Development Servicing Plan No.1 – Water Supply and Sewerage Services




ADOPTED BY COUNCIL: **21 NOVEMBER 2018**

THIS PLAN CAME INTO EFFECT ON: **21 NOVEMBER 2018**

This document was compiled by Wentworth Shire Council.

Images were sourced from Council's Health & Planning Division Image Library.

Copies of this plan can be viewed on Council's website at www.wentworth.nsw.gov.au

©Copyright Wentworth Shire Council 2018

Table of Contents

List of Tables

List of Figures

1 Introduction

Section 64 of the *Local Government Act, 1993* enables a local government council to levy developer charges for water supply, sewerage and stormwater. This derives from a cross-reference in that Act to Section 306 of the *Water Management Act, 2000*.

A Development Servicing Plan (DSP) details the water supply and sewerage developer charges to be levied on development areas utilising a water utility's water supply and sewerage infrastructure.

This DSP document covers water supply and sewerage developer charges in regard to the development areas served by Wentworth Shire Council.

This DSP document has been prepared in accordance with the 2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater issued by the Minister for Lands and Water, pursuant to Section 306 (3) of the *Water Management Act, 2000*.

This DSP document supersedes any other requirements related to water supply and sewerage developer charges for the area covered by this DSP. This DSP document takes precedence over any of Council's codes or policies where there are any inconsistencies

The water supply and sewerage developer charges for the areas covered by this DSP document have been determined as follows:

Sewer	**Water**
$7417	$2955

Developer charges relating to this DSP document will be reviewed after a period of 3 years.

In the period between any reviews, developer charges will be adjusted annually on the basis of the movement in the CPI for Sydney, excluding the impact of GST.

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

This DSP document should be read in conjunction with the Wentworth Local Environmental Plan 2011 and the Wentworth Development Control Plan 2011, which apply to the Wentworth Shire Council area.

2 Name of this Plan

This servicing plan is called the “Section 64 Development Servicing Plan No 1 – Water Supply and Sewerage Services”.

3 Purpose of this Plan

The purposes of this servicing plan are to:

a) provide an administrative framework under which specific water and sewerage infrastructure is provided, land acquired and easements created to allow development within the defined area;

b) to authorise the Council to impose conditions under Section 64 of the *Local Government Act 1993* when granting consent to development on land to which this plan applies;

c) ensure that the pre-development community is not financially burdened by the provision of water and sewerage infrastructure, acquisition of land or creation of easements as a result of this development; and

d) enable the Council to be both publicly and financially accountable in its assessment and administration of the servicing plan.

4 Commencement of this Plan

This plan commenced on the date on which public notice of its adoption by Council appeared in a local newspaper.

5 Land to which this Plan applies

This plan applies to the contribution area as shown in the maps in Attachment 1.

The contribution areas have generally been defined by the existing serviced area, plus areas proposed for subdivision during the planning horizon. Developers will be required to construct at their own cost the connections between their subdivisions and Wentworth Shire Council's trunk infrastructure.

6 Demographic and land use planning information

6.1 Population Projections

Population projections for the Wentworth local government area and the towns to which this plan is applied, are shown in Tables 1 and 2 and Figures 1 and 2 below. The projections are from the 2016 to 2036, which is the Council's current planning horizon for water supply and sewerage services.

The projections below have been formulated on the percentage of increase/decrease in population between the 2011 and 2016 Census data by the Australian Bureau of Statistics.

The methodology of calculating the percentage rate of growth/decline can be found below:

Growth or decline percentage rate was referenced from the World View – Population and Demography website. https://www.reference.com/world-view/calculate-population-s-growth-rate-c323cc96e3deff99?aq=Population+Growth+Rate&qo=cdpArticles#

The methodology of calculating population projections can be found below:

Population projections was referenced from the Sciencing, Calculate Population Projections by Michael Keenan. https://sciencing.com/calculate-population-projections-8473012.html

Table 1 Population projections for Wentworth Shire Council

	2011	2016	Growth p/a between 2011 & 2016	2021	2026	2031	2036
Wentworth LGA	6609	6794	0.6%	6984	7180	7381	7587

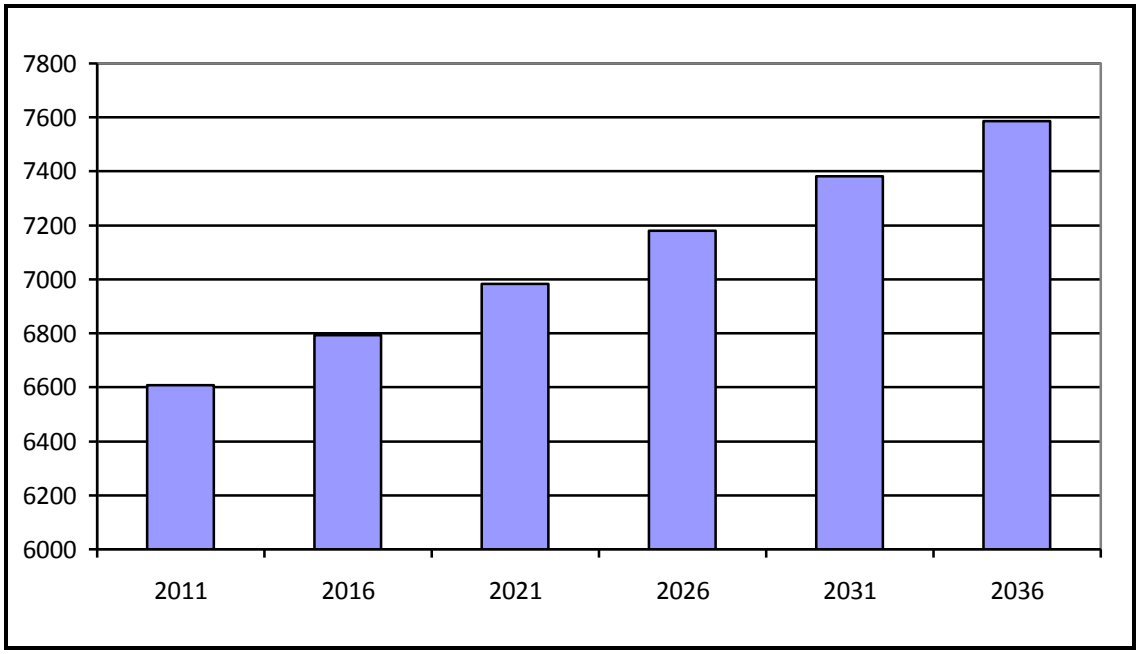


Figure 1 WSC Population Projection

Table 2 Population projections for townships in Wentworth Shire Council

Township	2011	2016	Growth/Decline p/a between 2011 & 2016	2021	2026	2031	2036
Wentworth	1248	1437	2.8%	1655	1905	2194	2526
Buronga	1053	1212	2.8%	1395	1607	1848	2127
Gol Gol	1478	1523	0.6%	1569	1617	1666	1717
Dareton	517	501	-0.6%	486	470	456	442

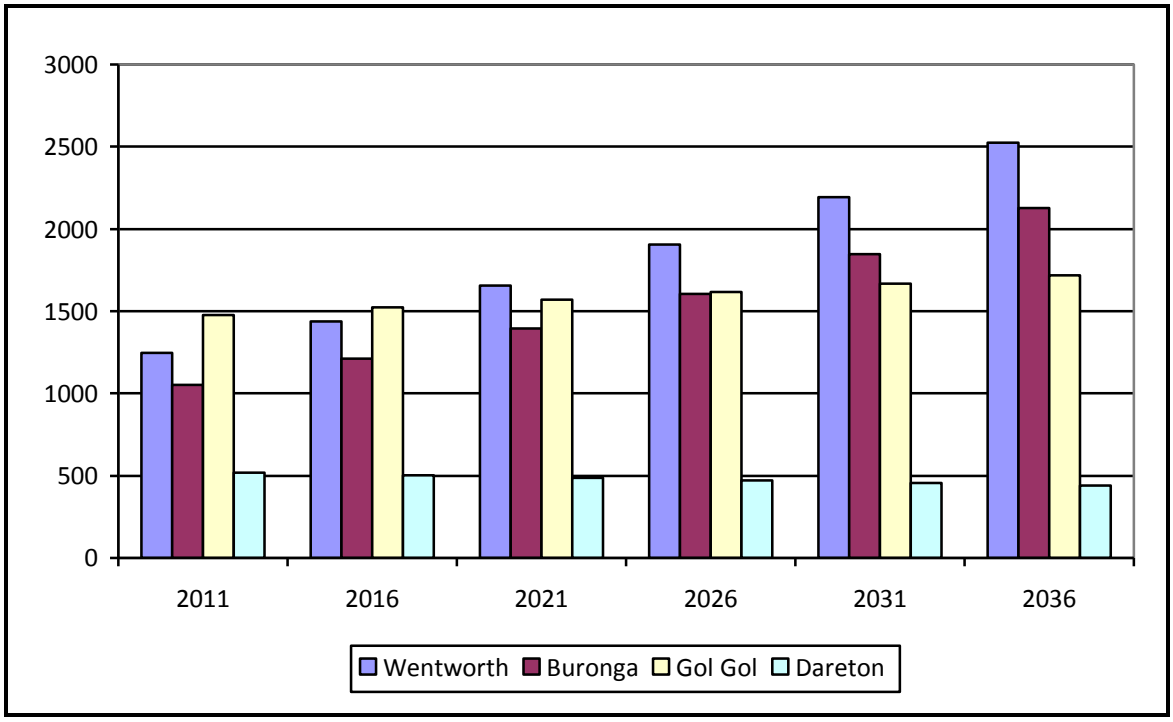


Figure 2 Projected population growth/decline

Note: The data for the Buronga and Gol Gol areas required minor manipulation due to a change in the data collection boundaries between 2011 and 2016 census period.

The 2011 boundary for Buronga included the Mourquong area and the 2011 boundary for Gol Gol included the Trentham Cliffs and Monak areas.

7 Development to which this Plan applies

This plan applies to the subdivision of all land into 2 or more lots.

8 Water Supply and Sewerage Assets

The existing and proposed water supply and sewerage assets serving the area covered by this DSP are shown on maps in Attachment 1.

8.1 Existing capital costs (Buronga and Gol Gol)

The capital cost of existing water supply and sewerage assets serving the area covered by this DSP are shown in Tables 3 and 4 below.

Table 3 Capital Sewer Costs

Component	Capital Cost
Pump Stations	$6,347,544
Waste Water Treatment Plants	$3,282,084
Gravity Mains	$6,191,130
Rising Mains	$4,333,627

Table 4 Capital Water (Raw and Filtered) Costs

Component	Capital Cost

Pump Stations	$950,007
Water Treatment Plants	$4,826,250
Reservoirs	$2,743,989
Reticulation Mains	$4,202,632
Trunk Mains	$4,880,582

8.2 Asset types and associated useful lives

Table 5 Water Asset lifespan

Water Assets	Years
Reservoir	100
Water Treatment Plants - Structural	25
Water Treatment Plants – Mech/Electrical	50
Reticulation Mains	80
Trunk Mains	80
Pump Stations - Structural	25
Pump Stations - Mech/Electrical	50

Table 6 Sewer Asset lifespan

Sewer Assets	Years
Reticulation Mains	80
Rising Mains (HOBASS/uPVC)	80
Rising Mains (DICL)	50
Wastewater Treatment Plants - Structural	60
Wastewater Treatment Plants – Mech/Electrical	35
Pump Stations - Structural	80
Pump Stations - Mech/Electrical	35

8.3 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

9 Levels of Service

In the preparation of this plan, the following key levels of service have been assumed for Water and Sewer.

- Average annual raw water to be supplied for one detached residential dwelling (1 ET) is 170 kL.
- Average annual treated water to be supplied for one detached residential dwelling (1 ET) is 170 kL.
- An ET is an ADWF of 200L/EP/d multiplied by the utility's occupancy ratio (2.6 persons per house).

For information relevant to current levels of service, please contact Council Roads & Engineering Department of 5027 5027.

10 Design Parameters

10.1 Water Supply

Investigation and design of new water supply system components is generally based on the relevant Water Services Association of Australia (WSAA) guidelines.

Where necessary, investigation and design is based on the *Water Supply Investigation Manual* (1986). This manual was prepared by the former NSW Department of Public Works and is now managed by the NSW Office of Water, Department of Primary Industries.

10.2 Sewerage

Investigation and design of new water supply system components is generally based on the Water Services Association of Australia (WSAA) guidelines.

Where necessary, investigation and design of sewerage system components is based on the *Manual of Practice: Sewer Design* (1984) and the *Manual of Practice: Sewage Pumping Station Design (*1986). These manuals were prepared by the former NSW Department of Public Works and are now managed by the NSW Office of Water, Department of Primary Industries.

11 Equivalent Tenements

Table 7 Filtered water supply for Buronga/Gol Gol in 2016/17

Service area	Current no. of connected properties 1	Current filtered water to be supplied(kL/a) 2
Buronga and Gol Gol	987	320362
TOTAL	987	320362

Table 8 Raw water supply for Buronga/Gol Gol in 2016/17

Service area	Current no. of connected properties 1	Current filtered water to be supplied(kL/a) 2
Buronga and Gol Gol	1009	582749
TOTAL	1009	582749

Current ET for filtered water = 320362/170 = 1884 ET

Current ET for Raw water = 582749/170 = 3428 ET

11.1 ET Projection for water supply

Based on the projected population growth rate of 0.5%, Table 9 below shows the projected water supply demand for the next 20 years.

Table 9 ET Projection for water supply

Year	Filtered water			Raw water		
	Growth Rate(%)	New ETs	Projected ETs	Growth Rate(%)	New ETs	Projected ETs
2016 / 2017	0.5		1884	1		3482
2016 / 2017	0.5	9	1893	1	35	3517
2017 / 2018	0.5	9	1903	1	35	3552
2018 / 2019	0.5	10	1912	1	36	3588
2019 / 2020	0.5	10	1922	1	36	3623
2020 / 2021	0.5	10	1932	1	36	3660
2021 / 2022	0.5	10	1941	1	37	3696
2022 / 2023	0.5	10	1951	1	37	3733
2023 / 2024	0.5	10	1961	1	37	3771
2024 / 2025	0.5	10	1970	1	38	3808
2025 / 2026	0.5	10	1980	1	38	3846
2026 / 2027	0.5	10	1990	1	38	3885
2027 / 2028	0.5	10	2000	1	39	3924
2028 / 2029	0.5	10	2010	1	39	3963
2029 / 2030	0.5	10	2020	1	40	4002
2030 / 2031	0.5	10	2030	1	40	4042
2031 / 2032	0.5	10	2041	1	40	4083
2032 / 2033	0.5	10	2051	1	41	4124
2033 / 2034	0.5	10	2061	1	41	4165
2034 / 2035	0.5	10	2071	1	42	4207
2035 / 2036	0.5	10	2082	1	42	4249

11.2 ET Projection for sewer

The assumed current ADWF is 2ML/d.

Average demand of sewer 520 L/ET/d - So the current ET for Sewer is = 2000000/520 = 3846 ET

Table 10 ET Projection for sewer

Year	Sewer		
	Growth Rate (%)	New ETs	Projected ETs
2016 / 2017	0.5		3846
2016 / 2017	0.5	19	3865
2017 / 2018	0.5	19	3885
2018 / 2019	0.5	19	3904
2019 / 2020	0.5	20	3923
2020 / 2021	0.5	20	3943
2021 / 2022	0.5	20	3963
2022 / 2023	0.5	20	3983
2023 / 2024	0.5	20	4003
2024 / 2025	0.5	20	4023
2025 / 2026	0.5	20	4043
2026 / 2027	0.5	20	4063
2027 / 2028	0.5	20	4083
2028 / 2029	0.5	20	4104
2029 / 2030	0.5	21	4124
2030 / 2031	0.5	21	4145
2031 / 2032	0.5	21	4165
2032 / 2033	0.5	21	4186
2033 / 2034	0.5	21	4207
2034 / 2035	0.5	21	4228
2035 / 2036	0.5	21	4249

12 Developer Charges Calculations

Developer charges are calculated by determining a capital charge for each service and reducing the value by a 'reduction amount'.

12.1 Capital Charge

Water

Note: Present Value (PV) of the capital assets are taken from the current replacement costs from the asset information in Council. Because of the PV is available from the replacement costs for the year 2016/17, actual commissioning years have not been considered for the computations.

(Total ET for filtered and raw water is 1884+3482 = 5366 ET)

Table 11 Capital Charge for Water

Component	Effective year of commissioning for ROI	PV of capital cost (2016/17$M)	Capacity of the service area (ET)	Capital cost per ET(2016/17$)	Year when capacity is fully taken up	Take up period (years)	ROI factor	Capital charge per ET (2016/17$)
Pump Stations	1995/96	0.95	5366	177	2035/36	40	1.68	297
Reservoirs	1995/96	2.744	5366	511	2035/36	40	1.68	858
Water treatment plants	1995/96	4.826	5366	899	2035/36	40	1.68	1510
Reticulation mains	1995/96	4.202	5366	783	2035/36	40	1.68	1315
Trunk mains	1995/96	4.880	5366	909	2035/36	40	1.68	1527

Total capital charge per ET = $5508

Sewer

Note: Present Value (PV) of the capital assets are taken from the current replacement costs from the asset information in Council. As the PV is available from the replacement costs for the 2016/17 year, actual commissioning years have not been considered for the computations.

Table 12 Capital Charge for Sewer

Component	Effective year of commissioning for ROI (1)	PV of capital cost (2016/17$M) (2)	Capacity of the service area (ET) (3)	Capital cost per ET(2016/17$) (4)=(2)/(3)	Year when capacity is fully taken up (5)	Take up period (years) (6)	ROI factor (7)	Capital charge per ET (2016/17$) (8)=(4)x(7)

Pump Stations	1995/96	6.347	3846	1650	2035/36	40	1.68	2772
Waste water treatment plants	1995/96	3.282	3846	853	2035/36	40	1.68	1433
Gravity mains (including manholes)	1995/96	6.192	3846	1610	2035/36	40	1.68	2704
Rising mains	1995/96	4.334	3846	1127	2035/36	40	1.68	1893

Total capital charge per ET = $8803

12.2 Reduction amount

Using ROI method (P50 in guidelines). Use example 17 in p50.

Using total current income and expenses for sewer, water, unfiltered water, for 2017 from Finance Reports WSC (Di)

Note: Since the income and expenses figures are taken from Finance Report 2017 for whole shire, connected properties for whole shire has been considered for the reduction amount.

Water (Raw and Filtered water)

Current income (2017) – $3,137,000

Current Expenses - $2,311,000

Net Income - $826,000

Total number of connected properties = 2011 (filtered water) + 2135 (Raw water) = 4146

Net income per ET = $826000/4146 = $199

The PV of $199 by 2035/36 year, with discount rate of 5% = $2553

Use the Reduction amount of $2553 for Water.

Percentage of the supply of raw water is 52% and filtered water is 48% (As per the number of connected properties 2135 and 2011).

Reduction amount for raw water = $2553x52% = $1327

Reduction amount for filtered water = $2553x48% = $1225

Sewer

Current income (2017) – $1,631,000

Current Expenses - $1,407,000

Net Income - $224,000

Average number of connected properties (from above filtered water 2011, and Raw water 2135 for whole shire, = 2070

Net income per ET = $224000/2070 = $108

The PV of $108 by 2035/36 year with discount rate of 5% = $1386

Use, the Reduction amount is $1386 for Sewer.

12.3 Developer Servicing Charges

Water

1) Filtered Water

Capital charge – Reduction amount = $5508x48% – $1225 = $1418 per ET

2) Raw water

Capital charge – Reduction amount = $5508x52% – $1327 = $1537 per ET

Total developer charge for water = $1418+$1537 = $2955

Sewer

Capital charge – Reduction amount = $8803 – $1386 = $7417 per ET

Total developer charge for sewer = $7417

13 Timing of payment of Contributions

Council requires contributions under this plan to be paid in full prior to release of the final plan of subdivision (i.e. Subdivision Certificate).

A Compliance Certificate under s64 of the Local Government Act 1993 will not be released until the relevant developer charges have been paid. Compliance certificate(s) will be required for subdivisions and where a development approval leads to an increased loading on water supply and/or sewerage infrastructure.

14 Transitional arrangements

This Plan applies to:

- a development application or application to modify a development consent submitted after the date on which this plan took effect; and
- a development application or application to modify a development consent submitted, but not yet determined, on or before the date on which this plan took effect.

15 Glossary

ADWF	Average dry weather flow. One of the design parameters for flow in sewers
Asset	An asset (or part of an asset) including land and headworks assets that directly provides, or will provide, the developer services to developments within the DSP area for which the Developer Charge is payable
Capital Charge	Capital cost of assets per ET adjusted for commercial return on investment (ROI)
Capital Cost	The Present Value of all expenditure on assets.

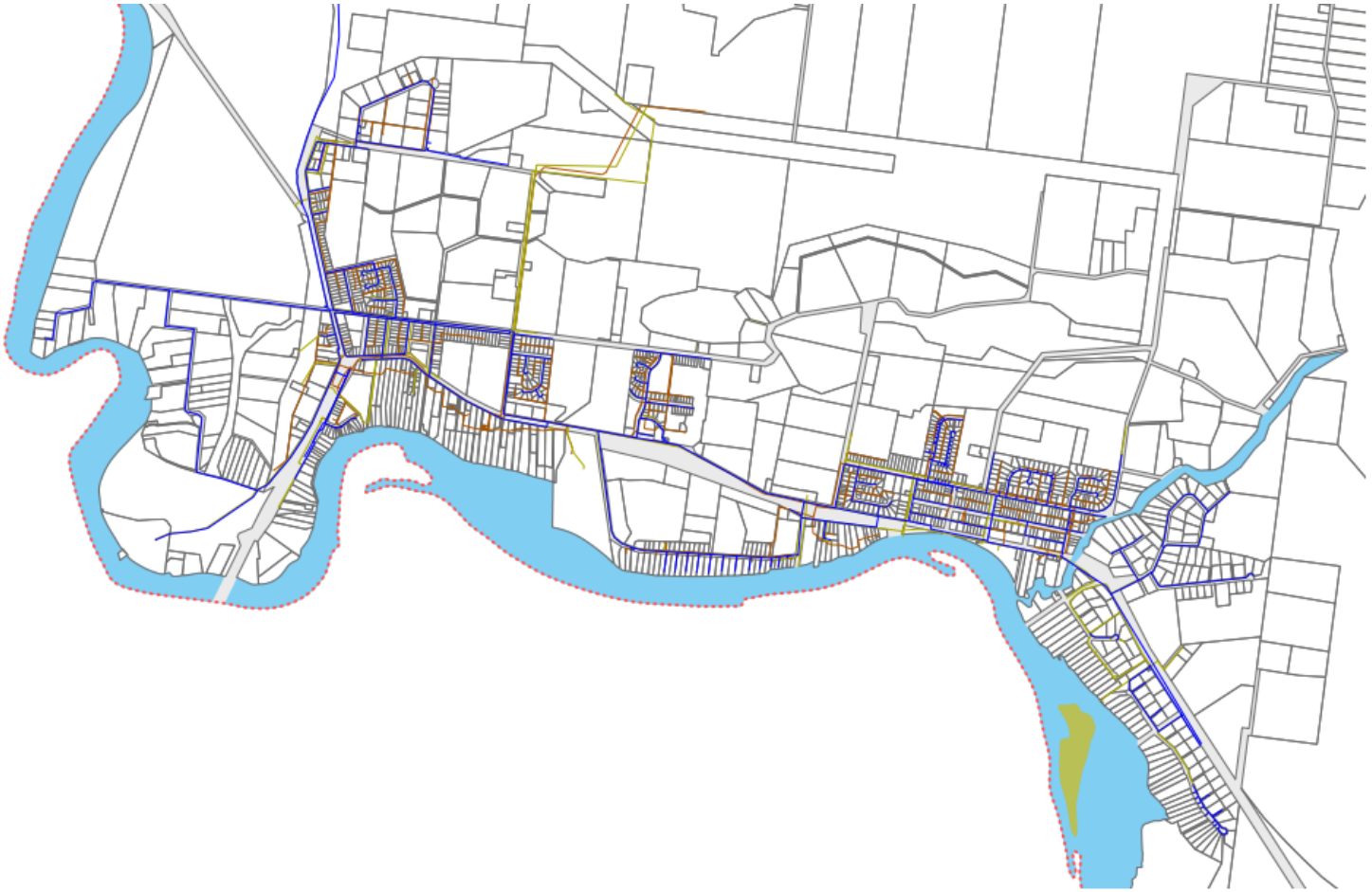
CPI	Consumer price index.
Developer Charge (DC)	Charge levied on developers to recover part of the capital cost incurred in providing infrastructure to new development.
Discount Rate	The rate used to calculate the present value of money arising in the future
DPI Water	A division of NSW Department of Primary Industries
DSP area	That part of a water utility's area covered by a particular Development Servicing Plan. Also referred to as Development Area (page 6 of Guidelines).
EP	Equivalent Persons (or equivalent population). Used as a design parameter for loadings of sewage treatment works.
ET	Equivalent tenement. The annual demand a detached residential dwelling will place on the infrastructure in terms of the water consumption or sewage discharge (page 13 of Guidelines).
NPV	Net present value means the difference between the Present Value of a revenue stream and the Present Value of a cost stream.
OMA	Operation, maintenance and administration (cost).
ROI	Return on investment. Represents the income that is, or could be, generated by investing money.

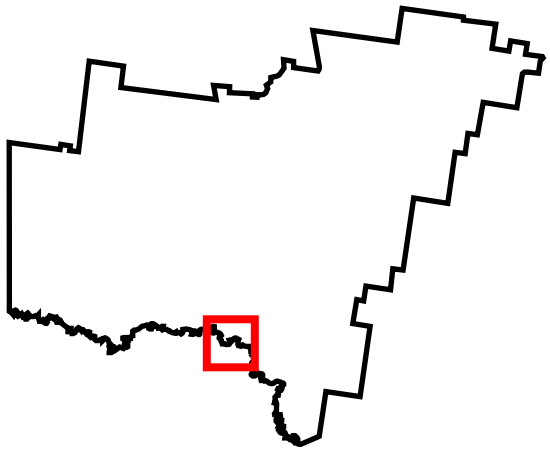
Attachments

Attachment 1 - DSP Area applicable to this plan

The Shire on Two Rivers

WENTWORTH SERVICES MAP
Buronga/Gol Gol Location



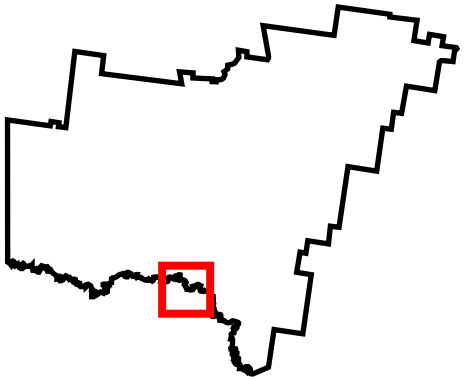


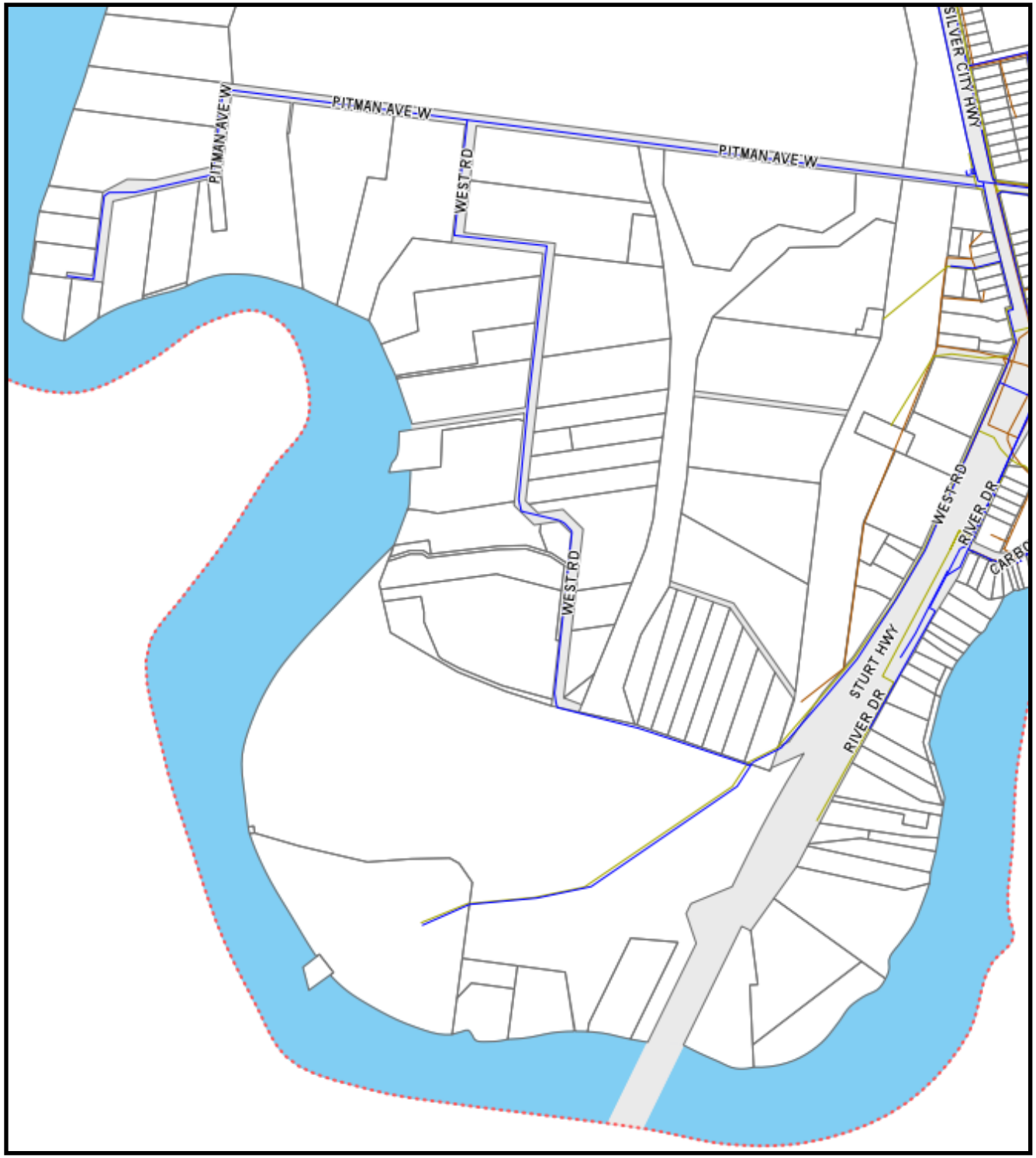
The Shire on Two Rivers

WENTWORTH SERVICES MAP
Buronga/Gol Gol Section 1

LEGEND

- Filtered Water Pipes
- Raw Water Pipes
- Sewer Pipes



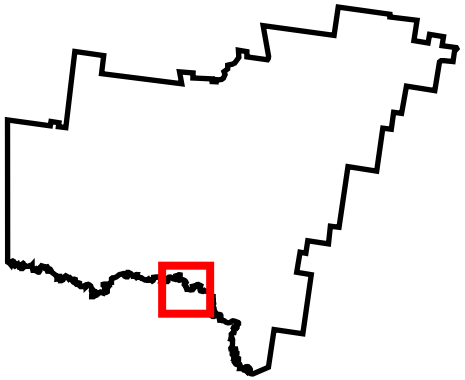


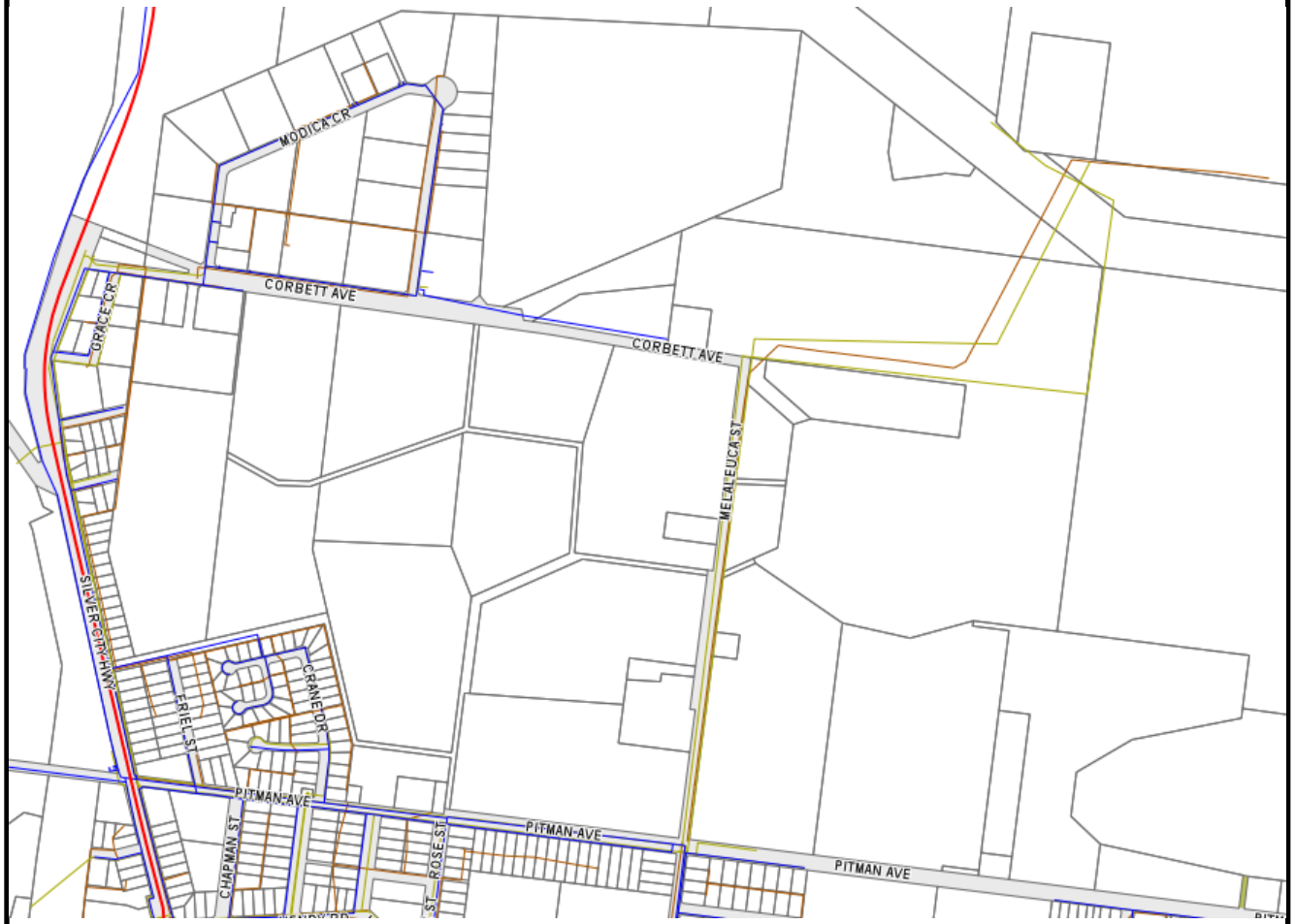
The Shire on Two Rivers

WENTWORTH SERVICES MAP
Buronga/Gol Gol Section 2

LEGEND

- Filtered Water Pipes
- Raw Water Pipes
- Sewer Pipes



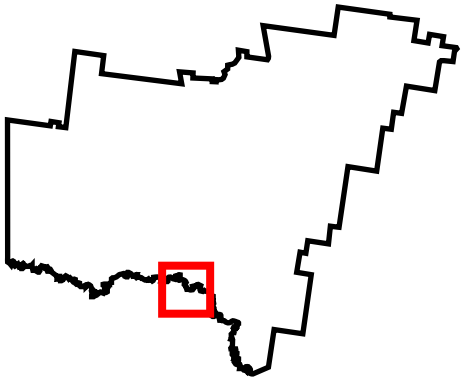


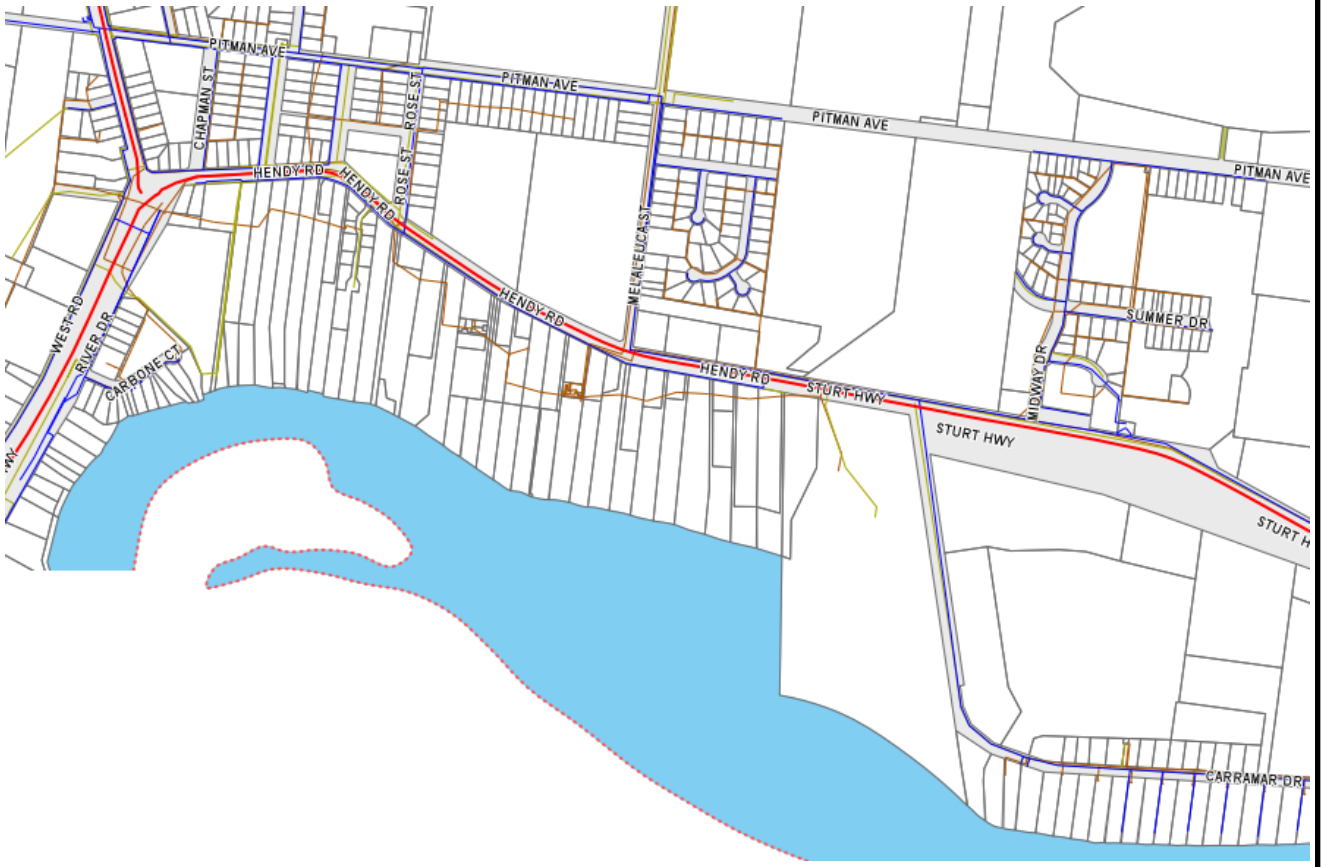
The Shire on Two Rivers

WENTWORTH SERVICES MAP
Buronga/Gol Gol Section 3

LEGEND

- Filtered Water Pipes
- Raw Water Pipes
- Sewer Pipes



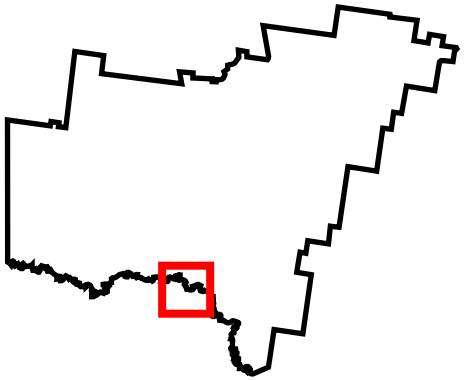


The Shire on Two Rivers

WENTWORTH SERVICES MAP
Buronga/Gol Gol Section 4

LEGEND

- Filtered Water Pipes
- Raw Water Pipes
- Sewer Pipes

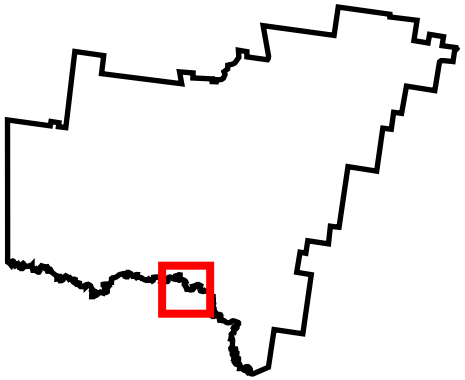


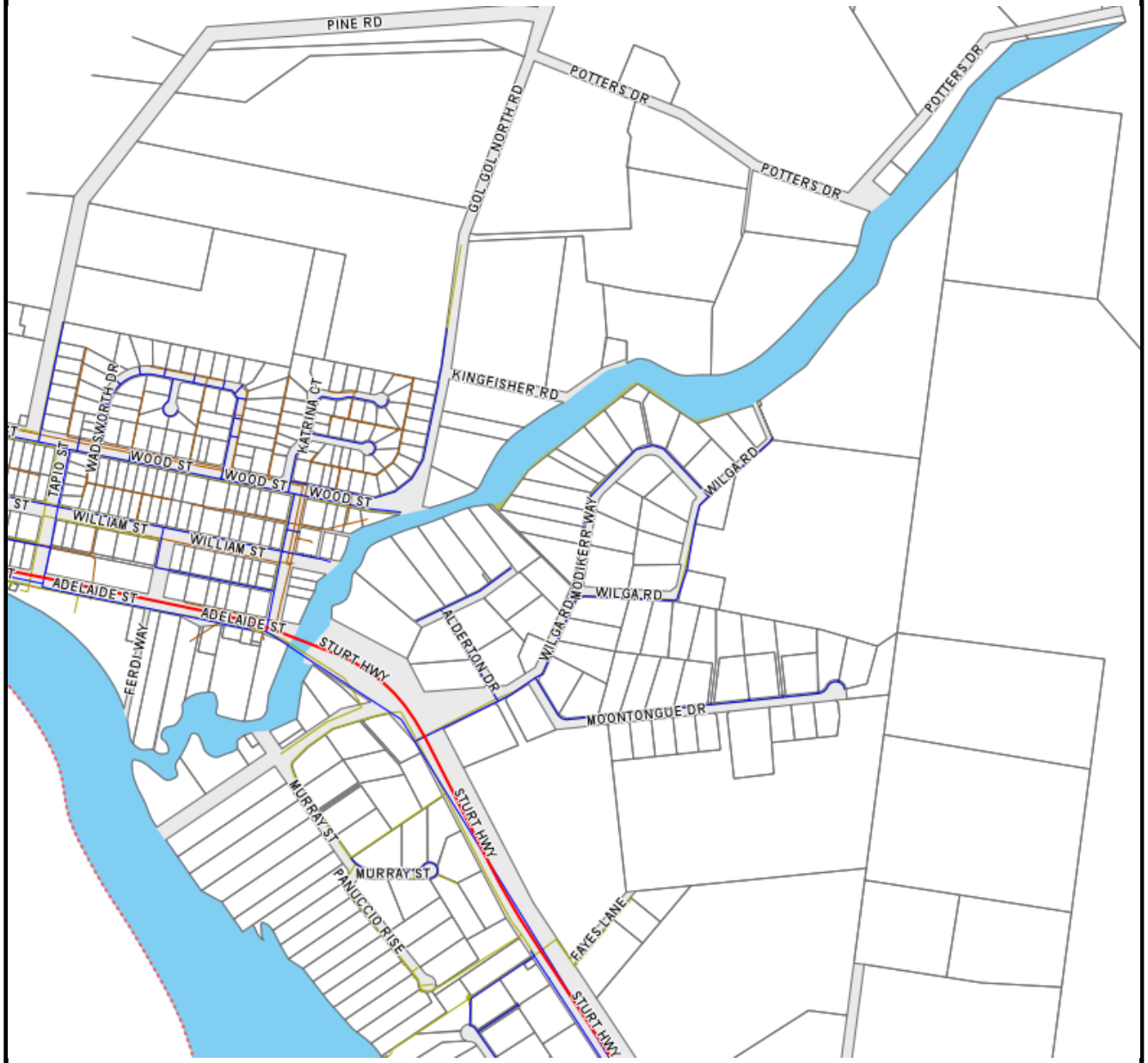
The Shire on Two Rivers

WENTWORTH SERVICES MAP
Buronga/Gol Gol Section 5

LEGEND

- Filtered Water Pipes
- Raw Water Pipes
- Sewer Pipes





The Shire on Two Rivers

WENTWORTH SERVICES MAP
Buronga/Gol Gol Section 6

LEGEND

- Filtered Water Pipes
- Raw Water Pipes
- Sewer Pipes