



Central Coast Council
Southern Region Water Supply and Sewerage Development
Servicing Plan 2019

Version 2.0
Water Services & Design
October 2019





Southern Region Water Supply and Sewerage Development Servicing Plan 2019

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1.0 Introduction

The purpose of this Development Servicing Plan (DSP) is to determine the Developer Charges applicable for water supply and sewerage infrastructure servicing proposed development within the southern region of the Central Coast. Developer Charges and the requirement to carry out works will be implemented as part of relevant development in accordance with the Water Management Act 2000 and the Independent Pricing and Regulatory Tribunal's (IPART) Determination on Maximum prices for connecting, or upgrading a connection, to a water supply, sewerage, or drainage system (October 2018).

Developer Charges relate to the provision of those water and sewerage assets identified in this Plan. Typically these assets service a number of developments within this Plan which provides the basis for sharing of asset costs. All other water and sewerage infrastructure required to service the local development area shall be provided at full cost to the Developer.

For the purpose of calculating Developer Charges, the Central Coast Local Government Area has been divided into two regions, reflecting the former Gosford City Council and Wyong Shire Council Local Government Areas. This has been undertaken to reflect the two different historical and future predicted development patterns, and new infrastructure requirements of the two areas.

This Plan has been prepared in accordance with the requirements of the Water Management Act 2000 using the methodology contained within IPART's 2018 Determination. All calculations have been carried out in the template provided by IPART.

The new Developer Charges, as detailed below, will be applicable for the period 1 November 2019 to June 30 2020, after which they will be adjusted in accordance with the provisions detailed in Section 13.

2.0 Summary of Developer Charges

Following the adoption of this DSP the combined water and sewerage contribution for all development within the Southern Region will be \$4,401 per Equivalent Tenement (ET). For the purpose of determining Developer Charges payable, all development is assessed on an 'Equivalent Tenement' basis. This is described further in Section 8.2.

A comparison of the existing and proposed charges for both water supply and sewerage are provided below in Table 1.

Table 1 Developer Charges Summary

Developer Charge	Previous Charge 2014 DSP (\$2018/19)	New Charge (\$2019-20/ET)
Southern Region Water Supply	Gosford Redevelopment \$2,116.46 Gosford CBD \$3,272.15	\$2,585
Southern Region Sewerage	Gosford Redevelopment \$1,361.62 Gosford CBD \$3,644.86	\$1,816
Combined Water & Sewerage	Gosford Redevelopment \$3,478.08 Gosford CBD \$6,917.01	\$4,401

A summary of Water and Sewerage Developer Charges calculation across New South Wales is provided below in Chart 1.

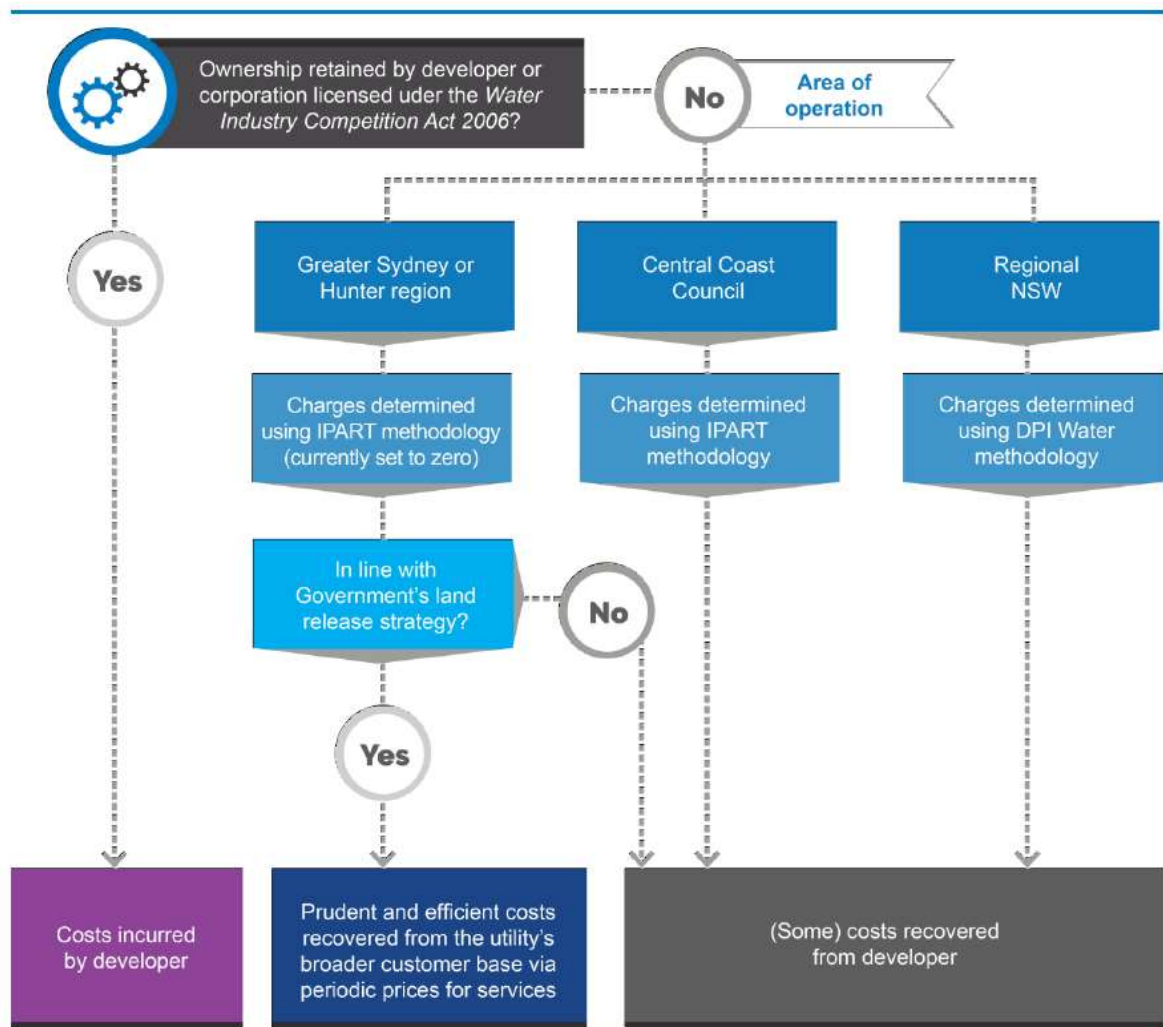


Chart 1 Differing methodologies for funding water and sewerage infrastructure for new development across NSW (supplied by IPART)

3.0 Applicability of the Plan

This DSP describes the requirements applicable to the assessment of Water Supply and Sewerage Developer Charges for any Development assessed under the Water Management Act from 1 November 2019. Developer Charges payable and any credits for works undertaken in accordance with the plan (in lieu of developer charges), for Development assessed under the Water Management Act within a previous Gosford City Council or Wyong Shire Council Development Servicing Plan will be assessed under the provisions contained within that DSP.

This DSP takes precedence over any of Council's Codes and Policies should there be any inconsistencies in relation to Water Supply and Sewerage Developer Charges.

4.0 Area of the Plan

This DSP covers all lands contained within the former Gosford Council Local Government Area (LGA) as shown in Figure 1.

It is noted that an additional charge applies to land within the Somersby Industrial Estate, with the site being the subject of a separate Deed of Agreement which included charges applicable on a per Hectare basis. Additional charges applicable within the area defined by the Deed will be determined in accordance with the Deed.

4.1 Basis of determining service areas

The basis for determining the service areas applicable to this plan is outlined in the following sections.

Water Supply Headworks

The former Gosford City and Wyong Shire Council's owned and managed a joint water supply headworks scheme. These headworks provide bulk treated bulk water to the entire Central Coast Water Supply Network. As a result a common Headworks Developer Charge is applicable to both Water Supply DSPs and is incorporated into the calculation of the Water Supply Developer Charge for both DSPs. This charge is detailed in Appendix A.

Water Distribution

The water supply distribution system takes potable water supplied from headworks assets and delivers this to customers across the Southern Supply Zone. Any site supplied potable water within the former Gosford City Council LGA is part of this area.

Sewerage

Sewage collected from connected properties within the Kincumber Sewerage Scheme is conveyed to either the Kincumber or Woy Woy Sewage Treatment Plants for treatment prior

to disposal at the Winnie Bay licenced outfall location. Any site provided with reticulated sewerage within the former Gosford City Council LGA is part of this area.

5.0 Population Predictions and Dwelling Unit Estimates

Council engaged consultants .id to prepare Economic and Demographic profiles for the Central Coast, as well as population forecasts. The information is derived from the Australian Bureau of Statistics Census of Population and Housing and the National Institute of Economic and Industry Research.

In preparing the 2019 Water Supply and Sewerage DSPs, Council has assessed the current number of connected Equivalent Tenements (ETs) in accordance with IPART's 2019 Pricing Determination for the Central Coast, being 150kL annual potable water demand per Equivalent Tenement. This is based on the current system annual demand (corrected for climate factors) apportioned to the Northern and Southern Regions based on demand distribution. The projected number of ETs was then projected forwards in accordance with region based population forecasts provided by .id, allowing for forecast differences in dwelling densities across the two regions. This is outlined below in Table 2 and described further in Appendix A.

Table 2 Population LGA with proposed populations for water supply and sewer services

Year	Residential Population (.id)*	Population Water Supply**	population Sewerage***
2019	176674	175614	175181
2021	179,377	177788	177258
2026	183,557	181786	181521
2031	186,415	185783	185783
2036	189,415	189263	189263
2041		192744	192744
2046		195586	195586
2051		198428	198428

* Population forecast by forecast.id consulting limited to 2036.

** Population water supply was extracted from Mater Plan study 2012 undertaken by GHD, based on forecast.id and extrapolated up to 2051. This included serviced and un-serviced properties (proposed to be serviced)

*** Population sewerage was extracted from Mater Plan study 2012 undertaken by GHD, based on forecast.id and extrapolated up to 2051. This included serviced and un-serviced properties (proposed to be serviced)

Full details relating to the forecast tools are available via Council's website:

<https://www.centralcoast.nsw.gov.au/business/opportunities-and-investment/profile-central-coast>.

6.0 Reference to Other Development Servicing Plans

The Water Supply Headworks capital components are detailed in Appendix A of this DSP (Gosford - Wyong Joint Water Supply DSP No. GW3 – July 2019). The cost of these components is included in the calculations for determining water supply developer charges payable under this Plan.

7.0 Timing of Capital Works

7.1 Water Supply

Water supply works relevant to this plan are shown in Figure 2 and associated costs and timing are outlined further in Appendix B. Water Supply augmentations were decided based on three studies carried out in the recent past.

- Master Plan 2012
- System assessments carried out for Local Environmental planning (2018)
- DSP 2014

The methodology used in the sizing of proposed water supply capital works is described in Appendix C.

7.2 Sewerage

Sewerage works relevant to this plan are shown in Figure 3 and associated costs and timing are outlined further in Appendix D. Sewerage augmentations were decided based on three studies carried out in the recent past.

- Master Plan 2012
- Terrigal Major Strategy and Coastal Carrier Strategy
- System assessments carried out for Local Environmental planning (2018)

The methodology used in identification and sizing, of proposed sewerage capital works is described in Appendix E. The methodology for identification of Sewer Pump Stations that are proposed for amplification is described in Appendix F.

Definitions:

IPART's 2019 Pricing Determination defines a 'deemed sewage discharge' per single residential properties of 125 kL/annum. This figure is adopted for the purpose of determining sewerage developer charges payable for a new development (1ET = 125kL sewage discharge per annum).

8.0 STANDARDS OF SERVICE AND DESIGN PARAMETERS

8.1 Standards of Services

Central Council's standards of service, relating to Water Supply and Sewerage, are outlined in Table 4.

Table 3 Council standards of service summary

Activity	Target for 2020	Target for 2021	Target for 2022
Water			
Water quality complaints per 1,000 properties	9	8	8
Average frequency of unplanned interruptions per 1,000 properties	115	115	115
Water main breaks per 100km of main	16	16	16
Compliance with Australian Drinking Water Guidelines – microbial and chemical guideline values (%)	100	100	100
Sewerage			
Wastewater overflows per 100 km of main	32	30	28
Wastewater overflows reported to the environmental regulator, per 100km of main	1.6	1.5	1.4
Wastewater odour complaints per 1,000 properties	1.7	1.7	1.5
Wastewater main breaks and chokes per 100km of main	35.6	34	32
Compliance with Environmental Protection Licences (concentration and load limits)	Yes	Yes	Yes

8.2 Design Parameters

A summary of water supply and sewerage design parameters is provided below.

Water Supply

For the purposes of assessing additional loads on the water supply system, from a Developer Charges Perspective, 1 Equivalent Tenement (ET) is defined as the following:

- **150 kL/year annual demand (IPART Determination) or**
- **0.92 kL/day peak day demand (whichever is greater)**

Design parameters relating to water supply headworks are detailed in Appendix A.

Design parameters relating to the supporting previous planning studies are outlined below.

Master Plan 2012 study carried out an extensive analysis of the water use data and demand trends within former Gosford LGA. All the studies subsequently carried out were based on the parameters decided in the Master Plan study. Water demand assessment was carried out analysing the demand trends within the former Gosford LGA and per capita water use. For this study max day demand and average day demand for former Gosford LGA was determined by analysing the water meter data of the properties within the LGA and the flow monitor data within the network. Non- revenue water component was calculated using the above two components.

Master Plan performance assessment was carried out for the following demand scenarios for former Gosford LGA ;

- Max day demand of 85.5ML/day for year 2011
- Max day demand of 98.6 ML/day for year 2051

Diurnal peaking factors and patterns were determined by the use of flow monitor data and also by use of WSAA guidelines for residential, commercial and industrial categories.

Following are the water use and demand parameters specific to Gosford water system that were used in the analysis:

Per capita water use = 236 l/day

Low density single residential=3 EP

High density Residential=2.1 EP

Diurnal factors for customer categories

- Residential=2.2
- Commercial=2.0
- Industrial=1.6

Unaccounted for water= 10.9%

PDD/ADD factor= 1.9

The strategy was developed with the consideration of current capacity, performance and future growth. The level of service was agreed by a technical memorandum which was based on WSAA (Sydney Water Edition).

Sewerage

IPART's 2019 Pricing Determination defines a 'deemed sewage discharge' per single residential properties of 125 kL/annum. This figure is adopted for the purpose of determining sewerage developer charges payable for a new development (1ET = 125kL sewage discharge per annum).

Design parameters relating to the supporting previous planning studies are outlined below.

The sewer load analysis was carried out to understand required infrastructure capacities in conveying sewage and storm loads from customer's properties to the Sewage Treatment Plants in accordance with the required levels of service. The dry weather flows within former Gosford LGA was analysed for Master Planning 2012 based on a per capita flow basis derived from the analysis carried out with measured water delivered to properties in 2010 for residential and non- residential properties.

Following are the sewerage flow parameters specific to Gosford sewer system that were used for the analysis:

- Per capita sewer flow = 205 l/day
- ADWF to PDWF factor= 3.0 residential and 2.0 non-residential

The storm flow analysis has been based on the rational method as described within the for infiltration and inflow analysis WSA 02 code. A course validation of the parameters of the applied rational method has been undertaken. As the system ages it is likely to allow increased IIF. A deterioration allowance of 0.5% per year has been applied to predicted storm and GWI flows. This equates to 20% increases of storm flows between 2011 and 2051.

Definitions:

ADD	Average Day Demand
PDD	Peak Day Demand
ADWF	Average Dry weather Flow
PDWF	Peak Dry weather Flow
IIF	Inflow & Infiltration Flow
GWI	Ground Water Infiltration

Equivalent Person (EP) - Population is converted to Equivalent Tenements (ET) based on occupancy rate.

Calculation of Equivalent Tenements

The conversion of a proposed development into Equivalent Tenements (ET) for the purpose of levying water and sewer developer charges is completed as outlined below:

- 1 Reference to Central Coast Council's Equivalent Tenement Calculation Matrix (see Appendix H)
- 2 For wet industry calculate based on annual and daily water and sewage demand/generation rates and compare to the allowances described above.
- 3 For non-standard development, the number and type of fixtures is used with calculation based parameters contained within AS3500.
- 4 Where the above are not relevant then alternate industry specific documents including Public Works, NSW Water Directorate documentation and investigation of similar developments within other NSW Local Government Areas may be used.

Credits for existing development will be provided based on an approved existing/previous use of the site, for which developer charges have been previously paid. ETs which have been calculated and levied on a parcel of land are not transferrable to another parcel of land.

A minimum threshold of 0.25ET is applicable for triggering the payment of developer charges for new development. However, this does not allow the staging of development in increments less than 0.25ET for the purposes of avoiding the payment of developer charges.

All developer charges calculations will be rounded to two decimal places when assessing ET payable and credits applicable.

9.0 Associated Technical Reports

The following Technical Reports provide the basis upon which the need for capital works have been assessed:

Water Supply

Summary of Developer Servicing Strategies South 2019 (Appendix G)

Servicing and Infrastructure Capacity Analysis-2018 (Relevant sections included in Appendix G)

Water and Sewer Master Plan 2051-Water System Technical Memoranda-2012 (Relevant sections included in Appendix G)

Sewerage

Summary of Developer Servicing Strategies South Memo (Appendix G)

Sewage Pumping Station Performance Analysis – (Appendix F)

Servicing and Infrastructure Capacity Analysis -2018 (Relevant sections included in Appendix G)

Coastal Carrier Strategy Briefing paper-Chris McDonald & Gosford NAVGS detail design report-AECOM (Relevant sections included in Appendix G)

Water and Sewer Master Plan 2051-Sewer system Technical Memoranda-2012 (Relevant Sections included in Appendix G)

10.0 Works In Kind and Temporary Works

Developers may provide works in kind in lieu of making monetary contributions provided prior agreement is reached with Council (contributed assets). The rates paid for works in kind will be the rates used in the calculation of future asset costs for this DSP. Actual costs of particular site constraints encountered as part of the design and/or construction phases will be borne by the Developer. Credits will only be payable upon the acceptance of an asset by Council (no staged payment for investigation and design).

Prior to commencing the design of any contributed assets, the Developer shall contact Council and provide a 'Letter of Intent' (template available) which identifies the subject DSP assets that are intended to be constructed and seeks confirmation what credits may be available for the construction of those assets.

It may be feasible to provide temporary measures to service initial stages of a development in lieu of constructing major works up front. Such proposals will need to be assessed at the time of application. In these cases the applicant is responsible to fully fund the design and construction of the assets and donate them to Council with a payment of expected operational costs and a further payment towards the future decommissioning of the temporary works. These costs are additional to any costs identified in this Plan.

This DSP does not include the provision of reticulation assets which are required to be donated to council by the developer. For the purpose of this DSP, reticulation assets are

defined as water mains with a nominal diameter less than 200mm and gravity sewer mains with a nominal diameter less than 225mm.

11.0 Timing and Method of Payment

Unless other arrangements have been approved by Council, the payments for Development Contributions are as follows:

- Involving subdivision, payment is required prior to the release of the Subdivision Certificate
- Involving building work, payment is required prior to the release of the first Construction Certificate
- Involving both subdivision and building work, payment is required prior to the release of the Subdivision Certificate or the first Construction Certificate, whichever occurs first
- Where no Construction Certificate or Subdivision Certificate is required, payment is required prior to issue of the first Certificate of Occupancy

12.0 Developer Charge Calculation

12.1 Calculation Formula

This Development Servicing Plan contains a net present value (NPV) calculation of the cost of total service capacity in the area less the expected net operating surplus (or losses) from providing services in the area. The resultant net cost is then expressed per Equivalent Tenement (ET). A development is charged a multiple of this per ET charge according to the number of ET applicable to that development calculated in accordance with section 8.2, minus any existing credits applicable to the site.

The developer charge (DC) is calculated in accordance with IPART's 2018 Determination as follows:

$$MP_{Sch1} = \frac{K_1}{L_1} + \frac{K_2}{L_2} - \frac{NPV(R_i - C_i)}{L_3} \text{ for } i = \text{financial years } 1, \dots, n$$

Where:

- MPSch1 means the maximum price per Equivalent Tenement to be serviced by the connection;
- K1 means the Capital Charge for the Pre-1996 Assets that will serve the relevant DSP Area, calculated in accordance with clause 2.3(a) of Schedule 5 and set out in the relevant DSP;
- K2 means the Capital Charge for the Post-1996 Assets that will serve the relevant DSP Area, calculated in accordance with clause 2.3(b) and 2.3(c) of Schedule 5 and set out in the relevant DSP;
- L1 means the Agency's estimate of the number of Equivalent Tenements for Pre- 1996 Assets, calculated in accordance with clause 3.2(a) of Schedule 5 and set out in the relevant DSP;

- L2 means the Agency's estimate of the number of Equivalent Tenements for Post-1996 Assets, calculated in accordance with clause 3.2(b) of Schedule 5 and set out in the relevant DSP;
- L3 means the Agency's estimate of the number of Equivalent Tenements for the Reduction Amount, calculated in accordance with clause 3.2(c) of Schedule 5 and set out in the relevant DSP;
- Ri means the Agency's estimate of the future periodic revenues to be received from new customers in the DSP Area in each financial year i, estimated in accordance with clause 4 of Schedule 5 and set out in the relevant DSP;
- Ci means the Agency's estimate of the future operating, maintenance and administration costs of servicing all new customers in the DSP Area in each financial year i (excluding, for the avoidance of doubt, any Capital Costs), estimated in accordance with clause 5 of Schedule 5 and set out in the relevant DSP; and
- n is the financial year which is 30 years from the financial year in which the relevant DSP was registered with IPART.

12.2 Net Present Value Model Parameters

Council has used the following parameters as required in calculating the developer charge:

- A 0% real discount rate for Pre 1996 assets.
- A real discount rate for post 1996 assets of 4.9% which is equal to Wyong Shire Council's Pre-tax Weighted Average Cost of Capital (WACC)
- A real discount rate of 4.9% for the expected net revenues and costs equal to Wyong Shire Council's Pre-tax WACC
- Consumption per annum for an average residential customer of 150kL/year;
- A forecast horizon for expected net revenues and costs of 30 years; and
- Any assets constructed prior to 1970 are excluded from the calculation.

12.3 Asset Description

Details relating to the size, length and date of commissioning of existing assets were taken from Council's asset register which was used to complete a recent revaluation of Council's Water and Sewerage Assets in 2016.

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 2016 Water and Sewerage Asset revaluation which has passed an external audit. The values were determined by adopting figures provided in the NSW Office of Water Reference Rates Manual (2014), with additional cost factors applied where applicable to reflect the value of the assets. Certain asset classes were also valued by external consultants during the previous revaluation. Relevant parameters are provided in Appendix I.

The estimated costs of future assets were also based on the values obtained from the asset revaluation, with a summary of the rates applied to future assets also provided in Appendix I.

12.4 Developer Charges

A summary of the developer charges is provided below in Table 5, with the full calculation available in Appendix J.

It is noted that GST is not payable on Water and Sewerage Developer Charges amounts, nor is it payable for credits on works undertaken in lieu of Developer Charges payable.

Table 4 Summary of Developer Charges Calculations

	Headworks Capital Charge (\$/ET)	Distribution Capital Charge (\$/ET)	Operating Surplus (\$/ET)	Total Charge (\$/ET)
Scheme	(a)	(b)	(c)	(d)=(a)+(b)-(c)
Southern Region Water Supply	\$3,933	\$632	\$1,980	\$2,585
Southern Region Sewerage	N/A	\$5,697	\$3,881	\$1,816

13.0 Method of Updating Developer Charges Payable Under This Plan

The Development Servicing Plan will be reviewed:

- Once, and no more than once, in each five year period, with the first five year period starting on 1 November 2019: and
- When and to the extent required by a determination of the Independent Pricing and Regulatory Tribunal.

13.1 CPI Adjustment

If there is no review of Developer Charges in any given year (Year n), the Developer Charges then prevailing must be multiplied to take effect from 1 July in each such year by the number derived from the application of the following formula:

$$\frac{CPI_{\text{March year } n}}{CPI_{\text{March year } n-1}}$$

Where:

CPI = the consumer price index, All Groups index number for the weighted average of eight capital cities as published by the Australian Bureau of Statistics, or if the Australian Bureau of Statistics does not or ceases to publish the index, then *CPI* will mean an index determined by IPART;

March_{year n} = the March quarter for Year n; and
March_{year n-1} = the March quarter for the year before Year n.

13.2 Dispute Resolution

A developer who is dissatisfied with how Council has calculated a developer charge has a right to have the dispute arbitrated under the Independent Pricing & Regulatory Tribunal Act.

The first step of this arbitration process is to contact Central Coast Council.

If the complaint has been reviewed by Council and the customer is still dissatisfied, the customer may request to have the dispute arbitrated under Section 31 of the IPART Act.

Figure 1
Development Servicing Plan Area

Figure 2
Water Supply Capital Works

Figure 3
Sewerage Capital Works

Appendix A
Gosford – Wyong Joint Water Supply Headworks DSP

Appendix B
Water Supply Capital Works Summary

Appendix C
Methodology for Water Supply Capital Works

Appendix D
Sewerage Capital Works Summary

Appendix E
Methodology for Sewerage Capital Works

Appendix F
Sewer Pump Station Upgrade Assessment

Appendix G
Summary of Developer Servicing Strategy Southern Region 2019

Appendix H
Central Coast Council Equivalent Tenement Calculation Matrix

Appendix I

Valuation of Existing Assets

Appendix J
Developer Charge Calculation