



Clarence Valley Council

Development Servicing Plans

Water Supply Services

August 2017

Executive Summary

This Development Servicing Plan (DSP) details water supply developer charges relating to development areas serviced by the Clarence Valley Council (CVC).

This DSP has been prepared in accordance with the *2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (2016) issued by the NSW Department of Primary Industries Office of Water (NSW DPI Office of Water), pursuant to section 306 (3) of the *Water Management Act, 2000*.

The following DSPs are included in this document:

- Nymboida River Water System – servicing areas including Coutts Crossing, Waterview Heights, Eatonsville and Seelands, Maclean, Lawrence, Yamba, Junction Hill, Iluka, Copmanhurst, Ulmarra, Grafton and Glenreagh.

The areas covered by this DSP are show on the plans in Section 12.

The timing and expenditure for works servicing the areas covered in this DSP are discussed in Section 4. CVC’s future water supply capital expenditure contributing to the capital charges in each service area are summarised in Section 15.

Levels of service to be provided in the DSP area are shown summarised in Section 5.

The water supply developer charge for the area covered by this DSP have been determined as summarised in Table E-1 below:

Table E-1 Water Supply Developer Charges

DSP Area	Adopted Developer Charge (\$/ET)	Cross – subsidy
Nymboida River Water System	\$4,719	\$0
Minnie Water	Nil ¹	Nil
Wooli	Nil ²	Nil

Developer charges relating to this DSP will be reviewed after a period of 4 to 8 years. In the period between any review developer charges will be indexed annually (1st day of July) on the basis of movements on the Consumer Price Index (CPI) for Sydney, in the preceding 12 months to December, excluding the impact of Goods and Services Tax (GST).

The Developer shall be responsible for the full cost of the design and construction of reticulation works within subdivisions. The design and construction of the works shall be in accordance with Council’s development specifications for water supply services. In addition to this water supply DSP there are other Council plans that apply to provision of infrastructure for developments.

Relevant background documents, which identify the characteristics of the water supply assets covered by this DSP are listed in Section 9. These documents are available on request from Clarence Valley Council.

¹ The water supply schemes for the villages of Minnie Water and Wooli were originally considered in the development of this DSP. However, there is minimal expected population growth and planned water supply infrastructure works for these areas within the 30 year planning period. As such, it was determined that a DSP was not required for the Minnie Water and Wooli areas.

Background information containing all the critical data including calculation models behind this DSP is available from Council's offices by appointment. To review these documents, please contact Council on (02) 6643 0200.

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Appendix A - Nymboida River Water System Schematic

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 developer charges to be levied on development areas using a local utility's water supply infrastructure.

This DSP covers water supply developer charges for the development areas served by the Clarence Valley Council ('the Council').

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

This DSP document supersedes all previous water supply development servicing plans and requirements related to water supply developer charges for the areas covered by this DSP adopted by the Council prior to the adoption of this DSP. This DSP takes precedence over any of Council's codes or policies where there are any inconsistencies relating to the water supply developer charges.

1.1 Purpose of the Plan

The purpose of this DSP is to set out the contributions payable by developments to the authority responsible for providing infrastructure and other facilities.

In the development of this DSP and calculation of the contributions payable, the following aims and objectives are taken into consideration:

- Ensure that adequate water supply infrastructure, and in specific areas recycled water infrastructure, is provided for as part of new developments
- Provide a comprehensive strategy for the assessment, collection, expenditure accounting and review of contributions on an equitable basis
- Ensure that the existing community is not burdened by the provision of water supply infrastructure as a result of future development
- Enable Council to be both publicly and financially accountable in its assessment and administration of the DSP.

1.2 Disclaimer

This report has been prepared by GHD for Clarence Valley Council ('the Council') and may only be used and relied on by Clarence Valley Council for the purpose agreed between GHD and the Clarence Valley Council as set out in Section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Clarence Valley Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Administration

2.1 Name of Development Servicing Plan

This DSP is known as *Clarence Valley Council Development Servicing Plan – Water Supply Services*. This document considers the DSP area of the Nymboida River Water System.

The water supply schemes for the villages of Minnie Water and Wooli were originally considered while developing this DSP. However, there is minimal expected population growth, and no planned water supply infrastructure works for these areas within the 30 year planning period. As such, it was determined that DSPs were not required for either the Minnie Water or Wooli areas.

2.2 Area to Which This DSP Applies

This DSP applies to all land administered by the Clarence Valley Council (CVC) Local Government Area (LGA) that is within the existing and proposed service areas (refer to Figure 12-1 and the table below).

DSP Name	Nymboida River Water System
DSP Area	<p>The area covered by the DSP area is shown in Figure 12-2, Figure 12-3 and Figure 12-4. A schematic of this system is included in Appendix A.</p> <p>It is noted that previously North Grafton and South Grafton have had separate DSPs. However, as they are both serviced by the Nymboida River Water System they have been included in this DSP.</p>
DSP Boundaries	The DSP area boundary is defined as the areas which receive reticulated water supply from the Nymboida River Water Supply System. The water supply scheme is discussed in Section 4.1.1.

2.3 Date of DSP Commencement

Council approved this DSP on 30 November 2016 for public exhibition. The DSP will come into effect following adoption by Council after the public exhibition period. Once adopted, the DSP will be forwarded to the NSW Office of Water (NOW) for registration.

The charges in this Plan will apply to all Development Applications determined on or after the date Council resolves the Plan to commence.

2.4 Payment of Developer Charges

Developer charges will be determined and levied in accordance with the provisions of the current DSP at the time of considering an application for a compliance certificate under section 305 of the *Water Management Act 2000*, a construction certificate under section 109 of the *Environmental Planning and Assessment Act 1979* or at the time of issuing a notice or other form of written advice, e.g. Section 5.3, 5.5 or 5A.2 of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.

A time limit for payment of developer charges must be included in any developer charge determination or advice provided to developers.

Council may elect to determine developer charges at the time of considering a development application. Such a determination would accompany the development consent, and must specify a time limit, subject to the development consent remaining valid, no further adjustment to the developer charges may be made at the time of considering an application for a

Compliance Certificate If the developer charges have not been paid in full within the specified time limit, the developer charges will be determined by the LWU at the time of considering an application for a Compliance Certificate, using the LWU's then current DSP document.

It is noted that section 64 developer charges do not apply for developments serviced by a licenced operator under the *Water Industry Competition Act 2006* (WICA) or *Water Industry Competition Amendment (Review) Act 2014*. The capital cost of the infrastructure serving such developments would be recovered through annual access and usage charges.

2.5 Developer Charges for Crown Developments

Under section 306 (4) and (5), of the *Water Management Act 2000*, the Minister for Planning and Infrastructure may make a determination in respect of developer charges levied on Crown developments.

Crown developments for essential community services (education, health, community services, and law and order) are exempt from general developer charges. Council can only charge crown developments for the portion of cost associated with direct connection costs relating to the development.

2.6 Refunds

If this DSP is revised to correct a major error in the calculation, Council will provide a refund to developers for any resulting over-payments.

2.7 Developments outside the DSP Area

When considering development outside the boundaries of this DSP, Council may either:

- Apply the developer charges adopted for the DSP to the new development; or
- Prepare a new DSP for the new development.

Such a development is likely to require the construction of specific assets. Refer to Section 2.8 for discussion on funding of out-of-sequence development.

2.8 Out-of- Sequence Development

Council has planned its infrastructure development according to a desired sequence of development. If a Developer wishes to proceed with a development, which is not in the same sequence, i.e. before essential assets, such as a water main or reservoir, are in place, the Council may approve construction of the essential assets ahead of time provided that there are no other constraints to the development.

In such cases the assets will be sized by the Council in accordance with the requirements of the DSP, and the full capital cost would initially be met by this Developer. If the asset funded by this Developer will serve other future development, the Developer shall be reimbursed when the Council collects developer charges from the future development. The Council and the Developer must enter into an agreement stating how the Developer will be reimbursed in the future.

2.9 Consultation and Dispute Resolution

A Developer who is dissatisfied with how the Council has calculated a developer charge has a right of appeal pursuant to the *2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (NSW DPI Office of Water, 2016). The following process must be followed:

1. A Developer who is dissatisfied with how Council has calculated the developer charge for a particular development may lodge a formal complaint to the Council.
2. The CVC General Manager is to review the complaint or cause it to be reviewed.
3. CVC is not a member of the Energy and Water Ombudsman (EWON). If the developer is not satisfied with the General Manager's response, the matter may be referred to the Ombudsman.
4. If the complaint is on technical matters or issues of interpretation of *2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (NSW DPI Office of Water, 2016), the Developer may refer the complaint to NOW. NOW will respond to the complaint. Where warranted, NOW may refer the matter to the expert technical panel, which includes representatives from NOW, Independent Pricing and Regulatory Tribunal (IPART), the NSW Water Directorate, local water utilities and the development industry.
5. The Developer, if still dissatisfied, may request that the matter be reviewed by way of arbitration by an arbitrator, who is to be appointed by agreement between the Developer and the Council (The *Commercial Arbitration Act 1984* applies to any such arbitration).
6. The decision of the arbitrator is binding on both the Developer and Council.
7. Costs of the arbitration are to be borne equally by the Developer and Council.

3. Demographic and Land Use Planning Information

3.1 Growth Projections

Growth projections for population and number of water supply Equivalent Tenements (ETs) are shown in Table 3-1 below. These projections are for a 30-year planning horizon from 2016 to 2046, which is the Council’s current planning horizon.

The population and number of ETs in January 1996 (i.e. year 1995/96) are also indicated.

A detailed ET projection methodology, including reference sources and assumptions, is included in Section 13.

Table 3-1 Growth Projections

Time Period	Equivalent Tenements (ET)	Number of New ETs	Cumulative Number of New ETs
1995/96	17,464		
2015/16	20,225		
2016/17	20,326	102	102
2017/18	20,428	102	204
2018/19	20,530	102	306
2019/20	20,633	103	408
2020/21	20,736	103	512
2021/22	20,840	104	615
2022/23	20,944	104	719
2023/24	21,048	105	824
2024/25	21,154	105	929
2025/26	21,259	106	1,035
2026/27	21,366	106	1,141
2027/28	21,473	107	1,248
2028/29	21,580	107	1,356
2029/30	21,688	108	1,464
2030/31	21,796	108	1,572
2031/32	21,905	109	1,681
2032/33	22,015	110	1,791
2033/34	22,125	110	1,901
2034/35	22,235	111	2,011
2035/36	22,347	111	2,122
2036/37	22,458	112	2,234
2037/38	22,571	112	2,346
2038/39	22,684	113	2,459
2039/40	22,797	113	2,573
2040/41	22,911	114	2,687
2041/42	23,025	115	2,801
2042/43	23,141	115	2,916
2043/44	23,256	116	3,032
2044/45	23,373	0	3,032
2045/46	23,489	0	3,032
2046/47	23,607	0	3,032

The calculation of ET projections is discussed in Section 7.3 of this DSP. A detailed methodology and calculation outcomes of ET projections are presented in Section 13.

3.2 Land Use Information

This DSP should be read in conjunction with the *Clarence Valley Council Strategic Business Plan for Water Supply Services* (GHD, 2016) and *Clarence Valley Local Environmental Plan* (CVC, 2011).

A draft sewer and water servicing strategy for a proposed development in the Clarenza Urban Release area was prepared by Hunter Water Australia in 2013. The ultimate yield of this development area is approximately 1,262 residential lots³ to be developed in six stages all of which will require connection to water supply and sewerage services. There are currently plans to develop the first five stages of this development with an approximate yield of 635 residential lots⁴. These works have not been included in a forward Council works program.

A specific Development Control Plan (DCP) has been adopted for the West Yamba Urban Release area, which required developers to prepare a sewer and water servicing strategy for the area. A draft servicing strategy has been produced by Hunter H₂O for a proposed development of approximately 1,198 residential lots which will require connection to water supply and sewerage services. These lots will be developed in stages with the first stage consisting of 161 lots being established over 3 - 5 years with the remaining 1,037 lots being developed at an expected rate of 50 lots per year⁵. The provision of water supply and sewerage services is being funded by the Developer.

Half of the Junction Hill Release Area was rezoned on 17 December 2010. At Junction Hill there is a development under way which will introduce an approximate 732 new ETs⁶, which will require connection to water supply and sewerage services. The provision of these services will be funded by the Developer.

The Gulmarrad and James Creek urban release area will be developed and will require connection to both water supply and sewerage services. This area will be serviced by the Nymboida River Water Supply System.

³Hunter Water Australia, Clarence Valley Council Clarenza Urban Release Water Supply and Sewer Strategy, 2013, page 4

⁴Hunter Water Australia, Clarence Valley Council Clarenza Urban Release Water Supply and Sewer Strategy, 2013, page 20-21

⁵Hunter H₂O, West Yamba Urban Release Area Water Supply and Sewer Servicing Strategy, 2015, page 1

⁶Cardno, Sketch 27, Junction Hill Overall Sewer Reticulation Concept Plan, 2001

4. Water Supply Infrastructure

This DSP levies developer charges towards the cost of providing water supply infrastructure to service new development. This infrastructure includes the value of both existing and future water supply assets serving a new development area.

Assets covered by this DSP include, but are not limited to:

- Distribution and Trunk Mains
- Water Pumping Stations
- Water Treatment Works
- Water Reservoirs.

4.1 Existing and Future Water Supply Services

The existing and proposed water supply infrastructure serving the area covered by this DSP is detailed in the asset registers contained in Section 14. The current water supply scheme considered in this DSP (the Nymboida River Water Supply Scheme) is discussed in Section 4.1.1 below. Potential future arrangements and augmentations are also identified.

Future capital expenditure which contributes to the capital charge of the Nymboida River Water Supply service area are detailed in Section 15 and discussed in Section 4.3.

Areas of future growth which will require connection to water supply services are identified in Section 3.2.

4.1.1 Nymboida River Water System

Existing

There is an existing Right of River Extraction licence for the Nymboida River which is currently owned by Essential Energy. With the gazettal of the Clarence Water Sharing Plan, CVC will have a separate licence to extract water from the Nymboida River. This licence permits water to be extracted from the Nymboida River when flows exceed 225 ML/day (95% flow). Extraction from the river supplies both the Clarence Valley and Coffs Harbour Councils under a Regional Water Supply Scheme (RWSS). The scheme includes a 30,000 ML off-stream storage (Shannon Creek Dam) which is filled from the Nymboida River. When unable to extract from the river, raw water can be pumped from Shannon Creek Dam or supplied under gravity from Coffs Harbour via the Regional Water Supply pipeline. A schematic of the Nymboida River Water Scheme is presented in Appendix A.

The Nymboida River Water System provides water to the following towns within the Clarence Valley jurisdiction:

- Coutts Crossing, which receives water directly from the Nymboida pipeline between Nymboida and Rushforth.
- Waterview Heights, Eatonsville and Seelands, Maclean, Lawrence, Iluka, Yamba Junction Hill, Copmanhurst, Grafton, Ulmarra and rural areas in between which receive water from Rushforth reservoir.
- Glenreagh, which receives water from the pipeline between Nymboida and Karangi.
- Clarenza, which receives water via an offtake from the trunk main.

There are four small pumped zones at South Grafton Hill, Elland, Clarenza and Ashby while three reservoir zones (Maclean lookout, Tintenbar Road and Copmanhurst) receive a pumped supply. Other supplementary pumping is available in the system for peak flows.

The Nymboida River Water System service area is illustrated in Figure 12-2, Figure 12-3 and Figure 12-4 in Section 12 below.

Future

As discussed in Section 3.2 above there are urban release areas at Clarenza, Junction Hill, Yamba, Gulmarrad and James Creek which would yield additional lots requiring connection to water supply services. Draft sewer and water servicing strategies have been prepared for the urban release areas of Clarenza and Yamba. As these servicing strategies are still in draft stage there are still several servicing options being considered.

4.2 Existing Capital Cost

Existing assets servicing the DSP area were included in the capital charge, except where:

- The location of the asset was unknown
- The asset was not installed by Council
- No valuation information could be sourced and there was insufficient information to estimate the capital cost using the *NSW Office of Water (formerly Ministry of Energy and Utilities) NSW Reference Rates Manual Valuation of Water Supply, Sewerage and Stormwater Assets (2014)*
- The year of construction of the asset was unknown
- The capacity of the asset was unlikely to be fully utilised over the 30-year planning horizon (and over a 50-year planning horizon for assets such as dams and outfalls). In these cases, the cost of the capacity for serving development beyond the planning horizon cannot be recovered through developer charges.
- Assets greater than 30 years old at the commencement of this DSP which were not planned to provide a capacity for growth into the current DSP period.

Assets which were greater than 30 years old at the commencement of this DSP and which were planned to provide a capacity for growth into the current DSP period were included in the developer charge calculations. These assets were major components of the Nymboida River Water System storage and treatment network and include:

- Rushforth Road 32 ML treatment works
- Rushforth Road 32 ML chlorination and fluoridation
- Rushforth Road 100 ML lime CO₂ plant
- Rushforth Road 100 ML reservoir
- Rushforth Road 32 ML reservoir
- Rushforth Road 2 ML reservoir
- Mountain View 2.5 ML reservoir
- Iluka 5 ML reservoir
- Iluka 1.36 ML reservoir
- Woombah 1 ML reservoir
- Brooms Head 2.5 ML reservoir

- Lawrence 1.14 ML reservoir
- Southgate 1.14 ML reservoir
- Lawrence 1.14 ML reservoir
- Junction Hill 6.82 ML reservoir
- Maclean 21 ML reservoir
- Maclean 4.5 ML reservoir
- Yamba 0.5 ML reservoir
- Yamba 9.5 ML reservoir

The estimated Modern Engineering Equivalent Replacement Asset (MEERA) capital cost of the existing water supply assets serving the area covered by this DSP are provided in Section 14.

The MEERA capital costs for most of the water supply infrastructure were provided by Clarence Valley Council. In cases where Council could not provide this information capital costs were estimated using the *NSW Office of Water (formerly Ministry of Energy and Utilities) NSW Reference Rates Manual Valuation of Water Supply, Sewerage and Stormwater Assets (2014)* in accordance with the requirements of the *2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (NSW DPI Office of Water, 2016).

4.3 Future Capital Works Program

Future assets that are expected to be required within 10 years of the commencement of this DSP were included in the capital charge. In cases where the year of construction of future assets or the specific cost or location of future assets were unknown they were not included in capital charge calculations.

Renewals to assets over 30-years old at the commencement of this DSP (and thus discounted from the existing asset category) and required within 10 years of the commencement of this DSP have also been included in the capital charge. Where the following could not be established, renewals works were not included in the capital charge calculation:

- Age of the asset being renewed at the commencement of this DSP
- Location of the asset being renewed
- Year renewals works are to be undertaken
- Cost of the renewal works.

The timing and expenditure for future water supply capital works (including backlog works) serving the area covered by this DSP and which contributed to the capital charge are provided in Section 15. The total value of these future works was provided by CVC.

Dates identified for completion of future works are approximate only and are contingent on development proceeding.

4.3.1 Backlog Works

Backlog works are those required to service existing dwellings without a reticulated water supply. For these works, Council will calculate the developer charge in the same manner as for other DSP areas. The calculation includes the total system capital cost (including government subsidies for backlog properties) and all ETs that the system will service (existing and new development). Only new developments are required to pay developer charges in accordance with this DSP.

4.3.2 Reticulation Works within a Development

The Developer shall be responsible for the full cost of the design and construction of water supply works within subdivisions that service only that development. The design and construction of the works shall be in accordance with Council's development specifications for water supply services.

5. Levels of Service

System design and operation are based on providing Council's current levels of service (LOS) as outlined below.

The water supply network is required to meet CVC's current LOS outlined in the Table 5-1. CVC are currently reviewing their LOS to ensure compliance with minimum legislative requirements outlined in the *NSW Water and Sewerage Strategic Business Planning Guidelines* (NSW Office of Water, 2011). This is discussed in detail in *Clarence Valley Council Strategic Business Plan – Water Supply Services* (GHD, 2016).

Table 5-1 Current Levels of Service – Water Supply⁷

Service Criteria	Service Target	Compliance Measure
Availability of supply - Connection	Provide point of connection for all allotments within defined service areas	Availability of point of connection for all allotments.
Availability of supply - Pressure	20 metres minimum	95% compliance
Availability of supply - Flow	48 litres/min 24 litres/min	85% compliance 95% compliance.
Response times to supply failures		
During Work Hours	2 hours from notification	95% compliance
Out of Work Hours	3 hours from notification	95% compliance
Minor Problems/General Enquires		
Oral	5 working days	95% compliance
Written	10 working days	95% compliance
Water Quality	NHRMC Australian Drinking Water Guidelines 2011.	95% compliance generally but 80% compliance for turbidity.
Water Restrictions	Restrictions that reduce demand by 20% being applied no more than once every 10 years for no more than 5% of the time.	Restriction history over a 10-year period.

CVC has different LOS for their raw water customers due to lack of water quality measures. These LOS are not currently being reviewed by CVC. CVC's current LOS for raw water consumers is detailed in Table 5-2.

⁷ Hunter Water Australia, Clarence Valley Council Strategic Business Plan for Water Supply Services, 2006, page 12

Table 5-2 Current Levels of Service – Raw Water Consumers⁸

Service Criteria	Service Target Raw Water Supply
Availability of service	No new connections permitted. There are approximately 400 existing raw water consumers for which the grandfather clause applies.
Pressure	Pressure will fluctuate depending on consumption; hence a break pressure tank will be required to ensure consistent pressure.
Flow	Due to varying pressure the flow at the meter will also vary, however a minimum of 10 litres per minute will be provided wherever possible.
Response times to supply failures	Whenever a consumer is without water or damage is being caused by a leak the problem will be rectified as soon as possible, otherwise the repair will be programmed and affected customers notified prior to turning off the water.
Water Quality	NHRMC Australian Drinking Water Guidelines 2011 are not complied with.
Water Restrictions	Restrictions are applied whenever necessary

5.1 Further information

Further information on standards of service is available from:

- *Clarence Valley Council Strategic Business Plan – Water Supply Services* (GHD, 2016), which is available on Council's website.
- *NSW Water and Sewerage Strategic Business Planning Guidelines* (NSW Office of Water, 2001) (available at www.water.nsw.gov.au).

⁸ Hunter Water Australia, Clarence Valley Council Strategic Business Plan for Water Supply Services, 2006, page 13

6. Design Parameters

CVC's peak planning documents include the following:

- Draft Water Supply Asset Management Plan, Clarence Valley Council, 2015
- Integrated Water Cycle Management Simplified Strategy, Clarence Valley Council, 2009
- Clarence Valley Council Water Supply Strategic Business Plan, Clarence Valley Council 2005.

These documents determine the LOS for designing and delivering CVC's water supply systems.

Investigation and design of water supply system components is based on the AUSPEC *Northern Rivers Local Government Development Design and Construction Manual, Development Design Specification D11 Water Supply* (Clarence Valley Council et al., 2009). This refers to the following for water supply design:

- Water Supply Code of Australia, Water Services Association of Australia (WSAA) 2002.

6.1 Planning and Design Parameters

The major components of the water supply network were planned according to the following:

- Regional Water Supply Strategy, Lower Clarence Country Council, 1997.

7. Calculated Developer Charges

Developer charges are up-front charges used to recover infrastructure costs incurred through the provision of services to new developments and service changes to existing developed areas. Developer charges are comprised of the following components:

- Capital charge – the cost of providing the asset, and;
- Reduction amount – the cost recovered through annual charges.

The relationship between these components is as follows:

$$\text{Developer Charge} = \text{Capital Charge} - \text{Reduction Amount}$$

7.1 Summary

The developer charges for the area covered by this DSP are as follows:

Table 7-1 Summary of Developer Charges

DSP Name	Capital Charge (\$ / ET)	Reduction Amount (\$ / ET)	Calculated Maximum Developer Charge (\$ / ET)	Developer Charge Adopted for Exhibition Purposes (\$ / ET)
Nymboida River Water System	\$4,856	\$137	\$4,719	\$4,719

These amounts have been calculated on the basis of Section 7.2 to Section 7.6 below. Background information containing all the critical data including calculation models behind this DSP is available from Council's offices by appointment. To review these documents, please contact Council on (02) 6643 0200.

7.2 Service Areas

Developer charges were initially calculated for the Nymboida River Water System. Refer to Section 2.2 for more information on the area covered by each DSP.

7.3 Equivalent Tenements

The basis of the future development throughout the CVC LGA has been adopted from information provided by CVC.

The projected future development areas and dwelling increases across the Council Government area are based on:

- Areas assumed for future land release
- Potential for infill development.

Projected ET growth in this document is for the purpose of capital works planning only. Actual population growth will be subject to the rezoning process and Council Development Approval.

A detailed ET projection methodology, including reference sources and assumptions, is included in Section 13.

7.3.1 Future Development Areas

A number of key urban release areas, identified for future land supply in the CVC LGA, have been included in this DSP for the purposes of determining infrastructure capacity and works

within the plan. These areas include the urban release areas at Clarenza, Junction Hill, Yamba, Gulmarrad and James Creek discussed in Section 3.2 above.

7.4 Capital Charge

The capital charge for each service area covered by this DSP has been calculated using the net present value (NPV) spreadsheet method which is considered to be the best practice method.

Under the NPV spreadsheet method, the capital cost of relevant assets and projected ET's served in a service area are identified. These capital costs represent only the share of the asset capacity used by a service area. The present value (PV) of capital cost and the PV of new ETs are calculated. The capital charge per ET is the PV of the capital cost divided by the PV of new ETs.

The calculation of the capital charge is summarised in tables presented in Section 16. A summary of the capital charge calculations prior to any agglomeration or cross-subsidy is shown in Table 7-2 below.

Table 7-2 Capital Charge Calculation

Service Area	PV of New ETs for pre-1996 assets @ 3%	PV of New ETs for post-1996 assets @ 5%	PV of capital cost from pre-1996 assets @ 3%	PV of capital cost from post-1996 assets @ 5%	Capital charge for pre-1996 assets	Capital charge for post-1996 assets	Capital charge per ET (\$ / ET)
Nymboida River Water System	\$2,030	\$1,668	\$4,677,876	\$4,256,373	\$2,304	\$2,552	\$4,856

7.5 DSP Areas

The *2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (NSW DPI Office of Water 2016) permit the agglomeration of service areas which have capital charges that are within 30% of each other. Agglomeration is intended to minimise the number of different developer charges within the LGA.

As there was only one service area being considered no agglomeration was undertaken.

7.6 Reduction Amount

The reduction amount is defined as the NPV of the future net income expected from providing water-related services to the new residents in the DSP area.

Council has adopted the NPV of Annual Bills method to calculate the reduction amount, as per the *2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (NSW DPI Office of Water 2016). This method involves calculation of the PV of the future net income, which is the difference between the revenue from annual bills, and annual operations, maintenance and administration (OMA) cost, projected for new development over the next 30 years. This is divided by the PV of the new ETs over 30 years to give the reduction amount.

The reduction amounts have been calculated and are shown in Section 17. A summary of adopted values contributing to the reduction amount and a summary table is shown below and in Section 17.

Discount Rate for post-1996 assets = 5% pa⁹

⁹ NSW DPI Office of Water, 2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater, 2016, page v

Annual bill at the commencement of the DSP = \$464 per ET

OMA cost at the commencement of the DSP = \$413 per ET

Net income = Annual bill – OMA cost (as above) = \$51 per ET

Table 7-3 Calculation of the Reduction Amount

Year	Total ETs	New ETs	PV of New ETs	Cumulative New ETs	Net Income from New ETs (\$)	PV of Net Income From New ETs	Reduction Amount (\$ per ET)
1995/96	17,464						
2015/16	20,225						
2016/17	20,326	102	1,668	102	5,242	228,432	137
2017/18	20,428	102		102	5,223		
2018/19	20,530	102		204	10,472		
2019/20	20,633	103		306	15,747		
2020/21	20,736	103		410	21,049		
2021/22	20,840	104		513	26,377		
2022/23	20,944	104		617	31,731		
2023/24	21,048	105		722	37,113		
2024/25	21,154	105		827	42,521		
2025/26	21,259	106		933	47,957		
2026/27	21,366	106		1,039	53,419		
2027/28	21,473	107		1,146	58,909		
2028/29	21,580	107		1,254	64,427		
2029/30	21,688	108		1,362	69,971		
2030/31	21,796	108		1,470	75,544		
2031/32	21,905	109		1,579	81,145		
2032/33	22,015	110		1,689	86,773		
2033/34	22,125	110		1,799	92,430		
2034/35	22,235	111		1,909	98,115		
2035/36	22,347	111		2,020	103,828		
2036/37	22,458	112		2,132	109,570		
2037/38	22,571	112		2,244	115,341		
2038/39	22,684	113		2,357	121,141		
2039/40	22,797	113		2,471	126,969		
2040/41	22,911	114		2,585	132,827		
2041/42	23,025	115		2,699	138,714		
2042/43	23,141	115		2,814	144,630		
2043/44	23,256	116		2,930	150,576		
2044/45	23,373	0		2,930	150,576		
2045/46	23,489	0		2,930	150,576		
2046/47	23,607	0		2,930	150,576		

8. Reviewing / Updating of Calculated Developer Charges

In line with the *2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (NSW DPI Office of Water 2016) the developer charges relating to this DSP will be reviewed after a period of 4 to 8 years from the implementation of this plan. If the review indicates that the developer charges in this DSP are still applicable this DSP will apply for a further five years once the Council releases a public notice to this effect. However, if the developer charges in this DSP are found to no longer apply and it is believed that a new DSP is warranted, a new DSP shall be prepared, audited, exhibited and registered.

If a major change occurs, such as a requirement for significant capital works, which was not considered in the DSP, Council may carry out a review in less than 4 years, subject to NOW approval. If the review identifies that a new DSP is required, the new DSP must to be prepared, audited, exhibited and registered.

In the period between any review, developer charges will be adjusted annually on 1 July on the basis of movements in the Consumer Price Index (CPI) for Sydney, in the preceding 12 months to December, excluding the impact of Goods and Services Tax (GST).

9. Reference Documents

Background information and calculations relating to this DSP are contained in the following documents:

1. 2011 Australian Census, Australian Bureau of Statistics, 2011
2. Sketch 27, Junction Hill Overall Sewer Reticulation Concept Plan, Cardno, 2001
3. Clarence Valley Local Environmental Plan, Clarence Valley Council, 2011
4. Northern Rivers Local Government Development Design and Construction Manual, Development Design Specification D11 Water Supply, Clarence Valley Council, et. al, 2009
5. Clarence Valley Council Sewerage Water Supply Business Plan, GHD, 2016
6. West Yamba Urban Release Area Water Supply and Sewer Servicing Strategy, HunterH2O, 2015
7. Clarenza Urban Release Water Supply and Sewer Strategy, Hunter Water Australia, 2013
8. Clarence Valley Council Development Servicing Plans for Water Supply Services, Hunter Water Australia, 2005
9. Clarence Valley Council Water Supply Strategic Business Plan, Hunter Water Australia, 2006
10. 2016 Developer Charges Guidelines for Water Supply, Sewerage and Stormwater, NSW Department of Primary Industries Office of Water, 2016
11. NSW Reference Rates Manual – Valuation of Water Supply, Sewerage and Stormwater Assets, NSW Government Office of Water, Ministry of Energy and Utilities, 2003 with amendments in 2010
12. NSW Water and Sewerage Strategic Business Planning Guidelines. NSW Office of Water, 2011
13. Section 64 Determinations of Equivalent Tenements Guidelines, Water Directorate, May 2009 Addendum
14. Water Supply Code of Australia, Water Services Association of Australia, 2002
15. Regional Water Supply Strategy, Lower Clarence Country Council, 1997
16. Excel spreadsheets used in calculating developer charges

These documents contain more detailed reference information relevant to the derivation of the developer charges. The following documents are still in draft form and are not currently available to the public for viewing:

- West Yamba Urban Release Area Water Supply and Sewer Servicing Strategy, HunterH2O, 2015.
- Clarenza Urban Release Water Supply and Sewer Strategy, Hunter Water Australia, 2013.

All other documents can be reviewed in Council's offices by appointment. To review the documents, please contact Council on (02) 6643 0200.

10. Other DSP's and Related Plans

Other DSP's and related plans include:

- Clarence Valley Council Development Servicing Plan – Sewerage Services, GHD, 2016

11. Glossary

Capital Cost	The Present Value (MEERA basis) of assessment used to service the development.
Capital Charge	The capital cost per ET.
CPI	Consumer Price Index
CVC	Clarence Valley Council
Developer Charge	A charge levied on Developers to recover part of the capital cost incurred in providing infrastructure to a new development.
Discount Rate	The rate used to calculate the present value of money arising in the future.
DSP	Developer Servicing Plan
DCP	Development Control Plan
ET	Equivalent Tenement
et al.	et alia
EWON	Energy and Water Ombudsman
FU	Fixture Unit
GST	Goods and Services Tax
i.e.	id est
IPART	Independent Pricing and Regulatory Tribunal
LEP	Local Environmental Plan
LGA	Local Government Area
LOS	Level of Service
MEERA	Modern Equivalent Engineering Replacement Asset
ML	Megalitre
ML/day	Megalitre per day
NHRMC	National Health and Medical Research Council
NPV	Net Present Value
NSW	New South Wales
NSW DPI	NSE Department of Primary Industries
OMA	Operation, maintenance and administration (cost)
Post 1996 Asset	An Asset that was commissioned by a water utility on or after 1 January 1996 or that is yet to be commissioned
Pre-1996 Asset	An Asset that was commissioned by a water utility before 1 January 1996
PV	Present Value. The value now of money, or ETs, in the future.

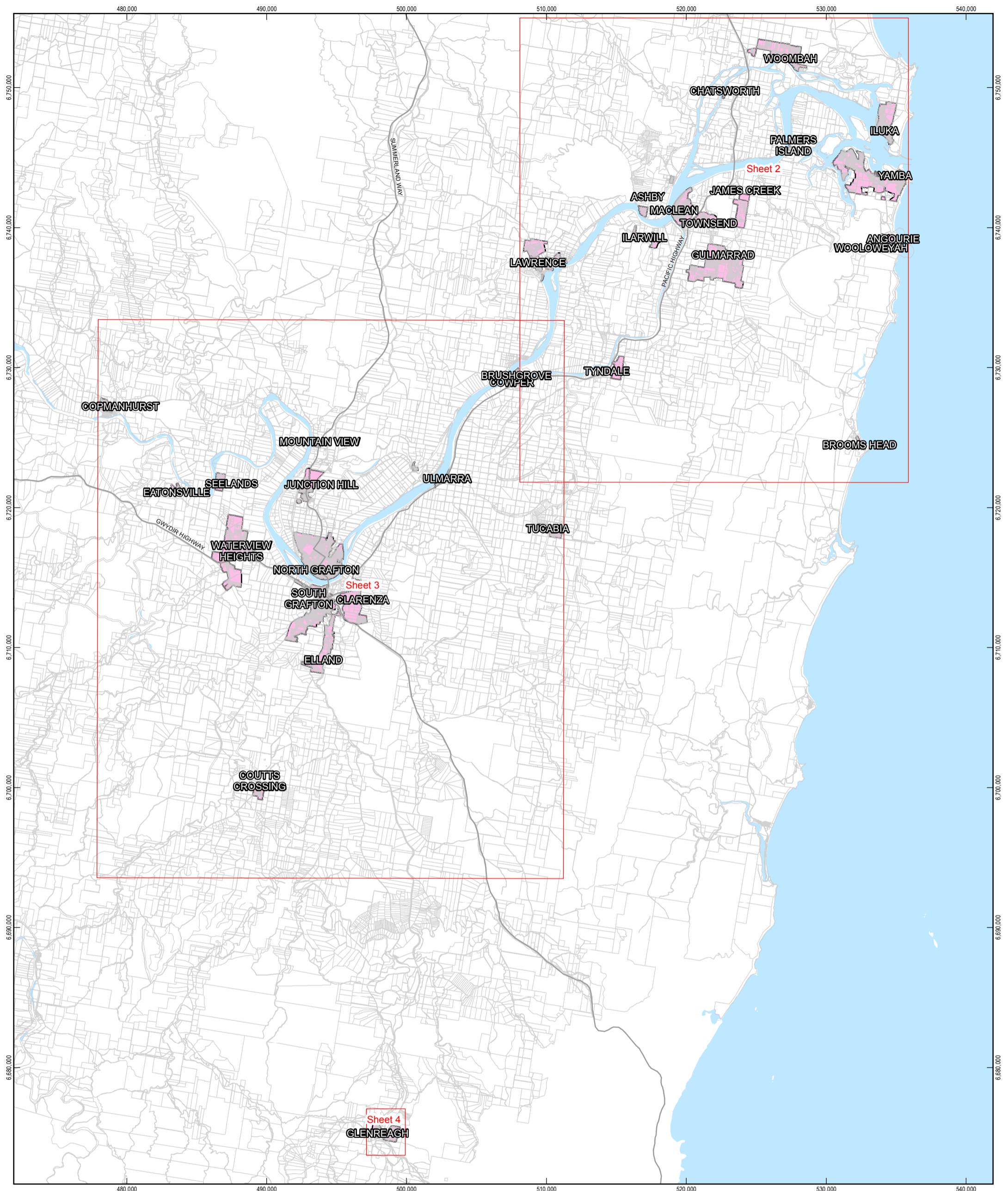
Reduction Amount	The amount by which the capital charge is reduced to arrive at the developer charge. The amount reflects the present value of the capital contributions that will be paid by the occupier of a development as part of future annual charges.
RWSS	Regional Water Supply Scheme
Service Area	An area served by a separate water supply system, an area served by a separate sewerage treatment works, a separate small town or village, or a new development of over 500 lots.
WICA	Water Industry Competition Act
WSAA	Water Services Association of Australia

12. DSP Areas

Table 12-1 provides an index to the figures defining the DSP areas provided in this Section. Each figure indicates the boundaries of the DSP area.

Table 12-1 Summary of DSP Area Maps for Water Infrastructure

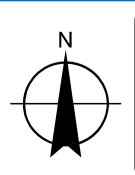
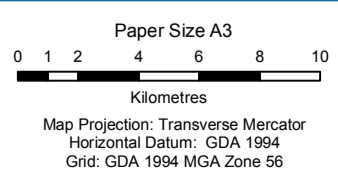
Figure Number	Scheme	Locality	DSP Area
Figure 11-1	Water Supply	Clarence Valley	All DSP Areas
Figure 11-2	Water Supply	Angourie, Wooloweyah, Yamba, Iluka, James Creek, Palmers Island, Ashby, Maclean, Townsend, Gulmarrad, Ilarwill, Lawrence, Brooms Head, Woombah, Chatsworth, Tyndale	DSP Area A (North)
Figure 11-3	Water Supply	Compmanhurst, Eatonsville, Seelands, Junction Hill, Ulmarra, Tucabia, North Grafton, Elland, Clarenza, Coutts Crossing, South Grafton, Waterview Heights, Brushgrove, Southgate, Mountain View, Cowper	DSP Area A (Central)
Figure 11-4	Water Supply	Glenreagh	DSP Area A (South)



LEGEND

- Major Road
- DSP Area A – Urban and Rural Residential Areas
- Oceans and Waterways
- Cadastral Boundary

Note: All properties within 225 m of Clarence Valley Council's potable reticulation mains are also included in DSP Area A

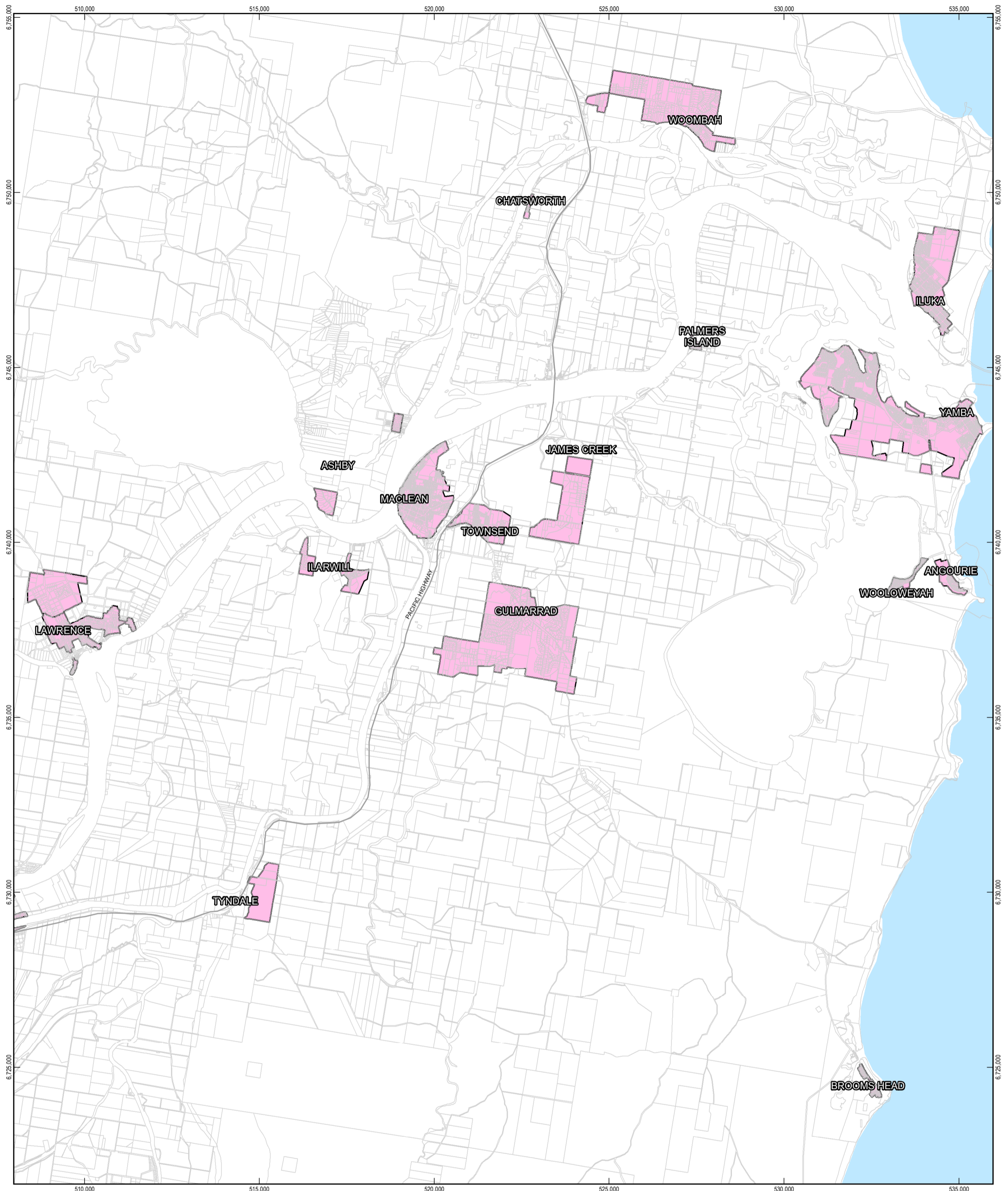


Clarence Valley Council
Development Servicing Plan – Water Supply



Job Number | 22-18238
Revision | 0
Date | 15 Aug 2017

**Development Servicing Plan Areas
Water Supply Overview**

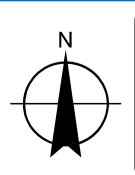
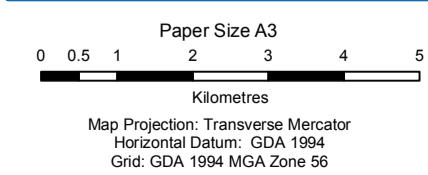
Figure 11-1



LEGEND

-  Cadastral Boundary
-  DSP Area A - Urban and Rural Residential Areas

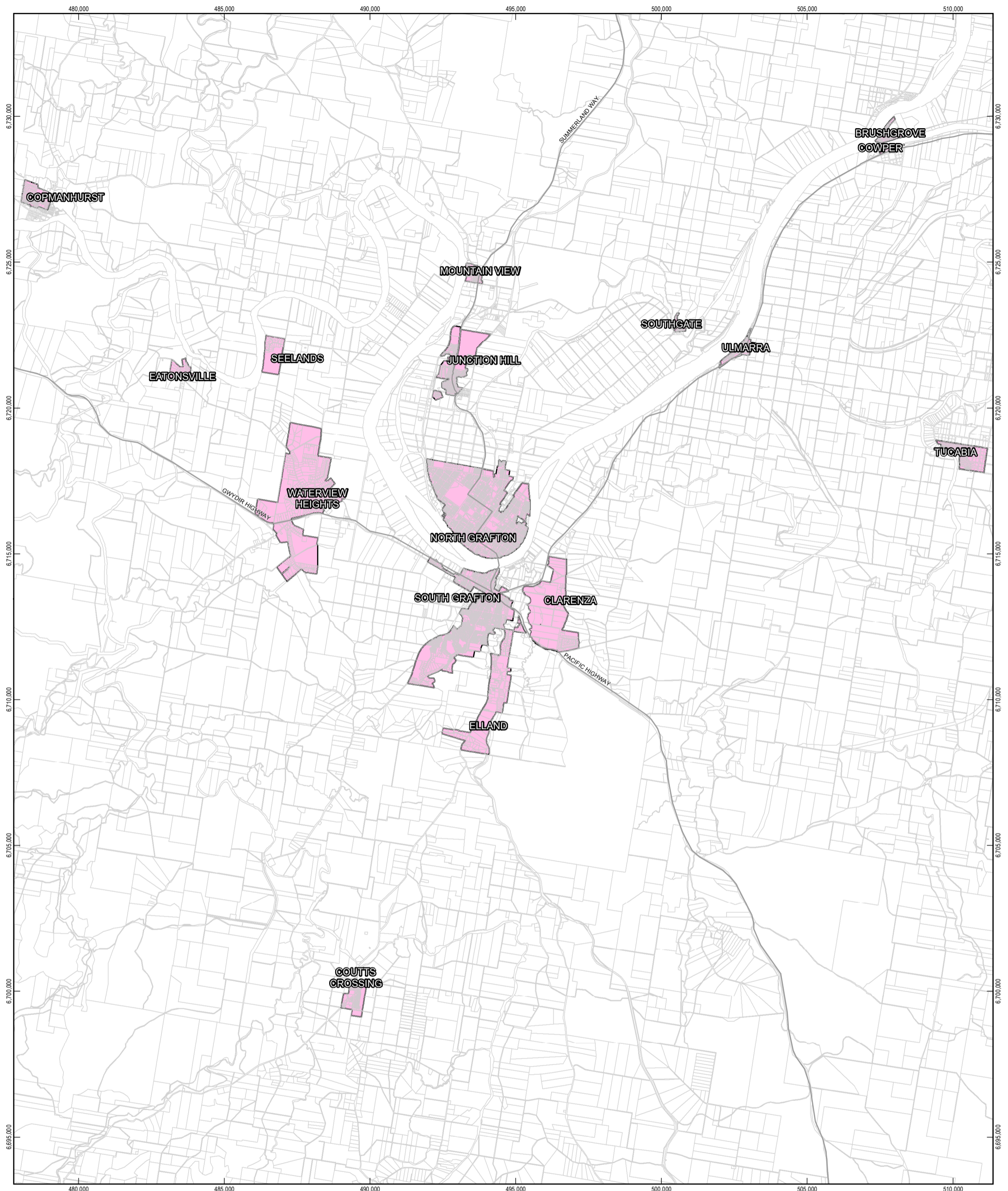
Note: All properties within 225 m of Clarence Valley Council's potable reticulation mains are also included in DSP Area A





Clarence Valley Council
 Development Servicing Plan – Water Supply
 DSP Area A (North)
 Angourie, Wooloweyah, Yamba, Iluka, James Creek, Palmers Island, Ashby, Maclean
 Townsend, Culmarrad, Ilarwil, Lawrence, Brooms Head, Woombah, Chatsworth, Tyndale

Job Number | 22-18238
 Revision | 0
 Date | 15 Aug 2017

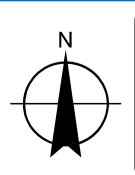
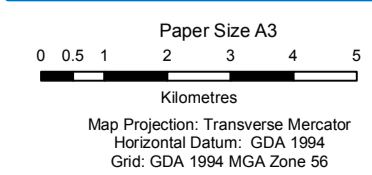
Figure 11-2



LEGEND

-  Cadastral Boundary
-  DSP Area A - Urban and Rural Residential Areas

Note: All properties within 225 m of Clarence Valley Council's potable reticulation mains are also included in DSP Area A

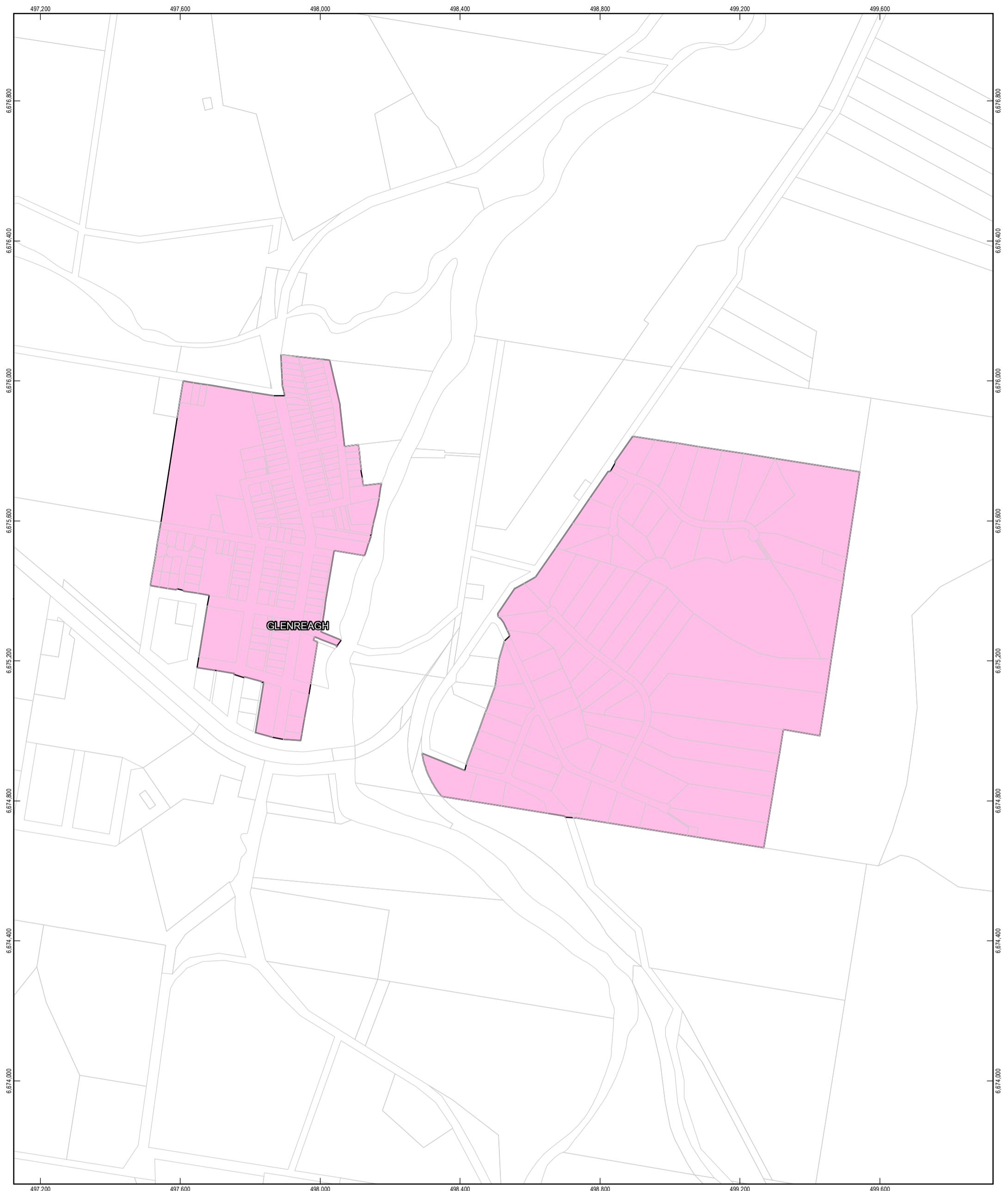


Clarence Valley Council
 Development Servicing Plan – Water Supply
 DSP Area A (Central)

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Companhurst, Eatonsville, Seelands, Junction Hill, Ulmarra, Tucabia, North Grafton, Elland, Clarenza
 Coutts Crossing, South Grafton, Waterview Heights, Brushgrove, Southgate, Mountain View, Cowper

Figure 11-3



LEGEND

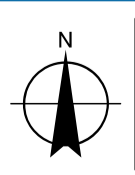
- Cadastral Boundary
- DSP Area A – Urban and Rural Residential Areas

Note: All properties within 225 m of Clarence Valley Council's potable reticulation mains are also included in DSP Area A

Paper Size A3

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56



Clarence Valley Council
Development Servicing Plan – Water Supply

DSP Area A (South)
Glenreagh

Job Number	22-18238
Revision	0
Date	15 Aug 2017

Figure 11-4

13. ET Projections

13.1 ET Projection Calculations

At the time of publishing this policy *Section 64 Determinations of Equivalent Tenements Guidelines* (Water Directorate, May 2009 Addendum) is the current industry guideline guidelines that define the number of ETs for common development types.

The draft servicing strategies for both Clarenza and West Yamba did not provide sufficient information on the nature of each proposed lot to enable these guidelines to be used. In both cases the additional ET was back calculated using the projected water consumption for the development, the average annual residential demand per connection identified for each area. It was found that the resulting ET was equal to the total residential lots introduced by each development (1,262 and 1,198 for the Clarenza and West Yamba urban release areas respectively).

The only information on the development in the Junction Hill urban release area was a sketch of the overall sewer reticulation concept plan. This sketch identified the total number of ET resulting from the development. This value was adopted for the developer charge calculations as there was insufficient information to enable the use of *Section 64 Determinations of Equivalent Tenements Guidelines* (Water Directorate, May 2009 Addendum).

No information was provided on the nature or extent of the any other future development including development in the Gulmarrad and James Creek urban release area. The expected increase in future ET was calculated using the methodology described below as there was insufficient information to enable the use of *Section 64 Determinations of Equivalent Tenements Guidelines* (Water Directorate, May 2009 Addendum).

13.1.1 Background

Background information provided to inform the population projection calculations included the following:

- 2011 Australian Census, Australian Bureau of Statistics, 2011

13.1.2 Assumptions

The following assumptions were made to produce the estimated population projections:

- Occupancy ratios identified in the 2011 Australian Census assumed to be constant after 2011
- All residential properties identified from Australian Census information are connected to water supply services
- Each connected property and lot is assumed to equal 1 ET in lieu of better information
- Annual percentage change in the number of connected properties is consistent with the annual growth rate
- The ratio of non-residential to residential connections is constant at 13% for water supply (the approximate constant annual ratio from 2010 - 2015) from 2010 – 2046
- A linear growth rate for the total population of 0.5% after 2015.

A.1.1 Methodology

The 2011 populations and occupancy ratios for each serviced town was identified by reviewing 2011 Australian Census information. It was assumed that occupancy ratios in each town would remain constant after 2011 in lieu of more recent information.

CVC provided a summary of sewer and water assessments from 2010 to 30 June 2015. These assessments indicate the number of residential and non-residential properties connected to water supply and sewerage services.

It was assumed that each connected property was equivalent to 1 ET. This was due to lack of detailed intra-catchment service information related to water supply volumes which would be required to determine the relationship between the number of connected properties and the number of ET.

The annual percentage changes in the number of connected properties was calculated and assumed to be equal to the annual population growth rates from 2010 – 2015. These growth rates were applied to the 2011 population to estimate the 2015 residential population values.

The occupancy ratios were then applied to the 2015 population figures to determine the number of connected properties in each town in 2015.

The assessment summary provided by CVC indicated that the ratio of non-residential connections to residential connections was approximately constant at 13% each year for water supply over the 5 years reflected. It was assumed that this ratio would remain constant after 2015.

To reflect the non-residential connections additional to the 2015 residential lots identified for each service area was increased by 13%.

The sum of the calculated connected properties was compared to the number of connected properties identifies in CVC's assessments summary. It was found that there was a discrepancy, with the total number of lots calculated being less than those indicated in CVC's assessment summary. It was thought that this may be a result of basing the calculations on information from the 2011 Australian Census due to the potential for properties to be unoccupied at the time of census collection period. The additional connected properties were distributed across each town on a pro rata basis.

Following advice from CVC it was assumed that after 2015 there was a linear annual population growth of 0.5% across the overall DSP service area to the end of projection period. It was assumed that all of the growth would take place in serviced areas.

The distribution of annual growth was completed in consultation with CVC and considered CVC's future planning and development projections as well as current development trends.

Several growth areas were identified within the Nymboida River Water System service area, including Clarenza, Junction Hill and Yamba.

Minimal population growth was expected in the villages of Minnie Water or Wooli during the planning period of the DSP (2016 – 2046). As such all population growth expected in the DSP period was identified to occur in the Nymboida River Water System.

A summary of ET projections is provided in Table 13-1.

Table 13-1 Summary of ET Projections – Nymboida River Water System

Year	Total ET	New ET per Year
2015	20,225	
2016	20,326	102
2017	20,428	102
2018	20,530	102
2019	20,633	103
2020	20,736	103
2021	20,840	104
2022	20,944	104
2023	21,048	105
2024	21,154	105
2025	21,259	106
2026	21,366	106
2027	21,473	107
2028	21,580	107
2029	21,688	108
2030	21,796	108
2031	21,905	109
2032	22,015	110
2033	22,125	110
2034	22,235	111
2035	22,347	111
2036	22,458	112
2037	22,571	112
2038	22,684	113
2039	22,797	113
2040	22,911	114
2041	23,025	115
2042	23,141	115
2043	23,256	116
2044	23,373	0
2045	23,489	0
2046	23,607	0
TOTAL		3,032

14. Existing Capital Costs

A summary of assets and MEERA values is presented in Table 14-1 to Table 14-5.

Table 14-1 Existing Water Supply Mains (contributing to Capital Charge)

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Regional Water Supply Mains	24628 /25695 /24627	Regional Watermain		Nymbodia River Water System	A	46,139,207	2002	POST	34,991
Regional Water Supply Mains	24835	Regional Watermain		Nymbodia River Water System	A	24,236	2002	POST	18
Regional Water Supply Mains	24836	Regional Watermain		Nymbodia River Water System	A	8,160	2002	POST	6
Regional Water Supply Mains	24837	Regional Watermain		Nymbodia River Water System	A	8,229	2002	POST	6
Regional Water Supply Mains	24918	Regional Watermain		Nymbodia River Water System	A	2,364	2004	POST	2
Regional Water Supply Mains	24923	Regional Watermain		Nymbodia River Water System	A	39,656	2004	POST	30
Regional Water Supply Mains	24954	Regional Watermain		Nymbodia River Water System	A	77,232	2004	POST	59
Regional Water Supply Mains	24964	Regional Watermain		Nymbodia River Water System	A	3,559	2004	POST	3
Regional Water Supply Mains	25132	Regional Watermain		Nymbodia River Water System	A	1,472,997	2004	POST	1,117
Regional Water Supply Mains	25133	Regional Watermain		Nymbodia River Water System	A	6,277	2004	POST	5
Regional Water Supply Mains	25134	Regional Watermain		Nymbodia River Water System	A	4,108,632	2004	POST	3,116
Regional Water Supply Mains	25152	Regional Watermain		Nymbodia River Water System	A	1,027,158	2004	POST	779
Regional Water Supply Mains	25153	Regional Watermain		Nymbodia River Water System	A	7,974,517	2004	POST	6,048
Regional Water Supply Mains	25154	Regional Watermain		Nymbodia River Water System	A	13,809	2004	POST	10
Regional Water Supply Mains	25155	Regional Watermain		Nymbodia River Water System	A	5,243,707	2004	POST	3,977
Regional Water Supply Mains	25323	Regional Watermain		Nymbodia River Water System	A	809,834	2007	POST	614
Regional Water Supply Mains	25727	Regional Watermain		Nymbodia River Water System	A	3,674,626	2007	POST	2,787
Regional Water Supply Mains	25741	Regional Watermain		Nymbodia River Water System	A	586,110	2007	POST	444
Water Supply Mains	22038			Nymbodia River Water System	A	63,310.68	1989	PRE	4,801
Water Supply Mains	22039			Nymbodia River Water System	A	22,743.16	1989	PRE	1,725
Water Supply Mains	22041			Nymbodia River Water System	A	151,762.32	1989	PRE	11,509
Water Supply Mains	22042			Nymbodia River Water System	A	163,984.08	1989	PRE	12,436
Water Supply Mains	22043			Nymbodia River Water System	A	68,569.28	1989	PRE	5,200
Water Supply Mains	22045			Nymbodia River Water System	A	220,632.12	1989	PRE	16,732
Water Supply Mains	22046			Nymbodia River Water System	A	35,982.70	1989	PRE	2,729
Water Supply Mains	22199			Nymbodia River Water System	A	71,546.72	1994	PRE	5,426
Water Supply Mains	22235			Nymbodia River Water System	A	5,264.56	1988	PRE	399
Water Supply Mains	22275			Nymbodia River Water System	A	199,110.78	1989	PRE	15,100
Water Supply Mains	22312			Nymbodia River Water System	A	168,424.74	1989	PRE	12,773
Water Supply Mains	22363			Nymbodia River Water System	A	136,449.26	1987	PRE	10,348
Water Supply Mains	22390			Nymbodia River Water System	A	256,487.92	1989	PRE	19,451
Water Supply Mains	22392			Nymbodia River Water System	A	68,238.00	1995	PRE	5,175
Water Supply Mains	22431			Nymbodia River Water System	A	162,336.02	1989	PRE	12,311
Water Supply Mains	22458			Nymbodia River Water System	A	58,925.52	1995	PRE	4,469
Water Supply Mains	22470			Nymbodia River Water System	A	41,833.80	1994	PRE	3,173
Water Supply Mains	22573			Nymbodia River Water System	A	218,161.35	1989	PRE	16,545
Water Supply Mains	22628			Nymbodia River Water System	A	94,166.82	1989	PRE	7,141
Water Supply Mains	22702			Nymbodia River Water System	A	163,860.28	1989	PRE	12,427
Water Supply Mains	22703			Nymbodia River Water System	A	236,256.35	1989	PRE	17,917
Water Supply Mains	22714			Nymbodia River Water System	A	27,883.05	1989	PRE	2,115
Water Supply Mains	22719			Nymbodia River Water System	A	61,993.08	1987	PRE	4,701
Water Supply Mains	22740			Nymbodia River Water System	A	171,816.06	1989	PRE	13,030

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Supply Mains	22783			Nymbodia River Water System	A	231,646.47	1989	PRE	17,567
Water Supply Mains	22847			Nymbodia River Water System	A	131,314.32	1989	PRE	9,958
Water Supply Mains	22869			Nymbodia River Water System	A	88,355.15	1989	PRE	6,701
Water Supply Mains	22877			Nymbodia River Water System	A	80,969.22	1989	PRE	6,140
Water Supply Mains	22933			Nymbodia River Water System	A	96,960.60	1989	PRE	7,353
Water Supply Mains	22965			Nymbodia River Water System	A	404,358.57	1989	PRE	30,665
Water Supply Mains	22973			Nymbodia River Water System	A	3,302,960.00	1989	PRE	250,486
Water Supply Mains	22974			Nymbodia River Water System	A	242,483.67	1989	PRE	18,389
Water Supply Mains	22493			Nymbodia River Water System	A	63,822.60	2000	POST	4,840
Water Supply Mains	22172			Nymbodia River Water System	A	21,387.36	1989	PRE	1,622
Water Supply Mains	22539			Nymbodia River Water System	A	96,744.78	1989	PRE	7,337
Water Supply Mains	22453			Nymbodia River Water System	A	118,731.72	1989	PRE	9,004
Water Supply Mains	23330			Nymbodia River Water System	A	45,492.00	2005	POST	3,450
Water Supply Mains	23331			Nymbodia River Water System	A	10,998.36	2005	POST	834
Water Supply Mains	23332			Nymbodia River Water System	A	240.84	2005	POST	18
Water Supply Mains	23333			Nymbodia River Water System	A	60,879.00	2005	POST	4,617
Water Supply Mains	23334			Nymbodia River Water System	A	1,674.96	2003	POST	127
Water Supply Mains	22093			Nymbodia River Water System	A	61,601.52	1994	PRE	4,672
Water Supply Mains	23336			Nymbodia River Water System	A	12,154.86	2003	POST	922
Water Supply Mains	22957			Nymbodia River Water System	A	158,795.12	1990	Pre	12,043
Water Supply Mains	23492			Nymbodia River Water System	A	36,615.95	1987	PRE	2,777
Water Supply Mains	23667			Nymbodia River Water System	A	53,793.31	1987	PRE	4,080
Water Supply Mains	23672			Nymbodia River Water System	A	507,842.01	1987	PRE	38,513
Water Supply Mains	23679			Nymbodia River Water System	A	36,967.66	1987	PRE	2,804
Water Supply Mains	23695			Nymbodia River Water System	A	679,839.48	1987	PRE	51,557
Water Supply Mains	23720			Nymbodia River Water System	A	99,885.57	1987	PRE	7,575
Water Supply Mains	23734			Nymbodia River Water System	A	29,669.92	1988	PRE	2,250
Water Supply Mains	23735			Nymbodia River Water System	A	155,905.42	1987	PRE	11,823
Water Supply Mains	23736			Nymbodia River Water System	A	255,845.12	1987	PRE	19,403
Water Supply Mains	23978			Nymbodia River Water System	A	287,647.65	1988	PRE	21,814
Water Supply Mains	24025			Nymbodia River Water System	A	82,801.36	1988	PRE	6,279
Water Supply Mains	24026			Nymbodia River Water System	A	38,246.61	1988	PRE	2,901
Water Supply Mains	24027			Nymbodia River Water System	A	12,289.59	1988	PRE	932
Water Supply Mains	24028			Nymbodia River Water System	A	210,895.59	1988	PRE	15,994
Water Supply Mains	24030			Nymbodia River Water System	A	321,040.20	1988	PRE	24,347
Water Supply Mains	24033			Nymbodia River Water System	A	7,388.42	1988	PRE	560
Water Supply Mains	24035			Nymbodia River Water System	A	4,018.68	2000	POST	305
Water Supply Mains	24036			Nymbodia River Water System	A	527.04	2000	POST	40
Water Supply Mains	24037			Nymbodia River Water System	A	9,223.20	2000	POST	699
Water Supply Mains	24050			Nymbodia River Water System	A	172,704.42	1988	PRE	13,097
Water Supply Mains	24170			Nymbodia River Water System	A	229,789.98	1988	PRE	17,427
Water Supply Mains	24171			Nymbodia River Water System	A	88,708.98	1988	PRE	6,727
Water Supply Mains	24173			Nymbodia River Water System	A	309,001.80	1988	PRE	23,434
Water Supply Mains	24177			Nymbodia River Water System	A	123,492.06	1988	PRE	9,365

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Supply Mains	24178			Nymbodia River Water System	A	46,412.46	1988	PRE	3,520
Water Supply Mains	24189			Nymbodia River Water System	A	16,614.69	1988	PRE	1,260
Water Supply Mains	24212			Nymbodia River Water System	A	101,344.59	1987	PRE	7,686
Water Supply Mains	24217			Nymbodia River Water System	A	73,876.07	1987	PRE	5,603
Water Supply Mains	24218			Nymbodia River Water System	A	235,263.52	1987	PRE	17,842
Water Supply Mains	24219			Nymbodia River Water System	A	115,593.39	1987	PRE	8,766
Water Supply Mains	24220			Nymbodia River Water System	A	243,990.91	1987	PRE	18,504
Water Supply Mains	24221			Nymbodia River Water System	A	213,989.27	1987	PRE	16,228
Water Supply Mains	24224			Nymbodia River Water System	A	64,535.19	1987	PRE	4,894
Water Supply Mains	24236			Nymbodia River Water System	A	77,418.48	1987	PRE	5,871
Water Supply Mains	24238			Nymbodia River Water System	A	79,061.05	1987	PRE	5,996
Water Supply Mains	24240			Nymbodia River Water System	A	22,147.71	2003	POST	1,680
Water Supply Mains	24320			Nymbodia River Water System	A	16,879.72	1987	PRE	1,280
Water Supply Mains	24321			Nymbodia River Water System	A	20,575.28	1987	PRE	1,560
Water Supply Mains	24322			Nymbodia River Water System	A	5,143.82	1987	PRE	390
Water Supply Mains	24393			Nymbodia River Water System	A	129,101.54	1987	PRE	9,791
Water Supply Mains	24394			Nymbodia River Water System	A	6,647.18	1987	PRE	504
Water Supply Mains	24397			Nymbodia River Water System	A	1,379,082.96	1987	PRE	104,585
Water Supply Mains	24398			Nymbodia River Water System	A	772,002.72	1987	PRE	58,546
Water Supply Mains	24412			Nymbodia River Water System	A	5,543.34	1987	PRE	420
Water Supply Mains	24413			Nymbodia River Water System	A	5,543.34	1987	PRE	420
Water Supply Mains	24421			Nymbodia River Water System	A	2,711,828.66	2001	POST	205,657
Water Supply Mains	24449			Nymbodia River Water System	A	3,745.50	1987	PRE	284
Water Supply Mains	24488			Nymbodia River Water System	A	217,181.30	1999	POST	16,470
Water Supply Mains	24490			Nymbodia River Water System	A	30,134.64	1999	POST	2,285
Water Supply Mains	24539			Nymbodia River Water System	A	9,145.86	2002	POST	694
Water Supply Mains	24540			Nymbodia River Water System	A	1,825,146.36	2002	POST	138,413
Water Supply Mains	24561			Nymbodia River Water System	A	794,021.94	1987	PRE	60,216
Water Supply Mains	24581			Nymbodia River Water System	A	7,043.52	2001	POST	534
Water Supply Mains	24584			Nymbodia River Water System	A	2,447.06	1987	PRE	186
Water Supply Mains	24585			Nymbodia River Water System	A	1,847.78	1987	PRE	140
Water Supply Mains	24586			Nymbodia River Water System	A	1,947.66	1987	PRE	148
Water Supply Mains	24587			Nymbodia River Water System	A	499.40	1987	PRE	38
Water Supply Mains	24601			Nymbodia River Water System	A	43,576.44	2001	POST	3,305
Water Supply Mains	24608			Nymbodia River Water System	A	496,984.14	1987	PRE	37,690
Water Supply Mains	24610			Nymbodia River Water System	A	4,315,397.67	1987	PRE	327,266
Water Supply Mains	24611			Nymbodia River Water System	A	2,061,900.45	1987	PRE	156,368
Water Supply Mains	24681			Nymbodia River Water System	A	8,864.16	1988	PRE	672
Water Supply Mains	24686			Nymbodia River Water System	A	169,737.52	1987	PRE	12,872
Water Supply Mains	24687			Nymbodia River Water System	A	274,427.93	1987	PRE	20,812
Water Supply Mains	24693			Nymbodia River Water System	A	2,662.66	1987	PRE	202
Water Supply Mains	24694			Nymbodia River Water System	A	16,825.65	1987	PRE	1,276
Water Supply Mains	24771			Nymbodia River Water System	A	547.05	2000	POST	41
Water Supply Mains	24793			Nymbodia River Water System	A	8,897.40	2000	POST	675

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Supply Mains	24820			Nymbodia River Water System	A	2,532.06	1987	PRE	192
Water Supply Mains	24847			Nymbodia River Water System	A	2,309.94	2002	POST	175
Water Supply Mains	24876			Nymbodia River Water System	A	22,348.80	2003	POST	1,695
Water Supply Mains	24878			Nymbodia River Water System	A	172,331.32	1987	PRE	13,069
Water Supply Mains	24914			Nymbodia River Water System	A	2,701.08	2000	POST	205
Water Supply Mains	24924			Nymbodia River Water System	A	20,464.02	2004	POST	1,552
Water Supply Mains	24959			Nymbodia River Water System	A	1,330.02	1987	PRE	101
Water Supply Mains	24967			Nymbodia River Water System	A	3,234.40	2000	POST	245
Water Supply Mains	24987			Nymbodia River Water System	A	18,349.62	2002	POST	1,392
Water Supply Mains	24988			Nymbodia River Water System	A	11,956.95	2002	POST	907
Water Supply Mains	25009			Nymbodia River Water System	A	67,983.09	1988	PRE	5,156
Water Supply Mains	25016			Nymbodia River Water System	A	1,258.26	2000	POST	95
Water Supply Mains	25029			Nymbodia River Water System	A	27,951.96	1987	PRE	2,120
Water Supply Mains	25085			Nymbodia River Water System	A	73,060.92	2000	POST	5,541
Water Supply Mains	25093			Nymbodia River Water System	A	445,607.91	1989	PRE	33,794
Water Supply Mains	25097			Nymbodia River Water System	A	14,656.68	2002	POST	1,112
Water Supply Mains	25102			Nymbodia River Water System	A	5,220.84	2006	POST	396
Water Supply Mains	25103			Nymbodia River Water System	A	1,640.20	2006	POST	124
Water Supply Mains	25125			Nymbodia River Water System	A	36,542.09	2006	POST	2,771
Water Supply Mains	25131			Nymbodia River Water System	A	3,707,250.00	2004	POST	281,146
Water Supply Mains	25165			Nymbodia River Water System	A	1,915.56	1987	PRE	145
Water Supply Mains	22040			Nymbodia River Water System	A	192,958.70	1989	PRE	14,633
Water Supply Mains	25177			Nymbodia River Water System	A	2,701.08	1989	PRE	205
Water Supply Mains	25207			Nymbodia River Water System	A	13,206.66	1988	PRE	1,002
Water Supply Mains	22749			Nymbodia River Water System	A	85,249.19	1989	PRE	6,465
Water Supply Mains	25293			Nymbodia River Water System	A	14,310.60	2006	POST	1,085
Water Supply Mains	25301			Nymbodia River Water System	A	3,695.56	2000	POST	280
Water Supply Mains	25321			Nymbodia River Water System	A	274,944.69	2004	POST	20,851
Water Supply Mains	25341			Nymbodia River Water System	A	15,969.96	2007	POST	1,211
Water Supply Mains	25362			Nymbodia River Water System	A	415,450.86	2002	POST	31,507
Water Supply Mains	25369			Nymbodia River Water System	A	4,720.26	2007	POST	358
Water Supply Mains	25372			Nymbodia River Water System	A	5,288.70	2006	POST	401
Water Supply Mains	25375			Nymbodia River Water System	A	1,476.18	2006	POST	112
Water Supply Mains	25379			Nymbodia River Water System	A	65,521.28	2000	POST	4,969
Water Supply Mains	25380			Nymbodia River Water System	A	15,340.32	2000	POST	1,163
Water Supply Mains	25381			Nymbodia River Water System	A	116,959.48	2000	POST	8,870
Water Supply Mains	25382			Nymbodia River Water System	A	34,630.20	2000	POST	2,626
Water Supply Mains	25385			Nymbodia River Water System	A	7,690.76	2000	POST	583
Water Supply Mains	25387			Nymbodia River Water System	A	7,640.82	2000	POST	579
Water Supply Mains	25388			Nymbodia River Water System	A	4,493.34	2000	POST	341
Water Supply Mains	25406			Nymbodia River Water System	A	1,000.32	1995	PRE	76
Water Supply Mains	25407			Nymbodia River Water System	A	27,399.39	1995	PRE	2,078
Water Supply Mains	25414			Nymbodia River Water System	A	8,080.71	2007	POST	613
Water Supply Mains	25417			Nymbodia River Water System	A	18,130.80	2007	POST	1,375

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Supply Mains	25498			Nymbodia River Water System	A	284,591.63	1989	PRE	21,583
Water Supply Mains	25354			Nymbodia River Water System	A	278,115.86	2007	POST	21,091
Water Supply Mains	23159			Nymbodia River Water System	A	139,075.74	2004	POST	10,547
Water Supply Mains	25588			Nymbodia River Water System	A	8,063.41	2009	POST	612
Water Supply Mains	25651			Nymbodia River Water System	A	481,612.04	2003	POST	36,524
Water Supply Mains	25653			Nymbodia River Water System	A	312,007.80	1995	PRE	23,662
Water Supply Mains	25660			Nymbodia River Water System	A	74,190.09	1989	PRE	5,626
Water Supply Mains	25661			Nymbodia River Water System	A	1,529.45	1989	PRE	116
Water Supply Mains	25662			Nymbodia River Water System	A	4,615.64	1989	PRE	350
Water Supply Mains	25663			Nymbodia River Water System	A	1,734.20	1989	PRE	132
Water Supply Mains	25664			Nymbodia River Water System	A	720.36	1989	PRE	55
Water Supply Mains	25683			Nymbodia River Water System	A	571,101.27	1989	PRE	43,311
Water Supply Mains	25695			Nymbodia River Water System	A	0.00	2002	POST	0
Water Supply Mains	24627			Nymbodia River Water System	A	0.00	2002	POST	0
Water Supply Mains	25722			Nymbodia River Water System	A	540,219.24	2010	POST	40,969
Water Supply Mains	25736			Nymbodia River Water System	A	445,426.47	2010	POST	33,780
Water Supply Mains	25742			Nymbodia River Water System	A	863.88	2010	POST	66
Water Supply Mains	25743			Nymbodia River Water System	A	882.66	2010	POST	67
Water Supply Mains	25766			Nymbodia River Water System	A	97,930.62	1989	PRE	7,427
Water Supply Mains	25770			Nymbodia River Water System	A	1,985.01	2004	POST	151
Water Supply Mains	25772			Nymbodia River Water System	A	7,082.53	2011	POST	537
Water Supply Mains	25783			Nymbodia River Water System	A	288,286.53	2011	POST	21,863
Water Supply Mains	25789			Nymbodia River Water System	A	125,947.92	2010	POST	9,552
Water Supply Mains	25790			Nymbodia River Water System	A	7,447.74	2010	POST	565
Water Supply Mains	25882			Nymbodia River Water System	A	1,765.10	2014	POST	1,765
Water Supply Mains	25883			Nymbodia River Water System	A	2,727.10	2014	POST	2,727
Water Supply Mains	25884			Nymbodia River Water System	A	156.34	2014	POST	156
Water Supply Mains	25885			Nymbodia River Water System	A	80.69	2014	POST	81
Water Supply Mains	25886			Nymbodia River Water System	A	169.31	2014	POST	169
Water Supply Mains	25887			Nymbodia River Water System	A	33.14	2014	POST	33
Water Supply Mains	25888			Nymbodia River Water System	A	10,171.32	2014	POST	10,171
Water Supply Mains	25890			Nymbodia River Water System	A	2,291.03	2014	POST	2,291
Water Supply Mains	25891			Nymbodia River Water System	A	72.05	2014	POST	72
Water Supply Mains	25892			Nymbodia River Water System	A	392.65	2014	POST	393
Water Supply Mains	25894			Nymbodia River Water System	A	972.61	2014	POST	973
Water Supply Mains	25904			Nymbodia River Water System	A	2,197.37	2015	POST	2,197
Water Supply Mains	25905			Nymbodia River Water System	A	564.11	2015	POST	564
Water Supply Mains	25906			Nymbodia River Water System	A	563.39	2015	POST	563
Water Supply Mains	25907			Nymbodia River Water System	A	2,276.62	2015	POST	2,277
Water Supply Mains	25908			Nymbodia River Water System	A	14.41	2015	POST	14
Water Supply Mains	25909			Nymbodia River Water System	A	14.41	2015	POST	14
Water Supply Mains	25914			Nymbodia River Water System	A	3,154.82	2003	POST	3,155
Water Supply Mains	25915			Nymbodia River Water System	A	2,426.78	2003	POST	2,427
Water Supply Mains	25916			Nymbodia River Water System	A	5,373.12	2003	POST	5,373

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Supply Mains	25917			Nymbodia River Water System	A	641.20	1990	PRE	641
Water Supply Mains	25918			Nymbodia River Water System	A	2,240.60	1990	PRE	2,241
Water Supply Mains	25919			Nymbodia River Water System	A	4,920.68	2003	POST	4,921
Water Supply Mains	25920			Nymbodia River Water System	A	1,749.25	1990	PRE	1,749
Water Supply Mains	25921			Nymbodia River Water System	A	257.92	1990	PRE	258
Water Supply Mains	25922			Nymbodia River Water System	A	3,564.79	2003	POST	3,565
Water Supply Mains	25924			Nymbodia River Water System	A	2,915.66	1990	PRE	2,916
Water Supply Mains	25925			Nymbodia River Water System	A	5,579.17	2003	POST	5,579
Water Supply Mains	25927			Nymbodia River Water System	A	5,603.67	2003	POST	5,604
Water Supply Mains	25928			Nymbodia River Water System	A	32.42	2003	POST	32
Water Supply Mains	25929			Nymbodia River Water System	A	3,163.50	1990	PRE	3,163
Water Supply Mains	25930			Nymbodia River Water System	A	144.09	2003	POST	144
Water Supply Mains	25938			Nymbodia River Water System	A	677.22	2003	POST	677
Water Supply Mains	25959			Nymbodia River Water System	A	180.11	2015	POST	180
Water Supply Mains	25960			Nymbodia River Water System	A	14.41	2015	POST	14
Water Supply Mains	25963			Nymbodia River Water System	A	576.36	2016	POST	576
Water Supply Mains	25965			Nymbodia River Water System	A	265.13	2016	POST	265
Water Supply Mains	25966			Nymbodia River Water System	A	82.85	2016	POST	83
Water Supply Mains	22390			Nymbodia River Water System	A	10,343.85	1989	PRE	10,344
Water Supply Mains	25805			Nymbodia River Water System	A	126.19	2011	POST	126
Water Supply Mains	25806			Nymbodia River Water System	A	126.19	2011	POST	126
Water Supply Mains	25807			Nymbodia River Water System	A	40.04	2011	POST	40
Water Supply Mains	25818			Nymbodia River Water System	A	1,858.66	2012	POST	1,859
Water Supply Mains	25833			Nymbodia River Water System	A	370.31	2012	POST	370
Water Supply Mains	25834			Nymbodia River Water System	A	330.69	1991	PRE	331
Water Supply Mains	25837			Nymbodia River Water System	A	24.50	2013	POST	24
Water Supply Mains	25839			Nymbodia River Water System	A	131.12	2013	POST	131
Water Supply Mains	25840			Nymbodia River Water System	A	142.65	1987	PRE	143
Water Supply Mains	25842			Nymbodia River Water System	A	3,083.53	2013	POST	3,084
Water Supply Mains	25843			Nymbodia River Water System	A	958.20	2014	POST	958
Water Supply Mains	25844			Nymbodia River Water System	A	1,080.68	2014	POST	1,081
Water Supply Mains	25846			Nymbodia River Water System	A	3,582.84	2015	POST	3,583
Water Supply Mains	25848			Nymbodia River Water System	A	2,013.01	2014	POST	2,013
Water Supply Mains	25854			Nymbodia River Water System	A	502.87	2014	POST	503
Water Supply Mains	25855			Nymbodia River Water System	A	1,527.36	2014	POST	1,527
Water Supply Mains	25856			Nymbodia River Water System	A	29,731.86	2013	POST	29,732
Water Supply Mains	25857			Nymbodia River Water System	A	4,155.56	2013	POST	4,156
Water Supply Mains	25858			Nymbodia River Water System	A	427.95	2013	POST	428
Water Supply Mains	25859			Nymbodia River Water System	A	3,373.07	2013	POST	3,373
Water Supply Mains	25866			Nymbodia River Water System	A	2,856.59	2013	POST	2,857
Water Supply Mains	25867			Nymbodia River Water System	A	1,959.63	2013	POST	1,960
Water Supply Mains	25868			Nymbodia River Water System	A	7.20	2013	POST	7
Water Supply Mains	25869			Nymbodia River Water System	A	7.20	2014	POST	7
Water Supply Mains	25870			Nymbodia River Water System	A	119.59	2014	POST	120

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Supply Mains	25871			Nymbodia River Water System	A	188.76	2014	POST	189
Water Supply Mains	25872			Nymbodia River Water System	A	78.87	2013	POST	79
Water Supply Mains	25876			Nymbodia River Water System	A	701.00	2005	POST	701
Water Supply Mains	25877			Nymbodia River Water System	A	3,955.27	2010	POST	3,955
Water Supply Mains	25878			Nymbodia River Water System	A	27.38	2010	POST	27
Water Supply Mains	25879			Nymbodia River Water System	A	1,352.29	2013	POST	1,352
Water Supply Mains	25880			Nymbodia River Water System	A	561.95	2013	POST	562
Water Supply Mains	23144			Nymbodia River Water System	A	1,167.13	2002	POST	1,167
Water Supply Mains	25836			Nymbodia River Water System	A	1,736.29	2013	POST	1,736
Water Supply Mains	25852			Nymbodia River Water System	A	2,456.74	2014	POST	2,457
Water Supply Mains	23913			Nymbodia River Water System	A	9,405.76	1990	PRE	713

Table 14-2 Existing Water Pumping Stations (contributing to Capital Charge)

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Regional Water Pumping Stations	CVC-WPS-127	Shannon Creek Pump Station	Civil Works - Installation Pads & Anchor Blocks, Access platforms & walkways	Nymbodia River Water System	A	47,509	2009	POST	1,477
Regional Water Pumping Stations	CVC-WPS-128	Shannon Creek Pump Station	Pump 1	Nymbodia River Water System	A	416,378	2009	POST	12,946
Regional Water Pumping Stations	CVC-WPS-129	Shannon Creek Pump Station	Pump 2	Nymbodia River Water System	A	416,378	2009	POST	12,946
Regional Water Pumping Stations	CVC-WPS-130	Shannon Creek Pump Station	Pump 3	Nymbodia River Water System	A	416,378	2009	POST	12,946
Regional Water Pumping Stations	CVC-WPS-131	Shannon Creek Pump Station	Pipework & Fittings	Nymbodia River Water System	A	851,484	2009	POST	26,475
Regional Water Pumping Stations	CVC-WPS-132	Shannon Creek Pump Station	Overhead Crane	Nymbodia River Water System	A	258,813	2009	POST	8,047
Regional Water Pumping Stations	CVC-WPS-133	Shannon Creek Pump Station	Field termination panels x 3	Nymbodia River Water System	A	15,527	2009	POST	483
Regional Water Pumping Stations	CVC-WPS-134	Shannon Creek Pump Station	Valve Actuators x 3	Nymbodia River Water System	A	37,265	2009	POST	1,159
Water Pumping Stations	800884	Ilarwill Pump Station WPS		Nymbodia River Water System	A	153,470	1988	PRE	11,639
Water Pumping Stations	800921	Ulmarra Pump Station WPS		Nymbodia River Water System	A	153,470	1988	PRE	11,639
Water Pumping Stations	800931	Yamba Pump Station WPS		Nymbodia River Water System	A	71,662	1988	PRE	5,435
Water Pumping Stations	800918	Shannon Creek Dam Pump Station WPS		Nymbodia River Water System	A	909,644	2009	POST	28,284
Water Pumping Stations	CVC-WPS-016	Ulmarra Pump Station	Civil Works - Installation Pads & Anchor Blocks, Access, Walkway platform and hand rails, Gantry Beam	Nymbodia River Water System	A	157,835.00	1988	PRE	11,970
Water Pumping Stations	CVC-WPS-017	Ulmarra Pump Station	Pump 1	Nymbodia River Water System	A	156,944.00	1988	PRE	11,902
Water Pumping Stations	CVC-WPS-018	Ulmarra Pump Station	Pump 2	Nymbodia River Water System	A	156,944.00	1988	PRE	11,902
Water Pumping Stations	CVC-WPS-019	Ulmarra Pump Station	Electrical -Control Panels and Electrical caballing	Nymbodia River Water System	A	179,702.00	1988	PRE	13,628
Water Pumping Stations	CVC-WPS-020	Ulmarra Pump Station	Pipework & Fittings	Nymbodia River Water System	A	130,428.00	1988	PRE	9,891
Water Pumping Stations	CVC-WPS-021	Ulmarra Pump Station	Telemetry	Nymbodia River Water System	A	10,352.00	1988	PRE	785
Water Pumping Stations	CVC-WPS-022	Ulmarra Pump Station	Valve Actuators x 2	Nymbodia River Water System	A	15,941.00	1988	PRE	1,209
Water Pumping Stations	CVC-WPS-029	Ilarwill Pump Station	Civil Works - Installation Pads & Anchor Blocks, Access, Walkway platform and hand rails, Gantry Beam	Nymbodia River Water System	A	157,835.00	1988	PRE	11,970
Water Pumping Stations	CVC-WPS-030	Ilarwill Pump Station	Pump 1	Nymbodia River Water System	A	156,944.00	1988	PRE	11,902
Water Pumping Stations	CVC-WPS-031	Ilarwill Pump Station	Pump 2	Nymbodia River Water System	A	156,944.00	1988	PRE	11,902
Water Pumping Stations	CVC-WPS-032	Ilarwill Pump Station	Electrical -Switchboard and caballing	Nymbodia River Water System	A	179,702.00	1988	PRE	13,628
Water Pumping Stations	CVC-WPS-033	Ilarwill Pump Station	Pipework & Fittings	Nymbodia River Water System	A	130,428.00	1988	PRE	9,891
Water Pumping Stations	CVC-WPS-034	Ilarwill Pump Station	Telemetry	Nymbodia River Water System	A	10,352.00	1988	PRE	785
Water Pumping Stations	CVC-WPS-035	Ilarwill Pump Station	Valve Actuators x 2	Nymbodia River Water System	A	15,941.00	1988	PRE	1,209
Water Pumping Stations	CVC-WPS-042	Yamba Pump Station	Civil Works - Installation Pads & Anchor Blocks, Gantry beam	Nymbodia River Water System	A	26,394.00	1988	PRE	2,002
Water Pumping Stations	CVC-WPS-043	Yamba Pump Station	Pump 1	Nymbodia River Water System	A	130,545.00	1988	PRE	9,900
Water Pumping Stations	CVC-WPS-044	Yamba Pump Station	Pump 2	Nymbodia River Water System	A	130,545.00	1988	PRE	9,900
Water Pumping Stations	CVC-WPS-045	Yamba Pump Station	Electrical -Control Panels and Electrical caballing	Nymbodia River Water System	A	175,354.00	1988	PRE	13,298
Water Pumping Stations	CVC-WPS-046	Yamba Pump Station	Pipework & Fittings	Nymbodia River Water System	A	72,471.00	1988	PRE	5,496
Water Pumping Stations	CVC-WPS-047	Yamba Pump Station	Telemetry	Nymbodia River Water System	A	10,352.00	1988	PRE	785
Water Pumping Stations	CVC-WPS-048	Yamba Pump Station	Valve Actuators x 2	Nymbodia River Water System	A	12,422.00	1988	PRE	942

Table 14-3 Existing Water Supply Buildings (contributing to Capital Charge)

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Supply Buildings	800884	Ilarwill Pump Station WPS		Nymbodia River Water System	A	153,470	1988	PRE	11,639
Water Supply Buildings	800921	Ulmarra Pump Station WPS		Nymbodia River Water System	A	153,470	1988	PRE	11,639
Water Supply Buildings	800931	Yamba Pump Station WPS		Nymbodia River Water System	A	71,662	1988	PRE	5,435
Water Supply Buildings	800918	Shannon Creek Dam Pump Station WPS		Nymbodia River Water System	A	909,644	2009	POST	28,284

Table 14-4 Existing Dams (contributing to Capital Charge)

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Shannon Creek Dam	CVC-SCD-001	Intake Tower & Bridge	Dam Intake and Outlet tower structure, Spillway, Ogee weir and dissipation bay, Top running bridge crane, access ladders,	Nymbodia River Water System	A	3,669,259	2009	POST	114,089
Shannon Creek Dam	CVC-SCD-002	Intake Tower & Bridge	Access Bridge	Nymbodia River Water System	A	1,815,362	2009	POST	56,445
Shannon Creek Dam	CVC-SCD-003	Intake Tower & Bridge	Top running bridge crane	Nymbodia River Water System	A	327,346	2009	POST	10,178
Shannon Creek Dam	CVC-SCD-004	Intake Tower & Bridge	Telemetry	Nymbodia River Water System	A	20,703	2009	POST	644
Shannon Creek Dam	CVC-SCD-005	Intake Tower & Bridge	Electrical works - Power supply cable, Crane controls, Lightening arrestors, and Auxiliary Board, & Telemetry Board.	Nymbodia River Water System	A	179,288	2009	POST	5,575
Shannon Creek Dam	CVC-SCD-006	Dam	Main Shannon Cr Dam	Nymbodia River Water System	A	47,914,158	2009	POST	1,489,801
Shannon Creek Dam	CVC-SCD-007	Spillway	Spillway, Ogee weir and dissipation bay	Nymbodia River Water System	A	11,613,883	2009	POST	361,112
Shannon Creek Dam	CVC-SCD-008	Spillway	Gabion Basket	Nymbodia River Water System	A	158,363	2009	POST	4,924
Shannon Creek Dam	CVC-SCD-009	In-ground Pipelines, Valves and Pits	Valpit Structures	Nymbodia River Water System	A	147,805	2009	POST	4,596
Shannon Creek Dam	CVC-SCD-010	In-ground Pipelines, Valves and Pits	Inlet and outlet pipework, valves	Nymbodia River Water System	A	4,856,775	2009	POST	151,012
Shannon Creek Dam	CVC-SCD-011	In-ground Pipelines, Valves and Pits	Control Valve- Singer	Nymbodia River Water System	A	25,881	2009	POST	805
Shannon Creek Dam	CVC-SCD-012	In-ground Pipelines, Valves and Pits	Inlet flowmeter	Nymbodia River Water System	A	15,527	2009	POST	483
Shannon Creek Dam	CVC-SCD-013	Valve house	Valve House Structure	Nymbodia River Water System	A	3,458,426	2009	POST	107,533
Shannon Creek Dam	CVC-SCD-014	Valve house	Fixed Dispersion Cone Valves- 2 x 1200mm and 1 x 450mm	Nymbodia River Water System	A	465,863	2009	POST	14,485
Shannon Creek Dam	CVC-SCD-015	Valve house	Valve Actuators	Nymbodia River Water System	A	57,968	2009	POST	1,802
Shannon Creek Dam	CVC-SCD-016	Valve house	Ventilation System	Nymbodia River Water System	A	155,288	2009	POST	4,828
Shannon Creek Dam	CVC-SCD-017	Valve house	Ventilation System control panel	Nymbodia River Water System	A	10,352	2009	POST	322
Shannon Creek Dam	CVC-SCD-018	Valve house	Dewatering Sump Pump	Nymbodia River Water System	A	15,529	2009	POST	483
Shannon Creek Dam	CVC-SCD-019	Valve house	Pump Control	Nymbodia River Water System	A	10,352	2009	POST	322
Shannon Creek Dam	CVC-SCD-020	Valve house	Valve House Pipe work & fittings	Nymbodia River Water System	A	2,101,456	2009	POST	65,341
Shannon Creek Dam	CVC-SCD-021	Valve house	Ultrasonic Level Sensors at seepage pits	Nymbodia River Water System	A	6,211	2009	POST	193
Shannon Creek Dam	CVC-SCD-022	Valve house	Electrical Works - Cabling	Nymbodia River Water System	A	41,717	2009	POST	1,297
Shannon Creek Dam	CVC-SCD-023	Destratification System	Air Compressor	Nymbodia River Water System	A	622,703	2009	POST	19,362
Shannon Creek Dam	CVC-SCD-024	Destratification System	Destrat Pipework & fittings	Nymbodia River Water System	A	10,150	2009	POST	316
Shannon Creek Dam	CVC-SCD-025	Destratification System	Destrat Pipework & fittings	Nymbodia River Water System	A	34,510	2009	POST	1,073
Shannon Creek Dam	CVC-SCD-026	Destratification System	Airflow meter	Nymbodia River Water System	A	5,176	2009	POST	161
Shannon Creek Dam	CVC-SCD-027	Power & Control - Control Room	Electrical -Main Switch bord and pump, Valve, Destratification control panels, harmonic filter and Variable Speed devices & Cabling	Nymbodia River Water System	A	4,067,311	2009	POST	126,465
Shannon Creek Dam	CVC-SCD-028	Power & Control - Control Room	Telemetry system	Nymbodia River Water System	A	155,273	2009	POST	4,828
Shannon Creek Dam	CVC-SCD-029	Telemetry & Repeater Stations	Telemetry Repeater Mountain Top	Nymbodia River Water System	A	22,773	2009	POST	708
Shannon Creek Dam	CVC-SCD-030	Telemetry & Repeater Stations	Upstream Measuring Weir & Rain Gauge	Nymbodia River Water System	A	17,948	2009	POST	558
Shannon Creek Dam	CVC-SCD-031	Telemetry & Repeater Stations	Upstream Telemetry	Nymbodia River Water System	A	31,055	2009	POST	966
Shannon Creek Dam	CVC-SCD-032	Telemetry & Repeater Stations	Upstream Nitrogen gas Pipe Work -poly	Nymbodia River Water System	A	1,523	2009	POST	47
Shannon Creek Dam	CVC-SCD-033	Telemetry & Repeater Stations	Downstream Measuring Weir & Rain Gauge	Nymbodia River Water System	A	14,781	2009	POST	460
Shannon Creek Dam	CVC-SCD-034	Telemetry & Repeater Stations	Downstream Telemetry	Nymbodia River Water System	A	31,055	2009	POST	966
Shannon Creek Dam	CVC-SCD-035	Telemetry & Repeater Stations	Downstream Pipe Work -Nitrogen gas Pipe Work -poly	Nymbodia River Water System	A	1,523	2009	POST	47

Table 14-5 Existing Water Storage and Treatment (contributing to Capital Charge)

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Storage and Treatment	CVC - RESWT-018	RUSHFORTH ROAD 32ML	Reservoir roof Structure	Nymbodia River Water System	A	686,238	2012	POST	52,042
Water Storage and Treatment	CVC - RESWT-001	RUSHFORTH ROAD 100ML	Reservoir Structure	Nymbodia River Water System	A	5,737,051	1985	PRE	435,080
Water Storage and Treatment	CVC - RESWT-002	RUSHFORTH ROAD 100ML	Pipe Work & Fittings	Nymbodia River Water System	A	441,221	1985	PRE	33,461
Water Storage and Treatment	CVC - RESWT-003	RUSHFORTH ROAD 100ML	Telemetry	Nymbodia River Water System	A	10,352	1985	PRE	785
Water Storage and Treatment	CVC - RESWT-004	RUSHFORTH ROAD 100ML	Reservoir Level Equipment	Nymbodia River Water System	A	12,422	1985	PRE	942
Water Storage and Treatment	CVC - RESWT-005	RUSHFORTH ROAD 100ML	Flowmeter	Nymbodia River Water System	A	14,492	1985	PRE	1,099
Water Storage and Treatment	CVC - RESWT-006	RUSHFORTH ROAD 100ML	Site Works -retaining wall	Nymbodia River Water System	A	15,836	1985	PRE	1,201
Water Storage and Treatment	CVC - RESWT-007	RUSHFORTH ROAD 100ML	Valve Actuator	Nymbodia River Water System	A	9,316	1985	PRE	706
Water Storage and Treatment	CVC - RESWT-008	RUSHFORTH ROAD 100ML	Site Works -fencing	Nymbodia River Water System	A	63,345	1985	PRE	4,804
Water Storage and Treatment	CVC - RESWT-009	RUSHFORTH ROAD 100ML	Telemetry repeater tower	Nymbodia River Water System	A	179,478	1985	PRE	13,611
Water Storage and Treatment	CVC - RESWT-010	RUSHFORTH ROAD 100ML	Telemetry repeater	Nymbodia River Water System	A	62,109	1985	PRE	4,710
Water Storage and Treatment	CVC - RESWT-011	RUSHFORTH ROAD 100ML	pH meter pit structure	Nymbodia River Water System	A	29,667	1985	PRE	2,250
Water Storage and Treatment	CVC - RESWT-012	RUSHFORTH ROAD 100ML	pH meter	Nymbodia River Water System	A	8,281	1985	PRE	628
Water Storage and Treatment	CVC - RESWT-013	RUSHFORTH ROAD 100ML	Nymbodia main Valve Actuator	Nymbodia River Water System	A	9,316	1985	PRE	706
Water Storage and Treatment	CVC - RESWT-014	RUSHFORTH ROAD 100ML	Nymbodia main flow meter 525	Nymbodia River Water System	A	14,492	1985	PRE	1,099
Water Storage and Treatment	CVC - RESWT-015	RUSHFORTH ROAD 100ML	Flow meter and Control valve site works -civil	Nymbodia River Water System	A	31,673	1985	PRE	2,402
Water Storage and Treatment	CVC - RESWT-016	RUSHFORTH ROAD 100ML	Overflow structures	Nymbodia River Water System	A	32,728	1985	PRE	2,482
Water Storage and Treatment	CVC - RESWT-017	RUSHFORTH ROAD 32ML	Reservoir Structure	Nymbodia River Water System	A	2,463,487	1970	PRE	186,823
Water Storage and Treatment	CVC - RESWT-019	RUSHFORTH ROAD 32ML	Overflow structures	Nymbodia River Water System	A	26,394	1970	PRE	2,002
Water Storage and Treatment	CVC - RESWT-020	RUSHFORTH ROAD 32ML	Pipe Work & Fittings	Nymbodia River Water System	A	355,250	1970	PRE	26,941
Water Storage and Treatment	CVC - RESWT-021	RUSHFORTH ROAD 32ML	Reservoir Level Equipment	Nymbodia River Water System	A	12,422	1970	PRE	942
Water Storage and Treatment	CVC - RESWT-022	RUSHFORTH ROAD 32ML	Site Works -fencing	Nymbodia River Water System	A	52,576	1970	PRE	3,987
Water Storage and Treatment	CVC - RESWT-023	RUSHFORTH ROAD 32ML	Pump 1	Nymbodia River Water System	A	7,764	1970	PRE	589
Water Storage and Treatment	CVC - RESWT-024	RUSHFORTH ROAD 32ML	Pump 2	Nymbodia River Water System	A	7,764	1970	PRE	589
Water Storage and Treatment	CVC - RESWT-025	RUSHFORTH ROAD 32ML	Pump pipe work	Nymbodia River Water System	A	5,380	1970	PRE	408
Water Storage and Treatment	CVC - RESWT-026	RUSHFORTH ROAD 32ML	Pump Control Panel	Nymbodia River Water System	A	25,879	1970	PRE	1,963
Water Storage and Treatment	CVC - RESWT-027	YAMBA Low Level 9.5ML	Reservoir Structure	Nymbodia River Water System	A	2,703,037	1986	PRE	204,990
Water Storage and Treatment	CVC - RESWT-028	YAMBA Low Level 9.5ML	Reservoir Roof	Nymbodia River Water System	A	525,447	1986	PRE	39,848
Water Storage and Treatment	CVC - RESWT-029	YAMBA Low Level 9.5ML	Electrical	Nymbodia River Water System	A	20,703	1986	PRE	1,570
Water Storage and Treatment	CVC - RESWT-030	YAMBA Low Level 9.5ML	Pipe Work & Fittings	Nymbodia River Water System	A	235,785	1986	PRE	17,881
Water Storage and Treatment	CVC - RESWT-031	YAMBA Low Level 9.5ML	Telemetry	Nymbodia River Water System	A	10,352	1986	PRE	785
Water Storage and Treatment	CVC - RESWT-032	YAMBA Low Level 9.5ML	Reservoir Level Equipment	Nymbodia River Water System	A	8,281	1986	PRE	628
Water Storage and Treatment	CVC - RESWT-033	YAMBA Low Level 9.5ML	Flowmeter	Nymbodia River Water System	A	9,316	1986	PRE	706
Water Storage and Treatment	CVC - RESWT-034	YAMBA High Level 0.5ML	Reservoir Structure	Nymbodia River Water System	A	379,964	1986	PRE	28,815
Water Storage and Treatment	CVC - RESWT-035	YAMBA High Level 0.5ML	Reservoir Roof	Nymbodia River Water System	A	48,670	1986	PRE	3,691
Water Storage and Treatment	CVC - RESWT-036	YAMBA High Level 0.5ML	Electrical	Nymbodia River Water System	A	15,527	1986	PRE	1,178
Water Storage and Treatment	CVC - RESWT-037	YAMBA High Level 0.5ML	Pipe Work & Fittings	Nymbodia River Water System	A	32,785	1986	PRE	2,486
Water Storage and Treatment	CVC - RESWT-038	YAMBA High Level 0.5ML	Telemetry	Nymbodia River Water System	A	10,352	1986	PRE	785
Water Storage and Treatment	CVC - RESWT-039	YAMBA High Level 0.5ML	Reservoir Level Equipment	Nymbodia River Water System	A	8,281	1986	PRE	628

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Storage and Treatment	CVC - RESWT-040	YAMBA High Level 0.5ML	Flowmeter	Nymbodia River Water System	A	7,764	1986	PRE	589
Water Storage and Treatment	CVC - RESWT-041	YAMBA High Level 0.5ML	Telemetry Repeater	Nymbodia River Water System	A	15,527	1986	PRE	1,178
Water Storage and Treatment	CVC - RESWT-042	RUSHFORTH RD 100ML - LIME CO2 PLANT	CO2 Vaporizers	Nymbodia River Water System	A	62,115	1985	PRE	4,711
Water Storage and Treatment	CVC - RESWT-043	RUSHFORTH RD 100ML - LIME CO2 PLANT	Pipe Work & Fittings	Nymbodia River Water System	A	71,050	1985	PRE	5,388
Water Storage and Treatment	CVC - RESWT-044	RUSHFORTH RD 100ML - LIME CO2 PLANT	Valve Actuators	Nymbodia River Water System	A	10,352	1985	PRE	785
Water Storage and Treatment	CVC - RESWT-045	RUSHFORTH RD 100ML - LIME CO2 PLANT	Side Stream Pump	Nymbodia River Water System	A	36,234	1985	PRE	2,748
Water Storage and Treatment	CVC - RESWT-046	RUSHFORTH RD 100ML - LIME CO2 PLANT	CO2 Cryogenic Storage Vessel	Nymbodia River Water System	A	362,338	1985	PRE	27,479
Water Storage and Treatment	CVC - RESWT-047	RUSHFORTH RD 100ML - LIME CO2 PLANT	Electrical Supply and Control Panel	Nymbodia River Water System	A	62,109	1985	PRE	4,710
Water Storage and Treatment	CVC - RESWT-048	RUSHFORTH RD 100ML - LIME CO2 PLANT	Pre Chlorination instrumentation	Nymbodia River Water System	A	41,410	1985	PRE	3,140
Water Storage and Treatment	CVC - RESWT-049	RUSHFORTH RD 100ML - LIME CO2 PLANT	Pre Chlorination circulation pump	Nymbodia River Water System	A	7,247	1985	PRE	550
Water Storage and Treatment	CVC - RESWT-050	RUSHFORTH RD 100ML - LIME CO2 PLANT	Pre Chlorination Pipe Work	Nymbodia River Water System	A	12,180	1985	PRE	924
Water Storage and Treatment	CVC - RESWT-051	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Lime & Co2 dosing Electrical works	Nymbodia River Water System	A	82,812	1985	PRE	6,280
Water Storage and Treatment	CVC - RESWT-052	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Lime Blower	Nymbodia River Water System	A	25,881	1985	PRE	1,963
Water Storage and Treatment	CVC - RESWT-053	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Safety Shower	Nymbodia River Water System	A	2,588	1985	PRE	196
Water Storage and Treatment	CVC - RESWT-054	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Lime Silo	Nymbodia River Water System	A	443,415	1985	PRE	33,627
Water Storage and Treatment	CVC - RESWT-055	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Lime Silo Load Cells	Nymbodia River Water System	A	16,564	1985	PRE	1,256
Water Storage and Treatment	CVC - RESWT-056	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Lime Silo Load Cells Monitor	Nymbodia River Water System	A	15,527	1985	PRE	1,178
Water Storage and Treatment	CVC - RESWT-057	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Ejector Pump	Nymbodia River Water System	A	5,176	1985	PRE	393
Water Storage and Treatment	CVC - RESWT-058	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Transfer Screw conveyor	Nymbodia River Water System	A	36,234	1985	PRE	2,748
Water Storage and Treatment	CVC - RESWT-059	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Volumetric Feeder	Nymbodia River Water System	A	258,813	1985	PRE	19,628
Water Storage and Treatment	CVC - RESWT-060	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Vessel	Nymbodia River Water System	A	10,353	1985	PRE	785
Water Storage and Treatment	CVC - RESWT-061	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Lime mixing tank and mixer	Nymbodia River Water System	A	8,282	1985	PRE	628
Water Storage and Treatment	CVC - RESWT-062	RUSHFORTH RD 100ML - LIME CO2 PLANT	Lime Dosing - Pipe Work & fittings	Nymbodia River Water System	A	111,650	1985	PRE	8,467
Water Storage and Treatment	CVC - RESWT-063	RUSHFORTH RD 100ML - LIME CO2 PLANT	Site Works-Hard Stand and installation pads	Nymbodia River Water System	A	68,624	1985	PRE	5,204
Water Storage and Treatment	CVC - RESWT-064	RUSHFORTH RD 100ML - LIME CO2 PLANT	Site Works-fence & bollards	Nymbodia River Water System	A	21,960	1985	PRE	1,665
Water Storage and Treatment	CVC - RESWT-065	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Post Chlorination civil Works	Nymbodia River Water System	A	6,335	1970	PRE	480
Water Storage and Treatment	CVC - RESWT-066	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Post Chlorination instrumentation	Nymbodia River Water System	A	46,586	1970	PRE	3,533
Water Storage and Treatment	CVC - RESWT-067	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Post Chlorination crane	Nymbodia River Water System	A	25,881	1970	PRE	1,963
Water Storage and Treatment	CVC - RESWT-068	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Post Chlorination pipe Work & fittings	Nymbodia River Water System	A	15,225	1970	PRE	1,155
Water Storage and Treatment	CVC - RESWT-069	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Post Chlorination booster pump 1	Nymbodia River Water System	A	6,212	1970	PRE	471
Water Storage and Treatment	CVC - RESWT-070	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Post Chlorination booster pump 2	Nymbodia River Water System	A	7,247	1970	PRE	550

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Storage and Treatment	CVC - RESWT-071	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Post Chlorination Electrical Supply and control panels	Nymbodia River Water System	A	62,109	1970	PRE	4,710
Water Storage and Treatment	CVC - RESWT-072	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Ammonia Dosing - Civil Works	Nymbodia River Water System	A	39,063	1970	PRE	2,962
Water Storage and Treatment	CVC - RESWT-073	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Ammonia Dosing - Storage Vessel	Nymbodia River Water System	A	155,288	1970	PRE	11,777
Water Storage and Treatment	CVC - RESWT-074	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Ammonia Dosing - Dosing pump1	Nymbodia River Water System	A	6,212	1970	PRE	471
Water Storage and Treatment	CVC - RESWT-075	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Ammonia Dosing - Dosing pump2	Nymbodia River Water System	A	6,212	1970	PRE	471
Water Storage and Treatment	CVC - RESWT-076	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Ammonia Dosing - safety shower	Nymbodia River Water System	A	2,588	1970	PRE	196
Water Storage and Treatment	CVC - RESWT-077	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Ammonia Dosing - injection pit	Nymbodia River Water System	A	26,183	1970	PRE	1,986
Water Storage and Treatment	CVC - RESWT-078	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Ammonia Dosing - pipe work	Nymbodia River Water System	A	8,120	1970	PRE	616
Water Storage and Treatment	CVC - RESWT-079	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Ammonia Dosing - Electrical control	Nymbodia River Water System	A	15,527	1970	PRE	1,178
Water Storage and Treatment	CVC - RESWT-080	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Fluoridation - Booster pump1	Nymbodia River Water System	A	3,623	1970	PRE	275
Water Storage and Treatment	CVC - RESWT-081	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Fluoridation - Booster pump2	Nymbodia River Water System	A	3,623	1970	PRE	275
Water Storage and Treatment	CVC - RESWT-082	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Fluoridation - Dust Extractor	Nymbodia River Water System	A	12,423	1970	PRE	942
Water Storage and Treatment	CVC - RESWT-083	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Fluoridation - mixing tank	Nymbodia River Water System	A	5,176	1970	PRE	393
Water Storage and Treatment	CVC - RESWT-084	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Fluoridation - mixing tank agitator	Nymbodia River Water System	A	2,588	1970	PRE	196
Water Storage and Treatment	CVC - RESWT-085	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Fluoridation - Fluoride Dosing system/hopper & load cells, Grinder, feeder	Nymbodia River Water System	A	67,291	1970	PRE	5,103
Water Storage and Treatment	CVC - RESWT-086	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Fluoridation - Chart Recorder	Nymbodia River Water System	A	5,176	1970	PRE	393
Water Storage and Treatment	CVC - RESWT-087	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Fluoridation - Control Panel	Nymbodia River Water System	A	15,527	1970	PRE	1,178
Water Storage and Treatment	CVC - RESWT-088	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Fluoridation - Civil works	Nymbodia River Water System	A	8,446	1970	PRE	641
Water Storage and Treatment	CVC - RESWT-089	RUSHFORTH RD 32ML - Treatment Works	Online water quality monitoring instruments	Nymbodia River Water System	A	15,527	1970	PRE	1,178
Water Storage and Treatment	CVC - RESWT-090	RUSHFORTH RD 32ML - Treatment Works	Chart recorder	Nymbodia River Water System	A	5,176	1970	PRE	393
Water Storage and Treatment	CVC - RESWT-091	RUSHFORTH RD 32ML - Treatment Works	Telemetry	Nymbodia River Water System	A	10,352	1970	PRE	785
Water Storage and Treatment	CVC - RESWT-092	RUSHFORTH RD 32ML - Treatment Works	Site works -Fencing	Nymbodia River Water System	A	19,004	1970	PRE	1,441
Water Storage and Treatment	CVC - RESWT-093	RUSHFORTH RD 32ML - Treatment Works	Water treatment - civil works, internal roads & Foot paths	Nymbodia River Water System	A	206,716	1970	PRE	15,677

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Storage and Treatment	CVC - RESWT-094	RUSHFORTH RD 32ML - Treatment Works	Site works -drainage	Nymbodia River Water System	A	73,903	1970	PRE	5,605
Water Storage and Treatment	CVC - RESWT-095	RUSHFORTH RD 32ML - Treatment Works	Water treatment - power supply and electrical work	Nymbodia River Water System	A	82,812	1970	PRE	6,280
Water Storage and Treatment	CVC - RESWT-096	MACLEAN 21ML	Reservoir Structure	Nymbodia River Water System	A	3,653,740	1985	PRE	277,088
Water Storage and Treatment	CVC - RESWT-097	MACLEAN 21ML	Reservoir Roof	Nymbodia River Water System	A	709,358	1985	PRE	53,796
Water Storage and Treatment	CVC - RESWT-098	MACLEAN 21ML	Electrical	Nymbodia River Water System	A	25,879	1985	PRE	1,963
Water Storage and Treatment	CVC - RESWT-099	MACLEAN 21ML	Pipe Work & Fittings	Nymbodia River Water System	A	318,304	1985	PRE	24,139
Water Storage and Treatment	CVC - RESWT-100	MACLEAN 21ML	Telemetry	Nymbodia River Water System	A	10,352	1985	PRE	785
Water Storage and Treatment	CVC - RESWT-101	MACLEAN 21ML	Reservoir Level Equipment	Nymbodia River Water System	A	8,281	1985	PRE	628
Water Storage and Treatment	CVC - RESWT-102	MACLEAN 21ML	Flow Meter Well Structure	Nymbodia River Water System	A	25,127	1985	PRE	1,906
Water Storage and Treatment	CVC - RESWT-103	MACLEAN 21ML	Flowmeter	Nymbodia River Water System	A	15,527	1985	PRE	1,178
Water Storage and Treatment	CVC - RESWT-104	MACLEAN 21ML	Site Work- Stormwater drainage and Scour protection	Nymbodia River Water System	A	26,394	1985	PRE	2,002
Water Storage and Treatment	CVC - RESWT-105	MACLEAN 21ML	Hypo Dosing Unit	Nymbodia River Water System	A	8,282	1985	PRE	628
Water Storage and Treatment	CVC - RESWT-106	MACLEAN 21ML	Site Works - Internal Access Road	Nymbodia River Water System	A	32,200	1985	PRE	2,442
Water Storage and Treatment	CVC - RESWT-107	MACLEAN 21ML	Site Works - Fence	Nymbodia River Water System	A	49,092	1985	PRE	3,723
Water Storage and Treatment	CVC - RESWT-108	MACLEAN 4.5ML	Reservoir Structure	Nymbodia River Water System	A	1,576,974	1963	PRE	119,593
Water Storage and Treatment	CVC - RESWT-109	MACLEAN 4.5ML	Reservoir Roof	Nymbodia River Water System	A	307,962	1963	PRE	23,355
Water Storage and Treatment	CVC - RESWT-110	MACLEAN 4.5ML	Electrical	Nymbodia River Water System	A	15,527	1963	PRE	1,178
Water Storage and Treatment	CVC - RESWT-111	MACLEAN 4.5ML	Pipe Work & Fittings	Nymbodia River Water System	A	138,142	1963	PRE	10,476
Water Storage and Treatment	CVC - RESWT-112	MACLEAN 4.5ML	Telemetry	Nymbodia River Water System	A	10,352	1963	PRE	785
Water Storage and Treatment	CVC - RESWT-113	MACLEAN 4.5ML	Reservoir Level Equipment	Nymbodia River Water System	A	8,281	1963	PRE	628
Water Storage and Treatment	CVC - RESWT-114	MACLEAN 4.5ML	Flow Meter Well Structure	Nymbodia River Water System	A	21,326	1963	PRE	1,617
Water Storage and Treatment	CVC - RESWT-115	MACLEAN 4.5ML	Flowmeter	Nymbodia River Water System	A	10,352	1963	PRE	785
Water Storage and Treatment	CVC - RESWT-116	JUNCTION HILL 6.82ML	Reservoir Structure	Nymbodia River Water System	A	2,147,501	1950	PRE	162,860
Water Storage and Treatment	CVC - RESWT-117	JUNCTION HILL 6.82ML	Reservoir Roof	Nymbodia River Water System	A	418,710	1950	PRE	31,754
Water Storage and Treatment	CVC - RESWT-118	JUNCTION HILL 6.82ML	Electrical	Nymbodia River Water System	A	20,703	1950	PRE	1,570
Water Storage and Treatment	CVC - RESWT-119	JUNCTION HILL 6.82ML	Pipe Work & Fittings	Nymbodia River Water System	A	187,877	1950	PRE	14,248
Water Storage and Treatment	CVC - RESWT-120	JUNCTION HILL 6.82ML	Telemetry	Nymbodia River Water System	A	10,352	1950	PRE	785
Water Storage and Treatment	CVC - RESWT-121	JUNCTION HILL 6.82ML	Reservoir Level Equipment	Nymbodia River Water System	A	8,281	1950	PRE	628
Water Storage and Treatment	CVC - RESWT-122	SOUTHGATE 1.14ML	Reservoir Structure	Nymbodia River Water System	A	595,337	1966	PRE	45,149
Water Storage and Treatment	CVC - RESWT-123	SOUTHGATE 1.14ML	Reservoir Roof	Nymbodia River Water System	A	56,799	1966	PRE	4,307
Water Storage and Treatment	CVC - RESWT-124	SOUTHGATE 1.14ML	Pipe Work & Fittings	Nymbodia River Water System	A	47,807	1966	PRE	3,626
Water Storage and Treatment	CVC - RESWT-125	SOUTHGATE 1.14ML	Altitude Valve -Singer	Nymbodia River Water System	A	15,529	1966	PRE	1,178
Water Storage and Treatment	CVC - RESWT-127	LAWRENCE 1.14ML	Reservoir Structure	Nymbodia River Water System	A	616,452	1966	PRE	46,750
Water Storage and Treatment	CVC - RESWT-128	LAWRENCE 1.14ML	Reservoir Roof	Nymbodia River Water System	A	56,799	1966	PRE	4,307
Water Storage and Treatment	CVC - RESWT-129	LAWRENCE 1.14ML	Pipe Work & Fittings	Nymbodia River Water System	A	47,807	1966	PRE	3,626
Water Storage and Treatment	CVC - RESWT-130	LAWRENCE 1.14ML	Telemetry	Nymbodia River Water System	A	10,352	1966	PRE	785
Water Storage and Treatment	CVC - RESWT-131	LAWRENCE 1.14ML	Electrical	Nymbodia River Water System	A	15,527	1966	PRE	1,178
Water Storage and Treatment	CVC - RESWT-132	LAWRENCE 1.14ML	Reservoir Level Equipments- pressure transducer	Nymbodia River Water System	A	8,281	1966	PRE	628
Water Storage and Treatment	CVC - RESWT-133	LAWRENCE 1.14ML	Altitude Valve -Singer	Nymbodia River Water System	A	15,529	1966	PRE	1,178

Asset Category	Asset ID	Asset Name	Segment Name	Development Area Name	Development Area	Gross (2015\$)	Construction Year	Pre or Post 1996 Asset	Capital Charge (2016\$)
Water Storage and Treatment	CVC - RESWT-134	LAWRENCE 1.14ML	Site Works - Fence	Nymbodia River Water System	A	7,390	1966	PRE	560
Water Storage and Treatment	CVC - RESWT-135	BROOMS HEAD 2.5ML	Reservoir Structure	Nymbodia River Water System	A	982,164	1977	PRE	74,484
Water Storage and Treatment	CVC - RESWT-136	BROOMS HEAD 2.5ML	Reservoir Roof	Nymbodia River Water System	A	190,457	1977	PRE	14,444
Water Storage and Treatment	CVC - RESWT-137	BROOMS HEAD 2.5ML	Pipe Work & Fittings	Nymbodia River Water System	A	85,463	1977	PRE	6,481
Water Storage and Treatment	CVC - RESWT-138	BROOMS HEAD 2.5ML	Telemetry , Solar panel	Nymbodia River Water System	A	12,422	1977	PRE	942
Water Storage and Treatment	CVC - RESWT-139	BROOMS HEAD 2.5ML	Reservoir Level Equipment	Nymbodia River Water System	A	8,281	1977	PRE	628
Water Storage and Treatment	CVC - RESWT-140	WOOMBAH 1ML	Reservoir Structure	Nymbodia River Water System	A	473,398	1986	PRE	35,901
Water Storage and Treatment	CVC - RESWT-141	WOOMBAH 1ML	Reservoir Roof	Nymbodia River Water System	A	76,120	1986	PRE	5,773
Water Storage and Treatment	CVC - RESWT-142	WOOMBAH 1ML	Electrical	Nymbodia River Water System	A	31,055	1986	PRE	2,355
Water Storage and Treatment	CVC - RESWT-143	WOOMBAH 1ML	Pipe Work & Fittings	Nymbodia River Water System	A	42,630	1986	PRE	3,233
Water Storage and Treatment	CVC - RESWT-144	WOOMBAH 1ML	Telemetry	Nymbodia River Water System	A	10,352	1986	PRE	785
Water Storage and Treatment	CVC - RESWT-145	WOOMBAH 1ML	Reservoir Level Equipment	Nymbodia River Water System	A	8,281	1986	PRE	628
Water Storage and Treatment	CVC - RESWT-146	WOOMBAH 1ML	Control Valve Actuator	Nymbodia River Water System	A	7,246	1986	PRE	550
Water Storage and Treatment	CVC - RESWT-153	ILUKA 1.36ML	Reservoir Structure	Nymbodia River Water System	A	611,702	1972	PRE	46,390
Water Storage and Treatment	CVC - RESWT-154	ILUKA 1.36ML	Reservoir Roof	Nymbodia River Water System	A	95,018	1972	PRE	7,206
Water Storage and Treatment	CVC - RESWT-155	ILUKA 1.36ML	Electrical	Nymbodia River Water System	A	20,703	1972	PRE	1,570
Water Storage and Treatment	CVC - RESWT-156	ILUKA 1.36ML	Pipe Work & Fittings	Nymbodia River Water System	A	53,288	1972	PRE	4,041
Water Storage and Treatment	CVC - RESWT-157	ILUKA 1.36ML	Telemetry	Nymbodia River Water System	A	10,352	1972	PRE	785
Water Storage and Treatment	CVC - RESWT-158	ILUKA 1.36ML	Reservoir Level Equipment	Nymbodia River Water System	A	8,281	1972	PRE	628
Water Storage and Treatment	CVC - RESWT-170	ILUKA 5ML	Reservoir Structure	Nymbodia River Water System	A	1,747,161	1986	PRE	132,499
Water Storage and Treatment	CVC - RESWT-171	ILUKA 5ML	Reservoir Roof	Nymbodia River Water System	A	264,782	1986	PRE	20,080
Water Storage and Treatment	CVC - RESWT-172	ILUKA 5ML	Electrical ,Valve Actuator Panel	Nymbodia River Water System	A	31,055	1986	PRE	2,355
Water Storage and Treatment	CVC - RESWT-173	ILUKA 5ML	Pipe Work & Fittings	Nymbodia River Water System	A	148,495	1986	PRE	11,261
Water Storage and Treatment	CVC - RESWT-174	ILUKA 5ML	Telemetry	Nymbodia River Water System	A	10,352	1986	PRE	785
Water Storage and Treatment	CVC - RESWT-175	ILUKA 5ML	Reservoir Level Equipment	Nymbodia River Water System	A	8,281	1986	PRE	628
Water Storage and Treatment	CVC - RESWT-176	ILUKA 5ML	Control Valve Actuator	Nymbodia River Water System	A	7,764	1986	PRE	589
Water Storage and Treatment	CVC - RESWT-177	MOUNTAIN VIEW 2.5ML	Reservoir Structure	Nymbodia River Water System	A	961,049	1985	PRE	72,883
Water Storage and Treatment	CVC - RESWT-178	MOUNTAIN VIEW 2.5ML	Reservoir Roof	Nymbodia River Water System	A	190,457	1985	PRE	14,444
Water Storage and Treatment	CVC - RESWT-179	MOUNTAIN VIEW 2.5ML	Electrical	Nymbodia River Water System	A	20,703	1985	PRE	1,570
Water Storage and Treatment	CVC - RESWT-180	MOUNTAIN VIEW 2.5ML	Pipe Work & Fittings	Nymbodia River Water System	A	85,463	1985	PRE	6,481
Water Storage and Treatment	CVC - RESWT-181	MOUNTAIN VIEW 2.5ML	Telemetry	Nymbodia River Water System	A	10,352	1985	PRE	785
Water Storage and Treatment	CVC - RESWT-182	MOUNTAIN VIEW 2.5ML	Reservoir Level Equipment	Nymbodia River Water System	A	8,281	1985	PRE	628
Water Storage and Treatment	CVC - RESWT-183	MOUNTAIN VIEW 2.5ML	Control Valve Actuator	Nymbodia River Water System	A	7,246	1985	PRE	550
Water Storage and Treatment	CVC - RESWT-184	MOUNTAIN VIEW 2.5ML	Site Works - Fence	Nymbodia River Water System	A	15,836	1985	PRE	1,201
Water Storage and Treatment	CVC - RESWT-203	RUSHFORTH ROAD 2ML	Reservoir Structure	Nymbodia River Water System	A	830,031	1940	PRE	62,947
Water Storage and Treatment	CVC - RESWT-204	RUSHFORTH ROAD 2ML	Pipe Work & Fittings	Nymbodia River Water System	A	71,659	1940	PRE	5,434
Water Storage and Treatment	CVC - RESWT-205	RUSHFORTH ROAD 2ML	Site Works -Fencing	Nymbodia River Water System	A	10,980	1940	PRE	833
Water Storage and Treatment	No ID -WE -2015 - 03	RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION	Ammonia Dosing - Storage Vessel	Nymbodia River Water System	A	72,280	1970	PRE	5,481

15. Future Capital Works Program

Future capital works including a description, construction year and MEERA costs are summarised in Table 15-1.

Table 15-1 Future Water Supply Capital Expenditure (contributing to Capital Charge)

Amenity	Asset Name	Comments	Service Area Name	Service Area	Construction Year	Gross (2015\$)	Gross (2016\$)	Capital Charge (2016\$)
Renewals / existing system improvement	Shannon Creek Carport		Nymbodia River Water System	A	2016	16,000	16,400	1,244
New System Asset	Shannon Creek Dam solar panels		Nymbodia River Water System	A	2017	40,000	41,000	3,109
New System Asset	Angourie pressure booster pump		Nymbodia River Water System	A	2017	56,000	57,400	4,353
Renewals	Rushforth Road Fluoridation renewal	Previous information provided by CVC indicated that the original asset was constructed in 1970 and is over 30 years old (see Existing Storage and Treatment tab - RUSHFORTH RD 32ML - CHLORINATION & FLUORIDATION)	Nymbodia River Water System	A	2017	150,000	153,750	11,660
New System Asset	Rushforth Road additional treatment barrier		Nymbodia River Water System	A	2017	3,000,000	3,075,000	233,198
New System Asset	Clear SCADA Upgrade	Total cost of asset estimated to be \$921,000. This was distributed across the service areas based on advice from CVC. 96% of the total cost was assigned to area A.	Nymbodia River Water System	A	2018	884,160	906,264	68,728
New System Asset	Rural Village treatment upgrade for multiple barrier	There is no specified order of construction. CVC have advised that GHD can assign the order which is favourable to reduce the developer charge. As such the construction years of these assets can be changed. However, one asset must be completed each year between 2021 and 2024.	Nymbodia River Water System	A	2019	1,500,000	1,537,500	116,599
New System Asset	Rural Village treatment upgrade for multiple barrier	There is no specified order of construction. CVC have advised that GHD can assign the order which is favourable to reduce the developer charge. As such the construction years of these assets can be changed. However, one asset must be completed each year between 2021 and 2024.	Nymbodia River Water System	A	2021	1,500,000	1,537,500	116,599
Renewals	Brooms Head Main renewal	Noted that all water mains in Brooms Head on the GIS are over 30 years old.	Nymbodia River Water System	A	2024	2,700,000	2,767,500	209,879

16. Calculation of Capital Charge

A summary of the calculated capital charge per ET is provided in Table 16-1.

Table 16-1 Capital per ET, Summary of Calculations

Development Area Name	Development Area	Future Works (\$/ET)	Existing Works (\$/ET)		Total Capital Cost per ET (\$/ET)
			Pre-1996	Post-1996	
Nymboida River Water Supply	A	367	2,304	2,185	4,856

17. Calculation of the Reduction Amount

The calculation of the reduction amount for DSP Area A (Nymboida River Water System) is summarised in Table 17-1. The calculation was based on the following inputs:

- Discount Rate of 5% p.a
- Annual Water Supply Charge = \$464
- Annual Water supply OMA Cost = \$413
- Future Operating Profits = \$51.

Table 17-1 Reduction Amount by NPV of Annual Bills Method – DSP Area A (Nymboida River Water System)

Year	Total ETs	New ETs per Year	PV (New ETs) (over 30 years @ 5%)	Cumulative New ETs	Net Operating Results for New ETs	PV (future operating profits) from new ETs over 30 years @ 5%	Reduction Amount (\$/ET)
2015/16	20,225						
2016/17	20,326	102	1,668	102	5,242	228,432	137
2017/18	20,428	102		102	5,223		
2018/19	20,530	102		204	10,472		
2019/20	20,633	103		306	15,747		
2020/21	20,736	103		410	21,049		
2021/22	20,840	104		513	26,377		
2022/23	20,944	104		617	31,731		
2023/24	21,048	105		722	37,113		
2024/25	21,154	105		827	42,521		
2025/26	21,259	106		933	47,957		
2026/27	21,366	106		1,039	53,419		
2027/28	21,473	107		1,146	58,909		
2028/29	21,580	107		1,254	64,427		
2029/30	21,688	108		1,362	69,971		
2030/31	21,796	108		1,470	75,544		
2031/32	21,905	109		1,579	81,145		

Year	Total ETs	New ETs per Year	PV (New ETs) (over 30 years @ 5%)	Cumulative New ETs	Net Operating Results for New ETs	PV (future operating profits) from new ETs over 30 years @ 5%	Reduction Amount (\$/ET)
2032/33	22,015	110		1,689	86,773		
2033/34	22,125	110		1,799	92,430		
2034/35	22,235	111		1,909	98,115		
2035/36	22,347	111		2,020	103,828		
2036/37	22,458	112		2,132	109,570		
2037/38	22,571	112		2,244	115,341		
2038/39	22,684	113		2,357	121,141		
2039/40	22,797	113		2,471	126,969		
2040/41	22,911	114		2,585	132,827		
2041/42	23,025	115		2,699	138,714		
2042/43	23,141	115		2,814	144,630		
2043/44	23,256	116		2,930	150,576		
2044/45	23,373	0		2,930	150,576		
2045/46	23,489	0		2,930	150,576		
2046/47	23,607	0		2,930	150,576		

18. Calculation of Developer Charge

The calculation of developer charges per ET is summarised in Table 18-1.

Table 18-1 Developer Charge per ET, Summary of Calculations

DSP Area Name	DSP Area	Capital Charge for each DSP Area (\$/ET)	Reduction Amount (\$/ET)	Calculated Developer Charge (\$/ET)
Nymboida River Water Supply	A	4,856	137	4,719

Appendices

Appendix A - Nymboida River Water System Schematic

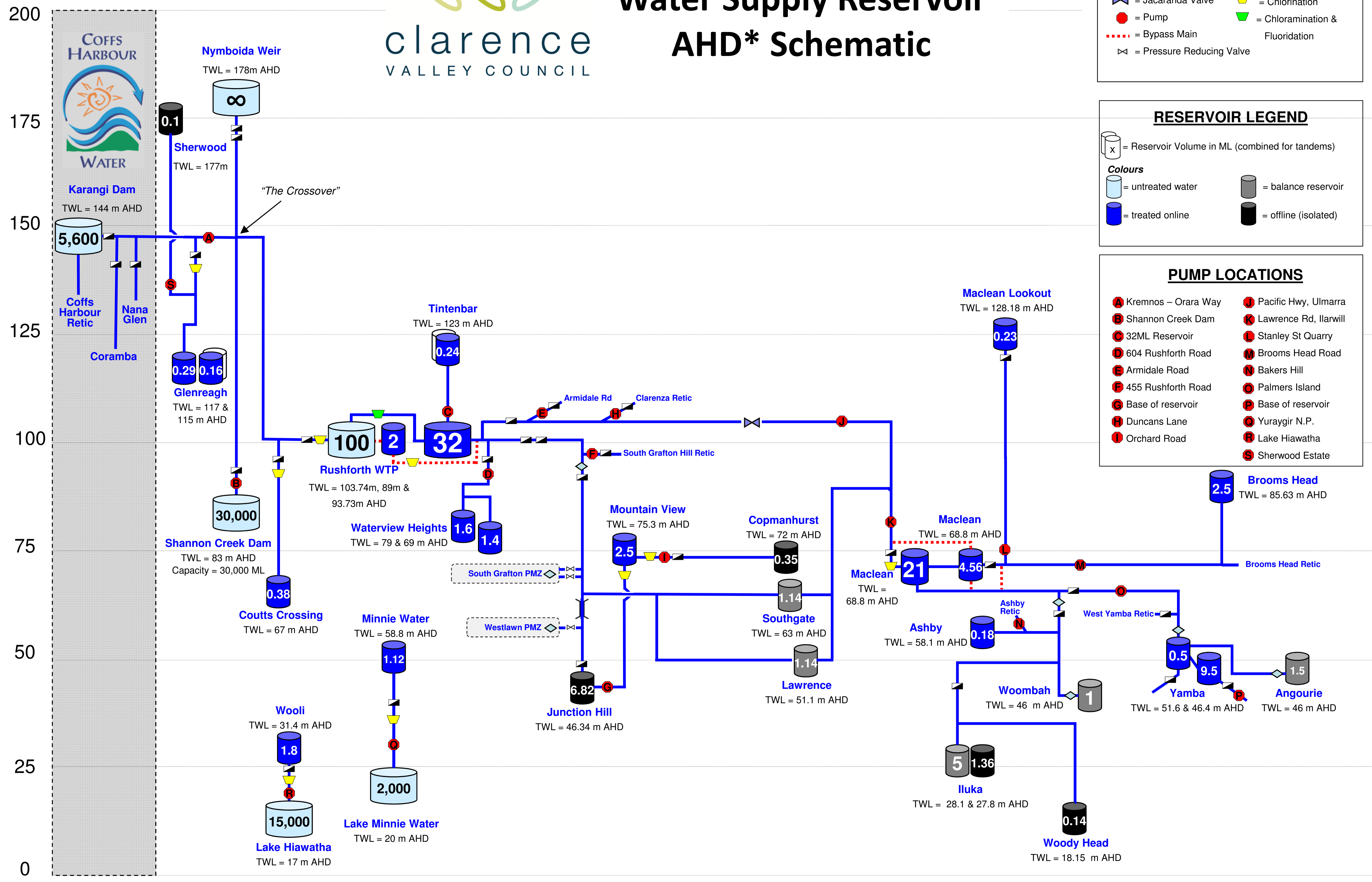
Contents:

Figure A-1 Water Supply Reservoir AHD Schematic



Water Supply Reservoir AHD* Schematic

Elevation (m AHD)



RETIC LEGEND

- ▬ = Bulk Flowmeter
- ⊗ = Jacaranda Valve
- = Pump
- ⋯ = Bypass Main
- ⊗ = Pressure Reducing Valve
- ◇ = Pressure Transducer
- ▭ = Chlorination
- ▭ = Chloramination & Fluoridation

RESERVOIR LEGEND

⊗ = Reservoir Volume in ML (combined for tandems)

Colours

- Light Blue = untreated water
- Dark Blue = treated online
- Grey = balance reservoir
- Black = offline (isolated)

PUMP LOCATIONS

● A Kremnos – Orara Way	● J Pacific Hwy, Ulmarra
● B Shannon Creek Dam	● K Lawrence Rd, Ilarwill
● C 32ML Reservoir	● L Stanley St Quarry
● D 604 Rushforth Road	● M Brooms Head Road
● E Armidale Road	● N Bakers Hill
● F 455 Rushforth Road	● O Palmers Island
● G Base of reservoir	● P Base of reservoir
● H Duncans Lane	● Q Yuraygir N.P.
● I Orchard Road	● R Lake Hiawatha
	● S Sherwood Estate

*Only reservoirs located according to level AHD. Watermains, pumps, valves, etc, placed according to schematic arrangement.

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