



North Head Wastewater Services

Development Servicing Plan 2023

Sydney
WATER

Table of contents

1	Executive summary	4
2	Introduction	5
2.1	Infrastructure contributions and Development Servicing Plans	5
2.2	Who pays the infrastructure contribution?	5
2.3	How do I apply the charge to my development?	6
3	North Head Wastewater DSP area	7
3.1	Systems covered by this DSP	7
3.2	Past and future development in the DSP area	9
3.3	Past and future assets providing services to the DSP area	11
4	Infrastructure contribution calculation	13
4.1	Key inputs for this DSP	14
4.2	Infrastructure contribution price elements	15
4.3	Total infrastructure contribution price	16
5	Appendices	17
5.1	Appendix A – Background on the North Head DSP area	17
5.2	Appendix B – Minimum content of documentation for public exhibition	24



Figures

Figure 3-1 North Head Wastewater Development Servicing Plan Area	8
Figure 3-2 Historical Development in the North Head Wastewater DSP Area	10
Figure 3-3 Future Development in the North Head Wastewater DSP Area	10
Figure 3-4 Future Uncommissioned Assets in the North Head Wastewater DSP Area	11
Figure 4-1 IPART's infrastructure contribution pricing method	13
Figure 5-1 Major assets in the DSP area	19
Figure 5-2 Major development sites in the DSP area	20
Figure 5-3 System constraints in the Northern Suburbs Ocean Outfall Sewer (NSOOS)	21
Figure 5-4 Investments needed to manage the impact of growth in the DSP area (dry weather)	22
Figure 5-5 Investments needed to manage the impact of growth in the DSP area (wet weather)	23

Tables

Table 1-1 – Wastewater infrastructure contribution prices for this DSP area (\$2022-23)	4
Table 3-1 – Summary statistics for systems in the DSP area (as at 2022)	7
Table 3-2 – Total present value of commissioned assets, 1970 – 2022 (\$2022-23)	11
Table 4-1 - Inputs to the infrastructure contribution calculation model	14
Table 4-2 – Charge for pre-1996 assets	15
Table 4-3 – Charge for post-1996 assets	15
Table 4-4 – Net operating result	15
Table 4-5 - Components of the infrastructure contribution price, \$ per ET (\$2022-23)	16

1 Executive summary

This Development Servicing Plan (DSP) sets out the price for connecting a new development to a wastewater system in the North Head DSP region. Additional charges may be payable depending on what services will be provided to a development, such as drinking water.

The price for new wastewater connections has been calculated using the method set by the Independent Pricing and Regulatory Tribunal's (IPART) in their 2018 Determination¹. Our approach to implementing the 2018 Determination is described in a separate methodology document², while this DSP describes inputs that are specific to this DSP area. The two documents should be read together to gain a full understanding of our approach.

The wastewater infrastructure contribution for the North Head DSP area is \$587.79 (\$2022-23) per Equivalent Tenement³ (ET). On 19 October 2022, the NSW Treasurer issued an approval under section 18(2) of the *Independent Pricing and Regulatory Tribunal Act 1992*, authorising us to charge less than the maximum price calculated under the 2018 Determination until 30 June 2026. Table 1-1 sets out the maximum prices that will be levied on new developments for wastewater services in this DSP area from 1 July 2023 until the DSP is reviewed and replaced.

Table 1-1 – Wastewater infrastructure contribution prices for this DSP area (\$2022-23)

	1 July 2023 to 30 June 2024	1 July 2024 to 30 June 2025	1 July 2025 to 30 June 2026	1 July 2026 onward
Maximum price calculated under the 2018 Determination (\$/ET)	\$587.79	\$587.79 + CPI ₁	\$587.79 + CPI ₂	\$587.79 + CPI _x
Percentage of maximum price to be charged	0%	25%	50%	100%
Maximum price that can be levied on new development (\$/ET)	\$0	\$146.95 + CPI ₁	\$293.90 + CPI ₂	\$587.79 + CPI _x

Note: the price is also adjusted each financial year based on changes in the Consumer Price Index (CPI) compared to the March Quarter 2023.

¹ IPART (2018) *Maximum prices for connecting, or upgrading a connection, to a water supply, sewerage, or drainage system for metropolitan water agencies*

² Sydney Water (2023) *Infrastructure contributions: how we apply IPART's pricing method*

³ See section 2.3 for more information regarding ET's and an overview of how to apply this price to individual developments.



2 Introduction

2.1 Infrastructure contributions and Development Servicing Plans

The *Sydney Water Act 1994* allows Sydney Water to recover the investment of infrastructure needed to provide services to new properties.

IPART is an independent authority that regulates the pricing of declared government monopoly services. IPART may set a maximum price for a government monopoly service, or it may decide to set a methodology that must be used to calculate the price.

In their 2018 Determination, IPART set a methodology that must be used to determine the maximum price for a new development connecting to a water, wastewater or stormwater system. The IPART methodology generates a price payable by all development inside a discrete Development Servicing Plan (DSP) area. Contribution prices are calculated separately for water, wastewater and stormwater (and, under a separate determination, for recycled water).

2.2 Who pays the infrastructure contribution?

As a condition of development consent, a consent authority (usually Council) may require a proponent to make satisfactory arrangements for the provision of water-related services to a development. To identify and confirm the necessary arrangements, the proponent must submit to Sydney Water an application for a Section 73 Compliance Certificate.

Upon receiving an application, we will investigate the impact a proposed development is likely to have on our systems. We will then issue a Notice of Requirements (NoR) under s74 of the *Sydney Water Act*, setting out any conditions that must be met (eg, details of works that must be constructed so that services will be available to the development). Infrastructure contributions are payable for all developments that require a Section 73 Certificate and must be paid by the proponent of the development before the Certificate can be issued.

In many cases a development is for the subdivision of land into smaller lots that are later sold to others for purposes such as building a house. Infrastructure contributions are not levied on this subsequent development, unless the subsequent development also needs its own Section 73 Compliance Certificate (eg, because a single residential lot will be sub-divided to create a dual occupancy).

2.3 How do I apply the charge to my development?

The infrastructure contribution price is the amount that must be paid by one equivalent tenement (ET). IPART's 2018 determination defines one ET as being equal to the annual total demand of an average detached, single residential dwelling⁴.

The total infrastructure contribution payable by any given development would equal the base price in the DSP area multiplied the number of additional ETs. For example, if a single residential dwelling uses 200 kilolitres of water in a year, one ET equals 200 kilolitres. If we receive a section 73 application for a development and assess that it will use 1,000 kilolitres of water over a year, the development is for five ETs. Assuming a base price in the DSP area of \$5,000 per ET, the development would be required to pay \$25,000 (\$5,000 per ET x 5 ETs).

We work out the number of ETs in a development based on information supplied to us during the Section 73 process. In broad terms:

- For residential properties, the number of ETs depends on the density of proposed dwellings. Each detached dwelling would typically be considered one ET, while medium to high-density developments (such as flats and units) would be less than one ET per dwelling (eg, 0.8);
- For non-residential developments, the number of ETs will be assessed based on the expected volumetric demand of the proposed land use (eg, use of drinking water, discharge of wastewater);
- We may account for existing land uses if, for example, the land was already occupied and used our services. For example, if a lot with a single dwelling is subdivided to create two lots, we may apply a credit for the pre-existing dwelling and only require a payment equal to one ET (being the net increase in demand for our services).

The contribution price set out in this DSP will apply to all developments requesting a new wastewater connection, where a Section 73 Compliance Certificate will be issued after 1 July 2024. Further information on our approach to assessing the number of ETs in a development will be set out in separate policy and guideline documents that will be available on Sydney Water's website or via your Water Servicing Coordinator.

If your development also requires a new drinking water connection, you will also be required to pay a drinking water infrastructure contribution. The drinking water contribution payable by new connections in this DSP area is potentially \$3,281.85 / ET, as set out in the Greater Sydney Drinking Water DSP, \$0 / ET, as set out in the Prospect East Drinking Water DSP or \$0 / ET, as set out in the Pott Hills Drinking Water DSP.

⁴ Because IPART did not specify a value for 'average demand' in their 2020 retail price determination, we must assume a value when calculating the contribution price for a DSP area. Our approach to estimating average demand is set out in our infrastructure contribution methodology report.

3 North Head Wastewater DSP area

3.1 Systems covered by this DSP

The boundary of this DSP area covers the North Head sewage treatment system (see also Table 3-1 for selected key statistics):

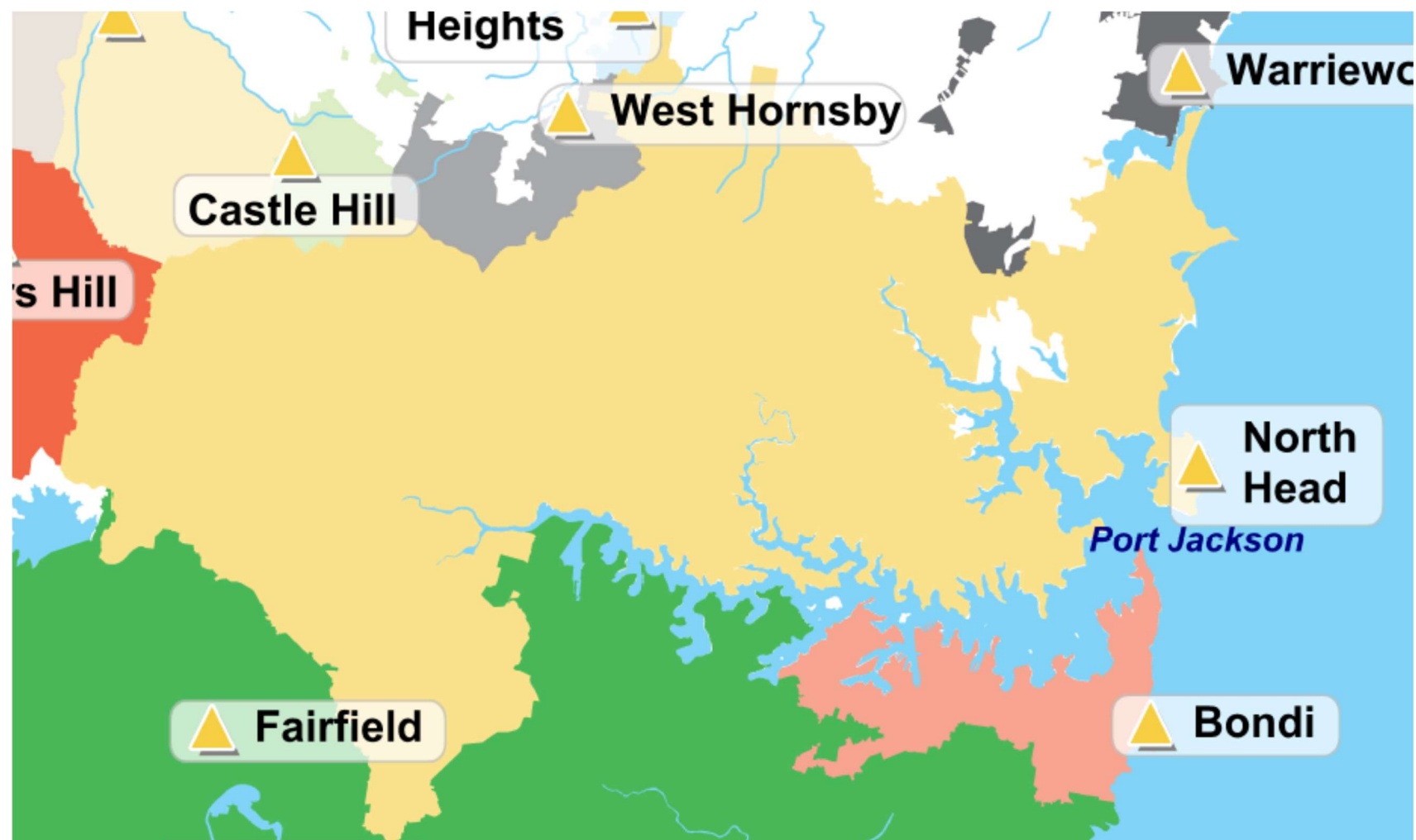
A sewage treatment system consists of the wastewater pipes, pumping stations, and resource recovery centres that transport used water away from homes and businesses for treatment before being beneficially reused or safely released to the environment.

Table 3-1 – Summary statistics for systems in the DSP area (as at 2022)

Catchment area	42,500
Residential population	1,387,488 (2021)
Length of mains (km)	6,250
Pump stations	87

Further background on this DSP area is contained in section 5.1 **Error! Reference source not found..**

Figure 3-1 North Head Wastewater Development Servicing Plan Area





3.2 Past and future development in the DSP area

This section provides an overview of past and historical development in the DSP area.

Historical development is summarised in **Figure 3-2**.

For the purposes of calculating an infrastructure contribution price for this DSP area, the forecast of future development must align to the available capacity provided by existing and future assets. In this DSP area, the forecast of future investment in new assets is limited to the next 10 years. As a result, the development forecast used to calculate the infrastructure contribution price must be limited to the amount of new development that can be serviced by assets commissioned within the next 10 years. Because asset capacity is typically delivered in large blocks, development can often continue to connect to a system for many years beyond the adopted investment horizon (see **Figure 3-3**).

Figure 3-2 Historical Development in the North Head Wastewater DSP Area

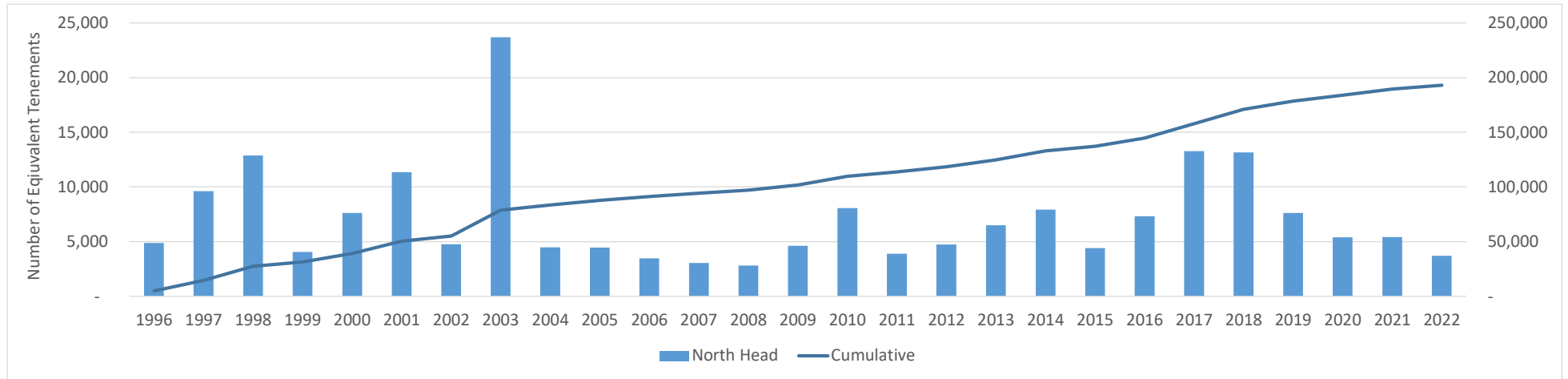
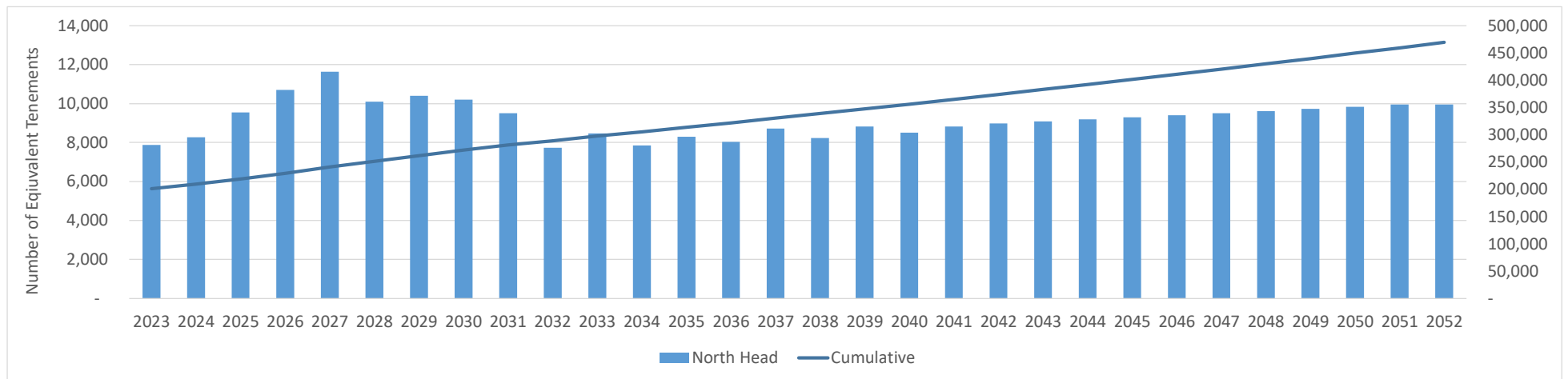


Figure 3-3 Future Development in the North Head Wastewater DSP Area



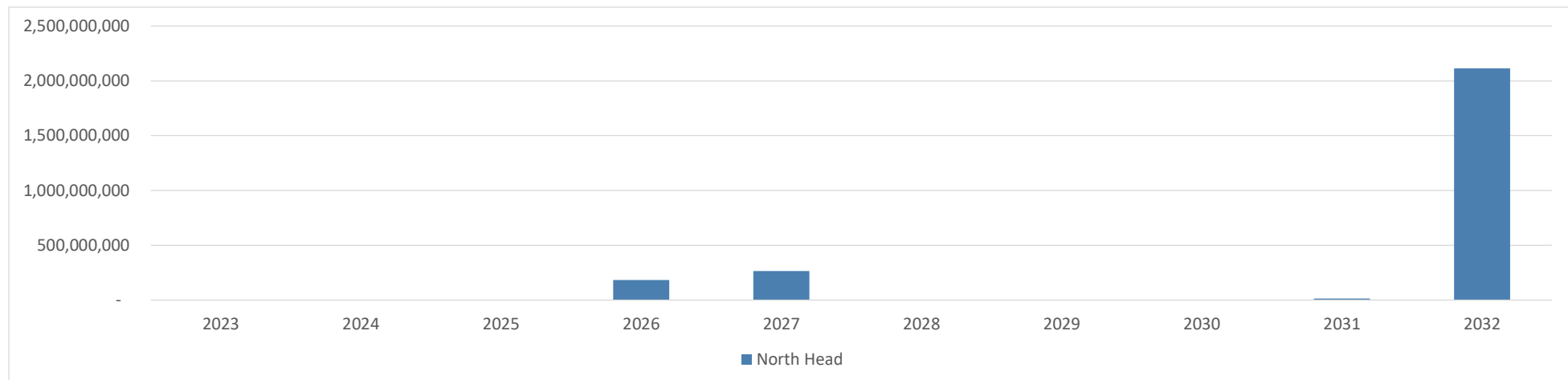
3.3 Past and future assets providing services to the DSP area

This section shows the value of past (Table 3-2) and future (**Figure 3-4**) assets constructed to provide services to new development. Consistent with IPART's pricing method, asset values are shown in the year commissioning (ie, not as a cashflow). As noted above, future assets are limited to those likely to be commissioned inside the next 10 years. The value and timing of asset commissioning beyond 10 years is more uncertain, and if further investment is needed after 10 years this will be captured in a future review of this DSP.

Table 3-2 – Total present value of commissioned assets, 1970 – 2022 (\$2022-23)

North Head	
Pre-1996 assets	186,616,414
Post-1996 assets	543,131,357

Figure 3-4 Future Uncommissioned Assets in the North Head Wastewater DSP Area





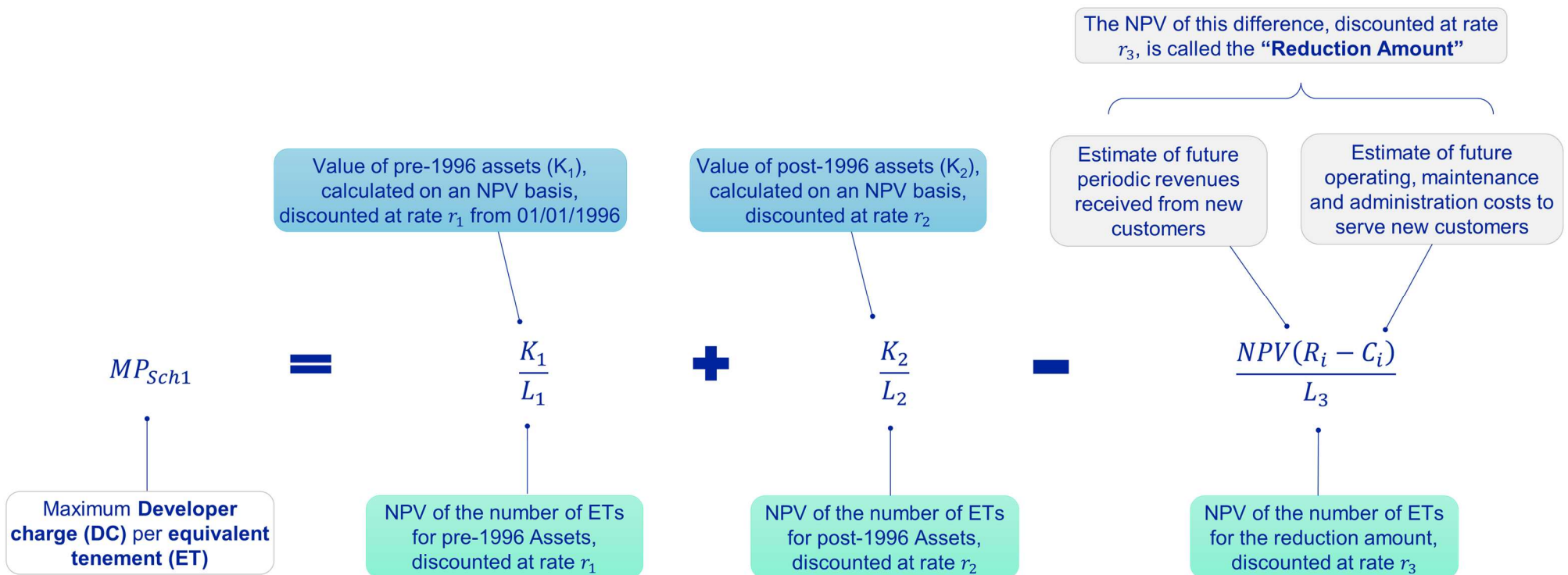
The infrastructure contribution price in this DSP will help to fund delivery of the following assets:

- North Head:
 - 2.1KM of gravity mains, 2,203m³ of storage, 8 gravity main projects, source control works, new pump station at North Head WWTP, 2 generators, 60KL of emergency storage, 3 pump upgrades and new primary sedimentation tanks and upgrades to STP.

4 Infrastructure contribution calculation

The main elements of IPART's pricing method are shown in **Figure 4-1**. The rest of this section presents the results of applying this method.

Figure 4-1 IPART's infrastructure contribution pricing method



4.1 Key inputs for this DSP

This section sets out assumptions used in the calculation of the infrastructure contribution price. Further detail on the approach, including assumed retail prices and escalation rates, are set out in our DSP methodology document.

Table 4-1 - Inputs to the infrastructure contribution calculation model

Input parameter	North Head Wastewater DSP
Base Year	2022-23
Real pre-tax discount rate for pre-1996 values (K_1 , L_1)	3.0%
Real pre-tax discount rate for post-1996 values (K_2 , L_2 , L_3)	4.2%
Demand of one equivalent tenement (kL / year)	145.7
Apportionment of commissioned assets	
(A) Total ETs (1970 – 2052)	658,782
(B) Pre-1996 ETs	201,851
(C) 1996 – 2022 ETs	190,672
Apportionment of pre-1996 assets $1 - [((B) + (C)) / (A)]$	40.4%
Apportionment of post-1996 commissioned assets $1 - [(C) / (A)]$	71.1%

4.2 Infrastructure contribution price elements

Table 4-2 – Charge for pre-1996 assets

(A) Present value of pre-1996 assets (K_1)	\$186,616,414
(B) Present value of equivalent tenements (L_1)	481,478
Capital charge for pre-1996 assets (A) / (B)	\$388 / ET

Table 4-3 – Charge for post-1996 assets

	Commissioned	Uncommissioned
(A) Present value of post-1996 assets (K_2)	\$543,131,357	\$1,876,896,166
(B) Present value of equivalent tenements (L_2)	522,276	522,276
Capital charge for post-1996 assets (A) / (B)	\$1,040 / ET	\$3,594 / ET

Table 4-4 – Net operating result

(A) Present value of revenue (R)	\$892,050,971
(B) Present value of operating costs (C)	\$187,701,907
(C) Present value of ETs (L_3)	158,873
Net operating result (A) + (B) / (C)	\$4,433 / ET

4.3 Total infrastructure contribution price

The following table shows the components of the infrastructure contribution calculation.

Table 4-5 - Components of the infrastructure contribution price, \$ per ET (\$2022-23)

(A) Pre-1996 commissioned assets	(B) Post 1996 assets	(C) Net operating result	Infrastructure Contribution (A) + (B) – (C)
\$387.59	\$4,633.61	\$4,433.42	\$587.79

5 Appendices

5.1 Appendix A – Background on the North Head DSP area

The North Head Wastewater Network System services an area of approximately 42,500 ha, more than 1.36 million people with a total flow of 309 ML/d.

The North Head wastewater system services the suburbs of seven complete LGAs and parts of seven others including Ku-ring-gai, Willoughby, Ryde, North Sydney, Mosman, Northern Beaches, Hornsby, The Hills, Blacktown, Parramatta, Cumberland and Canterbury-Bankstown. The North Head catchment extends from Narrabeen Lakes to the Harbour in the east and inland to the town centres of Hornsby and Blacktown. The major suburbs include Blacktown, Guildford, Lidcombe, Auburn, Parramatta in the west, Ryde, Hunters Hill, Lane Cove, Willoughby, North Sydney and Mosman in the south, Pymble, Turramurra, Asquith in the north and Manly, Curl Curl, Dee Why, Collaroy and Narrabeen in the north.

The North Head system shares a boundary with Warriewood, Hornsby Heights (north), West Hornsby, Castle Hill, Rouse Hill (north-west), Quakers Hill (west), Malabar (south-west) and Sydney Harbour (south) systems.

Sewage is transported to North Head WWTP via approximately 6250 km of trunk gravity sewers which have a diameter of 300mm or larger. In addition, as part of the Western Sydney Replacement Flows Scheme, the NSOOS also receives pumped concentrate from SP1162 located at the Quakers Hill Treatment Works via a long rising main that discharges to the NSOOS at Fred Robertson Park in Dundas.

The widespread growth in the North Head catchment will result in several performance gaps as summarized below:

- There are currently over 30 km of sewers exceeding 60% pipe full capacity of which about 3 km is in the SP0067 catchment. The total length of deficient sewer is expected to increase to more than 72 km by 2051.
- Of the 44 modelled SPSs, 14 SPSs found to not have the minimum detention time of 4-hours as well as no suitable contingency arrangements. Of these 14 SPSs, 13 are deficient in the existing scenario.
- At its present capacity of 25 l/s, SP0101 has high probability of dry weather spills and thus require a capacity upgrade. Similarly, SP0365 is expected to have insufficient capacity (current capacity = 100 l/s) beyond 2041 horizon.

- Of the 597 overflows within the SP0067 and Rest of North Head catchments, the performance of 125 overflows deteriorates due to growth and require a system augmentation strategy to meet the License.
- Due to growth, 35 manholes are expected to spill more than 5 times in 10 years inside private properties at various planning horizons and require augmentation to meet the current License requirements.
- No wet weather bypasses to occur for the North Head WWTP for all planning horizons.

In addition, as shown in Figure 5-3, there are significant constraints in the NSOOS downstream from the Camellia area. Sydney Water is exploring several options to resolve this issue, including potential duplication of the NSOOS, or the construction of a new treatment facility at Camellia to remove flows from the NSOOS. The DSP investment forecast is based on the least cost solution, which is to duplicate the NSOOS.

GISP 2021

SCAMP Name: SCAMP BOUNDARY

- NH_SPS_2020 Modelled
- NH_OF_2020 Modelled
- NHOBLink_data_Modelled
- Sludge Transfer Line from Quakers Hill
- Sewermain_Existing_Centreline
- North Head WWTP

Sydney WATER

Growth Servicing Investment Strategy 2021

NORTHHEAD SYSTEM

SYSTEM LAYOUT

0 10 kilometres

DRAWN: JT, CHECKED: MH, APPROVED: SP, SCALE: NTS, REVISION: 1, DATE: December 2021

[illegible]

Figure 5-3 System constraints in the Northern Suburbs Ocean Outfall Sewer (NSOOS)

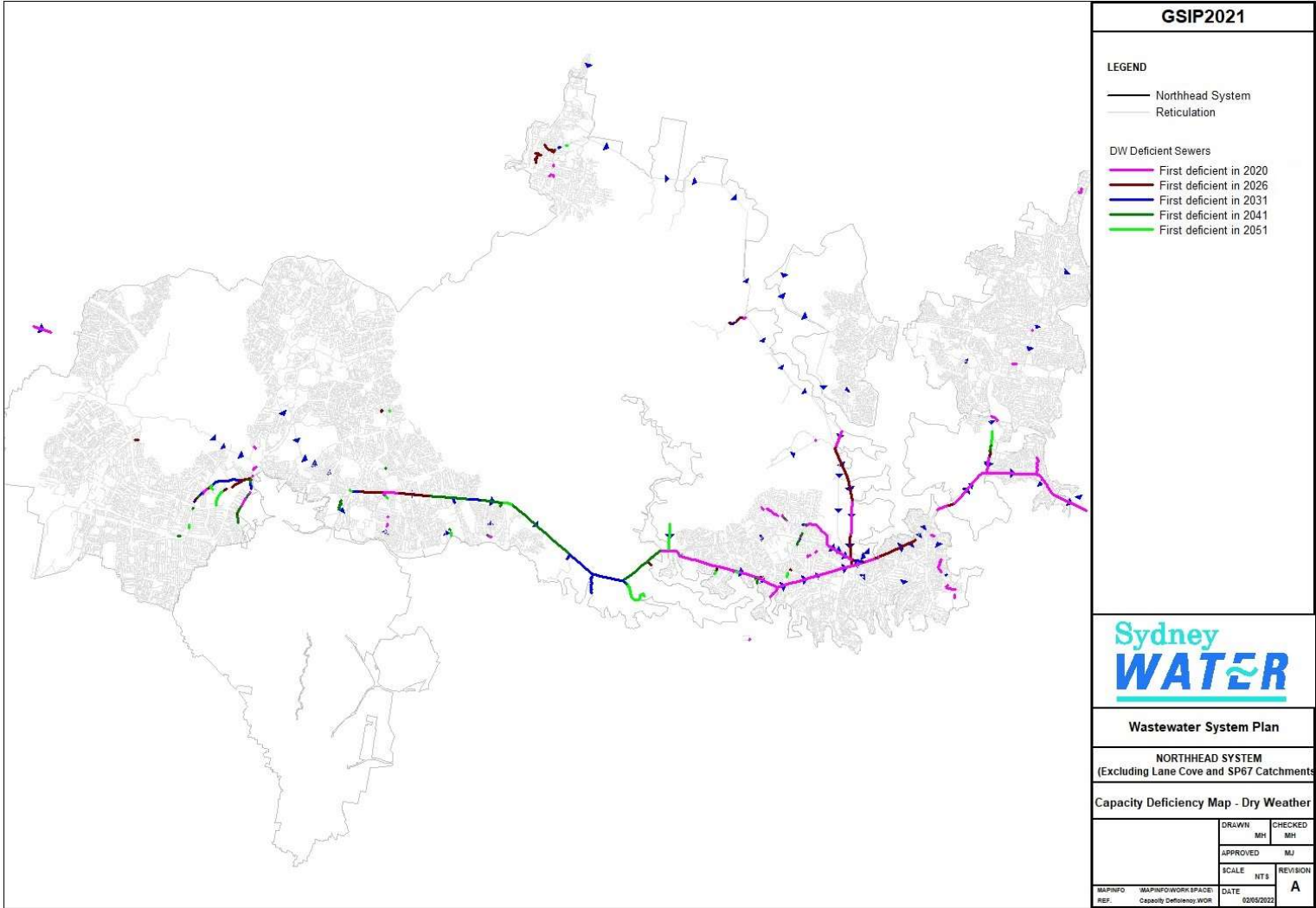


Figure 5-4 Investments needed to manage the impact of growth in the DSP area (dry weather)

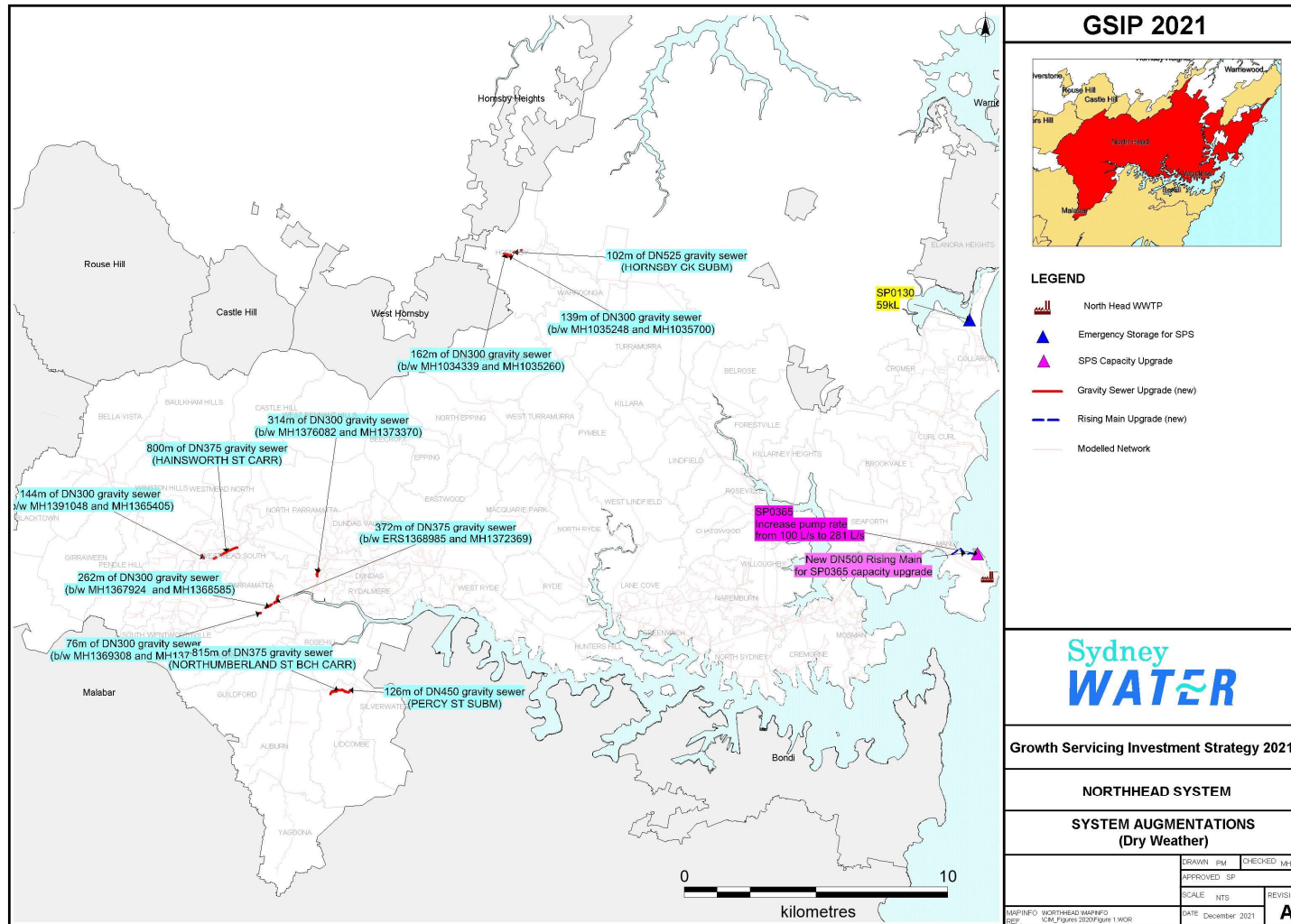
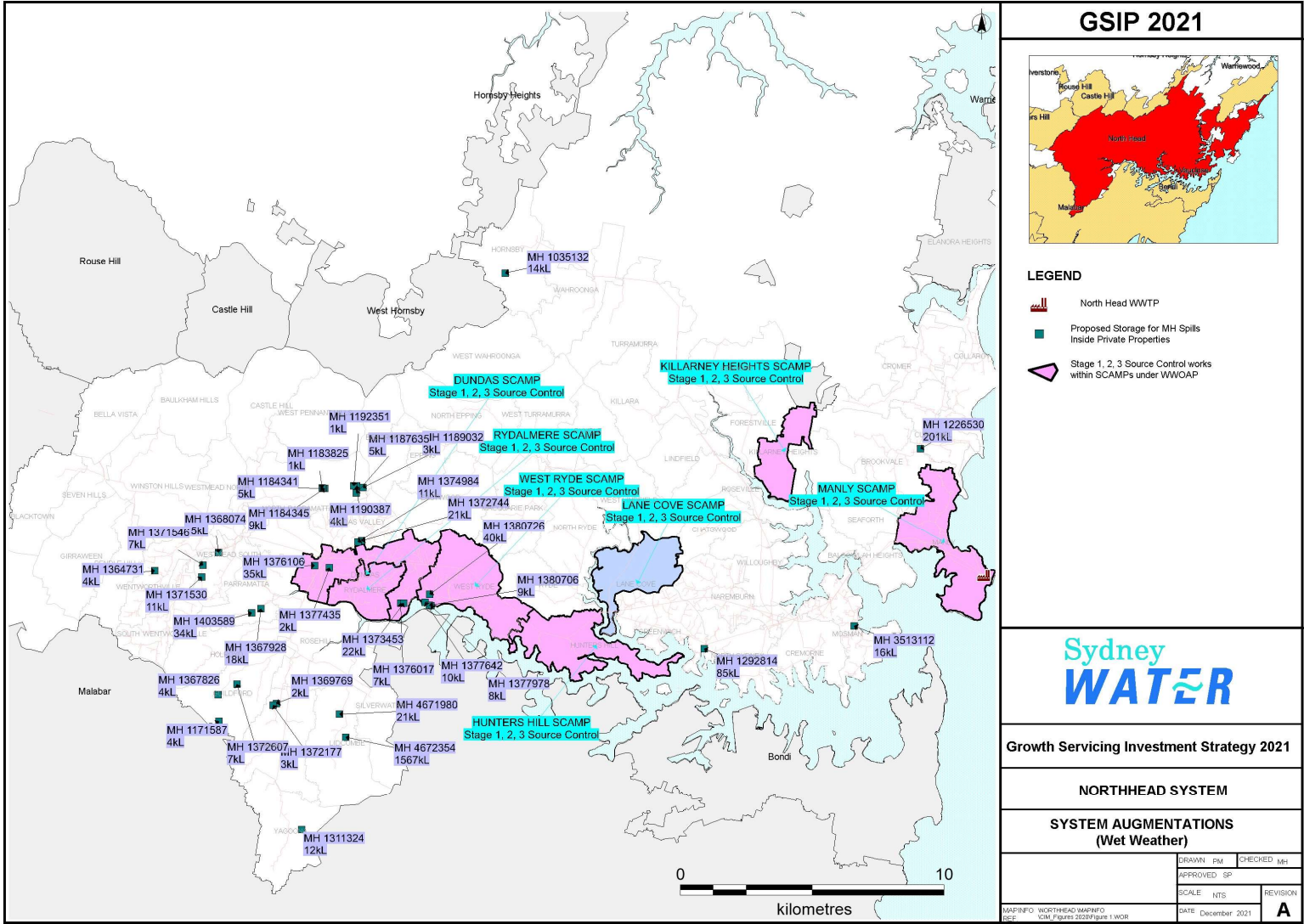


Figure 5-5 Investments needed to manage the impact of growth in the DSP area (wet weather)



5.2 Appendix B – Minimum content of documentation for public exhibition

IPART information requirement

Reference

a summary of the contents of the DSP	Contents page
a statement specifying the System (or Systems) to which the DSP relates	Section 3.1
a clear and accurate description of the DSP Area to which the DSP applies, including:	Section 3.1
(1) its size;	See also the DSP methodology document
(2) the basis for defining its boundaries; and	
(3) reference to other DSPs where there is an overlap or co-usage of Assets	
demographic and land use planning information including:	Table 3-1
(1) the current residential population in the DSP Area;	Figure 3-2
(2) the estimated Equivalent Tenements in the DSP Area as at 1 January 1996;	Figure 3-3
(3) the projected population over a period of 30 financial years starting from the financial year in which the DSP was registered with IPART; and	Note: Forecast ET's align to the capacity provided by the first 10 years of uncommissioned assets
(4) the projected Equivalent Tenements in the DSP Area for each financial year over a period of 30 financial years starting from the financial year in which the DSP was registered with IPART	
timing of works in the DSP Area including:	Infrastructure contribution calculation spreadsheets
(1) completed capital works; and	
(2) proposed capital works	
the standards of service to be provided to customers in the DSP Area and design parameters of Assets	DSP methodology document
the calculated maximum price under clause 1 of Schedule 1 (MP_{Sch1}), and the information used to calculate that price, including:	Section 4
(1) the future periodic revenues expected to be received from new customers in the DSP Area each financial year;	See also the DSP methodology document
(2) the charges used for the calculation of those revenues;	
(3) average water usage figures used for the calculation of those revenues;	
(4) the future expected annual operating, maintenance and administration costs of providing services to new customers in the DSP Area in each financial year; and	
(5) indexation principles and parameters used for that calculation	
a description, or reference to a background document containing the description, of Pre-1996 Assets and Post-1996 Assets in the DSP Area including:	Infrastructure contribution calculation spreadsheets



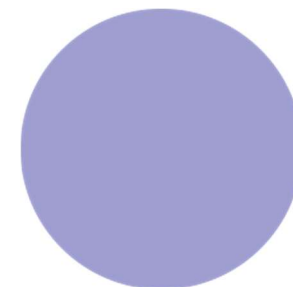
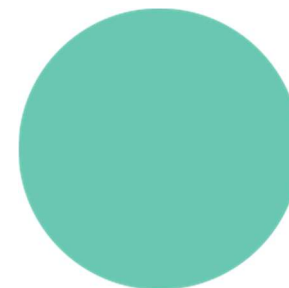
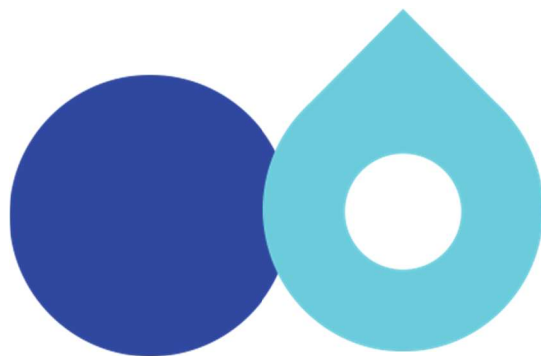
(Sydney Water Talk
website)

- (1) the date (or forecast date) of the commissioning of each Asset;
- (2) the size/length of each Asset;
- (3) the actual efficient cost of each Asset (where applicable);
- (4) the unit cost of each Asset (if applicable);
- (5) the MEERA valuation of each Asset (if applicable);
- (6) the total capacity of each Asset expressed in Equivalent Tenements (if applicable); and
- (7) the details of the number of Equivalent Tenements served by each Asset in each DSP Area, where that Asset serves more than one DSP Area

The proposed DSP areas and infrastructure contribution prices were on public exhibition for a period of 51 working days, from 28 April 2023 to close-of-business on 7 July 2023.

Sydney Water reviewed all submissions received during the exhibition period and submitted a final proposal to IPART on 31 August 2023.

IPART will review and register each DSP, and each DSP will remain in force until reviewed and replaced.

**Disclaimer**

This document is published for the purpose of Sydney Water fulfilling its statutory or delegated functions as set out in this document. Use of the information in this document for any other purpose is at the user's own risk, and is not endorsed by Sydney Water.

Nothing in this document should be taken to indicate Sydney Water's or the NSW Government's commitment to a particular course of action.

SWXXX XX/XX Insert a publication number.

For more info email infrastructure.contributions@sydneywater.com.au

© Sydney Water. All rights reserved.