Wastewater Development Servicing Plan

S.19 Tanilba Bay Wastewater DSP

AS OF AUGUST 2023

hunterwater.com.au

HUNTER WATER

Table of Contents

EXECUTIVE SUMMARY

This Development Servicing Plan (Draft DSP) sets out the price for connecting a new development to **Tanilba Bay Wastewater DSP**

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 **Tanilba Bay Wastewater DSP** is **$8,165.24** ($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	Equivalent demand or loading from a standard household. (Equivalent Tenement)
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:

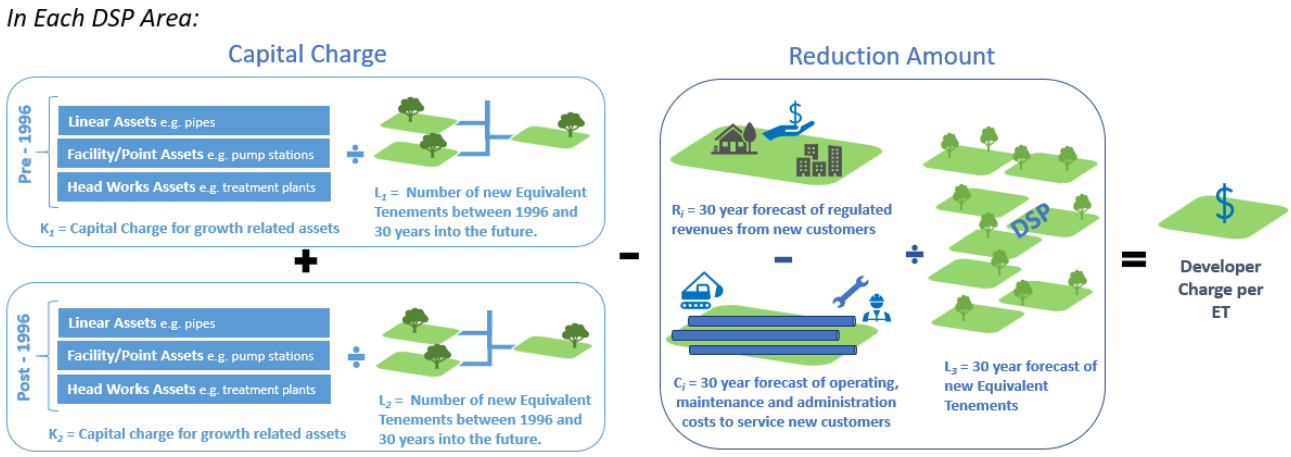
- The Capital Charge

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 “Tanilba Bay Wastewater Treatment Work Catchment Development Servicing Plan” (S.19)

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 the Tanilba Bay Wastewater Treatment Work (WWTW) catchment. The service area is shown in Figure 2. Tanilba Bay DSP covers approx. 9.98 square km. This DSP supersedes all prior determinations.

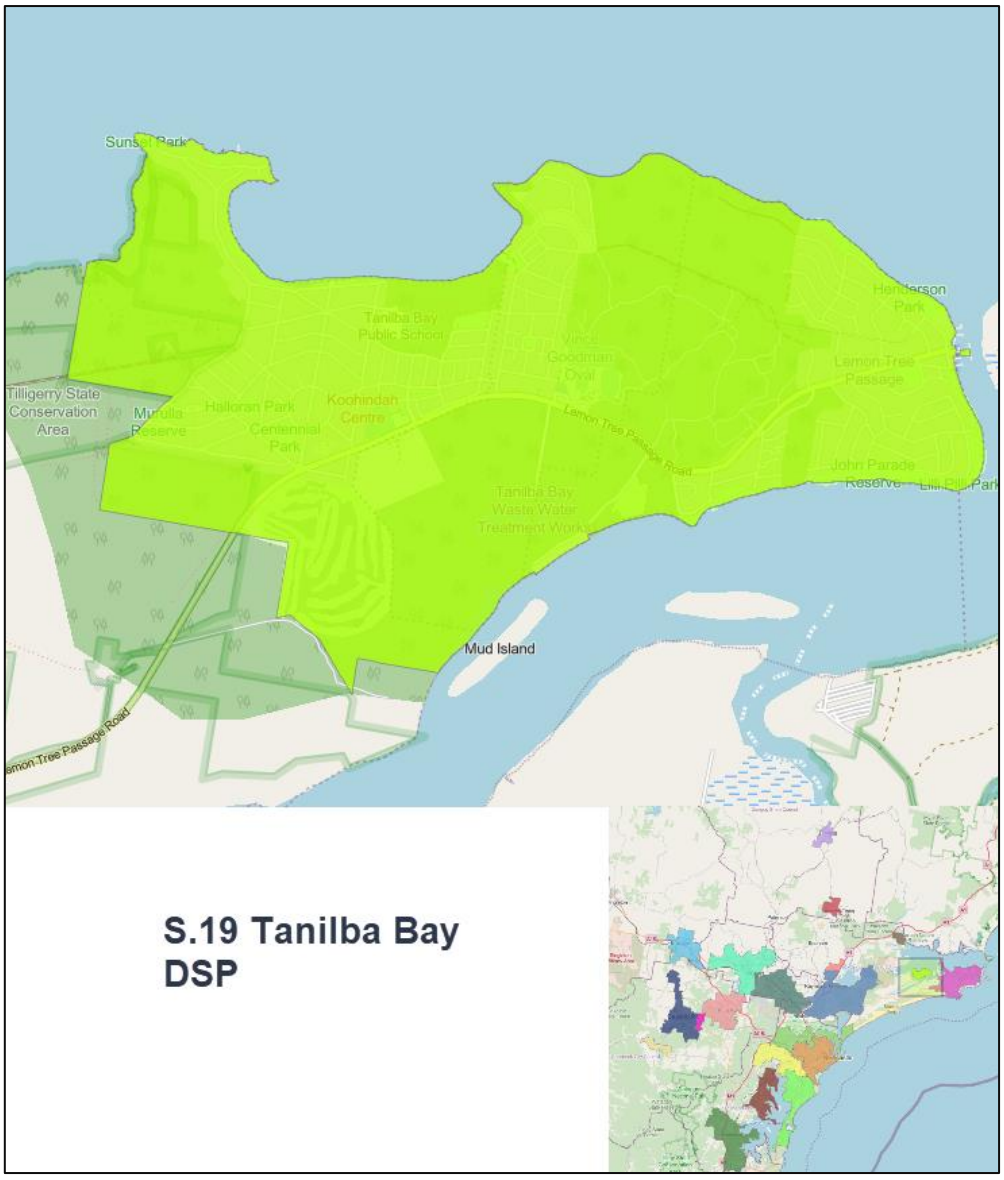


Figure 2 – Tanilba Bay Wastewater Treatment Work (WWTW) DSP

Area Covered

The suburbs (or part suburbs) within this DSP are: Lemon Tree Passage; Mallabula; Tanilba Bay

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 Tanilba Bay WWTW Catchment was determined based on the areas serviced by the Tanilba Bay WWTW.

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 (DSPs) and developer charge calculations.

Determining Wastewater DSP Criteria

Wastewater Transportation and Treatment

The system catchment boundary for wastewater treatment and transportation assets delineates the area served by the treatment works. This area is strongly based on topography/geography as the most efficient means of providing the wastewater treatment service.

Appendix A shows the assets included in the DSP area.

DEVELOPMENT SERVICING PLAN (DSP): PLANNING PROFILE

Boundary and Location

The Tanilba Bay Wastewater Treatment Works services the townships of Lemon Tree Passage, Mallabula and Tanilba Bay. The Tanilba Bay Wastewater Treatment Works is entirely within the Port Stephens City Council Local Government Area (LGA).

Current Population and Equivalent Tenement

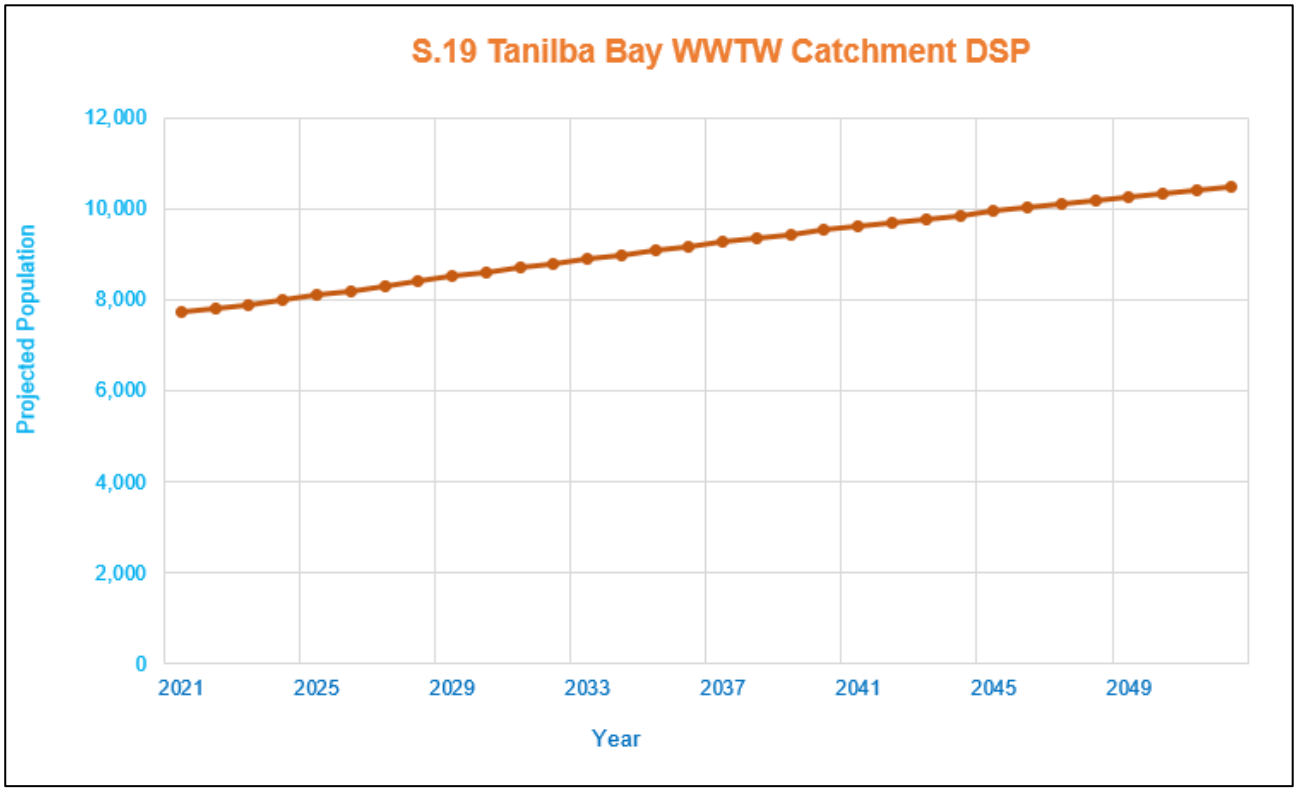
The total permanent population of the area in 2023 is estimated at: 7,893 which represents 1.25% of the total population of Hunter Water's servicing area.

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.

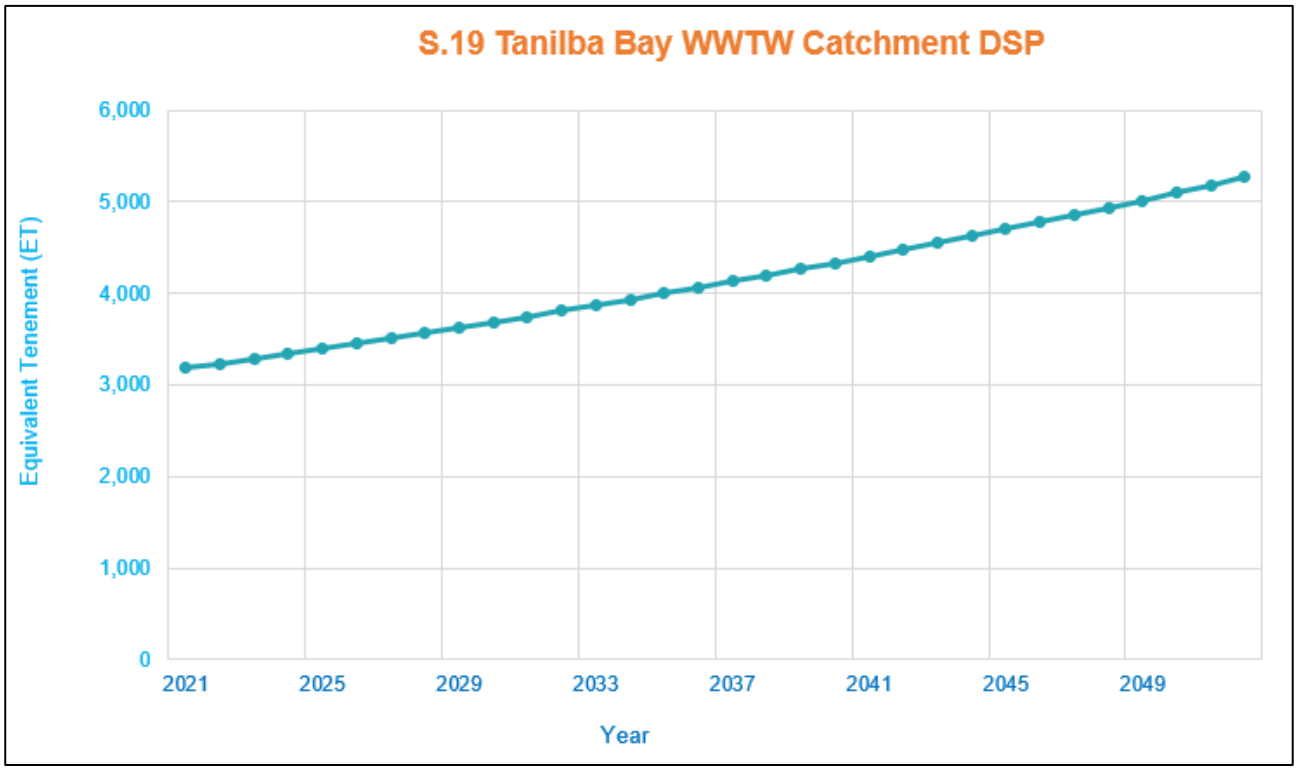
There are approximately 3,289 ETs in 2023 connected to the Tanilba Bay wastewater system.

Projected Population and Equivalent Tenement

The projected total permanent population in the Tanilba Bay WWTW DSP in 2052 is 10,495 (1.16% of the total population of Hunter Water's servicing area).



The projected Equivalent Tenements (ET) in the Tanilba Bay WWTW DSP in 2052 is 5,264 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:-

Wastewater

- Hunter Water is required to produce effluent that meets the requirements of our Environment Protection Licences which are governed by the Environment Protection Authority, as well as meet recycled water guidelines/agreements where recycled water is in use.
- Hunter Water integrated editions of the Water Services Associated of Australia (WSAA) design and construction guidelines (WSA 02 - Gravity Sewerage Code of Australia)
- Sewage Pump Stations and Rising Mains 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 funded works within the Tanilba Bay WWTW 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 ($2020-21)*
S.19 Tanilba Bay	Completed Gravity Mains	$ 7,645,978.36
	Completed Rising Mains	$ 2,102,589.70
	Completed Point Assets	$ 5,754,561.43
	TOTAL	$ 15,503,129.50

*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 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 funded works within the Tanilba Bay WWTW 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 Cost ($2020-21)*
S.19 Tanilba Bay	Future Linear Assets	$ -
	Future Point Assets	$ 5,283,985.20
	Connecting Asset Funding	$ -
	Future Connecting Asset Funding	$ -
	TOTAL	$ 5,283,985.20

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

Shared Assets across DSPs

Across Hunter Water's wastewater systems, wastewater assets are generally contained within their respective catchments, and as such, within their respective DSP. Shared assets between wastewater catchments are minimal.

In the case where there are assets that are shared between DSPs, each connecting lot that benefits from the asset will pay an equal contribution towards the cost of the asset.

Table 3 provides a list of any wastewater assets which are/will be shared among multiple wastewater DSPs.

Asset Name	DSP that benefit from this asset
Belmont Outfall Sewer (commissioned asset)	Toronto WWTW DSP Dora Creek WWTW DSP Edgeworth WWTW DSP Belmont WWTW DSP
Toronto Effluent (commissioned asset)	Toronto WWTW DSP Dora Creek WWTW DSP Edgeworth WWTW DSP
Biosolid (future asset)	Belmont WWTW DSP Boulder Bay WWTW DSP Dora Creek WWTW DSP Edgeworth WWTW DSP Farley WWTW DSP Kurri Kurri WTW DSP Morpeth WWTW DSP Raymond Terrace WWTW DSP

	Shortland WWTW DSP Kings Hill Wastewater DSP Toronto WWTW DSP
Raymond Terrace WWTW (commissioned asset)	Kings Hill Wastewater DSP Raymond Terrace WWTW DSP

List of shared 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 price determination. This determination was released in June 2020 with periodic prices set until 30 June 2024. Revenues after this date are kept constant per ET at the 2024 financial year rate.

Table 4 provides a summary of charges and the overall revenues per ET used in calculations.

TABLE 4: PERIODIC CHARGES AND REVENUE PER ET

Revenues per ET $20-21	2022-23	2023-24 +	
Single Residential	817.10 * 0.75	817.10 * 0.75	Base sewer service charge after 75% deemed discharge factor
	120 * 0.68	120 * 0.68	Sewer usage charge x 120kL deemed discharge
	694.43	694.43	Wastewater 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. Average discharge of a customer in different customer classes is recognised in the actual value of the ET.

In Table 4, the deemed discharge of an ET is 120kL per year.

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

Operating Costs

Wastewater operating costs includes a treatment cost per ET specific to each wastewater catchment zone, plus a system wide average cost per ET related to operations, transport and miscellaneous.

This method is used because:

- The cost to service most network systems is reasonably similar.
- Operational costs of wastewater treatment plants is dependent on the level of treatment required. This provides a pricing signal for different wastewater catchment zones.

Appendix B details the future expected operating, maintenance and administration costs of providing services to new customers each financial year.

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 wastewater developer charge applies to all customers in the DSP area. This is detailed in Table 5.

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.

Tanilba Bay		
S.19		
Calculation Components		
Capital Charges Pre 1996 Assets ($2020-21)	$	6,377.75
Capital Charges Post 1996 Assets ($2020-21)	$	2,057.70
Shared Asset Charges ($2020-21)	$	-
Reduction Amount($2020-21)	$	1,177.46
Developer Charge($2020-21)	$	7,257.99
Developer Charge($2022-23)	**$**	**8,165.24**

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	9,330	7,997
FY 2023	37	35
FY 2024	74	68
FY 2025	112	102
FY 2026	151	132
FY 2027	190	161
FY 2028	230	196
FY 2029	270	231
FY 2030	311	266
FY 2031	353	302
FY 2032	396	339
FY 2033	439	375
FY 2034	483	413
FY 2035	527	451
FY 2036	573	490
FY 2037	619	530
FY 2038	666	570
FY 2039	713	610
FY 2040	762	652
FY 2041	811	694
FY 2042	861	737
FY 2043	912	780
FY 2044	964	824
FY 2045	1,016	869
FY 2046	1,069	915
FY 2047	1,124	961
FY 2048	1,179	1,009
FY 2049	1,235	1,057
FY 2050	1,292	1,105
FY 2051	1,350	1,155
FY 2052	1,409	1,205

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.