Water Development Servicing Plan

W.6 Cessnock Water Zone DSP

AS OF AUGUST 2023

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EXECUTIVE SUMMARY

This Development Servicing Plan (Draft DSP) sets out the price for connecting a new development to **Cessnock Water Zone**

The prices have been prepared using the method set by the Independent Pricing and Regulatory Tribunal's (IPART) in their 2018 Determination (IPART 2018 Determination)

Using the methodology in the 2018 Determination, the maximum price for **Cessnock Water Zone** is **$4,848.61** ($2022-23) per Equivalent Tenement (ET). One ET represents the average billing of a single standalone residential dwelling. The charge will be adjusted each year based on movements in the Consumer Price Index (CPI).

Each DSP contains information about the geographical area covered by the system, estimates of future capital expenditure and operating costs, demographic assumptions, and documents the planning information relevant to that system.

The NSW Government has directed that developer charges will remain at 0% ($0) for financial year 2023-24, before a phased reintroduction at 25% in financial year 2024-25, 50% in financial year 2025-26, prior to full reintroduction from financial year 2026-27 onwards.

GLOSSARY

ABS	Australian Bureau of Statistics
Annual Demand	Estimated total annual water consumption
CPI	Consumer Price Index (All Groups) index for the weighted average of eight capital cities as published by the ABS
Developer	Any person(s) who intends to subdivide land and/or undertake works that may place demand on water and/or sewer systems
DSP	Development Servicing Plan
ET	An Equivalent Tenement (ET) is the unit of measure used to quantify the demand or loading on water or wastewater systems respectively. One ET represents the average billing of a single dwelling.
Headworks – Water	Infrastructure comprising a system of dams, major storage reservoirs, Water Treatment Plant (WTP) and bulk water supply
IPART	Independent Pricing & Regulatory Tribunal
KL/d	Kilolitres per day
Lead-in	A main that passes through lands other than the subject land which may be subdivided and/or developed
MEERA	Modern Equivalent Engineering Replacement Asset – means an asset value calculated on the basis that the asset is constructed at the time of valuation in accordance with modern engineering practice and the most economically viable technologies, which provides similar utility functions to the existing asset in service.
ML/d	Megalitres per day
NPV	Net Present Value; the summation of future expenditures / incomes expressed in today's dollars taking account the impact of financing costs due to interest rates
Reticulation	Local supply pipes providing water and sewer services to individual properties
Rising Main	A pipeline that is pressurized to transport sewage to a higher level
System	The integration of infrastructure assets into a network to service an area or catchment
WPS	Water Pumping Station
WTP	Water Treatment Plant
WWPS	Wastewater Pumping Station
WWTW	Waste Water Treatment Works

DEVELOPER CHARGES AND EQUIVALENT TENAMENTS

Calculation of the Developer Charge

What methodology is used to determine the value of developer charges?

IPART's 2018 Determination of developer charges sets the methodology that Hunter Water must follow when calculating a maximum price (charge) for each Developer Servicing Plan (DSP) area. (see IPART 2018 Determination).

The developer charge is calculated on a per Equivalent Tenement (ET) basis. One ET is equal to the estimated demand of a typical residential standalone dwelling. Each DSP area includes a developer charge for water and wastewater separately.

The methodology comprises two main components:

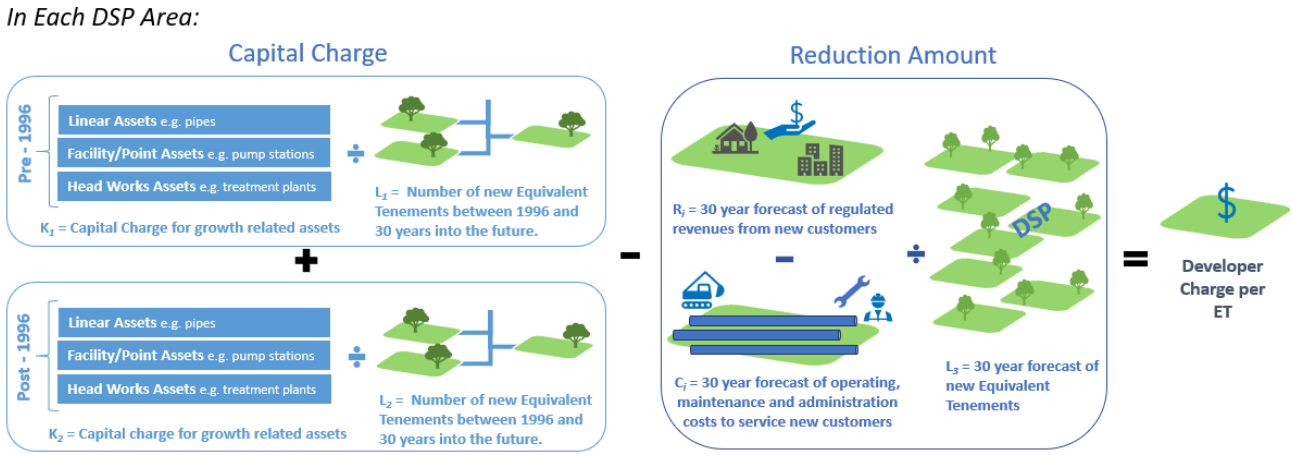
- The Capital Charge

The present value of the capital cost of assets used to service growth in the DSP area. This relates to both existing and future assets.

- The Reduction Amount

The present value of future periodic revenues less location-specific operating costs related to new customers. This is forecast over a 30-year period.

The calculation is summarised in the below ***Figure 1***.



Note:

K_1, K_2, R_i, C_i, L_1, L_2 and L_3 represent each component of IPARTs formula on pages 5 and 6 of the 2018 Determination.
Pre-1996 assets are those commissioned between 1 January 1970 and 31 December 1995.
Post-1996 assets include those commissioned after 1 January 1996, plus a forecast of future uncommissioned assets.

The total charge payable by any given development depends on the assessed number of ETs in that development. The underlying net present value method ensures that, all else being equal, the price paid by each new connection will be the same regardless of when the connection occurs.

DEVELOPMENT SERVICING PLAN (DSP): SUMMARY

Plan name and Purpose

This plan is called the “Cessnock Water Zone Development Servicing Plan” (W.6)

The purpose of this plan is to identify the demand for facilities and services as a result of development, and to provide those services and facilities (or equivalent) through developer contributions. The services and facilities included in this plan are only those provided through Hunter Water Corporation and not those provided by other authorities.

Summary of Contents

This DSP details the developer charges within Cessnock Water Zone. The service area is shown in Figure 2. Cessnock Water Development Servicing Plan covers approximately 244.14 square km. This DSP supersedes all prior determinations.

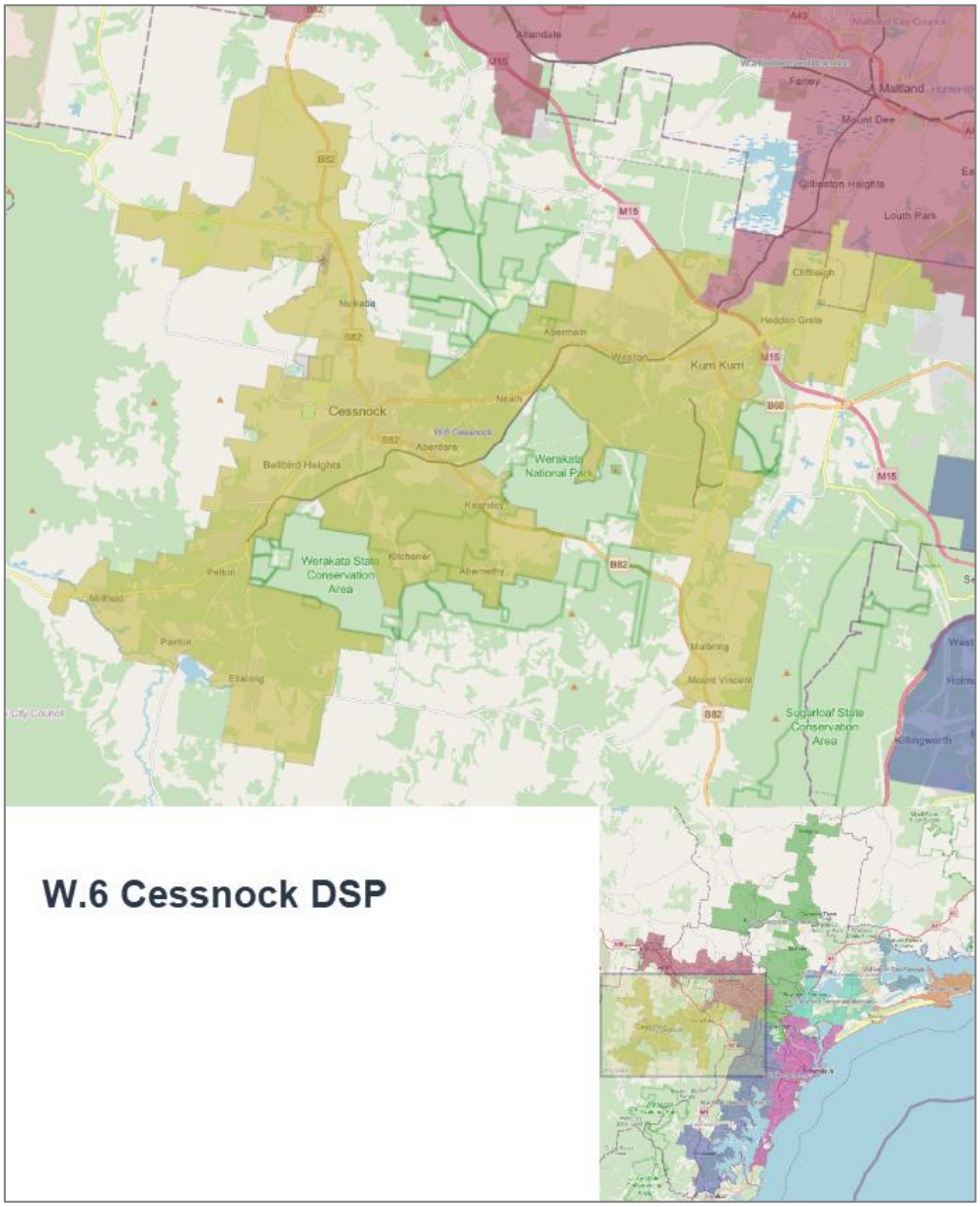


Figure 2 – Cessnock Water Zone DSP

Area Covered

The Suburbs within this DSP are: Aberdare; Abermain; Abernethy; Bellbird; Bellbird Heights; Cessnock; Congewai; Ellalong; Elrington; Greta Main; Kearsley; Kitchener; Kurri Kurri; Millfield; Mount View; Mount Vincent; Mulbring; Neath; Nulkaba; Paxton; Pelaw Main; Pelton; Pokolbin; part of Black Hill; part of Buchanan; part of Cliftleigh; part of East Maitland; part of Four Mile Creek; part of Gillieston Heights; part of Heddon Greta; part of Louth Park; part of Lovedale; part of Loxford; part of Sawyers Gully; Quorrobolong; Richmond Vale; Stanford Merthyr; Weston.

Relationship to other plans

Each site will have two developer charges applicable – one for water and another for wastewater. Developers will need to refer to Hunter Water's website to identify which DSPs are applicable to their development.

Determination of DSP area

How has the DSP area been determined?

The DSP area for Cessnock was determined based on the areas serviced by Cessnock water supply zone.

This is in accordance with Hunter Water's criteria for defining system catchment boundaries. Below details the formal guidelines used to define the extent of system catchment/supply zones for use in Development Servicing Plans and developer charge calculations.

Determining Water DSP Criteria

Headworks

The system catchment boundary for water resources assets delineates the area serviced by the water storages (dams and groundwater assets) and water treatment/delivery assets. Where the management, operation and upgrading of separate water resources assets are determined by their interconnection downstream, then the system catchment boundary for each area is combined.

Water Distribution

The system catchment boundary for water distribution assets that control the water pressure (hydraulics or head) in the area ("the zone"). These assets are typically water pumping stations, automatic inlet valved associated with major reservoirs as well as zone valves that are closed in the system.

Areas served from these major distribution assets via small pumping stations, high level tanks and pressure reducing valves are amalgamated with their associated larger system areas.

Appendix A shows the assets included in the DSP area.

DEVELOPMENT SERVICING PLAN (DSP): PLANNING PROFILE

Boundary and Location

The Cessnock DSP area encompasses the townships of Cessnock, Bellbird, Rothbury, Paxton, Pelton, Millford, Kurri Kurri, Abermain, Mulbring, Pokolbin and Cliftleigh. The Cessnock DSP area falls entirely within the Cessnock City Council Local Government Area (LGA).

Current Population and Equivalent Tenement

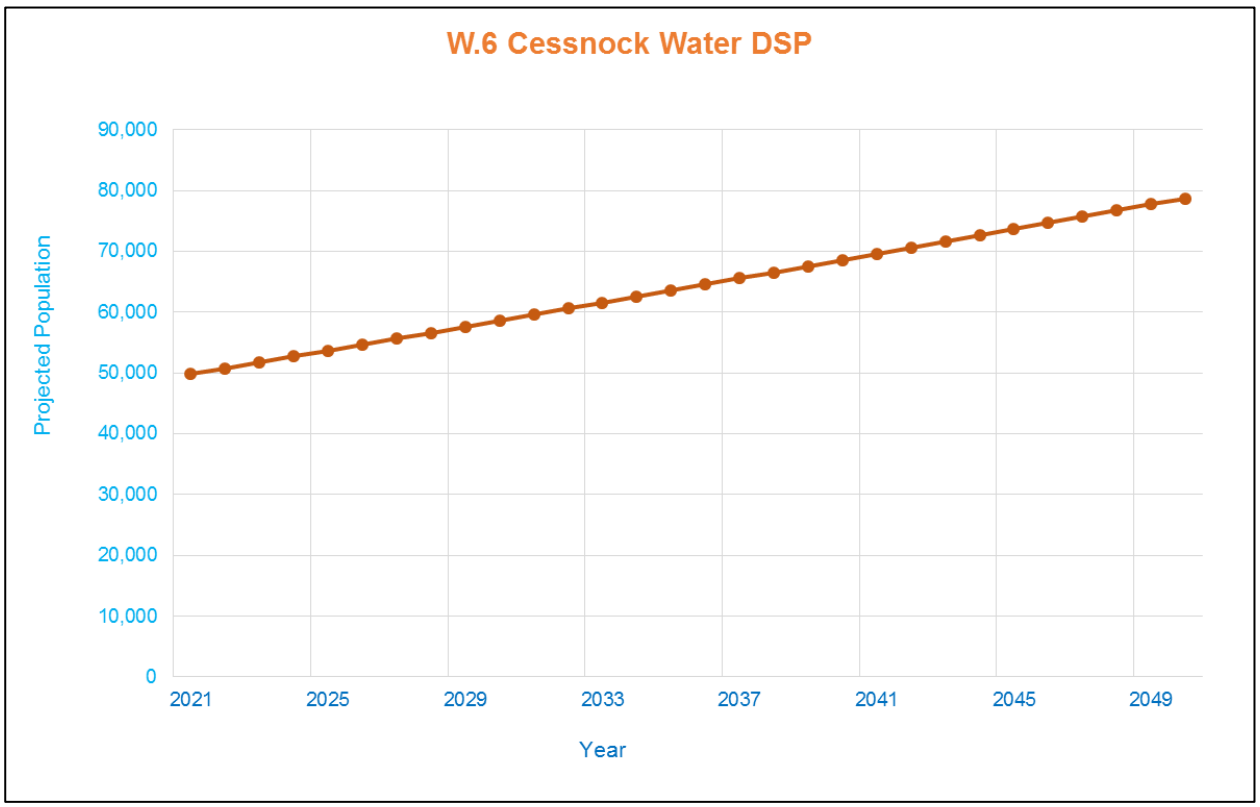
The total permanent population of the area in 2023 is estimated at: 49,859 which represents 7.94% of the total population of the Hunter Water servicing area.

An Equivalent Tenement (ET) is the unit of measure used to quantify the demand or loading on water or wastewater systems respectively. One ET represents the average billing of a single standalone residential dwelling.

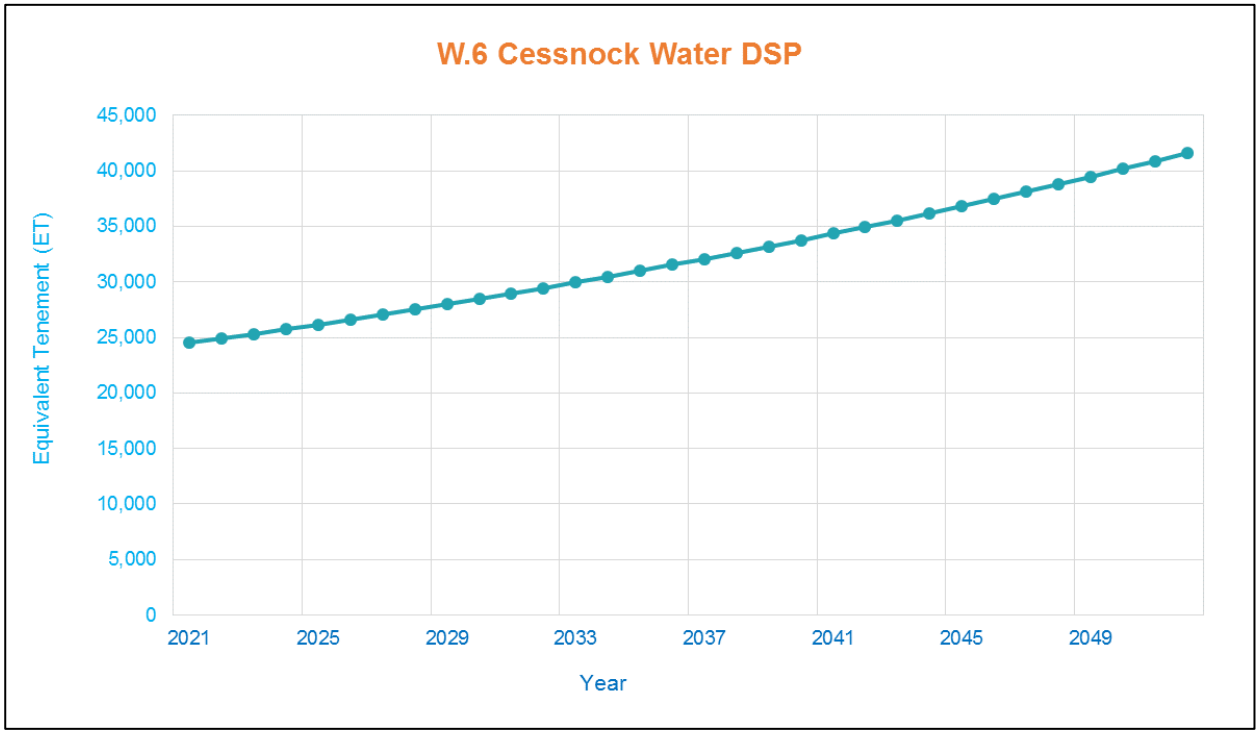
There are approximately 25,313 ET in 2023 connected to the Cessnock Water Zone.

Projected Population and Equivalent Tenement

The projected total permanent population in the Cessnock Water Zone in 2052 is 78,720 (8.77% of the total population of Hunter Water's servicing area).



The projected Equivalent Tenements (ET) in the Cessnock Water Zone in 2052 is 41,580 ETs.



Standards of Service

The standards of service to be provided to customers in the DSP Area are as per the following Licence, Standards and Charters:-

- **Hunter Water Corporation Operating Licence**
- **Hunter Water Corporation Customer Contract**

System design and operation is based on providing standards of service relative to:-

Water Supply

- Drinking Water Quality: Under its operating licence, Hunter Water is required to maintain and fully implement a Drinking Water Quality Management System that is consistent with the National Health and Medical Research Council (NHMRC) Australian Drinking Water Guidelines.
- Hunter Water integrated editions of the Water Services Associated of Australia (WSAA) design and construction guidelines (WSA 03 - Water Supply Code of Australia)
- Water Pumping Stations Design Manual (link)

DEVELOPMENT SERVICING PLAN (DSP): ASSET PROFILE

Assets included in the DSP Charge

In accordance with the 2018 Determination, the developer charge calculation includes all water and wastewater assets that Hunter Water has funded or will fund to provide services to new development.

'Assets' means all assets or parts of assets (including headworks), apart from 'Excluded Assets', allocated to a DSP where there is a nexus (close connection) to the Development they are intended to serve and includes assets that:

a) were commissioned prior to the Commencement Date;
b) were commissioned after the Commencement Date but before the Development commenced; and
c) are commissioned, or are to be commissioned, after the Development commences.

'Excluded Assets' means and assets:

d) that part of an asset provided for a reason other than to service a growth area;
e) that part of an asset that services other DSP Areas;
f) the capacity of an asset that was made available by changes in land use patterns, or by changes in average demand;
g) any asset or part of an asset that was unreasonably oversized relative to system and capacity requirements, based on available demographic data at the time it was commissioned;
h) any Pre-1970 Assets; and
i) any asset or part of an asset funded by Developers and transferred free of charge to the Agency.

The timing of existing assets contributing to the DSP has been sourced from Hunter Water's Fixed Assets Register. Proposed future assets have been sourced from Servicing Strategy Reports and reconciled with Hunter Water's Capital Works Program.

Summary of Completed Works in the DSP

Table 1 provides a summary of the completed Hunter Water Corporation funded works within the Cessnock Water DSP. Hunter Water's financial, developer and geographic information systems were used to identify works that have been constructed to provide a benefit to future development. Additional details of the items including the historical costs and the actual date of works are shown in Appendix A.

DSP Name	Asset Type	Total MEERA Cost ($2020-21)*	
W.6 Cessnock	Completed Point Assets	$	51,222,099.54
	Completed Linear Assets	$	13,101,819.19
	TOTAL	$	64,323,918.72

*Note: only the percentage attributable to growth has been added to the developer charge model.

Proposed Future Assets

The 2018 Determination allows Hunter Water to recover the cost of assets that are yet to be constructed and which are identified as being necessary to service future development. HWC's Capital Works Program database and Funding of Growth portfolio was referenced to identify the Future Works for each DSP area. Additional details of the items including the historical costs and the actual date of works are shown in Appendix A.

Hunter Water reserves the right to alter the scope and timing of the proposed future works, which are subject to ongoing review. Altered growth patterns and development profiles, changes to land-use zoning and other market conditions influence the location of development, and as a result Hunter Water may alter the proposed schedule of works in order to provide an optimal and cost-efficient service. All land developers are advised to contact Hunter Water to determine the nearest point of service connection.

Connecting Asset Funding (*formerly Funding of Growth Infrastructure*) – Completed Assets

Since the introduction of the Funding of Growth Infrastructure Standard in 2018 Hunter Water has entered commercial agreements with developers to deliver a range of water and sewer infrastructure supporting growth.

The value of the completed assets under the Standard have been included in the developer charge calculation using the GIS spatial model and accordingly their value will be recovered within the relevant DSP area they serve.

Connecting Asset Funding (*formerly Funding of Growth Infrastructure*) – Future Assets

A number of portfolio allowances have been made in anticipation of investments Hunter Water may need to make to support developer delivered connecting infrastructure under the Connecting Asset Funding (*formerly Funding of Growth Infrastructure*) Standard.

Hunter Water has reviewed the known approved water and wastewater servicing strategies prepared by developers and assessed whether some of the resulting assets may qualify under the Standard to be funded by Hunter Water and delivered by the development community. Such assets are included in the developer charge model with the associated lots served.

Where Hunter Water has received a Preliminary Servicing Application and has forward visibility of a likely development requiring support for connecting infrastructure, an allowance has been made in the forward program to allow such assets to be considered for developer design and construction within a 10-year window from 1 July 2023.

It is anticipated that each 5-year review Hunter Water will re-assess which assets were delivered, have changed delivery timing or value, and include final asset values in the developer charge model.

Summary of Future Works in the DSP

Table 2 provides a summary of the future Hunter Water Corporation funded works within the Cessnock Water DSP. Hunter Water's financial, developer and geographic information systems were used to identify works that will be constructed to provide a benefit to future development. Additional details of the items including the costs and the forecast date of works are shown in Appendix A.

DSP Name	Asset Type	Total MEERA Cost ($2020-21)*
W.6 Cessnock	Future Point Assets	$ 7,585,878.00
	Future Linear Assets	$ 21,576,977.00
	Connecting Asset Funding	$ 2,390,718.00
	Future Connecting Asset Funding	$ 5,400,000.00
	TOTAL	$ 36,953,573.00

*Note: only the percentage of the capital program attributable to growth has been added to the developer charge model

Headworks

The water supply headworks system delivers water to the water supply delivery systems. Headwork charges are therefore applicable to all water DSPs excluding Lemon Tree Passage and Karuah.

Assets included in the headwork calculation are summarised below:

- Major Sources – Chichester Dam, Grahamstown Dam, Tomago and Tomaree Sandbeds.
- Raw water system – CTGM from Chichester Dam to Dungog WTP, George Schroder pumping station and pipework, raw water reservoir to Grahamstown WTP, Tomago Sandbeds pipework to Grahamstown and Tomago WTP.
- Water Treatment Plants – Dungog WTP, Grahamstown WTP, Anna Bay and Glovers Hill WTP's.
- Bulk distribution system – transfer main from CTGM, transfer main from Grahamstown WTP to Newcastle, Central Coast Transfer (sections which were funded by Hunter Water), reservoirs and WPS which are considered as part of the Bulk distribution system.
- Lower Hunter Water Security Plan Investment (related to growth)

List of headworks assets are provided in Appendix A.

CALCULATION AND FINANCIAL INFORMATION

Reduction Amount

Revenues

Future periodic revenues have been forecast using charges in Hunter Water's prevailing periodic price determination. This determination was released in June 2020 with prices set until 30 June 2024. Revenues after this date are kept constant per ET at the 2024 financial year rate.

Table 3 provides a summary of charges and the overall revenues per ET used in calculations.

TABLE 3: PERIODIC CHARGES AND REVENUE PER ET

Revenue per ET $20-21	2022-23	2023-24 +	
Single Residential	24.26	24.26	Base water service charge
	181 * 2.51	181 * 2.54	Water usage charge x 181kL demand
	478.57	484.00	Water revenue per ET

Periodic revenues include a fixed and usage component, based on both volumetric demand and the type and size of connections to the system. Due to Hunter Water valuing ETs based on bill size, revenue per ET is the same amongst all customer types. Consumption of a customer in different customer classes is recognised in the actual value of the ET.

In Table 3, the average water consumption of an ET is 181kL per year.

Appendix B details the future periodic revenues expected to be received from new customers each financial year.

Operating Costs

Water operating costs per ET are common across all DSP areas except for Lemon Tree Passage and Karuah. This area is assigned a specific treatment cost per ET, unique from a system wide water treatment cost per ET assigned to all other areas. A system wide average cost per ET related to operations, transport and miscellaneous applies to all areas including Lemon Tree Passage and Karuah.

This method is used because:

- Hunter Water's bulk water system is heavily interconnected. Bulk water from Chichester or Grahamstown can be supplied to most customers across the area of operations.
- Lemon Tree Passage and Karuah are considered independent from this supply system. Water from Lemon Tree Passage Water Treatment Plant (WTP) can only be used in that DSP area. The Lemon Tree Passage DSP area cannot receive water from any other WTP.
- Water network pumping and chemical costs do not differ materially across the various water zones.

Indexation

All input costs included in the Maximum Price are in Real Terms - $2020-21.

The Maximum Price in Table 4 is indexed to $2022-23. The applied index of 1.125 reflects actual inflation for the year to June 2022 of 6.14%, and actual inflation for the year to June 2023 of 6.03%.

The Maximum Price in $2022-23 will then be adjusted for inflation by the CPI multiplier outlined in Schedule 6 of the 2018 Determination.

In line with the 2018 Determination the following discount rates have been used to calculate present values:

- Hunter Water has applied r_1 of 3.0%.

This converts pre 1996 commissioned assets and ETs for these assets to present values.

- Hunter Water has applied r_2 of 4.2%. This is the pre-tax WACC in the Final Report that accompanies Hunter Water's prevailing periodic price determination.

This converts post 1996 commissioned assets, uncommissioned assets, the reduction amount and ETs related to these, to present values.

Maximum Price

A single water developer charge applies to all customers in the DSP area. This is detailed in Table 4.

Each site will have two developer charges applicable – one for water and another for wastewater. Developers will need to refer to Hunter Water's website to identify which DSPs are applicable to their development.

Cessnock		
W.6		
Calculation Components		
Capital Charges Pre 1996 Assets ($2020-21)	$	1,030.09
Capital Charges Post 1996 Assets ($2020-21)	$	3,316.35
Headwork Charges ($2020-21)	$	3,128.92
Reduction Amount ($2020-21)	$	3,165.48
Developer Charge ($2020-21)	$	4,309.88
Developer Charge ($2022-23)	**$**	**4,848.61**

REFERENCES & RESOURCES

1. IPART Final Determination - Maximum prices for connecting, or upgrading a connection, to a water supply, sewerage, or drainage system - October 2018 (Link)
2. IPART Final Report - Maximum prices to connect, extend or upgrade a service for metropolitan water agencies - October 2018 (Link)
3. IPART Maximum Price Calculation Template (Link)
4. IPART Calculation example spreadsheet - developer charge clarification (Link)

LIST OF APPENDICES

1. Appendix A - List of Completed and Future Assets in DSP
2. Appendix B - Future Revenues and Operating Costs

APPENDIX B – FUTURE REVENUES AND OPERATING COSTS

Financial year	Future periodic revenues $20-21 (000)	Future operating, maintenance and administration costs $20-21 (000)
Present Value	52,473	23,302
FY 2023	199	88
FY 2024	407	170
FY 2025	616	255
FY 2026	830	352
FY 2027	1,047	444
FY 2028	1,268	567
FY 2029	1,494	663
FY 2030	1,724	770
FY 2031	1,959	873
FY 2032	2,198	978
FY 2033	2,441	1,083
FY 2034	2,689	1,191
FY 2035	2,942	1,301
FY 2036	3,199	1,411
FY 2037	3,462	1,525
FY 2038	3,729	1,640
FY 2039	4,002	1,749
FY 2040	4,280	1,868
FY 2041	4,563	1,988
FY 2042	4,852	2,111
FY 2043	5,146	2,236
FY 2044	5,445	2,362
FY 2045	5,750	2,491
FY 2046	6,062	2,788
FY 2047	6,379	2,928
FY 2048	6,702	3,069
FY 2049	7,031	3,213
FY 2050	7,367	3,359
FY 2051	7,708	3,508
FY 2052	8,057	3,659

Acknowledgement of Country

Hunter Water operates across the traditional country of the Awabakal, Birpai, Darkinjung, Wonaruah and Worimi peoples. We recognise and respect their cultural heritage, beliefs and continuing relationship with the land, and acknowledge and pay respect to Elders past, present and future.