Appendix A
Central Coast Water Supply Headworks Development Servicing Plan 2024

Central Coast Council

Water Supply Headworks Development Servicing Plan 2024

Version 2.

Water Assets & Planning

October 2024

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1. Introduction

The purpose of this Development Servicing Plan (DSP) is to determine the water headworks component of Developer Charges applicable to proposed new developments within the Northern and Southern regions of the Central Coast Council (Council) Local Government Area (LGA).

This plan has been prepared in accordance with the requirements of the Water Management Act 2000, using the methodology and parameters determined by the Independent Pricing and Regulatory Tribunal's (IPART) Determination in October 2018 for Maximum prices for connecting, or upgrading a connection, to a water supply, sewerage, or drainage system (October 2018).

2. Applicability of this Plan

This DSP describes the water headworks component of developer charges applicable to the Northern and Southern Region 2024 Development Servicing Plans.

3. Area of the Plan

All lands contained within the Council LGA, connected (or proposed for connection) to Council's water supply scheme may be subject to this DSP. Local area DSPs where applicable will refer to this DSP for headworks component of developer charges. The map of existing Central Coast Water Systems is shown in Appendix A

4. Population and Equivalent Water Tenement Projection

Council has engaged .id consulting for its demographics analysis based on latest Australian Bureau of Statistics (ABS) Census data. .id consulting provides population forecast figures at the level of various geographic areas. Council's North (former Wyong Shire Council LGA) and South (former Gosford City Council LGA) regions forecast is used for headworks DSP. The latest set of forecast population figures up to 2036, available at the time of development of this DSP are used.

Further population projection from 2036 to 2054 is based on previous studies done for sewerage master plan of both North and South regions. The 2036 population has been linearly extrapolated at 1.39% and 0.4% annual growth rates respectively for the Northern and Southern Regions. The portion of the of population not connected to council's water services was deducted while calculating the serviced population. Table 1 below summarises serviced population projection for the North and South regions.

Tenement projection has been done based on average annual water demand of 150KL/tenement as per directions from IPART. The water demand patterns of both North and South regions are slightly different to each other which may further depart in future 1 because of higher scope of growth of BASIX (more water efficient) housing in the northern region than the south. Therefore, the individually climate corrected demand of both regions, North and South has been used to forecast water demand for both regions which is further used for calculating total equivalent water tenements as shown in Table 1.

Table 1 Population and tenement Projection

Year	North Total Population	North Serviced Population	South Total Population	South Serviced Population	North Tenements	South Tenements	Total Tenements
30/6/2023	173,917	168,873	178,724	176,758	98,417	99,141	197,558
30/6/2026	183,592	178,268	182,272	180,267	103,892	101,109	205,001
30/6/2031	201,039	195,209	186,597	184,544	113,764	103,508	217,272
30/6/2036	217,751	211,436	190,955	188,854	123,222	105,925	229,147
30/6/2041	233,311	226,545	194,805	192,662	132,027	108,061	240,088
30/6/2046	249,984	242,734	198,732	196,546	141,461	110,239	251,700
30/6/2051	267,847	260,080	202,739	200,509	151,570	112,462	264,032
30/6/2055	283,053	274,844	206,002	203,736	160,175	114,272	274,447

5. Reference to Other Development Servicing Plans

The development charge for the headworks component determined by this DSP will be included in all applicable North and South region DSP charges.

6. System Demand

Council has used iSDP (Integrated Supply Demand Model) for demand forecast. The forecast demand is provided in the table below.

Table 2 Projected Water Demand for Central Coast Council

Year	Annual Average Demand ML/year	Average Day Demand ML/day	Peak Day Demand * ML/day
30/6/2021	29,964	82.1	131
30/6/2026	31,028	85.0	136
30/6/2031	32,317	88.5	142
30/6/2036	33,725	92.4	148
30/6/2041	35,299	96.7	155
30/6/2046	37,001	101.4	162
30/6/2051	38,819	106.4	170
30/6/2055	40,400	110.7	177

* Determined using Peak Demand Factor of 1.6

7. System Yield and Water Treatment Capacity

7.1. System Yield

Council has recently developed its long-term water strategy, Central Coast Water Security Plan June 2023 (CCWSP). The plan was developed collaboratively with Hunter Water Corporation and DCCEEW (then DPE). The hydrological model (Rainfall Runoff Model) was also updated on eSource platform which is considered Australia's National Hydrological Modelling Platform. The yield calculation methodology was synchronised with Hunter Water's risk-based method and newly developed joint WATHNET model was used for system analysis. This aligned the two systems in terms of yield determination, which helped consider joint water options on an equitable basis incorporating the synergies of both systems in the

analysis. The 32,500 ML/year was determined as the current yield of the existing system. While the current agreement with Hunter Water for inter-regional water sharing expires in 2026, it assumed for the purpose of this DSP that the provision for inter-regional water transfers will continue beyond 2026. The system forecast demand exceeds the above-described system yield in 2035.

The CCWSP was developed to plan for future water augmentations when demand will exceed the current system yield. CCWSP is an adaptive plan and is best described as three pillars as below:

Pillar 1 Conserve and use water efficiently
Pillar 2 Maximise existing water supplies to delay new water supplies
Pillar 3 Develop new rainfall independent supplies for an adaptive future

The plan has adopted the portfolio with the following options as shown in the Figure 1.

- Increased groundwater supply in 2035
- Increased recycled water supply in 2037
- New PRW supply 2038
- New Desalination supply 2043

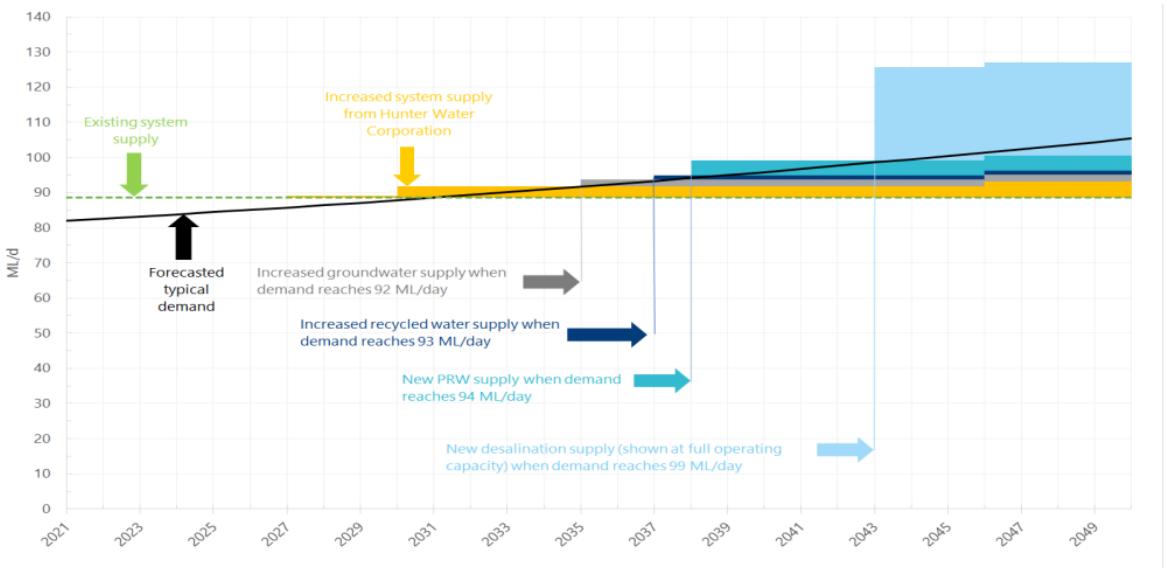

Figure 1 Indicative timings of new supplies after demand exceeds the system yield

7.2. Water Treatment Capacity

Total existing water treatment and distribution capacity provided for in the DSP is 300 ML/day which is sufficient to meet the peak day demand up to 2055. It is noted that Council's existing water treatment plants are subject to de-rating under certain raw water quality conditions and the below production capacity cannot be met under a range of different conditions. Figure 2 shows peak day demand versus theoretical treatment capacity over time.

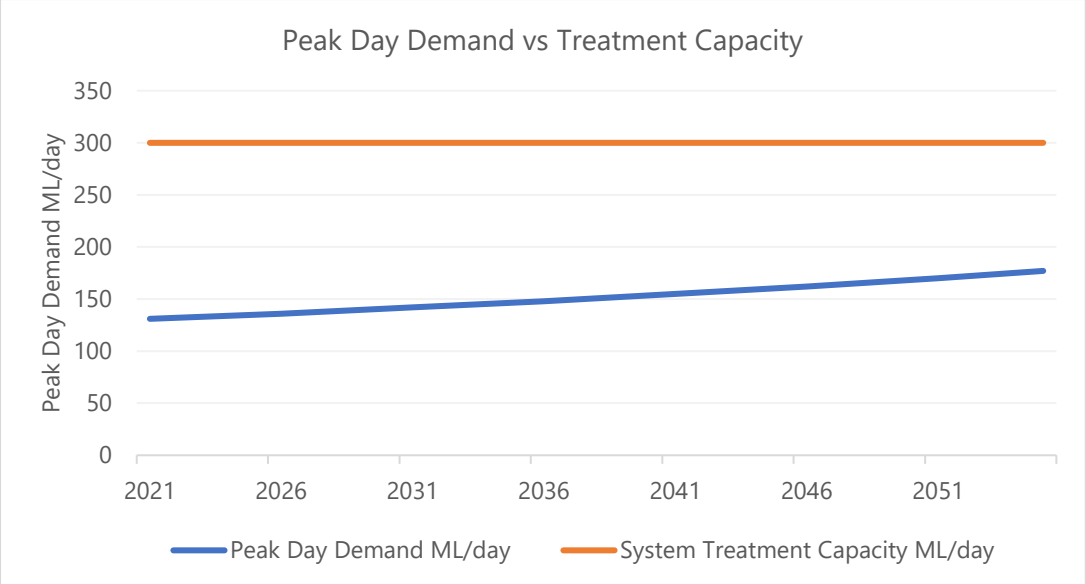

Figure 2 Peak Day Demand vs Water Treatment Capacity

8. Estimates of Asset Values

The asset values are taken as total gross replacement costs from Council's financial asset register which was used to complete a recent revaluation of Council's Water and Sewerage Assets in 2022. The value of existing assets was determined using a Modern Engineering Equivalent Replacement Asset (MEERA) approach as required by IPART. This same approach was required for the 2022 Water and Sewerage Asset revaluation which has satisfied Audit Office of NSW requirements. The values determined are in 2023-24 dollars.

The asset values for un-commissioned future assets are price indexed values as determined during development of CCWSP in 2020-21.

The annual value charges are calculated using 0% discount rate for pre-1996 assets and 2.8% discount rate (real pre-tax WACC as in the prevailing IPART price determination) for post-1996 assets as per IPART's final report on "Maximum prices to connect, extend or upgrade a service for metropolitan water agencies October 2018."

Operating costs are not relevant to this DSP and are detailed in each Local Area DSP.

9. Method of Reviewing/Updating Developer Charges

The Developer Charges determined in this DSP are incorporated into the Northern and Southern Region Water DSPs developed by Central Coast Council. The value of charges payable under the Development Servicing Plan will be held constant in real terms for the life of the Plan by the adjustments specified within Local Area DSPs.

10. Calculation of Development Service Charges

The 2018 Calculation Template provided by IPART has been used to calculate maximum charges that can be levied for the headworks component of developer charges on new developments.

Headworks development service charges assessed per equivalent tenement (ET) are determined as $5,975 per Equivalent Tenement (ET).

11. References

The following Reports provide the basis upon which the need and capacity of capital works have been assessed:

i. Central Coast Water Security Plan (CCWSP) June 2023

Appendix A

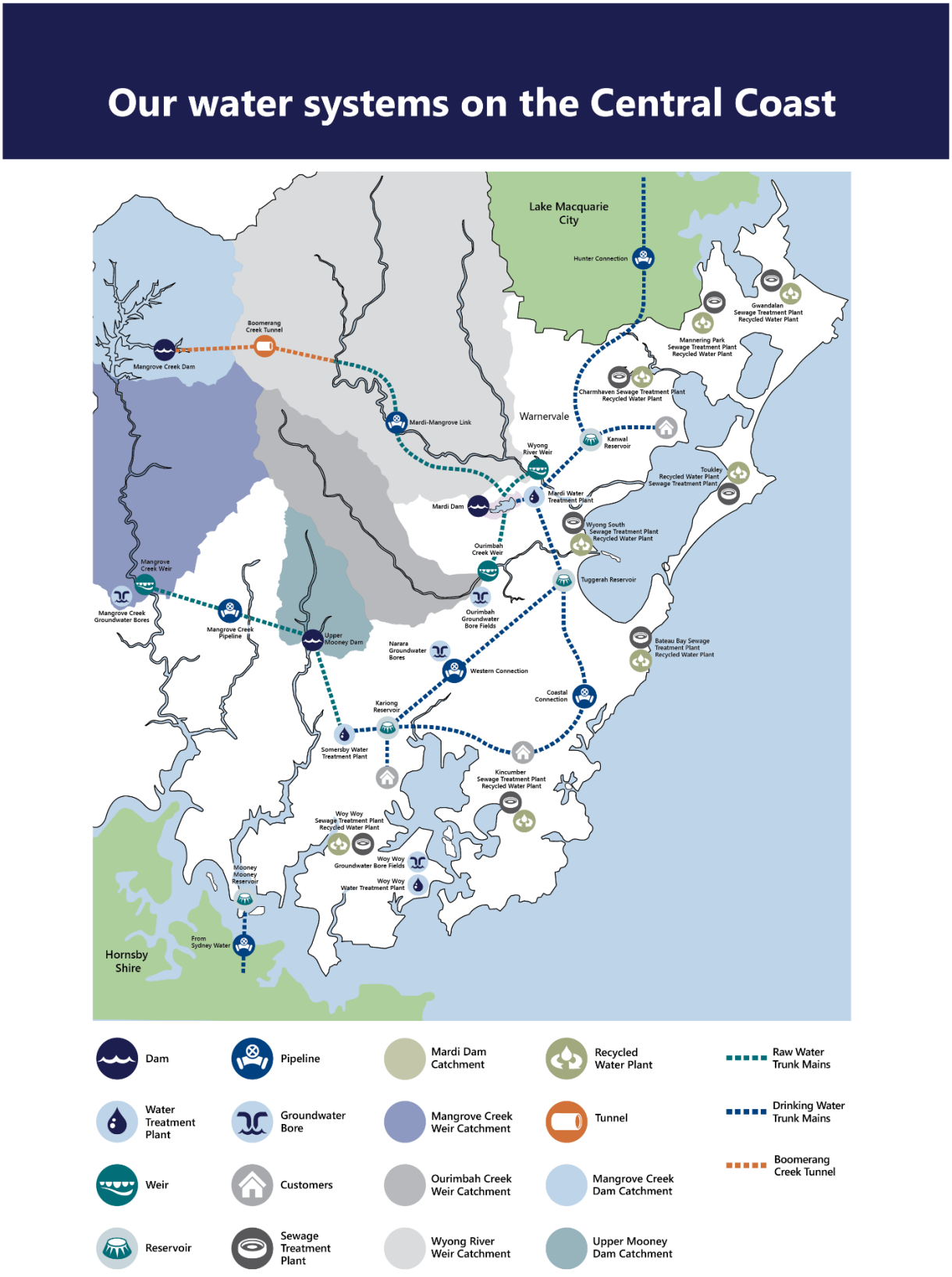

Figure A-1 Existing Central Coast Water Supply System

Figure A-2 Un-commissioned Future Assets

Table A-1 Maximum Price Calculations Spreadsheet Snips

Central Coast Council Water Supply Headworks Development Servicing Plan

CALCULATION OF MAXIMUM PRICE

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Note: an input is required in F21 to incorporate the Headwork costs per ET into the maximum price.

Table 1: Calculation of maximum price ($, $2024-25)

Maximum price		Headworks costs per ET	Pre-1996 assets	Post-1996 commissioned assets	Post-1996 uncommissioned assets	Reduction for expected revenue and operation costs
	Costs to be recovered via DSP		400,221,174	189,223,233	91,607,464	0
	ETs		112,823	115,692	115,692	115,692
5,975	Value per ET		3,547	1,636	792	0
		Percent	59.4%	27.4%	13.3%	

Sum of new ETs (not discounted)	Sum of PV of new ETs (discounted at pre-1996 asset discount rate)	Sum of PV of new ETs (discounted at post-1996 asset discount rate)	Sum of PV of new ETs (discounted at expected revenue and costs discount rate)	Sum of PV of Pre-1996 commissioned assets (discounted at pre-1996 asset discount rate)	Sum of PV of Post-1996 commissioned assets (discounted at post-1996 asset discount rate)	Sum of PV of Post-1996 uncommissioned assets (discounted at post-1996 asset discount rate)	Sum of PV of revenue for new customers (discounted at expected future revenue and costs discount rate)	Sum of PV of costs for new ETs (discounted at expected future revenue and costs discount rate)
112,823	112,823	115,692	115,692	400,221,174	189,223,233	91,607,464	0	0

PRE-1996 ASSETS WITH A NEXUS TO THE SERVICE FOR WHICH THE MAXIMUM PRICE IS BEING CALCULATED

Consideration must be given to the principles regarding asset exclusions presented on the 'Asset exclusions' worksheet before they are entered into the register.
Hyperlink to the 'Asset exclusions' worksheet: 'Asset exclusions'!A1

Date range for assets

Start date	01 Jan 1970
End date	31 Dec 1995

Register of pre-1996 assets

General inputs | **Asset value inputs**

Identifier	Description	Date commissioned	Expected system-wide ETs to be serviced by this asset	Proportion of asset cost to be recovered via this DSP	Number of units or length of asset (A)	Unit of measure in (A)	MEERA value per unit/measure of length (B) ($ as at 1 July 2024)	Total MEERA value (A x B) ($, $2024-25)	MEERA value to be recovered via DSP ($, $2024-25)
Raw Water Yield				-				-	-
	Mangrove Creek Dam	30 Jun 1982	271,796	41.5%	1		256,044,083	256,044,083	106,284,020
	Mangrove Creek Weir	30 Jun 1975	271,796	41.5%	1		8,413,568	8,413,568	3,492,476
	Ourimbah Creek Upper Weir	30 June 1979	271,796	41.5%	1		2,268,758	2,268,758	941,763
	Ourimbah Creek to Mardi Dam WMR	30 June 1980	271,796	41.5%	1		5,000,579	5,000,579	2,075,743
	Boomerang Creek Tunnel	30 June 1989	271,796	41.5%	1		238,447,805	238,447,805	98,979,797
	Ourimbah Ck Tunnel	30 June 1979	271,796	41.5%	1		10,665,035	10,665,035	4,427,061
	Mangrove Creek Weir WPS to Somersby WTP WMR (Surge Tanks Included)	30 June 1974	271,796	41.5%	1		67,946,739	67,946,739	28,204,724
	Balance Tank B2	30 June 1971	271,796	41.5%	1		7,507,222	7,507,222	3,116,251
	Balance tanks to Somersby WMR	30 June 1974	271,796	41.5%	1		19,781,630	19,781,630	8,211,364
	Mangrove Creek Pumping Station	30 June 1975	271,796	41.5%	1		18,430,258	18,430,258	7,650,409
	Ourimbah Creek Pumping Station (WPS11)	30 June 1979	271,796	41.5%	1		2,776,459	2,776,459	1,152,510
Treatment and			271,796	41.5%				-	-
	Somersby WTP Stage 1	30 June 1970	271,796	41.5%	1		34,300,808	34,300,808	14,238,282
	Somersby Balance Tank 2	30 June 1971	271,796	41.5%	1		7,085,524	7,085,524	2,941,204
	Kariong Reservoir No 1(K1)	30 June 1973	271,796	41.5%	1		7,333,798	7,333,798	3,044,263
	Coastal Connection	30 June 1985	271,796	41.5%	1		14,441,050	14,441,050	5,994,487
	Western Transfer WMT SWTP to K2 Res (WMT-WSTK2)	30 June 1978	271,796	41.5%	1		16,037,663	16,037,663	6,657,242
	Western Transfer WMT K2 Res to North Gosfrod (WMT-KTNG)	30 June 1979	271,796	41.5%	1		6,972,822	6,972,822	2,894,422
	Western Transfer WMT Gosford to T2 Res (WMT-GTT2) Stage 1	30 June 1980	271,796	41.5%	1		32,637,123	32,637,123	13,547,685
	Western Transfer WMT Gosford to T2 Res (WMT-GTT2)Stage 2	30 June 1995	271,796	41.5%	1		38,684,949	38,684,949	16,058,141
	Western Transfer WMT MWTP to T2 Res (WMT-MTT2)	30 June 1980	271,796	41.5%	1		5,048,147	5,048,147	2,095,488
	Mardi WTP Stage I: 80 ML/d	30 June 1982	271,796	41.5%	1		49,731,856	49,731,856	20,643,717
	Somersby WTP Stage 2	30 June 1986	271,796	41.5%	1		50,161,941	50,161,941	20,822,245
	Kariong Reservoir No 2 (K2)	30 June 1986	271,796	41.5%	1		21,942,939	21,942,939	9,108,524
	Tuggerah 2 Reservoir	30 June 1987	271,796	41.5%	1		16,244,709	16,244,709	6,743,186
	Forresters Beach Pumping Station	30 June 1987	271,796	41.5%	1		2,063,275	2,063,275	856,466
	Ourimbah Pumping Station (WPS17)	30 June 1987	271,796	41.5%	1		6,402,701	6,402,701	2,657,764
	Mardi WTP Stage II: 80 ML/d	30 June 1994	271,796	41.5%	1		17,783,500	17,783,500	7,381,939

POST-1996 COMMISSIONED ASSETS WITH A NEXUS TO THE SERVICE FOR WHICH THE MAXIMUM PRICE IS BEING CALCULATED

Consideration must be given to the principles regarding asset exclusions presented on the 'Asset exclusions' worksheet before they are entered into the register.
Hyperlink to the 'Asset exclusions' worksheet: 'Asset exclusions'!A1

Date range for assets

Start date	01 Jan 1996
End date	30 Jun 2024

Register of post-1996 commissioned assets

Add new assets Commissioned

General inputs				Service potential inputs			Asset value inputs				
Identifier	Description	Date commissioned	Financial year of commissioning		Expected system-wide ETs to be serviced by this asset	Proportion of asset cost to be recovered via this DSP	Number of units or length of asset (A)	Unit of measure in (A)	MEERA value per unit/measure of length (B) ($ as at 1 July 2024)	Total MEERA value (A x B) ($, $2024-25)	MEERA value to be recovered via DSP ($, $2024-25)
Raw Water Yield			-			-				-	-
	Mardi Dam Upgrades	30 Jun 2010	2009-10		271,796	41.5%	1		22,736,457	22,736,457	9,437,914
	Lower Wyong River Weir -Fishway and other Upgrade	30 Jun 2010	2009-10		271,796	41.5%	1		12,600,215	12,600,215	5,230,355
	Lower Wyong PS to Mardi Dam WMR	30 Jun 2011	2010-11		271,796	41.5%	1		25,571,628	25,571,628	10,614,795
	Mardi Dam to Mangrove Dam WMR	01 Jan 2011	2010-11		271,796	41.5%	1		97,049,989	97,049,989	40,285,496
	Mooney Pumpstation upgrade	30 Jun 2017	2016-17		271,796	41.5%	1		4,679,886	4,679,886	1,942,623
	Wyong River Pump Station (WPS 1A)	30 Jun 2011	2010-11		271,796	41.5%	1		9,926,222	9,926,222	4,120,379
	Mardi Dam to Mardi WTP Pump Station (WPS23)	30 Jun 2011	2010-11		271,796	41.5%	1		3,508,250	3,508,250	1,456,276
	Mardi Dam to Mangrove Creek Dam Pump Station (WPS24)	30 Jun 2012	2011-12		271,796	41.5%	1		7,564,732	7,564,732	3,140,124
	Spur main WMR	30 Jun 2007	2006-07		271,796	41.5%	1		318,109	318,109	132,047
	Groundwater Bores	30 Jun 2007	2006-07		271,796	41.5%	1		28,525,263	28,525,263	11,840,850
	WPS Narara	30 Jun 2007	2006-07		271,796	41.5%	1		1,287,723	1,287,723	534,534
Treatment and Transfer			-		271,796					-	-
	Western Transfer WMT MWTP to T2 Res (WMT-MTT2) Upgrade	30 Jun 1997	1996-97		271,796	41.5%	1		4,010,352	4,010,352	1,664,699
	Woy Woy WTP for Groundwater Bores	30 Jun 2007	2006-07		271,796	41.5%	1		9,202,024	9,202,024	3,819,764
	Hunter Connection	30 Jun 2007	2006-07		271,796	41.5%	1		43,629,707	43,629,707	18,110,712
	High Lift Pump Station (WPS25)	30 Jun 2011	2010-11		271,796	41.5%	1		11,375,609	11,375,609	4,722,021
	Mardi to Warnervale Pipeline (M2WPL)	01 Dec 2021	2021-22		271,796	41.5%	1		11,469,039	11,469,039	4,760,803
	Ourimbah Pump Station (WPS17)	30 Jun 2013	2012-13		271,796	41.5%	1		6,402,701	6,402,701	2,657,764
	Forresters Beach Pump Station (WPS FORBCH)	30 Jun 2022	2021-22		271,796	41.5%	1		2,063,275	2,063,275	856,466

POST-1996 UNCOMMISSIONED ASSETS WITH A NEXUS TO THE SERVICE FOR WHICH THE MAXIMUM PRICE IS BEING CALCULATED

Consideration must be given to the principles regarding asset exclusions presented on the 'Asset exclusions' worksheet before they are entered into the register.

Hyperlink to the 'Asset exclusions' worksheet: Asset exclusions'!A1

Date range for assets

Start date	01 Jul 2024

Register of uncommissioned assets

General inputs				Service potential inputs			Asset value inputs				
Identifier	Description	Date commissioned	Financial year of commissioning	DSP areas serviced by asset	Expected system-wide ETs to be	Proportion of asset cost to be	Number of units or length of asset (A)	Unit of measure in (A)	MEERA value per unit/measure of	Total MEERA value (A x B)	MEERA value to be recovered via DSP
Future Yield Augmentation			-			-				-	-
	Increased utilisation of GW	30 Jun 2034	2033-34		271,796	41.5%	1		568,575	568,575	236,016
	Expand existing STP based recycling schemes	30 Jun 2037	2036-37		271,796	41.5%	1		7,936,110	7,936,110	3,294,283
	Purified Recycled Water (PRW)	30 Jun 2038	2037-38		271,796	41.5%	1		56,977,200	56,977,200	23,651,263
	Drought Desalination Plant	30 Jun 2043	2042-43		271,796	41.5%	1		287,280,000	287,280,000	119,250,064