investment is also highly dependent on amount of effluent reused.</p>

Anticipated augmentation and upgrades for 2020 – 2046			
Year commissioned	Description	Approximate capital cost (\$M)	Impact on servicing capacity
2025	Biosolid upgrade- New pre-thickening and recuperative thickening, equipment and upgrade to dewatering and outloading	1.6**	Biosolids capacity upgrade beyond 2036
2032	Plant-wide upgrade: Staged implementation of RO	30.1	Increased capacity for servicing of growth demand beyond 2030.

** - Project in progress, remaining expenditure to complete

Further investigations
Alignment of aeration upgrade with bioreactor renewal works under consideration.
Changes to the Hawkesbury-Nepean load limits may result to additional treatment upgrades.
Greater Penrith to Eastern Creek growth area under investigation – servicing strategy may impact on demand forecast for Penrith WRP.
Investigations underway to assess EPL changes on servicing strategy and asset capability – further investment may be required.