


Ballina Shire Council

Draft Development Servicing Plan for Water Supply Infrastructure

Adopted: XX Xxxxx XXXX

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- *using information reasonably available to the GHD employee(s) who prepared this Report; and*
- *based on assumptions and judgments made by GHD.*

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Executive Summary

This Development Servicing Plan (DSP) details drinking water developer charges relative to the development areas serviced by Ballina Shire Council (BSC).

This DSP has been prepared in accordance with the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (2002) issued by the Minister for Land and Water Conservation (now administered by the NSW Office of Water in the Department of Environment, Climate Change and Water (DECCW)), pursuant to section 306 (3) of the *Water Management Act 2000*.

The areas covered by this DSP are shown in Figure 1. The drinking water supply developer charges for the areas covered by this DSP have been calculated as detailed in Table 1. Background documents will be provided in electronic format upon request.

The total developer charge required in consequence of servicing a proposed development in the respective DSP areas will be assessed by multiplying the additional demand (ET) of the proposed development by the developer charge ($/ET) in the table below. Loadings and credits will be assessed in accordance with the NSW Local Government Water Industry Directorate, *Section 64 Determinations of Equivalent Tenements Guidelines* (2005).

Ballina Shire Council anticipates that it will:

- Review this DSP once, and no more than once, in each five year period from the implementation of this plan, and
- Review Developer Charges when and to the extent required by the Department of Primary Industries, Office of Water (NOW).

In the period between any review, developer charges will be indexed annually (1st day of July) on the basis of movements on the CPI for Sydney, in the preceding 12 months to December, excluding the impact of GST. Current contribution rates are listed in Council's Annual Fees and Charges Document.

It should also be noted that these charges are exclusive of any developer charge that may be levied by Rous Water as a contribution towards bulk water infrastructure servicing the region. Current details of these charges may be obtained either from Rous Water, or from Council.

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

Relevant background documents are listed in Section 8 which identify the characteristics of the drinking water assets covered by this DSP. These documents are available on request from Council.

Table 1 Summary of Drinking Water Supply Developer Charges

Development Area	Included Suburbs	Developer Charge ($/ET) (30% Agglomeration Rule Applied)
Development Area A	Wardell	$11,641
Development Area C	Wollongbar Urban Expansion Area (WUEA)	$4,294
Development Area B	North Ballina Ballina Island East Ballina West Ballina Skennars Head Lennox Head Fig Tree Hill	$2,375
Development Area E	Alstonville Wollongbar Industrial Wollongbar	
Development Area F	Cumbalum Precinct A Ballina Heights	$1,313
Development Area G	Cumbalum Precinct B	$804

Eltham Road
Fernleigh
Fernleigh Road
Friday Hut Road
Knockrow
Alstonvale
Byron Bay Road
Ross Lane
Byron Street
Cumbalum B
Lennox Head
Mcleans Ridges
Tintenbar Road
Teven
The Coast Road
WUEA
Bruxner Highway
Rifle Range Road
Cumbalum A, Ballina Heights
Wollongbar
Alstonville Industrial
Alstonville
Ellis Road
North Ballina
Angels Beach Drive
Pacific Highway
East Ballina
Teven Road
Rous
Ballina Island
Bentinck Street
Hill Street
River Street
Lynwood
West Ballina
Rous Road
Dalwood Road
South Ballina
Pimlico Road
Keith Hall
Pimlico
Perrys Lane
Pimlico Riverbank Road
Marom Crk Road
Coolgardie
Wardell Road
Wardell
Bath Street
Patchs Beach
Pacific Ocean
Bagotville
Cabbage Tree Island

LEGEND

Major Roads
Cadastral Boundaries
DSP Area A
DSP Area B
DSP Area C
DSP Area E
DSP Area F
DSP Area G
Oceans and Waterways

1:80,000
0 1 2 3 4
Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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ballina shire council

Ballina Shire Council
Development Servicing Plan: Drinking Water Supply

Job Number | 22-15470
Revision | 1
Date | 11 MAY 2012

DSP Areas Overview

Figure 1

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Data source: BSC - DSP Areas, Cadastral Boundaries, Waterways (2012). Navteq - Major Roads, Place Names (2011). Created by: CM

1. Introduction

Section 64 of the *Local Government Act 1993* enables a local government council or water utility 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) is a document, which details the water supply developer charges to be levied on development areas requiring water supply infrastructure.

This report covers drinking water infrastructure for a number of development areas within the Ballina Shire.

This DSP has been prepared in accordance with the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (2002) issued by the Minister for Land and Water Conservation (now administered by the Department of Primary Industries Office of Water (NOW)), pursuant to section 306 (3) of the *Water Management Act 2000*. The guidelines require a review of DSPs to be conducted after a period of 5 to 6 years.

These DSPs supersede any other requirements related to water supply infrastructure developer charges for the area covered by these DSPs. These DSPs takes precedence over any of Council's codes or policies where there are any inconsistencies relating to water supply developer charges.

2. Administration

2.1 Name of Development Servicing Plan

This Development Servicing Plan (DSP) is known as *Ballina Shire Council Development Servicing Plan –Water Supply Infrastructure*.

2.2 Purpose of the Plan

The aim and objectives of this DSP are to:

- Ensure that adequate drinking water infrastructure is provided for as part of new development, and in specified areas, recycled water infrastructure
- 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; and
- Enable Council to be both publicly and financially accountable in its assessment and administration of the Development Servicing Plan.

2.3 Land to Which This Plan Applies

This DSP applies to all land within the Ballina Shire Local Government Area that is within the existing and proposed service areas illustrated on Figure 1

2.4 Date of Commencement of Plan

Council adopted this DSP on <dd/mm>2013. The DSP came into effect on <dd/mm> 2013.

The charges in this Plan will apply to all Development Applications determined on or after the date the Plan came into effect.

The charges in this Plan will also apply to existing development approvals that have developer charges outstanding.

2.5 How Will the DSP be Applied?

In determining a Development Application, Council may impose a condition requiring payment of a monetary contribution in accordance with the provisions of this DSP.

The condition of development consent will outline the amount payable in monetary terms at the time the consent is issued. However, conditions of consent shall advise that the Developer Contributions will be at that rate which applies at the time of payment. Therefore the rate may increase from the time of issue of the development application through indexation or through the replacement or review of this DSP.

2.6 Reviewing/Updating of Calculated Developer Charges

Ballina Shire Council anticipates that the developer charges relating to this DSP will be reviewed once and no more than once, in each five year period from the implementation of this plan.

In the period between any review, developer charges will be adjusted on 1 July each year on the basis of movements in the CPI for Sydney, in the preceding 12 months to December, excluding the impact of GST.

Developer charges will be those charges determined by Council from time-to-time and will be published in Council's Annual Fees and Charges.

2.7 Works within a Development

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

2.8 Developments Requiring Forward Funding

Council will generally not support development applications, which require the provision of water infrastructure prior to the timeframes outlined within the Works schedule.

Council may however consider a Development Application that requires the provision of infrastructure prior to the planning phase subject to the Developer agreeing to forward fund the infrastructure at the Developer's own expense.

Council may in these instances enter into a written agreement to reimburse the Developer as Council receives developer charges from other developments reliant on that infrastructure in the area.

2.9 Payment for Developer Charges

All developer charges will be paid at the rate applicable at the time of application for a Certificate of Compliance pursuant to Division 5 of Part 2 of Chapter 6 of the *Water Management Act 2000* is issued.

Generally payment of developer charges must be finalised at the following stages:

- Time of application for a Certificate of Compliance pursuant to Division 5 of Part 2 of Chapter 6 of the *Water Management Act 2000*.
- Development consents involving subdivisions – Prior to the release of the Subdivision Certificate (linen plan);
- Development consents involving building work – Prior to the release of the Construction Certificate;
- Other development application: Prior to the commencement of the use or occupation of premises.

2.10 Deferred Payment

The Council will generally not accept deferred or periodic payment of contributions.

However, Council may consider an application where:

- Compliance with the provisions relating to when contributions are payable is unreasonable or unnecessary in the circumstances of the case;
- Deferred or periodic payment will not prejudice the timing or the manner of the provision of the services or facilities for which the contribution is required as outlined in the works program; § where the applicant intends to make a contribution by way of a planning agreement, works in kind or land dedication in lieu of a cash contribution and Council and the applicant have a legally binding agreement for the provision of the works or land dedication; and
- There are circumstances justifying the deferred or periodic payment of the contribution. The decision to accept a deferred or periodic payment is at the sole discretion of the Council.

In the event Council decides to accept the deferred or periodic payment of contributions, the applicant may be required to provide a bank guarantee by an Australian bank or recognised financial institution for the full amount of the contribution or outstanding balance on condition that:

- The bank's guarantee be by a bank for the amount of the total contribution, or the amount of the outstanding contribution, plus an amount equal to thirteen (13) months interest plus any charges associated with establishing or operating the bank security;
- The bank unconditionally pay the guaranteed sum to the Council if the Council so demands in writing not earlier than 12 months from the provision of the guarantee or completion of the works;
- The bank must pay the guaranteed sum without reference to the applicant or landowner or other person who provided the guarantee, and without regard to any dispute, controversy, issue or other matter relating to the development consent or the carrying out of development;
- The banks obligations are discharged when payment to the Council is made in accordance with this guarantee or when Council notifies the bank in writing that the guarantee is no longer required; and
- Where a bank guarantee has been deposited with Council, the guarantee shall not be cancelled until such time as the original contribution and accrued interest are paid in accordance to the 90 day bank bill rate.

2.11 Refunds

Ballina Shire Council does not anticipate that developer charges will be refunded. In cases of extenuating circumstances, consideration will be given to a refund where developer charges have been paid in respect of a development consent that has lapsed and the funds have not been allocated/expended on the project identified in the DSP's work schedule.

Refunds will be a matter for Council to decide and it should be noted that any expended funds in the form of preliminary reports, investigations, land acquisitions etc. relating to the project could result in only part of the developer charges being refunded.

2.12 Works in Kind

"Works in kind" involves the construction or provision of infrastructure that has been identified in a works schedule contained in the DSP in lieu of full or part payment of a contribution relating to that section of the plan.

The decision to accept "works in kind" contributions will be at the discretion of Council. Factors that Council will take into consideration include:

- The extent to which the "works in kind" satisfies an item identified on the works program;
- Whether the payment of the contribution in accordance with the provisions of the DSP is unreasonable or unnecessary in the circumstances of the case;
- Whether the "works in kind" contribution will prejudice the timing or manner of the provision of the services for which the contribution is required; and
- The value of the "works in kind".

2.13 Developments outside the Development Servicing Areas

Development areas outside the DSP Area (refer to relevant drawing/s in Section 11) that are to be developed during the term of this policy and have no detailed DSP (and require water supply services), will be subjected to a separate DSP. The Developer shall be responsible for the preparation cost of this DSP.

2.14 Consultation and Dispute Resolution

A Developer who is dissatisfied with how a water supply utility has calculated a developer charge has a right of appeal pursuant to the DLWC *Guidelines for Calculating Developer Charges of Water Supply, Sewerage, and Stormwater* (2002).

1. A Developer who is dissatisfied with the way in which a water utility has calculated a developer charge may complain to the utility.
2. The General Manager of the utility is to review the complaint or cause it to be reviewed.
3. The Developer, if still dissatisfied, may request that an arbitrator review the matter by way of arbitration. The arbitrator is to be appointed by agreement between the Developer and the water utility.
4. The decision of the arbitrator is to be binding on both the Developer and the utility.
5. Costs of the arbitration are to be borne equally by the utility and the customer.
6. The Commercial Arbitration Act 1984 applies to any such arbitration.

It should be noted that not all aspects of the developer charge calculation are arbitral. That is, those matters of detail which are prescribed in DLWC's Guidelines are not subject to arbitration. For example, discount rates and the forecast horizon for expected net revenues and costs are parameters that are prescribed by DLWC.

3. Demographic and Land Use Planning Information

3.1 Growth Projections

Growth projections for population and number of ETs are shown in Table 2 below. These projections are for a 20-year planning horizon from the present year to 2030, which is Council's current planning horizon.

Table 2 Projected Equivalent Tenement Growth[1]

Time Period	Projected Shire ET Growth	Total Serviced ETs	Total Shire Population
2010	-	20,633	42,546
2010 – 2015	3,739	24,372	45,356
2015 – 2020	2,721	27,093	48,116
2020 – 2025	2,426	29,519	50,786
2025 – 2030	2,171	31,690	53,276

Projected ET growth for the areas covered by individual DSPs are provided in Appendix A as part of the calculations of the capital charge.

3.2 Land Use Information

This DSP should be read in conjunction with Ballina Shire Council Urban Land Release Strategy (2000), the Ballina Shire Council Local Environmental Plan (1987) (BLEP) and the Draft Ballina Local Environmental Plan (2010).

3.3 Projected Equivalent Tenements

The basis of future development throughout the Ballina Shire has been adopted from information provided by the BSC Strategic and Community Services Group. This included the Ballina Shire Council Local Growth Management Strategy - Housing demand and supply analysis working documents. The information in these documents is derived from information supplied by the Australian Bureau of Statistics, incorporating the latest available population information.

The projected future development areas and dwelling increases across the Shire, based on:

- Areas assumed for future land release;

[1] Source: Ballina Shire Council Local Growth Management Strategy – Housing demand and supply analysis working documents.

- Areas identified as part of the BSC Growth Management Strategy; and
- Potential for Infill Development.

Actual population growth will be subject to the rezoning process and Council Development Approval.

3.3.1 Future Development Areas

A number of key development areas have been identified for future land supply in Ballina Shire, including the following:

- West Ballina Structure Plan which identifies approximately 40 ha of land, incorporating a range of industrial, residential and open space land uses.
- Zoned and Candidate Investigation Release Areas in West Ballina, including potential redevelopment of the Boat Harbour precinct;
- Zoned and Candidate Investigation Release Areas in North Ballina, including potential expansion of the Southern Cross Industrial Estate and further industrial expansion;
- Zoned and Candidate Investigation Release Areas in Cumbalum Ridge;
- Zoned Release Area in East Ballina, including Rainforest Ridge;
- Zoned and Candidate Investigation Release Areas in Lennox Head;
- Candidate Investigation Release Area in Skennars Head;
- Wollongbar Urban Expansion Area; and
- Zoned and Candidate Investigation Release Areas in Wardell.

3.3.2 Development Summary

Significant development has been identified across Lennox Head, with future projections representing a development yield of approximately 3000 ET. In addition, future development and infill growth has also been identified throughout the Ballina, Wardell and Wollongbar wastewater catchment service areas.

The location of the proposed development areas are shown on Figure 1.

4. Drinking Water Infrastructure

This plan 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 assets serving a new development area.

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

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

The existing and proposed trunk infrastructure serving the area covered by this DSP is shown in a spatial format in Section 11.

4.1 Estimates of Capital Cost

The estimated capital cost of works serving the area covered by this DSP are provided in Appendix C.

The capital costs for trunk mains 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 (2003 with 2010 update)* (the Manual). More information on these rates, including excluded items can be found in the Manual.

The pump station, treatment plant and reservoir costs were estimated using the GHD Cost Database as it was felt that these costs were more appropriate to valuing new works than those provided in the Manual. These rates include a 30% contingency.

All assets that will be greater than 30 years of age when the DSP comes into effect have been excluded from the DSP calculations. This is in accordance with IPART recommendations, as BSC were unable to provide documentation justifying that population growth was accounted for in the development of these assets.

4.2 Timing of Works

The estimated timing for works serving the area covered by this DSP are provided in Appendix D. Further information regarding how the timings were estimated for individual work items is provided in report Reference 3. Dates identified are approximate only and are contingent on development proceeding.

5. Standards of Service

System design and operation are based on providing the following standards of service.

5.1 Desired Standards of Service

Pressures:

Where significant capital investment is required to satisfy marginal pressure requirements for a small number of connections an absolute minimum of 12 m head for residential and non-residential customers will apply.

- For residential customers, a minimum residual pressure of 20 m (196 kPa) at the property boundary at Peak Instantaneous Demand (PID).
- For non-residential customers, a minimum residual pressure of 25m (245 kPa) at the property boundary under Peak Instantaneous Demand (PID).
- Minimum Residual Pressure (Recycled Water) 15 m head, while storages are 1/3 full.
- A maximum residual pressure of 80 m (785 kPa) head at the property boundary during MID (Reference 3).
- Residual pressure of 150 kPa at the node (hydrant) during fire flow conditions, service reservoirs 1/3 full or the level that meets dot point two above, whichever is higher (Reference 3). (Pumped systems are assumed off due to the risk of failure of electrical supply, demand management areas are assumed to have the valve set point at the lowest level capable of meeting the criteria).
- Positive head elsewhere in the network during fire flow conditions.
- For Ballina, minimum pressures are to be maintained for the possible situations where a trunk main break occurs, or pipe maintenance is required.

Supply Strategy:

- Service reservoir storage equal to one Peak Day Demand (PDD)
- Supply into service reservoirs (Trunk mains) capable of delivering PDD over 24 hours (for gravity mains) and PDD over 22 hours (for rising mains)
- Minimum Storage in a reservoir = 4 hours fire fighting requirements + 4/24 PDD or 1/3 full, whichever is greater
- Drinking water top up for recycled water available for Urban Dual Reticulation connections in the case of recycled water treatment or transport failure.

Water Quality:

- To comply with Council's Drinking Water Quality Policy, the Public Health Act (2010), the Australian Drinking Water Guidelines and the NSW Best Practice Management Guidelines.

Interruption of Service:

- Nil unplanned interruptions greater than 6 hours; and

- Nil programmed interruptions greater than 12 hours.

Water restrictions:

- Water restrictions applying for not greater than 10% of the time on average

6. Design Parameters

Investigation and design of drinking water supply system components is generally based on the Water Supply Investigation Manual (1986). This Manual was prepared by the former NSW Public Works Department. In order to determine the infrastructure requirements over the planning horizon, the trunk water supply network was modelled by Council using H2OMap Water software by Innovyz, to determine the performance of the existing and proposed systems under projected hydraulic loads.

The Ballina Shire Council – Report for Water Supply Infrastructure Planning Version 1– (BSC, 2011) relates to the system components in this DSP. The planning and design parameters adopted in this report are discussed in the following section.

6.1 Planning and Design Parameters

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

Rising and Gravitation Mains: Are sized to deliver Peak Day Demand (PDD) over 22 hours and 24 hours respectively, with the diameter of a rising main sized to give the least present worth of capital and pumping costs. Gravity mains are sized by consideration of available head and grade.

Reticulation: Reticulation is to give minimum pressures, as outlined above, with the active storage of the service reservoir(s) 2/3 depleted during periods of maximum demand.

Table 3 provides the Hazen-Williams 'C' friction factor values that were adopted.

Table 3 Adopted friction factors

Nominal Diameter	Hazen-Williams 'C' Value
150 mm or less	100
200 mm – 250 mm inclusive	110
300 mm or greater	120

7. Calculated Developer Charges

7.1 Background

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:

Developer Charge = Capital Charge – Reduction Amount

7.2 Service Areas

Developer charges were initially calculated for a number of different service areas within the Ballina Shire Local Government Area.

Service areas were determined by Council.

This resulted in the adoption of the service areas detailed in Table 4 below.

Table 4 Service Areas

Service Areas	Localities Included
Area A	Wardell
Area B	Lennox Head Skennars Head East Ballina Fig Tree Hill North Ballina West Ballina Ballina Island Pacific Pines Estate Henderson Land Central and South
Area C	Release area known as the Wollongbar Urban Expansion Area (WUEA)
Area E	Alstonville and Wollongbar
Area F	Existing and future development in Cumbalum Precinct A Existing and future development in Ballina Heights
Area G	Future development in Cumbalum Precinct B

7.3 Capital Charge

The capital charge of an asset is calculated using the following steps, as described in the Guidelines (DLWC, 2000):

- *Estimate the period to full take-up of asset capacity, commencing in or after 1996. If information is readily available, actual take-up rates to date should be used. If not, the water utility could use an average based on the take-up rate for similar release or development areas, or other (better) estimates that are available. An estimate of the take-up of existing unused capacity should also be made.*
- *Calculate the capital charge per ET necessary to equate the present value of the stream of charges which would be derived from annual (per ET) charges and the capital cost of the asset.*

There are two basic approaches to calculating the capital charge per ET, the return on investment (ROI) approach and the spreadsheet approach. The latter is more appropriate for development areas where infrastructure will be developed in stages, and therefore was adopted for this DSP.

The capital charge calculations are contained in Appendix C.

7.4 Reduction Amount

Council has adopted the Direct NPV method for calculation of the reduction amount (Refer to Section 4.3 of the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater (2002)*, DLWC).

The Direct NPV method requires the total number of assessments (residential and non-residential) at year end for each year projected to 2030 for each DSP area. Projected yearly expenditure for renewal works and improved level of service to 2030 are also required in the model. This data is extracted from the BSC capital works program and asset register based on commissioning date and asset life span.

The Direct NPV method was chosen over the NPV of Annual Charges method employed in the previous DSP due to the limited availability of FINMOD software required to carry out the calculation, and lack of a 30-year Council financial plan.

The calculated reduction amount was $90 per ET. Details of the reduction amount calculation are located in Appendix E.

7.5 Methodology for Determining Developer Charges to be Paid

Calculation of the developer charge payable on all developments is based on the following formula:

$$\text{Development Charge Payable} = \text{Developer Charge}^{2}\ (\$/\text{ET}) \times \text{ETs}$$

When a development is assessed by Council, the only variable in this calculation is therefore the number of ETs in the proposed development. The following sections define how the number of ETs are defined for specific development types.

[2] Developer charge as defined by this document.

It should be noted that when a development is assessed, and the assessed ETs for the same falls below or is equal to the current entitlements, no developer charges will be levied, nor monies refunded on unused entitlements.

A developer charge will only be levied against a development where the ET evaluation is above the current entitlement.

7.5.1 Existing Unconnected Lots

In the case of an existing lot to be connected to Council's system and which has not previously paid developer charges, a contribution equivalent to the relevant developer charges will be applied.

7.5.2 Residential Development

Developer contributions for residential developments are based on industry guidelines that define the number of ETs for common development types. At the time of publishing this policy, the Water Directorate (May 2009 Addendum), *Section 64 Determinations of Equivalent Tenements Guidelines* are the current industry guidelines.

For advice on the current industry guidelines being used to calculate residential developer charges, please contact Ballina Shire Council's Water and Wastewater Section.

7.5.3 Non-Residential Developments including Commercial/Industrial Developments

Developer contributions for non-residential developments are based on industry guidelines that define the number of ETs for common development types, such as commercial and industrial uses.

At the time of publishing this policy, the Water Directorate *Section 64 Determinations of Equivalent Tenements Guidelines* are the current industry guidelines.

For advice on the current industry guidelines being used to calculate non-residential developer charges, please contact Ballina Shire Council's Water and Wastewater Section.

If the industry guidelines do not provide an appropriate match to the development being assessed, then the developer contribution will be determined via the use of one of the following methods:

1. Based on historical water consumption figures of similar developments (see Section 7.5.4); or
2. The number of water / wastewater fixture units (FU's – see Section 7.5.5); or
3. Information supplied by the Developer for water consumption (see Section 7.5.6).

7.5.4 Historical Water Consumption Method

This is applicable where historical water consumption information is available.

The ET loading will be determined by assessing the historical water consumption of similar developments (i.e.: 1 ET = 230 kL/annum of water consumption (Water Directorate, May 2009 Addendum)).

7.5.5 Fixture Unit (FU) Method

The fixture unit method will be used in cases where the above-mentioned methods are not appropriate.

The fixture units are calculated using the table from Section 6.2 of Part 2.2 of the National Plumbing and Drainage Code – AS3500. This number is then converted to an equivalent tenement using the probable simultaneous flow rate for a standard house.

7.5.6 Information Supplied by the Developer

This will normally be applicable for developments that cannot be determined by historical water consumption (such as a heavy industrial development) or where the developer proposes to utilise water saving devices that will reduce the consumption of water compared with similar developments.

For the calculation of ET's based on this method, the developer will need to supply to Council a submission outlining the proposed flow rates (instantaneous, daily and average annual flow rates) together with relevant supporting documentation**.**

7.5.7 Developer Charges

The developer charges determined prior to any agglomeration or cross-subsidy are shown in Table 5. The charges calculated were updated to 2011/12 rates by applying the CPI rate to December 2010 for Sydney (as per updating method in the Guidelines).

Table 5 Capital Charge per Development Area prior to Reduction & Agglomeration

Development Area	Total Capital Cost per ET ($)	Total ET Growth	Proportion of Growth (%)
A	11,731	109	1.0
B	4,088	5319	48.1
C	4,384	722	6.5
E	2,605	186	1.7
F	2,703	1782	16.1
G	3,131	2939	26.6

7.6 Cross-Subsidy

The Guidelines (DLWC, 2002) permit Local Government Authorities to cross-subsidise the calculated developer charge for an area, provided the extent of cross-subsidisation is fully disclosed. It is also noted that a developer charge cannot be cross-subsidised from one area to another. Instead, a developer charge for a particular area can be cross-subsidised via a corresponding change in the annual charge being paid through water rates.

Note that no cross-subsidy has been included in this report. Cross-subsidy calculations will be performed following discussions with Ballina Shire Council.

7.7 Agglomeration of Service Areas

Once the capital charges have been calculated for each service area, the Guidelines (DLWC, 2000) permit the agglomeration of charges that are within 30% of each other. Agglomeration is intended to minimise the number of different developer charges within the local government area. The agglomeration methodology outlined in the Guidelines (DLWC, 2000) was used to determine the adopted developer charge. The agglomerated charges are shown in Table 6. The charges calculated were updated to 2011/12 rates by applying the CPI rate to December 2010 for Sydney (as per updating method in the Guidelines).

For Wardell (DSP Area A), agglomeration is not permitted since it is outside 30% of the next highest calculated developer charge and therefore cannot be agglomerated with other DSP areas.

Table 6 Adopted Developer Charges after Agglomeration (2011/12 rates)

Development Area	Total Capital Cost per ET ($/ET)	Total ET Growth	Proportion of Growth (%)	Weighted Capital	Capital Charge for each DSP area ($)	Reduction Amount ($/ET)	Adopted Developer Charge ($/ET)
A	11,731	109	0.98	115	11,731	90	11,641
C	4,384	722	6.53	286	4,384	90	4,194
B	2,814	5319	48.11	1,353	2,464	90	2,375
E	2,605	186	1.68	44			
F	1,403	1782	16.11	226	1,403	90	1,313
G	894	2939	26.58	238	894	90	804

8. Reference Documents

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

1. Department of Land and Water Conservation (2002), *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater.*
2. New South Wales Government Office of Water, Ministry of Energy and Utilities (2003 with amendments in 2010), *NSW Reference Rates Manual – Valuation of Water Supply, Sewerage and Stormwater Assets*.
3. BSC (October 2011), *Ballina Shire Council – Water Supply Infrastructure Planning Report.*
4. Water Directorate (May 2009 Addendum), *Section 64 Determinations of Equivalent Tenements Guidelines.*
5. IPART (April 2007), *Review of DEUS Developer Charges Guidelines for Water Supply, Sewerage and Stormwater*
6. NSW Office of Water (August 2012), *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater, 2012 - Consultation Draft*

These documents contain more detailed reference information relevant to the derivation of the developer charges. These documents can be reviewed in Council's offices by appointment. To review the documents, please contact Council on (02) 6686 4444.

9. Other DSP's and Related Plans

Other DSP's and related plans include:

- GHD (2011), *Ballina Shire Council – Wastewater Infrastructure – Development Servicing Plan*
- Rous Water (2009), *Rous Water Development Servicing Plans – Regional Water Supply.*

Ballina Shire Council also levies developer contributions for various public amenities under Section 94 of the *Environmental Planning and Assessment Act, 1979*.

10. Glossary

Annual Demand	Total annual WATER loading
BSC	Ballina Shire Council
Capital Cost	The Present Value (MEERA basis) of assets used to service the development.
Capital Charge	Capital cost of assets per ET x Return on Investment (ROI) Factor.
CPI	Consumer Price Index
Developer Charge (DC)	A charge levied on Developers to recover part of the capital cost incurred in providing infrastructure to new development.
Discount Rate	The rate used to calculate the present value of money arising in the future.
DSP	Development Servicing Plan
DCP	Development Control Plan
DLWC	Department of Land and Water Conservation – now known as DIPNR
DMA	Demand Management Area. A reticulation area where flows are monitored with a flow meter
DIPNR	Department of Infrastructure, Planning and Natural Resources – formerly known as DLWC
EP	Equivalent Person
ET	Equivalent Tenement
IPART	Independent Pricing and Regulatory Tribunal
kL	1,000 litres
kL/d	Kilolitres per day
kL/a	Kilolitres per annum
LEP	Local Environmental Plan
MCV	Motorised Control Valve
MEERA	Modern Equivalent Engineering Replacement Asset
MID	Minimum Instantaneous Demand (Night Time Flow)
ML/d	Megalitres per day
NHMRC	National Health and Medical Research Council
NPV	Net Present Value
OMA	Operation, maintenance and administration (costs)
PDD	Peak Day Demand. Highest water consumption on one day in a year
PID	Peak Instantaneous Demand

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
PRV	Pressure Relief Valve
PMZ	Pressure Management Zone. A reticulation area where the pressures are managed via a PRV
PV	Present value. The value now of money, or ETs, in the future.
Real Terms	The value of a variable adjusted for inflation by a CPI adjustment
Reduction Amount	The amount by which the capital charge is reduced to arrive at the developer charge. This amount reflects the present value of the capital contribution that will be paid by the occupier of a development as part of future annual charges
ROI	Return on investment. Represents the income that is, or could be, generated by investing money
PS	Pumping Station
WR	Water Service Reservoir
RWP	Recycled Water Treatment Plant
RWR	Recycled Water Reservoir
RWT	Recycled Water Tank
Service Area	An area served by a separate water supply system, an area served by a separate sewage treatment works, a separate small town or village, or a new development of over 500 lots.
SR	Service Reservoir
TRB	Typical residential bill
WTP	Water Treatment Plant

11. DSP Areas

Table 7 provides an index to the figures defining the DSP areas provided in this section. Each figure (excluding Figure 1) indicates:

- The boundaries to the DSP area[3];
- The extent of existing trunk infrastructure;
- The location of recycled water serviced areas

Table 7 Summary of DSP Area Maps for Drinking Water Infrastructure

Figure Number	Locality	DSP Area
2	Wardell	DSP Area A
3	Skennars Head, Lennox Head and Fig Tree Hill	DSP Area B (North)
4	Skennars Head, East Ballina, Ballina Island	DSP Area B (South)
5	North Ballina, Ballina Island, West Ballina	DSP Area B (West)
6	Wollongbar Urban Expansion Area	DSP Area C
7	Wollongbar and Alstonville	DSP Area E
8	Cumbalum A, Ballina Heights	DSP Area F
9	Cumbalum B	DSP Area G

[3] The DSP boundaries indicated on all figures represent the extent of the proposed charge boundary. They do not necessarily reflect Council's approval of the extent of the serviceable area. Development within the DSP Areas is subject to Rezoning and Development Approval. For further details regarding development within the DSP Areas please contact Ballina Shire Council

Marom Creek WTP
Whites Lane Res. (1953)
Ellis Road
Bruxner Highway
Grey's Res. (INACTIVE) (1975)
Rous
Uralba
Uralba Road
Lynwood
Rous Road
Rous Mill
Dalwood Road
Meerschaum Tank (1989)
Meerschaum Vale
Wardell Res. (1990)
Pimlico
Pimlico Road
Perrys Lane
Pimlico Riverbank Road
Empire Vale
Coolgardie
Pacific Highway
Wardell Road
WPD90
Bath Street
Carlisle Street
WPD92
WPD91
Patchs Beach
East Wardell
Bagotville
Cabbage Tree Island

LEGEND

DSP Area A
Cadastral Boundaries
Major Roads

Trunk Infrastructure
392 to 621
285 to 392
253 to 285
210 to 253
203 to 210
186 to 203
97 to 186

Developer Constructed Infrastructure
2,010
2,015
2,020
2,025
2,030

Future Infrastructure Funded by DSP
2,010
2,011
2012 - 2015
2015 - 2020
2020 - 2025

Reticulation
Existing
Future

Existing Pumps
Future DSP Pumps

1:50,000
0 0.5 1 1.5 2 2.5
Kilometers

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

N

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Ballina Shire Council
Development Servicing Plan: Drinking Water Supply

Job Number 22-15470
Revision 1
Date 04 MAY 2012

DSP Area A - Wardell

Figure 2

N:\AU\Toowoomba\Projects\22\15470\GIS\Maps\2215470_02.wor

317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: BSC - DSP Areas, Cadastral Boundaries, Trunk Infrastructure, Developer Constructed Infrastructre, Future Infrastructure, Reticulation, Pumps, Reservoirs (2012). Navteq - Major Roads, Place Names (2011). Created by: CM

Fig Tree Hill

Byron Bay Road

Ross Lane

Byron Street

Ballina Street

The Coast Road

Rous Water Area of Responsibility

WPD51

WPD60

WPD61

WPD50

Lennox Head Res. (1968)

WPD62

WR3 (2020)

WPD63

Basalt Court Res. (1983)

WBPU1 (2012)

WPD70

WSPC1 (2020)

WPD71

LEGEND

DSP Area B

Cadastral Boundaries

Rous Water Area of Responsibility

Trunk Infrastructure

392 to 621
285 to 392
253 to 285
210 to 253
203 to 210
186 to 203
97 to 186

Developer Constructed Infrastructure

2,010
2,015
2,020
2,025
2,030

Future Infrastructure Funded by DSP

2,010
2,011
2012 - 2015
2015 - 2020
2020 - 2025

Reticulation

Existing
Future

Pumps

Existing Pumps
Future DSP Pumps

1:20,000

0 250 500 750 1000

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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Job Number 22-15470
Revision 1
Date 08 MAY 2012

DSP Area B - North

Figure 3

N:\AU\Toowoomba\Projects\22\15470\GIS\Maps\2215470_01A.wor

317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: BSC - DSP Areas, Cadastral Boundaries, Trunk Infrastructure, Developer Constructed Infrastructre, Future Infrastructure, Reticulation, Pumps, Reservoirs (2012). Navteq - Major Roads, Place Names (2011). Created by: CM

WSPC1 (2020)

WPD7.1

Skennars Head

WPD26

WPD21

WPD20

WPD28

WPD25

WPD24

WPD23

Pacific Highway

Angels Beach Drive

Bangalow Road

Kerr Street

Cherry Street

WPD22

Ballina

Bentinck Street

WPD12

WPD13

River Street

Kingsford Smith Drive

WPD14

WPD11

East Ballina

Links Avenue

Manly Street

WBP12

WBP10

WBPC1 (2012)

Pine Avenue Res. (1978)

East Ballina Res. (1968)

WBP13

WPD10

WBP11

LEGEND

DSP Area B

Cadastral Boundaries

Trunk Infrastructure

392 to 621
285 to 392
253 to 285
210 to 253
203 to 210
186 to 203
97 to 186

Developer Constructed Infrastructure

2,010
2,015
2,020
2,025
2,030

Future Infrastructure Funded by DSP

2,010
2,011
2012 - 2015
2015 - 2020
2020 - 2025

Reticulation

Existing
Future

Pumps

Existing Pumps
Future DSP Pumps

1:20,000

0 250 500 750 1000

Meters

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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Revision 1
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DSP Area B - South

Figure 4

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317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: BSC - DSP Areas, Cadastral Boundaries, Trunk Infrastructure, Developer Constructed Infrastructre, Future Infrastructure, Reticulation, Pumps, Reservoirs (2012). Navteq - Major Roads, Place Names (2011). Created by: CM

Trunk Infrastructure
392 to 621
285 to 392
253 to 285
210 to 253
203 to 210
186 to 203
97 to 186

Future Infrastructure Funded by DSP
2,010
2,011
2012 - 2015
2015 - 2020
2020 - 2025

Pumps
Existing Pumps
Future DSP Pumps

Developer Constructed Infrastructure
2,010
2,015
2,020
2,025
2,030

Reticulation
Existing
Future

Reservoirs
Existing
Future

Pacific Highway
Cumbalum
Bruxner Highway
West Ballina
Ballina
Angels Beach Drive
Bangalow Road
Kerr Street
Bentinck Street
River Street
Links Avenue
Pine Avenue Res. (1978)
East Ballina
East Ballina Res. (1968)
WPD71
WPD26
WPD20
WPD21
WPD28
WPD25
WPD24
WPD27
WPD23
WPD30
WPD22
WPD12
WPD14
WPD13
WPD11
WPD10
WBP12
WBPC1 (2012)
WBP10
WBP13
WBP11

1:30,000 (at A3)
0 0.5 1 1.5
Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

N

LEGEND
DSP Area B
Cadastral Boundaries

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Revision 1
Date 04 MAY 2012

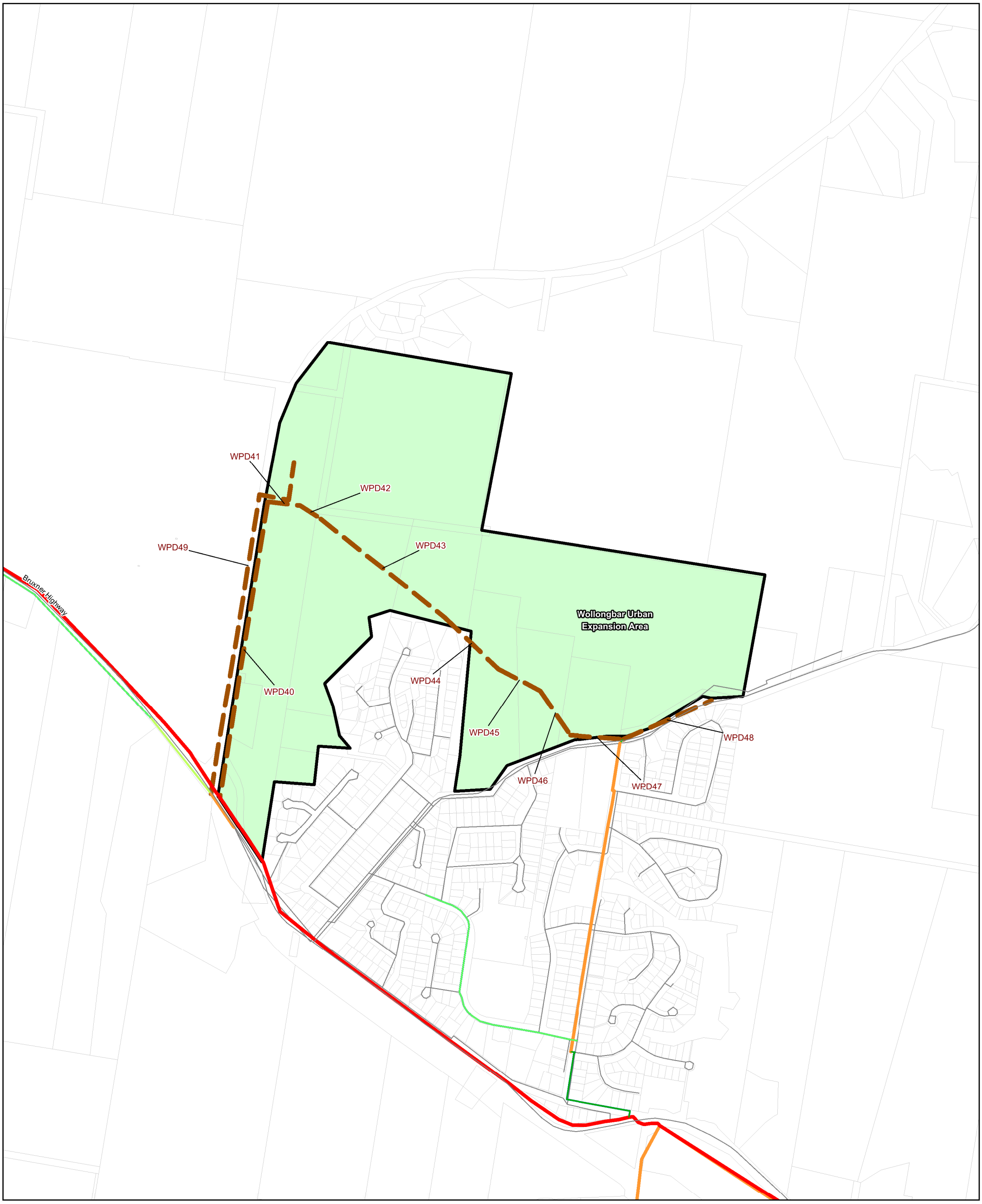
DSP Area B - West

Figure 5

N:\AU\Toowoomba\Projects\22\15470\GIS\Maps\2215470_01C.wor

Data source: BSC - DSP Areas, Cadastral Boundaries, Trunk Infrastructure, Developer Constructed Infrastructre, Future Infrastructure, Reticulation, Pumps, Reservoirs (2012). Navteq - Major Roads, Place Names (2011). Created by: CM

317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au



LEGEND

DSP Area

Cadastral Boundaries

Major Roads

Trunk Infrastructure
- 392 to 621
- 285 to 392
- 253 to 285
- 210 to 253
- 203 to 210
- 186 to 203
- 97 to 186

Developer Constructed Infrastructure
- 2,010
- 2,015
- 2,020
- 2,025
- 2,030

Future Infrastructure Funded by DSP
- 2,010
- 2,011
- 2012 - 2015
- 2015 - 2020
- 2020 - 2025

Reticulation
- Existing
- Future

Pumps
- Existing Pumps
- Future DSP Pumps

1:10,000

0 100 200 300 400

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

N

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Development Servicing Plan - Drinking Water Supply

DSP Area C
Wollongbar Urban Expansion Area

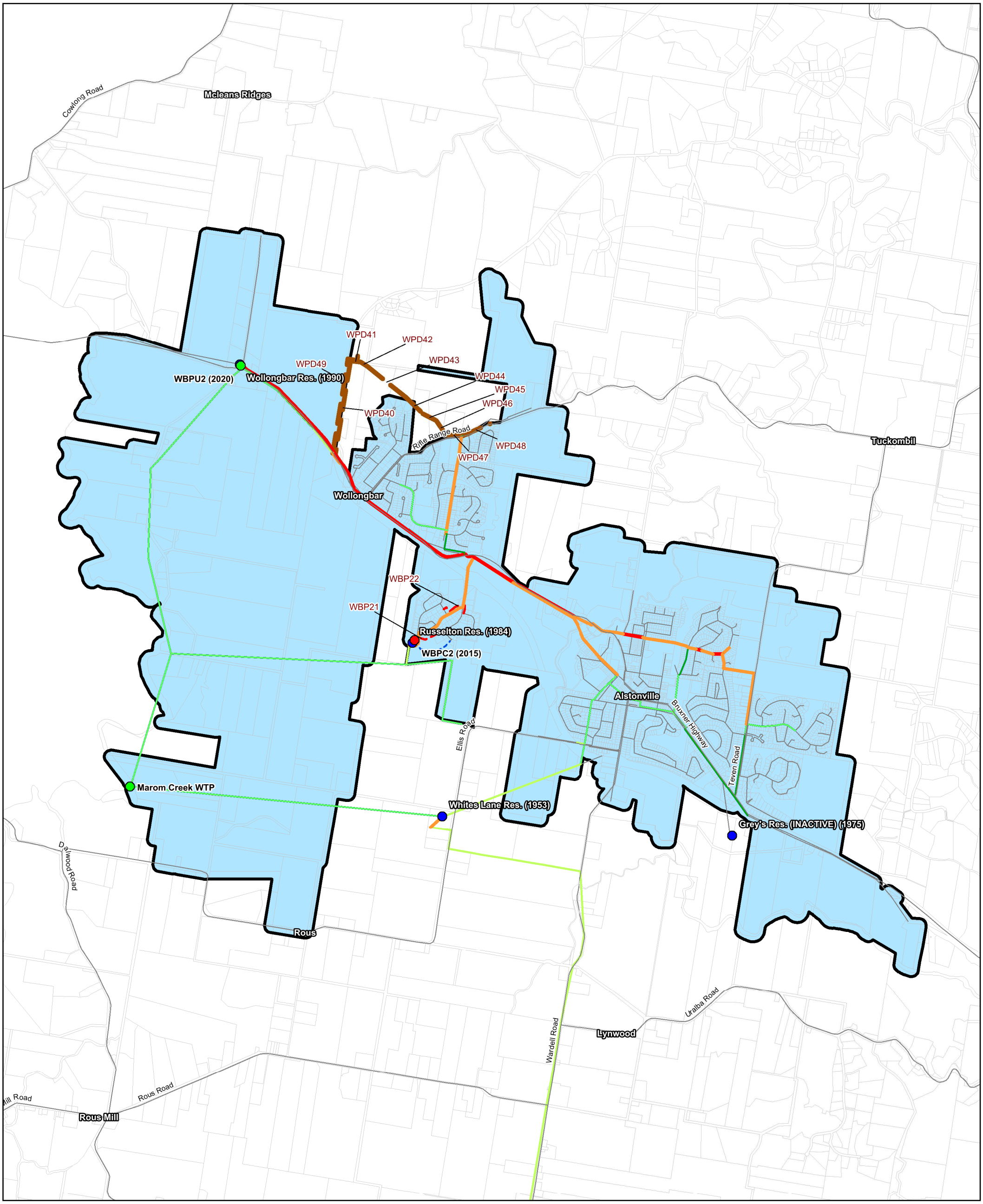
Job Number | 22-15470
Revision | 1
Date | 04 MAY 2012

Figure 6

N:\AU\Toowoomba\Projects\22\15470\GIS\Maps\2215470_03.wor

317 River Street Ballina NSW 2478 Australia **T** 61 2 6620 6500 **F** 61 2 6620 6501 **E** bnkmail@ghd.com **W** www.ghd.com.au

Data source: BSC - DSP Areas, Cadastral Boundaries, Trunk Infrastructure, Developer Constructed Infrastructre, Future Infrastructure, Reticulation, Pumps, Reservoirs (2012). Navteq - Major Roads, Place Names (2011). Created by: CM



LEGEND

DSP Area
Cadastral Boundaries
Major Roads

Trunk Infrastructure: 392 to 621; 285 to 392; 253 to 285; 210 to 253; 203 to 210; 186 to 203; 97 to 186

Developer Constructed Infrastructure: 2,010; 2,015; 2,020; 2,025; 2,030

Future Infrastructure Funded by DSP: 2,010; 2,011; 2012 - 2015; 2015 - 2020; 2020 - 2025

Reticulation: Existing; Future

Pumps: Existing Pumps; Future DSP Pumps

1:50,000
0 0.5 1 1.5 2 2.5
Kilometers

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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Development Servicing Plan: Drinking Water Supply

Job Number 22-15470
Revision 1
Date 04 MAY 2012

DSP Area E
Alstonville Industrial, Alstonville, Wollongbar

Figure 7

N:\AU\Toowoomba\Projects\22\15470\GIS\Maps\2215470_04.wor

317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: BSC - DSP Areas, Cadastral Boundaries, Trunk Infrastructure, Developer Constructed Infrastructre, Future Infrastructure, Reticulation, Pumps, Reservoirs (2012). Navteq - Major Roads, Place Names (2011). Created by: CM

WPD80

Cumbalum A

Ballina Heights WR1 (2015)

WBPC3 (2013)

WPD81

Ballina Heights Temp. Res (2005)

Ballina Heights

Pacific Highway

LEGEND

DSP Area

Cadastral Boundaries

Major Roads

Trunk Infrastructure

392 to 621
285 to 392
253 to 285
210 to 253
203 to 210
186 to 203
97 to 186

Developer Constructed Infrastructure

2,010
2,015
2,020
2,025
2,030

Future Infrastructure Funded by DSP

2,011
2012 - 2015
2015 - 2020
2020 - 2025

Reticulation

Existing
Future

Pumps

Existing Pumps
Future DSP Pumps

Reservoirs

Existing
Future

1:15,000

0 200 400 600 800

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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Development Servicing Plan: Drinking Water Supply

Job Number 22-15470
Revision 1
Date 11 MAY 2012

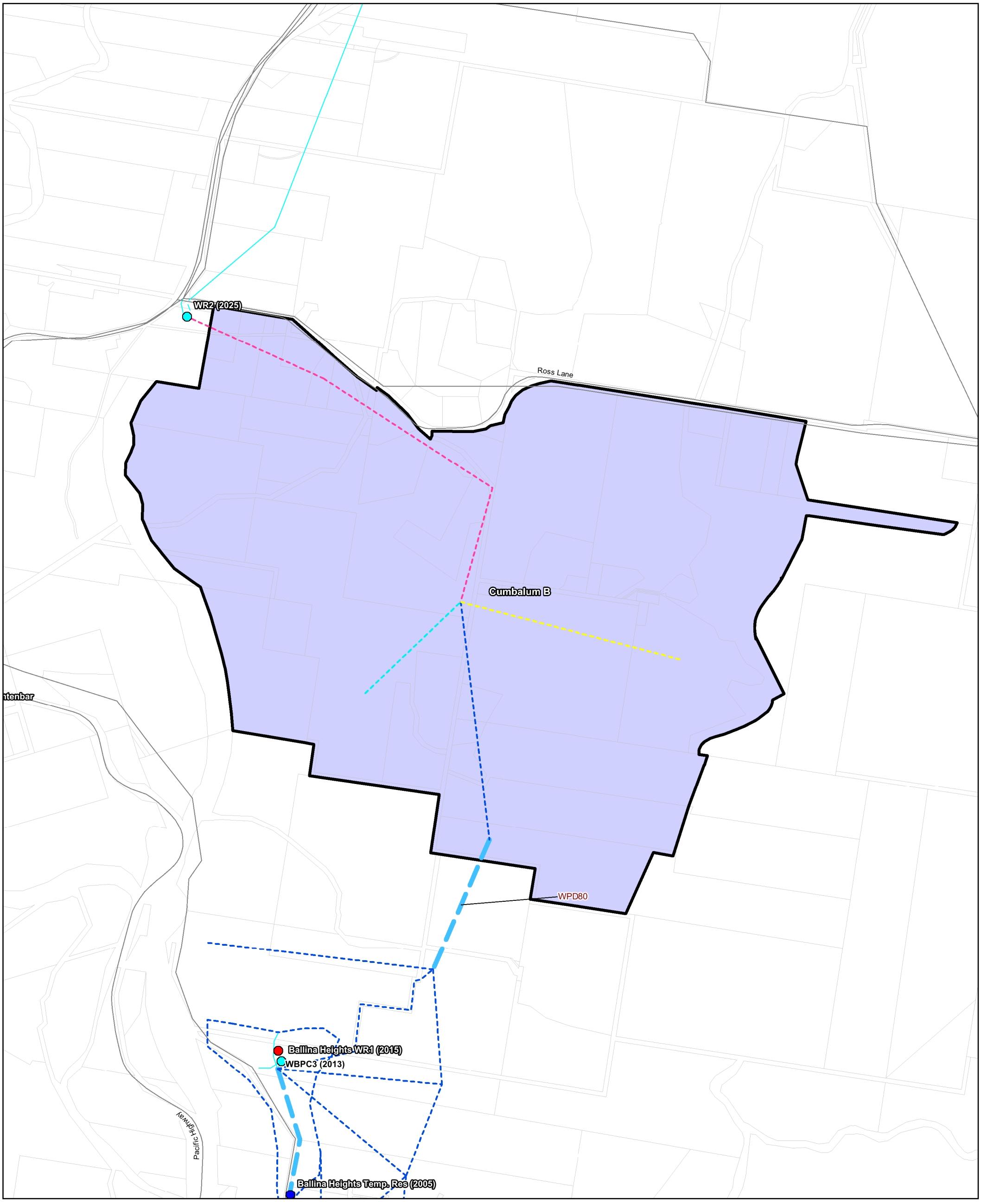
DSP Area F
Cumbalum A, Ballina Heights

Figure 8

N:\AU\Toowoomba\Projects\22\15470\GIS\Maps\2215470_05.wor

317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: BSC - DSP Areas, Cadastral Boundaries, Trunk Infrastructure, Developer Constructed Infrastructre, Future Infrastructure, Reticulation, Pumps, Reservoirs (2012). Navteq - Major Roads, Place Names (2011). Created by: CM



LEGEND

DSP Area

Cadastral Boundaries

Major Roads

Trunk Infrastructure: 392 to 621; 285 to 392; 253 to 285; 210 to 253; 203 to 210; 186 to 203; 97 to 186

Developer Constructed Infrastructure: 2,010; 2,015; 2,020; 2,025; 2,030

Future Infrastructure Funded by DSP: 2,011; 2012 - 2015; 2015 - 2020; 2020 - 2025

Reticulation: Existing; Future

Pumps: Existing Pumps; Future DSP Pumps

Reservoirs: Existing; Future

1:15,000

0 200 400 600 800

Metres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

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Ballina Shire Council
Development Servicing Plan: Drinking Water Supply

Job Number 22-15470
Revision 1
Date 11 MAY 2012

DSP Area G - Cumbalum B

Figure 9

N:\AU\Toowoomba\Projects\22\15470\GIS\Maps\2215470_06.wor

317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: BSC - DSP Areas, Cadastral Boundaries, Trunk Infrastructure, Developer Constructed Infrastructre, Future Infrastructure, Reticulation, Pumps, Reservoirs (2012). Navteq - Major Roads, Place Names (2011). Created by: CM

Appendix A

ET and Assessment Projections

Summary sheets from spread sheet calculations

Table A1 ET projections for water supply used in calculation of the capital charge

DSP Area	2010 ET	2015 ET	2020 ET	2025 ET	2030 ET	Total ET Growth as a result of new development areas
A	517	558	581	603	626	109
B	13672	15523	16894	18132	18991	5319
C	13	195	377	557	735	722
E	5796	5842	5888	5935	5983	186
F	634	1785	2416	2416	2416	1782
G	0	469	938	1876	2939	2939
Total	20633	24372	27093	29519	31690	11057

Table A2 Assessment projections for water supply used in calculation of the capital charge

DSP Area	2010	2015	2020	2025	2030	Total increase in assessments as a result of new developments
A	508	548	570	593	615	107
B	14953	16977	18476	19830	20770	5817
C	14	216	417	617	815	800
E	6234	6284	6333	6384	6435	200
F	841	2366	3202	3202	3202	2361
G	0	498	996	1991	3120	3120
Total	22550	26889	29995	32617	34956	12406

Appendix B

Reference Rates

NSW Reference Rate Manual and GHD Internal Rates

Ballina Shire Council
Inputs to Water Supply Cost Estimates

Note: All costs are to supply and install and include an allowance for Survey, Investigation, Design and contingency.

NSW Reference Rates Manual

Reference

Samra, S, Essery, C, (New South Wales. Ministry of Energy and Utilities), 2003, New South Wales reference rates manual: for valuation of water supply, sewerage and stormwater assets. Ministry of Energy and Utilities, Sydney.

Interpolated from Reference Rates
Extrapolated from Reference Rates

T3.1 Water Trunk Mains - uPVC

Reference Rates ($/m) as at June 2003

Pipe (DN)	*Contract Rate* ($/m)	*Reference Rate* ($/m)
50	33	42
80	43	55
100	55	70
150	83	105
200	103	130
225	119	150
250	134	170
275	150	190
300	166	210
325	179	227
350	192	243
375	206	260
400	219	300
450	245	400
500	271	400

T3.2 Water Trunk Mains - DICL

Reference Rates ($/m) as at June 2003

Pipe (DN)	*Contract Rate* ($/m)	*Reference Rate* ($/m)
100	65	82
150	83	105
200	103	130
250	123	155
275	144	183
300	166	210
325	173	218
375	186	235
400	202	255
450	233	295
500	255	323
600	320	405
750	403	510

T3.3 Water Trunk Mains - Steel

Reference Rates ($/m) as at June 2003

Pipe (DN)	*Contract Rate* ($/m)	*Reference Rate* ($/m)
300	170	215
375	206	260
450	245	310
525	285	360
600	362	470
750	518	655
900	717	917
1050	917	1160
1200	1154	1460

T3.5 Water Treatment Works

Reference Rates ($/m) as at June 2003

Capacity (ML/day)	*Contract Rate* ($)	*Reference Rate* ($)
0.3	536667	708400
0.5	690000	910800
0.55	728333	961400
0.8	920000	1214400
1	1060000	1399200
2	1640000	2164800
5	3000000	3960000
7.5	3830000	5055600
10	4600000	6072000
15	5850000	7722000
20	7000000	9240000
30	8700000	11484000
40	10400000	13728000
50	12000000	15840000
60	14400000.00	19008000
70	16800000	22176000
80	18400000.00	24288000
100	23000000.00	30360000

NSW Reference Rates Manual

Reference Rates for Construction Difficulties

Page 27, Table 3.14, rates estimated for June 2003 as per Ref rates manual.

Construction Difficulty - Moderate Congestion

Reference Rates ($/m) as at June 2003

Pipe (DN)	*Contract Rate* ($/m)	*Reference Rate* ($/m)
100	24	30
150	*36*	*45*
200	48	60
250	60	75
275	66	83
300	72	90
325	80	100
350	88	110
375	96	120
400	104	130
450	120	150
500	133	170
600	157	200
750	205	260
900	240	300

Construction Difficulty - High Congestion

Reference Rates ($/m) as at June 2003

Pipe (DN)	*Contract Rate* ($/m)	*Reference Rate* ($/m)
100	48.0	60.0
150	72	90
200	96	120
250	120	150
275	133	165
300	145	180
325	161	200
350	177	220
375	193	240
400	209	260
450	240	300
500	265	335
600	313.0	395.0
750	410	520
900	480	600

	Interpolated from Reference Rates
	Extrapolated from Reference Rates

Ballina Shire Council
Inputs to Water Supply Cost Estimates

Note: All costs are to supply and install and include an allowance for Survey, Investigation, Design and contingency.

GHD Internal Cost Estimates

NSW Water Supply and Sewerage Cost Indicy uplift from 2003/2004 to 2010/2011: 1.4

NSW Water Supply and Sewerage Cost Indicy uplift from 2009/2010 to 2010/2011: 1.03

Extrapolated from GHD Reference Rates

Water Mains Unit Rates

Nominal Diameter	Total Cost (2011/12)
50	$83.58
80	$106.52
100	$117.24
150	$149.36
200	$187.01
225	$206.31
250	$217.68
300	$393.16
375	$483.38
400	$609.02
450	$720.31
500	$896.11
525	$952.65
600	$1,213.60
660	$1,349.88
675	$1,441.01
700	$1,530.96
750	$1,632.09
900	$1,837.83
1000	$2,132.60
1050	$2,353.35
1085	$2,471.28
1200	$2,897.97
1650	$4,653.37
1800	$5,167.81
2400	$7,530.74

Water Pump Stations

Pump Motor (kW)	Total (2011$)
5	$118,125.75
10	$156,209
15	$208,499.67
20	$239,867
25	$285,998.82
30	$308,544
40	$367,716
50	$428,068
60	$456,241.94
75	$511,453
95	$654,818.32
100	$666,311
145	$777,502.61
150	$787,509
200	$910,328
240	$988,105.95
250	$1,006,446
300	$1,087,688
350	$1,185,199
400	$1,289,796
450	$1,373,243
500	$1,442,159
600	$1,533,504
700	$1,656,181
800	$1,769,909
900	$1,885,541
1000	$1,989,009
1050	$2,069,596
1100	$2,145,933
1150	$2,227,055
1200	$2,325,895
1250	$2,394,079
1300	$2,463,662
1350	$2,531,467
1400	$2,591,857
1450	$2,660,231
1500	$2,726,747

Reservoirs

Volume (ML)	Cost (2008$)	Total (2011$)
0.2	$157,379.17	$169,480.15
0.24	$183,233.70	$197,322.65
0.3	$224,280	$241,525
0.35	$228,664	$246,246
0.4	$262,747	$282,950
0.45	$318,970	$343,496
0.5	$361,101	$388,866
1	$472,405	$508,729
1.6	$535,611.80	$576,795.33
2	$759,071	$817,436
2.5	$957,687	$1,031,324
3	$1,519,805	$1,636,664
3.5	$1,756,865.05	$1,891,951.50
4	$1,876,367	$2,020,642
5	$2,274,272	$2,449,142
8	$3,196,585	$3,442,372
10	$3,541,512	$3,813,821
15	$4,505,410	$4,851,834
18	$5,332,897	$5,742,947
20	$5,520,326	$5,944,787
30	$6,826,569	$7,351,468
35	$7,746,964	$8,342,633
40	$8,353,750	$8,996,075
50	$9,587,682	$10,324,885
55	$10,623,784	$11,440,653
60	$11,306,909	$12,176,304

Appendix C

Capital Charge Calculations

Agglomeration Summary and Asset Evaluations

Agglomeration of Capital Charges

	Future Works				Existing Works				Total Capital cost per ET	Capital Charge for Shire	Total ET Growth
Area	**Pipelines**	**Reservoirs**	**Pumps**	**Treament Plants**	**Pipelines**	**Reservoirs**	**Pumps**	**Treament Plants**			
A	485	-	-	387	6,220	2,580	-	2,058	**$11,731**	115	109
B	771	54	-	-	1,251	665	74	-	**$2,814**	1,353	5319
C	1,990	-	-	-	-	2,141	253	-	**$4,384**	286	722
E	37	-	-	-	1,128	1,352	88	-	**$2,605**	44	186
F	280	868	-	-	51	113	91	-	**$1,403**	226	1782
G	-	894	-	-	-	-	-	-	**$894**	238	2939
									Weighted Capital Charge ($/ET)	**2,263**	11057

Agglomeration of Capital Charges

In accordance with S3.3.2 of the Developer Charges Guidelines, this table agglomerates capital charges based on areas that fall within the 70-100% of the highest charge in each group

Area	Service Area	Capital Charge per ET ($ per ET) 2011$	Percentage of Highest Capital Charge Area A	Percentage of Highest Capital Charge Area C	Percentage of Highest Capital Charge Area B	Percentage of Highest Capital Charge Area F	Total ET Growth	% Growth	Agglomerated Capital Charges	Reduction Amount	Adopted Developer Charge
A	Wardell	$11,731	100%	<- Forced agglomeration			109	100%	$ 11,731.26	$ 90.00	$ 11,641.26
C	WUEA	$4,384	37%	100%			722	100%	$ 4,384.06	$ 90.00	$ 4,294.06
B	North/East/West Ballina, Ballina Island, Skennars Head, Lennox Head	$2,814	24%	64%	100%		5319	84%	$ 2,464.59	$ 90.00	$ 2,374.59
E	Alstonville, Wollongbar	$2,605	22%	59%	93%		186	4%			
F	CURA A, Ballina Heights	$1,403	12%	32%	50%	100%	1782	100%	$ 1,403.16	$ 90.00	$ 1,313.16
G	CURA B	$894	8%	20%	32%	64%	2939	100%	$ 893.99	$ 90.00	$ 803.99

Capital Charge: Pipelines - Future and Existing

Label	Drinking Recycled Asset	Length	Material	Diameter	Pipe Base Rate 2003 ($/m)	Construction Difficulty	Row Ref for diameter	Construction Difficulty Rate 2003 ($/m)	Total Rate 2003 ($/m)	Total Rate 2011 ($/m)	Total Cost 2011 ($)	DSP AREA	Area	Date of Construction	Pre or Post 1996 Asset	Capital Cost (2011/2012$)	Adopted Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up	Take-up period (t) (years)	Pre 1996 Return on Investment Factor	Post 1996 Return on Investment Factor	% Water/ Wastewater	Capital Charge per ET (2011/2012$)
FUTURE																								
WPD28	Drinking	138.17	PVC	200	130	High	5	120	250	350	48,360	North Ballina	B	2011	Post	48,360	18991	2.5	2030	20	1.25	1.61	100%	4.10
WPD20	Drinking	249.71	PVC	200	130	High	5	120	250	350	87,399	North Ballina	B	2015	Post	87,399	18991	4.6	2030	16	1.25	1.61	100%	7.40
WPD21	Drinking	345.22	PVC	200	130	High	5	120	250	350	120,827	North Ballina	B	2015	Post	120,827	18991	6.4	2030	16	1.25	1.61	100%	10.23
WPD10	Drinking	512.77	PVC	450	400	Moderate	13	150	550	770	394,833	East Ballina	B	2015	Post	394,833	18991	20.8	2030	16	1.25	1.61	100%	33.44
WPD11	Drinking	456.33	DICL	500	323	High	14	335	658	921	420,371	Ballina Island	B	2015	Post	420,371	18991	22.1	2030	16	1.25	1.61	100%	35.60
WPD12	Drinking	487.2	PVC	450	400	High	13	300	700	980	477,456	Ballina Island	B	2015	Post	477,456	18991	25.1	2030	16	1.25	1.61	100%	40.43
WPD13	Drinking	593.44	PVC	350	243	High	10	220	463	649	384,945	Ballina Island	B	2015	Post	384,945	18991	20.3	2030	16	1.25	1.61	100%	32.60
WPD14	Drinking	911.66	PVC	350	243	High	10	220	463	649	591,363	Ballina Island	B	2015	Post	591,363	18991	31.1	2030	16	1.25	1.61	100%	50.08
WPD22	Drinking	1,311.94	PVC	350	243	High	10	220	463	649	851,012	Ballina Island	B	2025	Post	851,012	18991	44.8	2030	6	1.25	1.61	100%	72.07
WPD23	Drinking	1,279.93	PVC	350	243	High	10	220	463	649	830,248	North Ballina	B	2012	Post	830,248	18991	43.7	2030	19	1.25	1.61	100%	70.31
WPD24	Drinking	759.1	PVC	350	243	High	10	220	463	649	492,403	North Ballina	B	2012	Post	492,403	18991	25.9	2030	19	1.25	1.61	100%	41.70
WPD90	Drinking	277.22	PVC	200	130			0	130	182	50,454	Wardell	A	2015	Post	50,454	626	80.7	2030	16	1.26	1.61	100%	130.19
WPD91	Drinking	413.09	PVC	200	130			0	130	182	75,182	Wardell	A	2015	Post	75,182	626	120.2	2030	16	1.26	1.61	100%	193.99
WPD92	Drinking	343.41	PVC	200	130			0	130	182	62,501	Wardell	A	2015	Post	62,501	626	99.9	2030	16	1.26	1.61	100%	161.27
WPD60	Drinking	508.24	PVC	300	210	Moderate	8	90	300	420	213,461	Lennox Head	B	2015	Post	213,461	18991	11.2	2030	16	1.25	1.61	100%	18.08
WPD62	Drinking	634.11	PVC	300	210	Moderate	8	90	300	420	266,326	Lennox Head	B	2010	Post	266,326	18991	14.0	2030	21	1.25	1.61	100%	22.55
WPD61	Drinking	378.1	PVC	300	210	Moderate	8	90	300	420	158,802	Lennox Head	B	2010	Post	158,802	18991	8.4	2030	21	1.25	1.61	100%	13.45
WPD50	Drinking	841.72	PVC	300	210	Moderate	8	90	300	420	353,522	Lennox Head	B	2012	Post	353,522	18991	18.6	2030	19	1.25	1.61	100%	29.94
WPD51	Drinking	394.32	PVC	300	210	Moderate	8	90	300	420	165,614	Lennox Head	B	2012	Post	165,614	18991	8.7	2030	19	1.25	1.61	100%	14.03
WBP13	Drinking	222.14	PVC	300	210	Moderate	8	90	300	420	93,299	East Ballina	B	2015	Post	93,299	18991	4.9	2030	16	1.25	1.61	100%	7.90
WPD81	Drinking	947.87	PVC	300	210			0	210	294	278,674	Ballina Heights	F	2015	Post	278,674	2416	115.3	2030	16	1.11	1.27	100%	146.33
WPD80	Drinking	604.31	PVC	400	300			0	300	420	253,810	Ballina Heights	F	2015	Post	253,810	2416	105.1	2030	16	1.11	1.27	100%	133.27
WBP10	Drinking	512.77	PVC	450	400	Moderate	13	150	550	770	394,833	East Ballina	B	2010	Post	394,833	18991	20.8	2030	21	1.25	1.61	100%	33.44
WBP22	Drinking	304.59	PVC	250	170			0	170	238	72,492	Alst. Industr	E	2012	Post	72,492	5983	12.1	2030	19	1.31	1.77	100%	21.49
WPD30	Drinking	2,375.45	PVC	300	210	High	8	180	390	546	1,296,996	North Ballina	B	2012	Post	1,296,996	18991	68.3	2030	19	1.25	1.61	100%	109.84
WBP21	Drinking	220.64	PVC	250	170			0	170	238	52,512	Alst. Industr	E	2012	Post	52,512	5983	8.8	2030	19	1.31	1.77	100%	15.57
WPD25	Drinking	569.31	PVC	200	130	High	5	120	250	350	199,259	North Ballina	B	2012	Post	199,259	18991	10.5	2030	19	1.25	1.61	100%	16.87
WBP11	Drinking	647.26	PVC	250	170	Moderate	6	75	245	343	222,010	East Ballina	B	2010	Post	222,010	18991	11.7	2030	21	1.25	1.61	100%	18.80
WBP12	Drinking	685.64	PVC	200	130	Moderate	5	60	190	266	182,380	East Ballina	B	2010	Post	182,380	18991	9.6	2030	21	1.25	1.61	100%	15.45
WPD27	Drinking	300	PVC	300	210	High	8	180	390	546	163,800	North Ballina	B	2011	Post	163,800	18991	8.6	2030	20	1.25	1.61	100%	13.87
WPD26	Drinking	922.37	PVC	200	130	High	5	120	250	350	322,830	North Ballina	B	2015	Post	322,830	18991	17.0	2030	16	1.25	1.61	100%	27.34
WPD40	Drinking	853.402	HOBA	300	210			0	210	294	250,900	WUEA	C	2011	Post	250,900	735	341.2	2030	20	1.30	1.76	100%	600.41
WPD41	Drinking	92.52	BluB	300	210			0	210	294	27,201	WUEA	C	2011	Post	27,201	735	37.0	2030	20	1.30	1.76	100%	65.09
WPD42	Drinking	69.89	HOBA	300	210			0	210	294	20,548	WUEA	C	2011	Post	20,548	735	27.9	2030	20	1.30	1.76	100%	49.17
WPD43	Drinking	450.82	HOBA	300	210			0	210	294	132,541	WUEA	C	2011	Post	132,541	735	180.3	2030	20	1.30	1.76	100%	317.17
WPD44	Drinking	212.39	HOBA	300	210			0	210	294	62,443	WUEA	C	2011	Post	62,443	735	84.9	2030	20	1.30	1.76	100%	149.43
WPD45	Drinking	134.64	HOBA	300	210			0	210	294	39,584	WUEA	C	2011	Post	39,584	735	53.8	2030	20	1.30	1.76	100%	94.73
WPD46	Drinking	152.39	HOBA	300	210			0	210	294	44,803	WUEA	C	2011	Post	44,803	735	60.9	2030	20	1.30	1.76	100%	107.21
WPD47	Drinking	151.41	HOBA	325	218			0	218	306	46,281	WUEA	C	2011	Post	46,281	735	62.9	2030	20	1.30	1.76	100%	110.75
WPD48	Drinking	274.71	PVC	150	105			0	105	147	40,382	WUEA	C	2011	Post	40,382	735	54.9	2030	20	1.30	1.76	100%	96.64
WPD49	Drinking	1,134.00	BluB	150	105			0	105	147	166,698	WUEA	C	2011	Post	166,698	735	226.7	2030	20	1.30	1.76	100%	398.91
WPD70	Drinking	788.234	PVC	250	170			0	170	197	155,011	Skenners Head	B	2020	Post	155,011	18991	8.2	2030	11	1.25	1.61	100%	13.13
WPD71	Drinking	1088.99	PVC	250	170			0	170	197	214,156	Skenners Head	B	2025	Post	214,156	18991	11.3	2030	6	1.25	1.61	100%	18.14

Capital Charge: Pipelines - Future and Existing

Label	Drinking Recycled Asset	Length	Material	Diameter	Pipe Base Rate 2003 ($/m)	Construction Difficulty	Row Ref for diameter	Construction Difficulty Rate 2003 ($/m)	Total Rate 2003 ($/m)	Total Rate 2011 ($/m)	Total Cost 2011 ($)	DSP AREA	Area	Date of Construction	Pre or Post 1996 Asset	Capital Cost (2011/2012$)	Adopted Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up	Take-up period (t) (years)	Pre 1996 Return on Investment Factor	Post 1996 Return on Investment Factor	% Water/ Wastewater	Capital Charge per ET (2011/2012$)
EXISTING																								
1650	Drinking	167.31	DICL	450	295	Moderate	13	150	445	623	104,234	Lennox Head	B	1985	Pre	104,234	18991	5.5	2030	35	1.25	1.61	100%	6.87
1002	Drinking	64.88	PVC	200	130	High	5	120	250	350	22,708	North Ballina	B	1995	Pre	22,708	18991	1.2	2030	35	1.25	1.61	100%	1.50
1009	Drinking	103.65	PVC	200	130	High	5	120	250	350	36,278	North Ballina	B	1995	Pre	36,278	18991	1.9	2030	35	1.25	1.61	100%	2.39
1013	Drinking	128.24	PVC	200	130	High	5	120	250	350	44,884	North Ballina	B	1995	Pre	44,884	18991	2.4	2030	35	1.25	1.61	100%	2.96
1016	Drinking	173.58	PVC	200	130	High	5	120	250	350	60,753	North Ballina	B	1995	Pre	60,753	18991	3.2	2030	35	1.25	1.61	100%	4.00
1018	Drinking	7.34	DICL	600	405	Moderate	15	200	605	847	6,217	East Ballina	B	1980	Pre	6,217	18991	0.3	2030	35	1.25	1.61	100%	0.41
1032	Drinking	7.34	DICL	450	295	Moderate	13	150	445	623	4,573	East Ballina	B	1980	Pre	4,573	18991	0.2	2030	35	1.25	1.61	100%	0.30
1055	Drinking	7.39	DICL	600	405	Moderate	15	200	605	847	6,259	East Ballina	B	1980	Pre	6,259	18991	0.3	2030	35	1.25	1.61	100%	0.41
1064	Drinking	229.34	PVC	200	130	High	5	120	250	350	80,269	North Ballina	B	1992	Pre	80,269	18991	4.2	2030	35	1.25	1.61	100%	5.29
1066	Drinking	7.2	DICL	600	405	Moderate	15	200	605	847	6,098	East Ballina	B	1980	Pre	6,098	18991	0.3	2030	35	1.25	1.61	100%	0.40
1079	Drinking	22.49	DICL	450	295	Moderate	13	150	445	623	14,011	East Ballina	B	1980	Pre	14,011	18991	0.7	2030	35	1.25	1.61	100%	0.92
1087	Drinking	166.92	PVC	200	130	High	5	120	250	350	58,422	Ballina Island	B	1979	Pre	58,422	18991	3.1	2030	35	1.25	1.61	100%	3.85
1089	Drinking	6.66	DICL	600	405	Moderate	15	200	605	847	5,641	East Ballina	B	1980	Pre	5,641	18991	0.3	2030	35	1.25	1.61	100%	0.37
1093	Drinking	70.85	PVC	300	210	High	8	180	390	546	38,684	Ballina Island	B	1980	Pre	38,684	18991	2.0	2030	35	1.25	1.61	100%	2.55
1094	Drinking	141.96	PVC	300	210	High	8	180	390	546	77,510	Ballina Island	B	1980	Pre	77,510	18991	4.1	2030	35	1.25	1.61	100%	5.11
11	Drinking	299.46	PVC	200	130	Moderate	5	60	190	266	79,656	East Ballina	B	1992	Pre	79,656	18991	4.2	2030	35	1.25	1.61	100%	5.25
1110	Drinking	380.21	PVC	250	170			0	170	238	90,490	West Ballina	B	1984	Pre	90,490	18991	4.8	2030	35	1.25	1.61	100%	5.96
1113	Drinking	139.59	DICL	300	210			0	210	294	41,039	West Ballina	B	1980	Pre	41,039	18991	2.2	2030	35	1.25	1.61	100%	2.70
1118	Drinking	86.87	DICL	450	295	Moderate	13	150	445	623	54,120	East Ballina	B	1980	Pre	54,120	18991	2.8	2030	35	1.25	1.61	100%	3.57
1135	Drinking	221.9	PVC	300	210	High	8	180	390	546	121,157	Ballina Island	B	1980	Pre	121,157	18991	6.4	2030	35	1.25	1.61	100%	7.98
1189	Drinking	266.84	PVC	200	130			0	130	182	48,565	Fig Tree Hill	B	1987	Pre	48,565	18991	2.6	2030	35	1.25	1.61	100%	3.20
1190	Drinking	232.45	DICL	300	210			0	210	294	68,340	Fig Tree Hill	B	1987	Pre	68,340	18991	3.6	2030	35	1.25	1.61	100%	4.50
1191	Drinking	232.45	DICL	300	210			0	210	294	68,340	Fig Tree Hill	B	1987	Pre	68,340	18991	3.6	2030	35	1.25	1.61	100%	4.50
1192	Drinking	94.8	DICL	300	210			0	210	294	27,871	Fig Tree Hill	B	1987	Pre	27,871	18991	1.5	2030	35	1.25	1.61	100%	1.84
1194	Drinking	620.94	DICL	300	210			0	210	294	182,556	Fig Tree Hill	B	1987	Pre	182,556	18991	9.6	2030	35	1.25	1.61	100%	12.03
12	Drinking	28.28	DICL	300	210	Moderate	8	90	300	420	11,878	East Ballina	B	1992	Pre	11,878	18991	0.6	2030	35	1.25	1.61	100%	0.78
1266	Drinking	326.64	PVC	200	130	Moderate	5	60	190	266	86,886	Lennox Head	B	1975	Pre	86,886	18991	4.6	2030	35	1.25	1.61	100%	5.72
13	Drinking	190.15	PVC	200	130			0	130	182	34,607	Skenners Head	B	1980	Pre	34,607	18991	1.8	2030	35	1.25	1.61	100%	2.28
1325	Drinking	14.71	PVC	200	130	Moderate	5	60	190	266	3,913	Lennox Head	B	1978	Pre	3,913	18991	0.2	2030	35	1.25	1.61	100%	0.26
1326	Drinking	14.71	PVC	200	130	Moderate	5	60	190	266	3,913	Lennox Head	B	1978	Pre	3,913	18991	0.2	2030	35	1.25	1.61	100%	0.26
1328	Drinking	92.85	PVC	200	130	Moderate	5	60	190	266	24,698	Lennox Head	B	1975	Pre	24,698	18991	1.3	2030	35	1.25	1.61	100%	1.63
1332	Drinking	109.47	PVC	275	190	Moderate	7	82.5	273	382	41,763	Lennox Head	B	1975	Pre	41,763	18991	2.2	2030	35	1.25	1.61	100%	2.75
1333	Drinking	113.09	PVC	275	190	Moderate	7	82.5	273	382	43,144	Lennox Head	B	1975	Pre	43,144	18991	2.3	2030	35	1.25	1.61	100%	2.84
1334	Drinking	106.39	PVC	200	130	Moderate	5	60	190	266	28,300	Lennox Head	B	1975	Pre	28,300	18991	1.5	2030	35	1.25	1.61	100%	1.86
1346	Drinking	399.7	PVC	200	130			0	130	182	72,745	Fig Tree Hill	B	1980	Pre	72,745	18991	3.8	2030	35	1.25	1.61	100%	4.79
1349	Drinking	219.93	PVC	200	130	Moderate	5	60	190	266	58,501	Lennox Head	B	1991	Pre	58,501	18991	3.1	2030	35	1.25	1.61	100%	3.85
1350	Drinking	274.37	PVC	200	130	Moderate	5	60	190	266	72,982	Lennox Head	B	1981	Pre	72,982	18991	3.8	2030	35	1.25	1.61	100%	4.81
1352	Drinking	221.26	PVC	200	130	Moderate	5	60	190	266	58,855	Lennox Head	B	1989	Pre	58,855	18991	3.1	2030	35	1.25	1.61	100%	3.88
1376	Drinking	47.79	PVC	200	130	Moderate	5	60	190	266	12,712	Lennox Head	B	1981	Pre	12,712	18991	0.7	2030	35	1.25	1.61	100%	0.84
1377	Drinking	17.02	PVC	200	130	Moderate	5	60	190	266	4,527	Lennox Head	B	1981	Pre	4,527	18991	0.2	2030	35	1.25	1.61	100%	0.30
1378	Drinking	47.79	PVC	200	130	Moderate	5	60	190	266	12,712	Lennox Head	B	1981	Pre	12,712	18991	0.7	2030	35	1.25	1.61	100%	0.84
1387	Drinking	17.02	PVC	200	130	Moderate	5	60	190	266	4,527	Lennox Head	B	1980	Pre	4,527	18991	0.2	2030	35	1.25	1.61	100%	0.30
1388	Drinking	42.85	PVC	200	130	Moderate	5	60	190	266	11,398	Lennox Head	B	1981	Pre	11,398	18991	0.6	2030	35	1.25	1.61	100%	0.75
1389	Drinking	42.85	PVC	200	130	Moderate	5	60	190	266	11,398	Lennox Head	B	1980	Pre	11,398	18991	0.6	2030	35	1.25	1.61	100%	0.75
1390	Drinking	139.76	PVC	200	130	Moderate	5	60	190	266	37,176	Lennox Head	B	1981	Pre	37,176	18991	2.0	2030	35	1.25	1.61	100%	2.45
1391	Drinking	48.32	PVC	200	130	Moderate	5	60	190	266	12,853	Lennox Head	B	1981	Pre	12,853	18991	0.7	2030	35	1.25	1.61	100%	0.85
1392	Drinking	247.16	PVC	200	130	Moderate	5	60	190	266	65,745	Lennox Head	B	1981	Pre	65,745	18991	3.5	2030	35	1.25	1.61	100%	4.33
1393	Drinking	88.31	PVC	200	130	Moderate	5	60	190	266	23,490	Lennox Head	B	1981	Pre	23,490	18991	1.2	2030	35	1.25	1.61	100%	1.55
1395	Drinking	95.15	PVC	200	130	Moderate	5	60	190	266	25,310	Lennox Head	B	1981	Pre	25,310	18991	1.3	2030	35	1.25	1.61	100%	1.67
1398	Drinking	249.72	PVC	200	130	Moderate	5	60	190	266	66,426	Lennox Head	B	1983	Pre	66,426	18991	3.5	2030	35	1.25	1.61	100%	4.38
1404	Drinking	255.5	PVC	200	130			0	130	182	46,501	Skenners Head	B	1983	Pre	46,501	18991	2.4	2030	35	1.25	1.61	100%	3.06
1406	Drinking	25.4	PVC	200	130			0	130	182	4,623	Skenners Head	B	1983	Pre	4,623	18991	0.2	2030	35	1.25	1.61	100%	0.30
1410	Drinking	263.41	PVC	200	130			0	130	182	47,941	Skenners Head	B	1983	Pre	47,941	18991	2.5	2030	35	1.25	1.61	100%	3.16
1414	Drinking	185.18	AC	200	130			0	130	182	33,703	Skenners Head	B	1983	Pre	33,703	18991	1.8	2030	35	1.25	1.61	100%	2.22
1416	Drinking	77.88	PVC	200	130			0	130	182	14,174	Skenners Head	B	1983	Pre	14,174	18991	0.7	2030	35	1.25	1.61	100%	0.93
1419	Drinking	405.6	PVC	200	130			0	130	182	73,819	Skenners Head	B	1989	Pre	73,819	18991	3.9	2030	35	1.25	1.61	100%	4.86
1424	Drinking	69.03	PVC	200	130	Moderate	5	60	190	266	18,362	Lennox Head	B	1985	Pre	18,362	18991	1.0	2030	35	1.25	1.61	100%	1.21
1425	Drinking	64.43	DICL	200	130	Moderate	5	60	190	266	17,138	Lennox Head	B	1990	Pre	17,138	18991	0.9	2030	35	1.25	1.61	100%	1.13
1426	Drinking	175.41	PVC	200	130	Moderate	5	60	190	266	46,659	Lennox Head	B	1985	Pre	46,659	18991	2.5	2030	35	1.25	1.61	100%	3.07
1428	Drinking	133.15	DICL	200	130	Moderate	5	60	190	266	35,418	Lennox Head	B	1990	Pre	35,418	18991	1.9	2030	35	1.25	1.61	100%	2.33
1433	Drinking	384.58	PVC	200	130	Moderate	5	60	190	266	102,298	Lennox Head	B	1990	Pre	102,298	18991	5.4	2030	35	1.25	1.61	100%	6.74
1434	Drinking	79.13	PVC	200	130	Moderate	5	60	190	266	21,049	Lennox Head	B	1990	Pre	21,049	18991	1.1	2030	35	1.25	1.61	100%	1.39
1447	Drinking	93.37	PVC	200	130	Moderate	5	60	190	266	24,836	Lennox Head	B	1995	Pre	24,836	18991	1.3	2030	35	1.25	1.61	100%	1.64
1449	Drinking	45.58	PVC	200	130	Moderate	5	60	190	266	12,124	Lennox Head	B	1985	Pre	12,124	18991	0.6	2030	35	1.25	1.61	100%	0.80
1450	Drinking	45.58	PVC	200	130	Moderate	5	60	190	266	12,124	Lennox Head	B	1985	Pre	12,124	18991	0.6	2030	35	1.25	1.61	100%	0.80
1451	Drinking	24.36	PVC	200	130	Moderate	5	60	190	266	6,480	Lennox Head	B	1985	Pre	6,480	18991	0.3	2030	35	1.25	1.61	100%	0.43
1452	Drinking	24.36	PVC	200	130	Moderate	5	60	190	266	6,480	Lennox Head	B	1985	Pre	6,480	18991	0.3	2030	35	1.25	1.61	100%	0.43
1453	Drinking	96.56	PVC	200	130	Moderate	5	60	190	266	25,685	Lennox Head	B	1985	Pre	25,685	18991	1.4	2030	35	1.25	1.61	100%	1.69

Capital Charge: Pipelines - Future and Existing

Label	Drinking Recycled Asset	Length	Material	Diameter	Pipe Base Rate 2003 ($/m)	Construction Difficulty	Row Ref for diameter	Construction Difficulty Rate 2003 ($/m)	Total Rate 2003 ($/m)	Total Rate 2011 ($/m)	Total Cost 2011 ($)	DSP AREA	Area	Date of Construction	Pre or Post 1996 Asset	Capital Cost (2011/2012$)	Adopted Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up	Take-up period (t) (years)	Pre 1996 Return on Investment Factor	Post 1996 Return on Investment Factor	% Water/ Wastewater	Capital Charge per ET (2011/2012$)
1454	Drinking	148.5	PVC	200	130	Moderate	5	60	190	266	39,501	Lennox Head	B	1985	Pre	39,501	18991	2.1	2030	35	1.25	1.61	100%	2.60
1458	Drinking	56.22	PVC	200	130	Moderate	5	60	190	266	14,955	Lennox Head	B	1985	Pre	14,955	18991	0.8	2030	35	1.25	1.61	100%	0.99
1459	Drinking	82.38	PVC	200	130	Moderate	5	60	190	266	21,913	Lennox Head	B	1985	Pre	21,913	18991	1.2	2030	35	1.25	1.61	100%	1.44
1461	Drinking	18.27	PVC	200	130	Moderate	5	60	190	266	4,860	Lennox Head	B	1979	Pre	4,860	18991	0.3	2030	35	1.25	1.61	100%	0.32
1463	Drinking	72.78	PVC	200	130	Moderate	5	60	190	266	19,359	Lennox Head	B	1971	Pre	19,359	18991	1.0	2030	35	1.25	1.61	100%	1.28
1464	Drinking	77.88	PVC	200	130			0	130	182	14,174	Skenners Head	B	1983	Pre	14,174	18991	0.7	2030	35	1.25	1.61	100%	0.93
1465	Drinking	46.4	PVC	200	130			0	130	182	8,445	Skenners Head	B	1983	Pre	8,445	18991	0.4	2030	35	1.25	1.61	100%	0.56
1466	Drinking	248.35	PVC	200	130			0	130	182	45,200	Skenners Head	B	1992	Pre	45,200	18991	2.4	2030	35	1.25	1.61	100%	2.98
1467	Drinking	89.12	PVC	200	130			0	130	182	16,220	Skenners Head	B	1994	Pre	16,220	18991	0.9	2030	35	1.25	1.61	100%	1.07
1474	Drinking	97.95	DICL	450	295			0	295	413	40,453	Fig Tree Hill	B	1980	Pre	40,453	18991	2.1	2030	35	1.25	1.61	100%	2.67
1488	Drinking	86.69	PVC	200	130			0	130	182	15,778	Skenners Head	B	1994	Pre	15,778	18991	0.8	2030	35	1.25	1.61	100%	1.04
1490	Drinking	90.79	PVC	200	130			0	130	182	16,524	Skenners Head	B	1992	Pre	16,524	18991	0.9	2030	35	1.25	1.61	100%	1.09
1491	Drinking	226.12	PVC	200	130			0	130	182	41,154	Skenners Head	B	1992	Pre	41,154	18991	2.2	2030	35	1.25	1.61	100%	2.71
1492	Drinking	150.12	PVC	200	130			0	130	182	27,322	Skenners Head	B	1992	Pre	27,322	18991	1.4	2030	35	1.25	1.61	100%	1.80
1493	Drinking	201.37	PVC	200	130			0	130	182	36,649	Skenners Head	B	1994	Pre	36,649	18991	1.9	2030	35	1.25	1.61	100%	2.41
15	Drinking	194.1	PVC	200	130	Moderate	5	60	190	266	51,631	East Ballina	B	1992	Pre	51,631	18991	2.7	2030	35	1.25	1.61	100%	3.40
151	Drinking	328.34	DICL	450	295	Moderate	13	150	445	623	204,556	East Ballina	B	1987	Pre	204,556	18991	10.8	2030	35	1.25	1.61	100%	13.48
1530	Drinking	207.33	PVC	200	130	Moderate	5	60	190	266	55,150	Lennox Head	B	1995	Pre	55,150	18991	2.9	2030	35	1.25	1.61	100%	3.63
1531	Drinking	32.81	PVC	200	130	Moderate	5	60	190	266	8,727	Lennox Head	B	1995	Pre	8,727	18991	0.5	2030	35	1.25	1.61	100%	0.57
1540	Drinking	113.33	PVC	200	130			0	130	182	20,626	Skenners Head	B	1994	Pre	20,626	18991	1.1	2030	35	1.25	1.61	100%	1.36
1541	Drinking	125.77	PVC	200	130			0	130	182	22,890	Skenners Head	B	1994	Pre	22,890	18991	1.2	2030	35	1.25	1.61	100%	1.51
1542	Drinking	224.04	PVC	100	70			0	70	98	21,956	Skenners Head	B	1994	Pre	21,956	18991	1.2	2030	35	1.25	1.61	100%	1.45
1581	Drinking	209.85	PVC	275	190	Moderate	7	82.5	273	382	80,058	Lennox Head	B	1979	Pre	80,058	18991	4.2	2030	35	1.25	1.61	100%	5.27
1599	Drinking	233.07	PVC	200	130	Moderate	5	60	190	266	61,997	Lennox Head	B	1988	Pre	61,997	18991	3.3	2030	35	1.25	1.61	100%	4.08
16	Drinking	1,295.31	DICL	450	295	Moderate	13	150	445	623	806,978	Lennox Head	B	1987	Pre	806,978	18991	42.5	2030	35	1.25	1.61	100%	53.17
1601	Drinking	181.68	PVC	200	130	Moderate	5	60	190	266	48,327	Lennox Head	B	1988	Pre	48,327	18991	2.5	2030	35	1.25	1.61	100%	3.18
1602	Drinking	18.61	PVC	200	130	Moderate	5	60	190	266	4,950	Lennox Head	B	1988	Pre	4,950	18991	0.3	2030	35	1.25	1.61	100%	0.33
1604	Drinking	82.18	PVC	200	130	Moderate	5	60	190	266	21,860	Lennox Head	B	1988	Pre	21,860	18991	1.2	2030	35	1.25	1.61	100%	1.44
1605	Drinking	93	PVC	200	130	Moderate	5	60	190	266	24,738	Lennox Head	B	1988	Pre	24,738	18991	1.3	2030	35	1.25	1.61	100%	1.63
1616	Drinking	32.83	PVC	200	130	Moderate	5	60	190	266	8,733	Lennox Head	B	1995	Pre	8,733	18991	0.5	2030	35	1.25	1.61	100%	0.58
1617	Drinking	17.13	PVC	200	130	Moderate	5	60	190	266	4,557	Lennox Head	B	1995	Pre	4,557	18991	0.2	2030	35	1.25	1.61	100%	0.30
1619	Drinking	80.27	PVC	200	130	Moderate	5	60	190	266	21,352	Lennox Head	B	1995	Pre	21,352	18991	1.1	2030	35	1.25	1.61	100%	1.41
1621	Drinking	58.18	PVC	200	130	Moderate	5	60	190	266	15,476	Lennox Head	B	1995	Pre	15,476	18991	0.8	2030	35	1.25	1.61	100%	1.02
1635	Drinking	150.72	PVC	275	190	Moderate	7	82.5	273	382	57,500	Lennox Head	B	1975	Pre	57,500	18991	3.0	2030	35	1.25	1.61	100%	3.79
1637	Drinking	167.28	PVC	275	190	Moderate	7	82.5	273	382	63,817	Lennox Head	B	1981	Pre	63,817	18991	3.4	2030	35	1.25	1.61	100%	4.20
1639	Drinking	146.24	PVC	275	190	Moderate	7	82.5	273	382	55,791	Lennox Head	B	1981	Pre	55,791	18991	2.9	2030	35	1.25	1.61	100%	3.68
164	Drinking	25.76	PVC	300	210	High	8	180	390	546	14,065	Ballina Island	B	1980	Pre	14,065	18991	0.7	2030	35	1.25	1.61	100%	0.93
1640	Drinking	173.72	PVC	275	190	Moderate	7	82.5	273	382	66,274	Lennox Head	B	1989	Pre	66,274	18991	3.5	2030	35	1.25	1.61	100%	4.37
1641	Drinking	60.33	PVC	275	190	Moderate	7	82.5	273	382	23,016	Lennox Head	B	1981	Pre	23,016	18991	1.2	2030	35	1.25	1.61	100%	1.52
1642	Drinking	33.95	PVC	200	130	Moderate	5	60	190	266	9,031	Lennox Head	B	1981	Pre	9,031	18991	0.5	2030	35	1.25	1.61	100%	0.59
1643	Drinking	64.79	PVC	275	190	Moderate	7	82.5	273	382	24,717	Lennox Head	B	1989	Pre	24,717	18991	1.3	2030	35	1.25	1.61	100%	1.63
1647	Drinking	167.28	PVC	275	190	Moderate	7	82.5	273	382	63,817	Lennox Head	B	1981	Pre	63,817	18991	3.4	2030	35	1.25	1.61	100%	4.20
1650	Drinking	52	PVC	200	130	Moderate	5	60	190	266	13,832	Lennox Head	B	1980	Pre	13,832	18991	0.7	2030	35	1.25	1.61	100%	0.91
1651	Drinking	7.07	DICL	600	405	Moderate	15	200	605	847	5,988	East Ballina	B	1980	Pre	5,988	18991	0.3	2030	35	1.25	1.61	100%	0.39
1653	Drinking	255.98	PVC	350	243	High	10	220	463	649	166,046	North Ballina	B	1987	Pre	166,046	18991	8.7	2030	35	1.25	1.61	100%	10.94
167	Drinking	195.73	PVC	300	210	High	8	180	390	546	106,869	Ballina Island	B	1989	Pre	106,869	18991	5.6	2030	35	1.25	1.61	100%	7.04
17	Drinking	852.39	DICL	450	295	Moderate	13	150	445	623	531,039	Lennox Head	B	1987	Pre	531,039	18991	28.0	2030	35	1.25	1.61	100%	34.99
171	Drinking	239.44	PVC	300	210	High	8	180	390	546	130,734	Ballina Island	B	1989	Pre	130,734	18991	6.9	2030	35	1.25	1.61	100%	8.61
175	Drinking	228.93	PVC	300	210	High	8	180	390	546	124,996	Ballina Island	B	1985	Pre	124,996	18991	6.6	2030	35	1.25	1.61	100%	8.23
176	Drinking	121.66	PVC	250	170	High	6	150	320	448	54,504	Ballina Island	B	1985	Pre	54,504	18991	2.9	2030	35	1.25	1.61	100%	3.59
177	Drinking	10.56	PVC	300	210	High	8	180	390	546	5,766	Ballina Island	B	1985	Pre	5,766	18991	0.3	2030	35	1.25	1.61	100%	0.38
178	Drinking	688.38	DICL	450	295	Moderate	13	150	445	623	428,861	East Ballina	B	1987	Pre	428,861	18991	22.6	2030	35	1.25	1.61	100%	28.25
179	Drinking	2,594.68	PVC	325	227	High	9	200	427	597	1,549,889	North Ballina	B	1994	Pre	1,549,889	18991	81.6	2030	35	1.25	1.61	100%	102.11
18	Drinking	2,635.66	DICL	450	295	Moderate	13	150	445	623	1,642,016	Lennox Head	B	1987	Pre	1,642,016	18991	86.5	2030	35	1.25	1.61	100%	108.18
181	Drinking	211.67	PVC	300	210	High	8	180	390	546	115,572	Ballina Island	B	1985	Pre	115,572	18991	6.1	2030	35	1.25	1.61	100%	7.61
186	Drinking	124.57	PVC	300	210	High	8	180	390	546	68,015	Ballina Island	B	1985	Pre	68,015	18991	3.6	2030	35	1.25	1.61	100%	4.48
187	Drinking	133.99	PVC	300	210	High	8	180	390	546	73,159	Ballina Island	B	1985	Pre	73,159	18991	3.9	2030	35	1.25	1.61	100%	4.82
188	Drinking	134.7	PVC	300	210	High	8	180	390	546	73,546	Ballina Island	B	1985	Pre	73,546	18991	3.9	2030	35	1.25	1.61	100%	4.85
189	Drinking	63.59	PVC	300	210	High	8	180	390	546	34,720	Ballina Island	B	1985	Pre	34,720	18991	1.8	2030	35	1.25	1.61	100%	2.29
190	Drinking	112.07	PVC	300	210	High	8	180	390	546	61,190	Ballina Island	B	1985	Pre	61,190	18991	3.2	2030	35	1.25	1.61	100%	4.03
191	Drinking	17.32	PVC	300	210	High	8	180	390	546	9,457	Ballina Island	B	1985	Pre	9,457	18991	0.5	2030	35	1.25	1.61	100%	0.62
194	Drinking	45.56	PVC	300	210	High	8	180	390	546	24,876	Ballina Island	B	1985	Pre	24,876	18991	1.3	2030	35	1.25	1.61	100%	1.64
195	Drinking	367.83	PVC	350	243	High	10	220	463	649	238,599	Ballina Island	B	1985	Pre	238,599	18991	12.6	2030	35	1.25	1.61	100%	15.72
196	Drinking	42.09	PVC	300	210	High	8	180	390	546	22,981	Ballina Island	B	1985	Pre	22,981	18991	1.2	2030	35	1.25	1.61	100%	1.51
198	Drinking	298.85	DICL	450	295	Moderate	13	150	445	623	186,184	East Ballina	B	1987	Pre	186,184	18991	9.8	2030	35	1.25	1.61	100%	12.27
199	Drinking	49.6	DICL	450	295	Moderate	13	150	445	623	30,901	East Ballina	B	1987	Pre	30,901	18991	1.6	2030	35	1.25	1.61	100%	2.04
20	Drinking	257.32	DICL	450	295	Moderate	13	150	445	623	160,310	Lennox Head	B	1987	Pre	160,310	18991	8.4	2030	35	1.25	1.61	100%	10.56
201	Drinking	74.59	PVC	300	210	High	8	180	390	546	40,726	Ballina Island	B	1985	Pre	40,726	18991	2.1	2030	35	1.25	1.61	100%	2.68
203	Drinking	70.58	PVC	350	243	High	10	220	463	649	45,783	Ballina Island	B	1986	Pre	45,783	18991	2.4	2030	35	1.25	1.61	100%	3.02
204	Drinking	81.42	PVC	200	130	High	5	120	250	350	28,497	Ballina Island	B	1986	Pre	28,497	18991	1.5	2030	35	1.25	1.61	100%	1.88
208	Drinking	93.21	PVC	300	210	High	8	180	390	546	50,893	Ballina Island	B	1980	Pre	50,893	18991	2.7	2030	35	1.25	1.61	100%	3.35
209	Drinking	15.07	PVC	300	210	High	8	180	390	546	8,228	Ballina Island	B	1980	Pre	8,228	18991	0.4	2030	35	1.25	1.61	100%	0.54
21	Drinking	67.9	PVC	300	210			0	210	294	19,963	West Ballina	B	1988	Pre	19,963	18991	1.1	2030	35	1.25	1.61	100%	1.32
212	Drinking	383.1	PVC	300	210	High	8	180	390	546	209,173	Ballina Island	B	1980	Pre	209,173	18991	11.0	2030	35	1.25	1.61	100%	13.78
214	Drinking	49.8	DICL	450	295	Moderate	13	150	445	623	31,025	East Ballina	B	1987	Pre	31,025	18991	1.6	2030	35	1.25	1.61	100%	2.04
23	Drinking	217.78	PVC	300	210			0	210	294	64,027	West Ballina	B	1988	Pre	64,027	18991	3.4	2030	35	1.25	1.61	100%	4.22
231	Drinking	292.05	DICL	450	295	Moderate	13	150	445	623	181,947	East Ballina	B	1987	Pre	181,947	18991	9.6	2030	35	1.25	1.61	100%	11.99

Capital Charge: Pipelines - Future and Existing

Label	Drinking Recycled Asset	Length	Material	Diameter	Pipe Base Rate 2003 ($/m)	Construction Difficulty	Row Ref for diameter	Construction Difficulty Rate 2003 ($/m)	Total Rate 2003 ($/m)	Total Rate 2011 ($/m)	Total Cost 2011 ($)	DSP AREA	Area	Date of Construction	Pre or Post 1996 Asset	Capital Cost (2011/2012$)	Adopted Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up	Take-up period (t) (years)	Pre 1996 Return on Investment Factor	Post 1996 Return on Investment Factor	% Water/ Wastewater	Capital Charge per ET (2011/2012$)
24	Drinking	101.67	PVC	300	210			0	210	294	29,891	West Ballina	B	1988	Pre	29,891	18991	1.6	2030	35	1.25	1.61	100%	1.97
248	Drinking	23.31	DICL	450	295	Moderate	13	150	445	623	14,522	East Ballina	B	1987	Pre	14,522	18991	0.8	2030	35	1.25	1.61	100%	0.96
25	Drinking	64.52	PVC	300	210			0	210	294	18,969	West Ballina	B	1980	Pre	18,969	18991	1.0	2030	35	1.25	1.61	100%	1.25
26	Drinking	250.15	PVC	300	210			0	210	294	73,544	West Ballina	B	1980	Pre	73,544	18991	3.9	2030	35	1.25	1.61	100%	4.85
262	Drinking	72.6	DICL	450	295	Moderate	13	150	445	623	45,230	East Ballina	B	1987	Pre	45,230	18991	2.4	2030	35	1.25	1.61	100%	2.98
28	Drinking	162.28	PVC	300	210			0	210	294	47,710	West Ballina	B	1980	Pre	47,710	18991	2.5	2030	35	1.25	1.61	100%	3.14
283	Drinking	787.21	DICL	450	295	Moderate	13	150	445	623	490,432	East Ballina	B	1987	Pre	490,432	18991	25.8	2030	35	1.25	1.61	100%	32.31
29	Drinking	253.04	PVC	300	210			0	210	294	74,394	West Ballina	B	1980	Pre	74,394	18991	3.9	2030	35	1.25	1.61	100%	4.90
31	Drinking	336	PVC	300	210			0	210	294	98,784	West Ballina	B	1980	Pre	98,784	18991	5.2	2030	35	1.25	1.61	100%	6.51
324	Drinking	486.72	PVC	300	210	High	8	180	390	546	265,749	North Ballina	B	1987	Pre	265,749	18991	14.0	2030	35	1.25	1.61	100%	17.51
33	Drinking	34.69	DICL	300	210			0	210	294	10,199	West Ballina	B	1980	Pre	10,199	18991	0.5	2030	35	1.25	1.61	100%	0.67
34	Drinking	18	DICL	300	210			0	210	294	5,292	West Ballina	B	1980	Pre	5,292	18991	0.3	2030	35	1.25	1.61	100%	0.35
358	Drinking	231.82	PVC	300	210	High	8	180	390	546	126,574	North Ballina	B	1981	Pre	126,574	18991	6.7	2030	35	1.25	1.61	100%	8.34
359	Drinking	326.07	PVC	300	210	High	8	180	390	546	178,034	North Ballina	B	1980	Pre	178,034	18991	9.4	2030	35	1.25	1.61	100%	11.73
360	Drinking	82.76	PVC	200	130	High	5	120	250	350	28,966	North Ballina	B	1981	Pre	28,966	18991	1.5	2030	35	1.25	1.61	100%	1.91
382	Drinking	66.8	PVC	300	210	High	8	180	390	546	36,473	Ballina Island	B	1980	Pre	36,473	18991	1.9	2030	35	1.25	1.61	100%	2.40
401	Drinking	228.56	PVC	300	210	High	8	180	390	546	124,794	Ballina Island	B	1981	Pre	124,794	18991	6.6	2030	35	1.25	1.61	100%	8.22
419	Drinking	261.97	PVC	300	210	High	8	180	390	546	143,036	Ballina Island	B	1980	Pre	143,036	18991	7.5	2030	35	1.25	1.61	100%	9.42
420	Drinking	37.8	PVC	300	210	High	8	180	390	546	20,639	Ballina Island	B	1980	Pre	20,639	18991	1.1	2030	35	1.25	1.61	100%	1.36
437	Drinking	242.27	PVC	300	210	High	8	180	390	546	132,279	Ballina Island	B	1980	Pre	132,279	18991	7.0	2030	35	1.25	1.61	100%	8.71
451	Drinking	85.2	PVC	300	210	High	8	180	390	546	46,519	Ballina Island	B	1980	Pre	46,519	18991	2.4	2030	35	1.25	1.61	100%	3.06
455	Drinking	322.98	PVC	300	210	High	8	180	390	546	176,347	Ballina Island	B	1980	Pre	176,347	18991	9.3	2030	35	1.25	1.61	100%	11.62
471	Drinking	238.74	PVC	300	210	High	8	180	390	546	130,352	Ballina Island	B	1980	Pre	130,352	18991	6.9	2030	35	1.25	1.61	100%	8.59
485	Drinking	217.21	PVC	300	210	High	8	180	390	546	118,597	Ballina Island	B	1980	Pre	118,597	18991	6.2	2030	35	1.25	1.61	100%	7.81
486	Drinking	225.01	PVC	300	210	High	8	180	390	546	122,855	Ballina Island	B	1980	Pre	122,855	18991	6.5	2030	35	1.25	1.61	100%	8.09
4_2#	Drinking	688.94	PVC	450	400	Moderate	13	150	550	770	530,484	Lennox Head	B	1987	Pre	530,484	18991	27.9	2030	35	1.25	1.61	100%	34.95
500	Drinking	154.62	PVC	300	210	High	8	180	390	546	84,423	Ballina Island	B	1980	Pre	84,423	18991	4.4	2030	35	1.25	1.61	100%	5.56
514	Drinking	3.76	PVC	400	300	High	12	260	560	784	2,948	Ballina Island	B	1980	Pre	2,948	18991	0.2	2030	35	1.25	1.61	100%	0.19
515	Drinking	17.64	PVC	300	210	High	8	180	390	546	9,631	Ballina Island	B	1980	Pre	9,631	18991	0.5	2030	35	1.25	1.61	100%	0.63
529	Drinking	28.82	PVC	350	243	High	10	220	463	649	18,695	Ballina Island	B	1980	Pre	18,695	18991	1.0	2030	35	1.25	1.61	100%	1.23
551	Drinking	27.94	PVC	400	300	High	12	260	560	784	21,905	Ballina Island	B	1987	Pre	21,905	18991	1.2	2030	35	1.25	1.61	100%	1.44
565	Drinking	257.98	DICL	300	210	High	8	180	390	546	140,857	Ballina Island	B	1987	Pre	140,857	18991	7.4	2030	35	1.25	1.61	100%	9.28
575	Drinking	186.32	PVC	350	243	Moderate	10	110	353	495	92,166	East Ballina	B	1987	Pre	92,166	18991	4.9	2030	35	1.25	1.61	100%	6.07
58	Drinking	171.23	PVC	200	130			0	130	182	31,164	West Ballina	B	1984	Pre	31,164	18991	1.6	2030	35	1.25	1.61	100%	2.05
588	Drinking	18.6	PVC	400	300	Moderate	12	130	430	602	11,197	East Ballina	B	1987	Pre	11,197	18991	0.6	2030	35	1.25	1.61	100%	0.74
6	Drinking	1,211.25	DICL	450	295	Moderate	13	150	445	623	754,609	Lennox Head	B	1987	Pre	754,609	18991	39.7	2030	35	1.25	1.61	100%	49.72
610	Drinking	22.78	PVC	350	243	Moderate	10	110	353	495	11,269	East Ballina	B	1987	Pre	11,269	18991	0.6	2030	35	1.25	1.61	100%	0.74
626	Drinking	19.31	PVC	200	130	Moderate	5	60	190	266	5,136	East Ballina	B	1980	Pre	5,136	18991	0.3	2030	35	1.25	1.61	100%	0.34
627	Drinking	7.88	DICL	600	405	Moderate	15	200	605	847	6,674	East Ballina	B	1980	Pre	6,674	18991	0.4	2030	35	1.25	1.61	100%	0.44
657	Drinking	14.95	PVC	300	210	Moderate	8	90	300	420	6,279	East Ballina	B	1980	Pre	6,279	18991	0.3	2030	35	1.25	1.61	100%	0.41
671	Drinking	238.34	PVC	300	210	Moderate	8	90	300	420	100,103	East Ballina	B	1988	Pre	100,103	18991	5.3	2030	35	1.25	1.61	100%	6.59
685	Drinking	29.49	PVC	300	210	Moderate	8	90	300	420	12,386	East Ballina	B	1980	Pre	12,386	18991	0.7	2030	35	1.25	1.61	100%	0.82
7	Drinking	1,539.12	DICL	450	295	Moderate	13	150	445	623	958,872	Lennox Head	B	1987	Pre	958,872	18991	50.5	2030	35	1.25	1.61	100%	63.17
707	Drinking	313.2	PVC	300	210	Moderate	8	90	300	420	131,544	East Ballina	B	1987	Pre	131,544	18991	6.9	2030	35	1.25	1.61	100%	8.67
708	Drinking	821.74	PVC	300	210	Moderate	8	90	300	420	345,131	East Ballina	B	1972	Pre	345,131	18991	18.2	2030	35	1.25	1.61	100%	22.74
8	Drinking	449.42	PVC	200	130	Moderate	5	60	190	266	119,546	East Ballina	B	1992	Pre	119,546	18991	6.3	2030	35	1.25	1.61	100%	7.88
822	Drinking	561.77	DICL	450	295	Moderate	13	150	445	623	349,983	East Ballina	B	1992	Pre	349,983	18991	18.4	2030	35	1.25	1.61	100%	23.06
825	Drinking	669.91	PVC	250	170			0	170	238	159,439	West Ballina	B	1984	Pre	159,439	18991	8.4	2030	35	1.25	1.61	100%	10.50
852	Drinking	169.78	PVC	250	170			0	170	238	40,408	West Ballina	B	1988	Pre	40,408	18991	2.1	2030	35	1.25	1.61	100%	2.66
868	Drinking	51.48	PVC	300	210	High	8	180	390	546	28,108	Ballina Island	B	1980	Pre	28,108	18991	1.5	2030	35	1.25	1.61	100%	1.85
897	Drinking	265.1	PVC	300	210	High	8	180	390	546	144,745	Ballina Island	B	1980	Pre	144,745	18991	7.6	2030	35	1.25	1.61	100%	9.54
914	Drinking	58.91	PE	325	227	High	9	200	427	597	35,189	Ballina Island	B	1994	Pre	35,189	18991	1.9	2030	35	1.25	1.61	100%	2.32
925	Drinking	454.65	PVC	200	130	Moderate	5	60	190	266	120,937	East Ballina	B	1974	Pre	120,937	18991	6.4	2030	35	1.25	1.61	100%	7.97
928	Drinking	51.38	PVC	325	227	High	9	200	427	597	30,691	Ballina Island	B	1994	Pre	30,691	18991	1.6	2030	35	1.25	1.61	100%	2.02
931	Drinking	133.28	PVC	300	210	Moderate	8	90	300	420	55,978	East Ballina	B	1972	Pre	55,978	18991	2.9	2030	35	1.25	1.61	100%	3.69
941	Drinking	16.97	PVC	200	130	Moderate	5	60	190	266	4,514	East Ballina	B	1980	Pre	4,514	18991	0.2	2030	35	1.25	1.61	100%	0.30
964	Drinking	9.73	PVC	200	130	Moderate	5	60	190	266	2,588	East Ballina	B	1980	Pre	2,588	18991	0.1	2030	35	1.25	1.61	100%	0.17
967	Drinking	34.55	PVC	200	130	High	5	120	250	350	12,093	North Ballina	B	1981	Pre	12,093	18991	0.6	2030	35	1.25	1.61	100%	0.80
968	Drinking	156.68	PVC	200	130	High	5	120	250	350	54,838	North Ballina	B	1981	Pre	54,838	18991	2.9	2030	35	1.25	1.61	100%	3.61
972	Drinking	81.77	PVC	200	130	High	5	120	250	350	28,620	North Ballina	B	1981	Pre	28,620	18991	1.5	2030	35	1.25	1.61	100%	1.89
973	Drinking	109.98	PVC	200	130	High	5	120	250	350	38,493	North Ballina	B	1981	Pre	38,493	18991	2.0	2030	35	1.25	1.61	100%	2.54
974	Drinking	11.97	PVC	200	130	High	5	120	250	350	4,190	North Ballina	B	1981	Pre	4,190	18991	0.2	2030	35	1.25	1.61	100%	0.28
975	Drinking	286.29	PVC	200	130	High	5	120	250	350	100,202	North Ballina	B	1981	Pre	100,202	18991	5.3	2030	35	1.25	1.61	100%	6.60
976	Drinking	178.53	PVC	200	130	High	5	120	250	350	62,486	North Ballina	B	1981	Pre	62,486	18991	3.3	2030	35	1.25	1.61	100%	4.12
977	Drinking	72.75	PVC	200	130	High	5	120	250	350	25,463	North Ballina	B	1995	Pre	25,463	18991	1.3	2030	35	1.25	1.61	100%	1.68
9927	Drinking	57.73	AC	450	400	Moderate	13	150	550	770	44,452	Lennox Head	B	1980	Pre	44,452	18991	2.3	2030	35	1.25	1.61	100%	2.93
998	Drinking	11.53	DICL	450	295	Moderate	13	150	445	623	7,183	East Ballina	B	1980	Pre	7,183	18991	0.4	2030	35	1.25	1.61	100%	0.47
999	Drinking	7.34	DICL	450	295	Moderate	13	150	445	623	4,573	East Ballina	B	1980	Pre	4,573	18991	0.2	2030	35	1.25	1.61	100%	0.30
BC_CV_BYP	Drinking	28.89	DICL	450	295	Moderate	13	150	445	623	17,998	Lennox Head	B	1981	Pre	17,998	18991	0.9	2030	35	1.25	1.61	100%	1.19
BHWDP2405	Drinking	198.86	PVC	200	130			0	130	182	36,193	Ballina Heights	F	2005	Post	36,193	2416	15.0	2030	26	1.11	1.27	100%	19.00
BHWDP2406	Drinking	44.64	PVC	200	130			0	130	182	8,124	Ballina Heights	F	2005	Post	8,124	2416	3.4	2030	26	1.11	1.27	100%	4.27
BHWDP2407	Drinking	292.97	PVC	200	130			0	130	182	53,321	Ballina Heights	F	2005	Post	53,321	2416	22.1	2030	26	1.11	1.27	100%	28.00
MA000642	Drinking	275.8	AC	200	130			0	130	182	50,196	Wollongbar	E	1988	Pre	50,196	5983	8.4	2030	35	1.31	1.77	100%	10.98
MA0011	Drinking	10.24	AC	450	400	Moderate	13	150	550	770	7,885	Lennox Head	B	1987	Pre	7,885	18991	0.4	2030	35	1.25	1.61	100%	0.52
MA0012	Drinking	23.05	AC	450	400	Moderate	13	150	550	770	17,749	Lennox Head	B	1987	Pre	17,749	18991	0.9	2030	35	1.25	1.61	100%	1.17
MA001660	Drinking	619.22	AC	200	130			0	130	182	112,698	Fig Tree Hill	B	1987	Pre	112,698	18991	5.9	2030	35	1.25	1.61	100%	7.42
MA001660_B	Drinking	31.65	AC	200	130			0	130	182	5,760	Fig Tree Hill	B	1987	Pre	5,760	18991	0.3	2030	35	1.25	1.61	100%	0.38
NCMCVFCV1	Drinking	22.46	AC	450	400	Moderate	13	150	550	770	17,294	Lennox Head	B	1987	Pre	17,294	18991	0.9	2030	35	1.25	1.61	100%	1.14
P001	Drinking	381.58	AC	200	130			0	130	182	69,448	Wollongbar	E	1989	Pre	69,448	5983	11.6	2030	35	1.31	1.77	100%	15.19
P002	Drinking	8.97	DICL	200	130			0	130	182	1,633	Wollongbar	E	1991	Pre	1,633	5983	0.3	2030	35	1.31	1.77	100%	0.36
P003	Drinking	485.51	AC	200	130			0	130	182	88,363	Wollongbar	E	1989	Pre	88,363	5983	14.8	2030	35	1.31	1.77	100%	19.32

Capital Charge: Pipelines - Future and Existing

Label	Drinking Recycled Asset	Length	Material	Diameter	Pipe Base Rate 2003 ($/m)	Construction Difficulty	Row Ref for diameter	Construction Difficulty Rate 2003 ($/m)	Total Rate 2003 ($/m)	Total Rate 2011 ($/m)	Total Cost 2011 ($)	DSP AREA	Area	Date of Construction	Pre or Post 1996 Asset	Capital Cost (2011/2012$)	Adopted Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up	Take-up period (t) (years)	Pre 1996 Return on Investment Factor	Post 1996 Return on Investment Factor	% Water/ Wastewater	Capital Charge per ET (2011/2012$)
P004	Drinking	273.19	DICL	200	130			0	130	182	49,721	Wollongbar	E	1989	Pre	49,721	5983	8.3	2030	35	1.31	1.77	100%	10.87
P009	Drinking	111.34	DICL	150	105			0	105	147	16,367	Alstonville	E	1991	Pre	16,367	5983	2.7	2030	35	1.31	1.77	100%	3.58
P010	Drinking	80.71	PVC	275	190			0	190	266	21,469	Alst. Industr	E	1979	Pre	21,469	5983	3.6	2030	35	1.31	1.77	100%	4.69
P011	Drinking	178.03	PVC	200	130			0	130	182	32,401	Alst. Industr	E	1979	Pre	32,401	5983	5.4	2030	35	1.31	1.77	100%	7.09
P016	Drinking	109.23	AC	300	210			0	210	294	32,114	Wollongbar	E	1984	Pre	32,114	5983	5.4	2030	35	1.31	1.77	100%	7.02
P017	Drinking	423.44	AC	300	210			0	210	294	124,491	Wollongbar	E	1984	Pre	124,491	5983	20.8	2030	35	1.31	1.77	100%	27.22
P018	Drinking	424.18	DICL	450	295			0	295	413	175,186	Wollongbar	E	1984	Pre	175,186	5983	29.3	2030	35	1.31	1.77	100%	38.31
P021	Drinking	1,051.24	HOBA	600	405			0	405	567	596,053	Wollongbar	E	1991	Pre	596,053	5983	99.6	2030	35	1.31	1.77	100%	130.35
P022	Drinking	384.15	HOBA	600	405			0	405	567	217,813	Wollongbar	E	1991	Pre	217,813	5983	36.4	2030	35	1.31	1.77	100%	47.63
P023	Drinking	4.25	HOBA	600	405			0	405	567	2,410	Wollongbar	E	1993	Pre	2,410	5983	0.4	2030	35	1.31	1.77	100%	0.53
P024	Drinking	5.59	HOBA	600	405			0	405	567	3,170	Wollongbar	E	1980	Pre	3,170	5983	0.5	2030	35	1.31	1.77	100%	0.69
P030	Drinking	853.4	HOBA	325	218			0	218	306	260,856	Wollongbar	E	1972	Pre	260,856	5983	43.6	2030	35	1.31	1.77	100%	57.05
P040	Drinking	142.44	HOBA	325	218			0	218	306	43,539	Wollongbar	E	1973	Pre	43,539	5983	7.3	2030	35	1.31	1.77	100%	9.52
P042	Drinking	37.34	HOBA	325	218			0	218	306	11,414	Wollongbar	E	2001	Post	11,414	5983	1.9	2030	30	1.31	1.77	100%	3.38
P044	Drinking	67.58	DICL	300	210			0	210	294	19,869	Wollongbar	E	2001	Post	19,869	5983	3.3	2030	30	1.31	1.77	100%	5.89
P045	Drinking	296.25	BluB	275	190			0	190	266	78,803	Wollongbar	E	1988	Pre	78,803	5983	13.2	2030	35	1.31	1.77	100%	17.23
P047	Drinking	350.98	BluB	275	190			0	190	266	93,361	Wollongbar	E	1988	Pre	93,361	5983	15.6	2030	35	1.31	1.77	100%	20.42
P049	Drinking	12.33	BluB	150	105			0	105	147	1,813	Wollongbar	E	1978	Pre	1,813	5983	0.3	2030	35	1.31	1.77	100%	0.40
P089	Drinking	14.6	DICL	450	295			0	295	413	6,030	Wollongbar	E	1991	Pre	6,030	5983	1.0	2030	35	1.31	1.77	100%	1.32
P090	Drinking	19.47	DICL	400	255			0	255	357	6,951	Wollongbar	E	1991	Pre	6,951	5983	1.2	2030	35	1.31	1.77	100%	1.52
P091	Drinking	8.5	DICL	450	295			0	295	413	3,511	Wollongbar	E	1991	Pre	3,511	5983	0.6	2030	35	1.31	1.77	100%	0.77
P106	Drinking	61.77	AC	200	130			0	130	182	11,242	Wollongbar	E	2004	Post	11,242	5983	1.9	2030	27	1.31	1.77	100%	3.33
P130	Drinking	25.59	HOBA	600	405			0	405	567	14,510	Wollongbar	E	1972	Pre	14,510	5983	2.4	2030	35	1.31	1.77	100%	3.17
P138	Drinking	47.39	AC	200	130			0	130	182	8,625	Wollongbar	E	1972	Pre	8,625	5983	1.4	2030	35	1.31	1.77	100%	1.89
P174	Drinking	87.27	AC	200	130			0	130	182	15,883	Wollongbar	E	1981	Pre	15,883	5983	2.7	2030	35	1.31	1.77	100%	3.47
P175	Drinking	217.22	AC	200	130			0	130	182	39,534	Wollongbar	E	1981	Pre	39,534	5983	6.6	2030	35	1.31	1.77	100%	8.65
P192	Drinking	89.48	AC	200	130			0	130	182	16,285	Wollongbar	E	1988	Pre	16,285	5983	2.7	2030	35	1.31	1.77	100%	3.56
P205	Drinking	21.64	AC	200	130			0	130	182	3,938	Wollongbar	E	1988	Pre	3,938	5983	0.7	2030	35	1.31	1.77	100%	0.86
P230	Drinking	231.03	AC	300	210			0	210	294	67,923	Wollongbar	E	1978	Pre	67,923	5983	11.4	2030	35	1.31	1.77	100%	14.85
P251	Drinking	133.43	AC	300	210			0	210	294	39,228	Alst. Industr	E	1978	Pre	39,228	5983	6.6	2030	35	1.31	1.77	100%	8.58
P254	Drinking	439.99	AC	300	210			0	210	294	129,357	Alst. Industr	E	1979	Pre	129,357	5983	21.6	2030	35	1.31	1.77	100%	28.29
P255	Drinking	159.11	AC	300	210			0	210	294	46,778	Alst. Industr	E	1984	Pre	46,778	5983	7.8	2030	35	1.31	1.77	100%	10.23
P266	Drinking	22.74	PVC	275	190			0	190	266	6,049	Alst. Industr	E	1979	Pre	6,049	5983	1.0	2030	35	1.31	1.77	100%	1.32
P275	Drinking	109.11	DICL	500	323			0	323	452	49,340	Wollongbar	E	1972	Pre	49,340	5983	8.2	2030	35	1.31	1.77	100%	10.79
P277	Drinking	117.44	DICL	300	210			0	210	294	34,527	Wollongbar	E	1989	Pre	34,527	5983	5.8	2030	35	1.31	1.77	100%	7.55
P289	Drinking	26.66	AC	200	130			0	130	182	4,852	Wollongbar	E	1980	Pre	4,852	5983	0.8	2030	35	1.31	1.77	100%	1.06
P293	Drinking	89.83	HOBA	600	405			0	405	567	50,934	Wollongbar	E	1993	Pre	50,934	5983	8.5	2030	35	1.31	1.77	100%	11.14
P294	Drinking	205.54	HOBA	600	405			0	405	567	116,541	Wollongbar	E	1991	Pre	116,541	5983	19.5	2030	35	1.31	1.77	100%	25.49
P295	Drinking	977.15	HOBA	600	405			0	405	567	554,044	Wollongbar	E	1972	Pre	554,044	5983	92.6	2030	35	1.31	1.77	100%	121.16
P319	Drinking	129.78	AC	200	130			0	130	182	23,620	Alstonville	E	1989	Pre	23,620	5983	3.9	2030	35	1.31	1.77	100%	5.17
P320	Drinking	15.58	AC	200	130			0	130	182	2,836	Alstonville	E	1990	Pre	2,836	5983	0.5	2030	35	1.31	1.77	100%	0.62
P332	Drinking	116.64	AC	200	130			0	130	182	21,228	Alstonville	E	1985	Pre	21,228	5983	3.5	2030	35	1.31	1.77	100%	4.64
P336	Drinking	41.64	AC	200	130			0	130	182	7,578	Alstonville	E	1985	Pre	7,578	5983	1.3	2030	35	1.31	1.77	100%	1.66
P338	Drinking	75.98	AC	200	130			0	130	182	13,828	Alstonville	E	1985	Pre	13,828	5983	2.3	2030	35	1.31	1.77	100%	3.02
P341	Drinking	82.97	AC	200	130			0	130	182	15,101	Alstonville	E	1985	Pre	15,101	5983	2.5	2030	35	1.31	1.77	100%	3.30
P370	Drinking	98.56	AC	200	130			0	130	182	17,938	Alstonville	E	1985	Pre	17,938	5983	3.0	2030	35	1.31	1.77	100%	3.92
P400	Drinking	181.51	DICL	400	255			0	255	357	64,799	Alstonville	E	1990	Pre	64,799	5983	10.8	2030	35	1.31	1.77	100%	14.17
P402	Drinking	142.1	DICL	150	105			0	105	147	20,889	Alstonville	E	1991	Pre	20,889	5983	3.5	2030	35	1.31	1.77	100%	4.57
P405	Drinking	18.9	AC	150	105			0	105	147	2,778	Alstonville	E	1991	Pre	2,778	5983	0.5	2030	35	1.31	1.77	100%	0.61
P406	Drinking	352.01	AC	200	130			0	130	182	64,066	Alstonville	E	1984	Pre	64,066	5983	10.7	2030	35	1.31	1.77	100%	14.01
P414	Drinking	52.29	DICL	400	255			0	255	357	18,668	Alstonville	E	1991	Pre	18,668	5983	3.1	2030	35	1.31	1.77	100%	4.08
P417	Drinking	83.71	DICL	400	255			0	255	357	29,884	Alstonville	E	1990	Pre	29,884	5983	5.0	2030	35	1.31	1.77	100%	6.54
P418	Drinking	85.58	DICL	300	210			0	210	294	25,161	Alstonville	E	1990	Pre	25,161	5983	4.2	2030	35	1.31	1.77	100%	5.50
P436	Drinking	281.59	DICL	300	210			0	210	294	82,787	Alstonville	E	1980	Pre	82,787	5983	13.8	2030	35	1.31	1.77	100%	18.10
P439	Drinking	46.68	DICL	300	210			0	210	294	13,724	Alstonville	E	1990	Pre	13,724	5983	2.3	2030	35	1.31	1.77	100%	3.00
P457	Drinking	221.68	AC	150	105			0	105	147	32,587	Alstonville	E	1970	Pre	32,587	5983	5.4	2030	35	1.31	1.77	100%	7.13
P466	Drinking	29.16	AC	200	130			0	130	182	5,307	Wollongbar	E	1991	Pre	5,307	5983	0.9	2030	35	1.31	1.77	100%	1.16
P472	Drinking	107.67	DICL	300	210			0	210	294	31,655	Alstonville	E	1990	Pre	31,655	5983	5.3	2030	35	1.31	1.77	100%	6.92
P473	Drinking	73.76	DICL	300	210			0	210	294	21,685	Alstonville	E	1990	Pre	21,685	5983	3.6	2030	35	1.31	1.77	100%	4.74
P479	Drinking	84.52	DICL	300	210			0	210	294	24,849	Alstonville	E	1990	Pre	24,849	5983	4.2	2030	35	1.31	1.77	100%	5.43
P487	Drinking	19.17	DICL	300	210			0	210	294	5,636	Alstonville	E	1990	Pre	5,636	5983	0.9	2030	35	1.31	1.77	100%	1.23
P488	Drinking	40.75	DICL	300	210			0	210	294	11,981	Alstonville	E	1990	Pre	11,981	5983	2.0	2030	35	1.31	1.77	100%	2.62
P489	Drinking	67.44	DICL	300	210			0	210	294	19,827	Alstonville	E	1990	Pre	19,827	5983	3.3	2030	35	1.31	1.77	100%	4.34
P490	Drinking	271.01	DICL	300	210			0	210	294	79,677	Alstonville	E	1990	Pre	79,677	5983	13.3	2030	35	1.31	1.77	100%	17.42
P491	Drinking	24.81	DICL	300	210			0	210	294	7,294	Alstonville	E	1990	Pre	7,294	5983	1.2	2030	35	1.31	1.77	100%	1.60
P492	Drinking	70.03	DICL	300	210			0	210	294	20,589	Alstonville	E	1990	Pre	20,589	5983	3.4	2030	35	1.31	1.77	100%	4.50
P493	Drinking	15.88	DICL	300	210			0	210	294	4,669	Alstonville	E	1990	Pre	4,669	5983	0.8	2030	35	1.31	1.77	100%	1.02
P494	Drinking	102.24	DICL	300	210			0	210	294	30,059	Alstonville	E	1990	Pre	30,059	5983	5.0	2030	35	1.31	1.77	100%	6.57
P495	Drinking	20.6	DICL	300	210			0	210	294	6,056	Alstonville	E	1990	Pre	6,056	5983	1.0	2030	35	1.31	1.77	100%	1.32
P496	Drinking	107.01	DICL	300	210			0	210	294	31,461	Alstonville	E	1990	Pre	31,461	5983	5.3	2030	35	1.31	1.77	100%	6.88
P497	Drinking	638.48	AC	300	210			0	210	294	187,713	Alstonville	E	1984	Pre	187,713	5983	31.4	2030	35	1.31	1.77	100%	41.05
P498	Drinking	637.13	DICL	450	295			0	295	413	263,135	Alstonville	E	1990	Pre	263,135	5983	44.0	2030	35	1.31	1.77	100%	57.54
P499	Drinking	20.81	AC	300	210			0	210	294	6,118	Alstonville	E	1984	Pre	6,118	5983	1.0	2030	35	1.31	1.77	100%	1.34
P500	Drinking	117	AC	300	210			0	210	294	34,398	Alstonville	E	1984	Pre	34,398	5983	5.7	2030	35	1.31	1.77	100%	7.52
P504	Drinking	199.96	DICL	300	210			0	210	294	58,788	Alstonville	E	1990	Pre	58,788	5983	9.8	2030	35	1.31	1.77	100%	12.86
P505	Drinking	267.17	DICL	300	210			0	210	294	78,548	Alstonville	E	1990	Pre	78,548	5983	13.1	2030	35	1.31	1.77	100%	17.18
P524	Drinking	74.44	PVC	200	130			0	130	182	13,548	Alstonville	E	1973	Pre	13,548	5983	2.3	2030	35	1.31	1.77	100%	2.96
P525	Drinking	188.2	AC	200	130			0	130	182	34,252	Alstonville	E	1973	Pre	34,252	5983	5.7	2030	35	1.31	1.77	100%	7.49
P528	Drinking	90.83	AC	200	130			0	130	182	16,531	Alstonville	E	1973	Pre	16,531	5983	2.8	2030	35	1.31	1.77	100%	3.62
P536	Drinking	64.06	AC	200	130			0	130	182	11,659	Alstonville	E	1972	Pre	11,659	5983	1.9	2030	35	1.31	1.77	100%	2.55
P563	Drinking	113.28	AC	200	130			0	130	182	20,617	Alstonville	E	1970	Pre	20,617	5983	3.4	2030	35	1.31	1.77	100%	4.51

Capital Charge: Pipelines - Future and Existing

Label	Drinking Recycled Asset	Length	Material	Diameter	Pipe Base Rate 2003 ($/m)	Construction Difficulty	Row Ref for diameter	Construction Difficulty Rate 2003 ($/m)	Total Rate 2003 ($/m)	Total Rate 2011 ($/m)	Total Cost 2011 ($)	DSP AREA	Area	Date of Construction	Pre or Post 1996 Asset	Capital Cost (2011/2012$)	Adopted Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up	Take-up period (t) (years)	Pre 1996 Return on Investment Factor	Post 1996 Return on Investment Factor	% Water/ Wastewater	Capital Charge per ET (2011/2012$)
P564	Drinking	221.74	AC	200	130			0	130	182	40,357	Alstonville	E	1970	Pre	40,357	5983	6.7	2030	35	1.31	1.77	100%	8.83
P566	Drinking	75.74	AC	200	130			0	130	182	13,785	Alstonville	E	1970	Pre	13,785	5983	2.3	2030	35	1.31	1.77	100%	3.01
P568	Drinking	14.99	AC	200	130			0	130	182	2,728	Alstonville	E	1984	Pre	2,728	5983	0.5	2030	35	1.31	1.77	100%	0.60
P573	Drinking	221.46	AC	300	210			0	210	294	65,109	Alstonville	E	1984	Pre	65,109	5983	10.9	2030	35	1.31	1.77	100%	14.24
P576	Drinking	92.26	AC	200	130			0	130	182	16,791	Alstonville	E	1982	Pre	16,791	5983	2.8	2030	35	1.31	1.77	100%	3.67
P582	Drinking	17.5	AC	200	130			0	130	182	3,185	Alstonville	E	1970	Pre	3,185	5983	0.5	2030	35	1.31	1.77	100%	0.70
P583	Drinking	77.04	AC	200	130			0	130	182	14,021	Alstonville	E	1973	Pre	14,021	5983	2.3	2030	35	1.31	1.77	100%	3.07
P585	Drinking	17.79	AC	200	130			0	130	182	3,238	Alstonville	E	1970	Pre	3,238	5983	0.5	2030	35	1.31	1.77	100%	0.71
P586	Drinking	16.33	AC	150	105			0	105	147	2,401	Alstonville	E	1984	Pre	2,401	5983	0.4	2030	35	1.31	1.77	100%	0.52
P587	Drinking	188.73	AC	200	130			0	130	182	34,349	Alstonville	E	1975	Pre	34,349	5983	5.7	2030	35	1.31	1.77	100%	7.51
P598	Drinking	120.97	AC	200	130			0	130	182	22,017	Alstonville	E	1970	Pre	22,017	5983	3.7	2030	35	1.31	1.77	100%	4.81
P599	Drinking	46.35	AC	200	130			0	130	182	8,436	Alstonville	E	1984	Pre	8,436	5983	1.4	2030	35	1.31	1.77	100%	1.84
P600	Drinking	304.14	AC	200	130			0	130	182	55,353	Alstonville	E	1984	Pre	55,353	5983	9.3	2030	35	1.31	1.77	100%	12.11
P615	Drinking	16.97	AC	200	130			0	130	182	3,089	Alstonville	E	1970	Pre	3,089	5983	0.5	2030	35	1.31	1.77	100%	0.68
P624	Drinking	176.77	DICL	300	210			0	210	294	51,970	Alstonville	E	1990	Pre	51,970	5983	8.7	2030	35	1.31	1.77	100%	11.37
P625	Drinking	15.53	DICL	300	210			0	210	294	4,566	Alstonville	E	1990	Pre	4,566	5983	0.8	2030	35	1.31	1.77	100%	1.00
P626	Drinking	69.92	AC	300	210			0	210	294	20,556	Alstonville	E	1994	Pre	20,556	5983	3.4	2030	35	1.31	1.77	100%	4.50
P637	Drinking	157.33	AC	200	130			0	130	182	28,634	Alstonville	E	1970	Pre	28,634	5983	4.8	2030	35	1.31	1.77	100%	6.26
UNK300	Drinking	340.34	DICL	150	105			0	105	147	50,030	Wollongbar	E	1989	Pre	50,030	5983	8.4	2030	35	1.31	1.77	100%	10.94
W008	Drinking	257.2	BluB	200	130			0	130	182	46,810	Wardell	A	1974	Pre	46,810	626	74.8	2030	35	1.26	1.61	100%	93.97
W015	Drinking	250.85	DICL	150	105			0	105	147	36,875	Wardell	A	1974	Pre	36,875	626	58.9	2030	35	1.26	1.61	100%	74.02
W053	Drinking	15.37	DICL	150	105			0	105	147	2,259	Wardell	A	1990	Pre	2,259	626	3.6	2030	35	1.26	1.61	100%	4.54
W054	Drinking	1,895.02	BluB	200	130			0	130	182	344,894	Wardell	A	1990	Pre	344,894	626	551.3	2030	35	1.26	1.61	100%	692.35
W055	Drinking	684.35	DICL	150	105			0	105	147	100,599	Wardell	A	1990	Pre	100,599	626	160.8	2030	35	1.26	1.61	100%	201.95
W056	Drinking	10.44	BluB	200	130			0	130	182	1,900	Wardell	A	1990	Pre	1,900	626	3.0	2030	35	1.26	1.61	100%	3.81
W057	Drinking	628.17	BluB	200	130			0	130	182	114,327	Wardell	A	1990	Pre	114,327	626	182.8	2030	35	1.26	1.61	100%	229.50
W058	Drinking	352.06	BluB	200	130			0	130	182	64,075	Wardell	A	1990	Pre	64,075	626	102.4	2030	35	1.26	1.61	100%	128.63
W059	Drinking	552.35	BluB	200	130			0	130	182	100,528	Wardell	A	1974	Pre	100,528	626	160.7	2030	35	1.26	1.61	100%	201.80
W061	Drinking	172.51	DICL	150	105			0	105	147	25,359	Wardell	A	1980	Pre	25,359	626	40.5	2030	35	1.26	1.61	100%	50.91
W063	Drinking	524.8	BluB	200	130			0	130	182	95,514	Wardell	A	1990	Pre	95,514	626	152.7	2030	35	1.26	1.61	100%	191.74
W064	Drinking	22.35	BluB	200	130			0	130	182	4,068	Wardell	A	1990	Pre	4,068	626	6.5	2030	35	1.26	1.61	100%	8.17
W065	Drinking	9.54	PVC	150	105			0	105	147	1,402	Wardell	A	1980	Pre	1,402	626	2.2	2030	35	1.26	1.61	100%	2.82
W066	Drinking	910.21	PVC	150	105			0	105	147	133,801	Wardell	A	1990	Pre	133,801	626	213.9	2030	35	1.26	1.61	100%	268.59
W067	Drinking	270.27	PVC	150	105			0	105	147	39,730	Wardell	A	1990	Pre	39,730	626	63.5	2030	35	1.26	1.61	100%	79.75
W068	Drinking	105.32	PVC	150	105			0	105	147	15,482	Wardell	A	1982	Pre	15,482	626	24.7	2030	35	1.26	1.61	100%	31.08
W069	Drinking	14.44	PVC	150	105			0	105	147	2,123	Wardell	A	1982	Pre	2,123	626	3.4	2030	35	1.26	1.61	100%	4.26
W070	Drinking	208.17	PVC	150	105			0	105	147	30,601	Wardell	A	1982	Pre	30,601	626	48.9	2030	35	1.26	1.61	100%	61.43
W071	Drinking	369.97	DICL	200	130			0	130	182	67,335	Wardell	A	1990	Pre	67,335	626	107.6	2030	35	1.26	1.61	100%	135.17
W072	Drinking	367.94	DICL	200	130			0	130	182	66,965	Wardell	A	1990	Pre	66,965	626	107.0	2030	35	1.26	1.61	100%	134.43
W073	Drinking	294.68	DICL	150	105			0	105	147	43,318	Wardell	A	1990	Pre	43,318	626	69.2	2030	35	1.26	1.61	100%	86.96
W074	Drinking	332.49	PVC	150	105			0	105	147	48,876	Wardell	A	1990	Pre	48,876	626	78.1	2030	35	1.26	1.61	100%	98.11
W075	Drinking	955.88	DICL	150	105			0	105	147	140,514	Wardell	A	1990	Pre	140,514	626	224.6	2030	35	1.26	1.61	100%	282.07
W076	Drinking	13.99	DICL	150	105			0	105	147	2,057	Wardell	A	1990	Pre	2,057	626	3.3	2030	35	1.26	1.61	100%	4.13
W077	Drinking	374.21	DICL	150	105			0	105	147	55,009	Wardell	A	1990	Pre	55,009	626	87.9	2030	35	1.26	1.61	100%	110.43
W079	Drinking	35.05	DICL	200	130			0	130	182	6,379	Wardell	A	1990	Pre	6,379	626	10.2	2030	35	1.26	1.61	100%	12.81
W080	Drinking	572.12	AC	150	105			0	105	147	84,102	Wardell	A	1982	Pre	84,102	626	134.4	2030	35	1.26	1.61	100%	168.83
W081	Drinking	915.93	PVC	150	105			0	105	147	134,642	Wardell	A	1982	Pre	134,642	626	215.2	2030	35	1.26	1.61	100%	270.28
W082	Drinking	17.76	BluB	200	130			0	130	182	3,232	Wardell	A	1980	Pre	3,232	626	5.2	2030	35	1.26	1.61	100%	6.49
W083	Drinking	28.23	PVC	150	105			0	105	147	4,150	Wardell	A	1982	Pre	4,150	626	6.6	2030	35	1.26	1.61	100%	8.33
W084	Drinking	94.56	DICL	300	210			0	210	294	27,801	Wardell	A	1990	Pre	27,801	626	44.4	2030	35	1.26	1.61	100%	55.81
W089	Drinking	156.35	DICL	200	130			0	130	182	28,456	Wardell	A	1990	Pre	28,456	626	45.5	2030	35	1.26	1.61	100%	57.12
W090	Drinking	170.75	DICL	200	130			0	130	182	31,077	Wardell	A	1990	Pre	31,077	626	49.7	2030	35	1.26	1.61	100%	62.38
W091	Drinking	202.44	DICL	200	130			0	130	182	36,844	Wardell	A	1990	Pre	36,844	626	58.9	2030	35	1.26	1.61	100%	73.96
W092	Drinking	114.95	DICL	200	130			0	130	182	20,921	Wardell	A	1990	Pre	20,921	626	33.4	2030	35	1.26	1.61	100%	42.00
W094	Drinking	141.96	DICL	200	130			0	130	182	25,837	Wardell	A	1990	Pre	25,837	626	41.3	2030	35	1.26	1.61	100%	51.87
W095	Drinking	122.88	DICL	200	130			0	130	182	22,364	Wardell	A	1990	Pre	22,364	626	35.8	2030	35	1.26	1.61	100%	44.89
W096	Drinking	142.38	DICL	200	130			0	130	182	25,913	Wardell	A	1990	Pre	25,913	626	41.4	2030	35	1.26	1.61	100%	52.02
W097	Drinking	151.19	DICL	200	130			0	130	182	27,517	Wardell	A	1990	Pre	27,517	626	44.0	2030	35	1.26	1.61	100%	55.24
W098	Drinking	340.74	DICL	200	130			0	130	182	62,015	Wardell	A	1990	Pre	62,015	626	99.1	2030	35	1.26	1.61	100%	124.49
W099	Drinking	580.09	DICL	200	130			0	130	182	105,576	Wardell	A	1990	Pre	105,576	626	168.8	2030	35	1.26	1.61	100%	211.94
W100	Drinking	183.57	PVC	200	130			0	130	182	33,410	Wardell	A	1990	Pre	33,410	626	53.4	2030	35	1.26	1.61	100%	67.07
W101	Drinking	123.26	DICL	200	130			0	130	182	22,433	Wardell	A	1990	Pre	22,433	626	35.9	2030	35	1.26	1.61	100%	45.03
W102	Drinking	515.34	DICL	200	130			0	130	182	93,792	Wardell	A	1990	Pre	93,792	626	149.9	2030	35	1.26	1.61	100%	188.28
W103	Drinking	32.46	DICL	200	130			0	130	182	5,908	Wardell	A	1990	Pre	5,908	626	9.4	2030	35	1.26	1.61	100%	11.86
W104	Drinking	7.19	DICL	300	210			0	210	294	2,114	Wardell	A	1990	Pre	2,114	626	3.4	2030	35	1.26	1.61	100%	4.24
W105	Drinking	367.59	DICL	200	130			0	130	182	66,901	Wardell	A	1990	Pre	66,901	626	106.9	2030	35	1.26	1.61	100%	134.30
W106	Drinking	126.49	DICL	200	130			0	130	182	23,021	Wardell	A	1990	Pre	23,021	626	36.8	2030	35	1.26	1.61	100%	46.21
W107	Drinking	775.99	DICL	200	130			0	130	182	141,230	Wardell	A	1990	Pre	141,230	626	225.8	2030	35	1.26	1.61	100%	283.51
W108	Drinking	337.12	DICL	200	130			0	130	182	61,356	Wardell	A	1990	Pre	61,356	626	98.1	2030	35	1.26	1.61	100%	123.17
W109	Drinking	444.99	DICL	150	105			0	105	147	65,414	Wardell	A	1980	Pre	65,414	626	104.6	2030	35	1.26	1.61	100%	131.31
W115	Drinking	169.2	DICL	200	130			0	130	182	30,794	Wardell	A	1990	Pre	30,794	626	49.2	2030	35	1.26	1.61	100%	61.82
W116	Drinking	10.41	DICL	300	210			0	210	294	3,061	Wardell	A	1990	Pre	3,061	626	4.9	2030	35	1.26	1.61	100%	6.14
W120	Drinking	28.82	DICL	200	130			0	130	182	5,245	Wardell	A	1990	Pre	5,245	626	8.4	2030	35	1.26	1.61	100%	10.53
W121	Drinking	422.48	DICL	200	130			0	130	182	76,891	Wardell	A	1990	Pre	76,891	626	122.9	2030	35	1.26	1.61	100%	154.35
W122	Drinking	227.41	DICL	200	130			0	130	182	41,389	Wardell	A	1990	Pre	41,389	626	66.2	2030	35	1.26	1.61	100%	83.08
W126	Drinking	1,323.37	DICL	150	105			0	105	147	194,535	Wardell	A	1990	Pre	194,535	626	311.0	2030	35	1.26	1.61	100%	390.51

Capital Charge: Pump Stations & Valves - Future and Existing

Base Year		2010
Year when capacity taken up		2030

Total Cost of Pump Stations per Development Area			
Development Area		**Capital Charge per ET - Future**	**Capital Charge per ET - Existing**
A		$ -	$ 1,659.20
B		$ 73.71	$ 9.39
C		$ 253.38	$ -
D		$ -	$ -
E		$ 88.07	$ 110.42
F		$ 91.07	$ -
G		$ -	$ -

Existing

Description	Label (ID)	Drinking or Recycled Asset	DSP Area	DSP Area	Flow	Head	kW	Year Commissioned	kW	Reference rate (2007/08$)	Pre/Post 1996	Effective Date of Commissioning	Capital Cost (2011/12$)	Year of Renewal	Capacity (ETs)	$/ET	Year of Full Take up	Take up Period	ROI	% Water/ Wastewater	Capital Charge ($/ET)
Bassalt Court Booster Pump		Drinking	Lennox Head	B	15	40	9	1983	10	$ 156,209.45	Pre	1996	$ 175,815.11	2033	18991	9.26	2012	16	1.01	100%	$ 9.39
Wollongbar Booster pump		Drinking	Wollongbar	E	46	25	18	1990	20	$ 239,866.62	Pre	1996	$ 269,971.99	2040	5983	45.13	2020	24	1.14	100%	$ 51.38
Marom Creek Supply Pump		Drinking	Wardell, Alstonville, Wollongbar, A'ville	A	22	75	26	1980	25	$ 285,998.82	Pre	1996	$ 321,894.19	2030	626	514.58	2030	34	1.26	100%	$ 646.18
Lindendale Bore Lift Pump		Drinking	Wardell, Alstonville, Wollongbar, A'ville	E	16	88	22	1992	20	$ 239,866.62	Pre	1996	$ 269,971.99	2042	5983	45.13	2030	34	1.31	100%	$ 59.04
Ellis Road Lift Pump		Drinking	Wardell, Alstonville, Wollongbar, A'ville	A	16	88	22	1992	20	$ 239,866.62	Pre	1996	$ 269,971.99	2042	626	431.58	2030	34	1.26	100%	$ 541.95
Ellis Road Booster Pump		Drinking	Wardell, Alstonville, Wollongbar, A'ville	A	11	88	15	1992	15	$ 208,499.67	Pre	1996	$ 234,668.21	2042	626	375.14	2030	34	1.26	100%	$ 471.08

Future

Description	Label (ID)	Drinking or Recycled Asset	DSP Area	DSP Area	Flow	Head	kW	Year Commissioned	kW	Reference rate (2007/08$)	Pre/Post 1996	Effective Date of Commissioning	Capital Cost (2011/12$)		Capacity (ETs)	$/ET	Year of Full Take up	Take up Period	ROI	% Water/ Wastewater	Capital Charge ($/ET)
North Creek Road Supply Pump Station	WSPC1	Drinking	Lennox Head, Skenners Head	B	90	20	28	2015	30	$ 308,544.24	Post	2015	$ 347,269.26		18991	18.29	2030	15	1.61	100%	$ 29.41
East Ballina Booster Pump	WBPC1	Drinking	East Ballina	B	50	35	28	2012	30	$ 308,544.24	Post	2012	$ 347,269.26		18991	18.29	2030	18	1.61	100%	$ 29.41
Russelton Booster Pump	WBPC2	Drinking	A'ville Idustrial Estate	E	11	22	4	2012	5	$ 118,125.75	Post	2012	$ 132,951.57		5983	22.22	2030	18	1.77	100%	$ 39.42
Ballina Heights High Level Zone	WBPC3	Drinking	Ballina Heights	F	18	20	6	2012	5	External Figure	Post	2012	$ 173,430.00		2416	71.79	2030	18	1.27	100%	$ 91.07
Upgrade of Bassalt Court Booster pumps	WBPU1	Drinking	Lennox Head	B	15	40	9	2012	10	$ 156,209.45	Post	2012	$ 175,815.11		18991	9.26	2030	18	1.61	100%	$ 14.89
Upgrade of Wollongbar Booster pumps	WBPU2	Drinking	Wollongbar	E	46	25	18	2020	20	$ 239,866.62	Post	2020	$ 164,086.50		5983	27.43	2030	10	1.77	100%	$ 48.65
Upgrade of Wollongbar Booster pumps	WBPU2	Drinking	WUEA	C	46	25	18	2020	20	$ 239,866.62	Post	2020	$ 105,885.49		735	144.00	2030	10	1.76	100%	$ 253.38
Lumley's Lane PMZ	PMZ1	Drinking	Wardell	A				2012		External Figure	Post	2012	97326		626	155.58	2030	18	1.61	100%	$ 251.13
Southern Cross Dr PMZ	PMZ2	Drinking	North Ballina	B				2013		External Figure	Post	2013	97326		18991	5.12	2030	17	1.61	100%	$ 8.24
Fox St PMZ	PMZ3	Drinking	Ballina Island	B				2016		External Figure	Post	2016	125534		18991	6.61	2030	14	1.61	100%	$ 10.63
Temple St PMZ	PMZ4	Drinking	Ballina Island	B				2014		External Figure	Post	2014	143179		18991	7.54	2030	16	1.61	100%	$ 12.13
Owen St PMZ	PMZ5	Drinking	Ballina Island	B				2015		External Figure	Post	2015	131270		18991	6.91	2030	15	1.61	100%	$ 11.12
Bassalt Court Reservoir DMA	DMA1	Drinking	Lennox Head	B				2012		External Figure	Post	2012	60000		18991	3.16	2030	18	1.61	100%	$ 5.08
Silver Gull Dr DMA	DMA2	Drinking	East Ballina	B				2013		External Figure	Post	2013	60000		18991	3.16	2030	17	1.61	100%	$ 5.08
Seaview St DMA	DMA3	Drinking	East Ballina	B				2014		External Figure	Post	2014	60000		18991	3.16	2030	16	1.61	100%	$ 5.08

Capital Charge: Reservoirs - Future and Existing

Base Year	**2011**
Year when capacity taken up	**2030**

Total Cost of Reservoirs per Development Area

DSP Area	Capital Charge per ET - Future	Capital Charge per ET - Existing
A	$ -	$ 2,580.47
B	$ 53.58	$ 664.78
C	$ -	$ 2,141.17
D	$ -	$ -
E	$ -	$ 1,352.17
F	$ 868.49	$ 112.73
G	$ 893.99	$ -

Existing

Description	Label (ID)	Drinking or Recycled Asset	DSP Area	DSP Area	Capacity (ML)	Year Commissioned	Capacity (ML)	Reference rate (2003/04$)	Pre/Post 1996	Effective Date of Commissioning	Asset Division between DSP Areas	Capital Cost (2011/12$)	Year of Renewal	Capacity (ETs)	$/ET	Year of Full Take up	Take up Period	ROI	% Water/ Wastewater	Capital Charge ($/ET)
Wollongbar Service Reservoir (10.4 ML)		Drinking	Wollongbar, Alstonville	E	10.4	1990	10	$ 3,813,821.07	Pre	1996	1	$ 3,623,425.82	2090	5983	605.65	2030	34	1.31	100%	$ 792.40
Wollongbar Service Reservoir (10.4 ML)		Drinking	Wollongbar Urban Expansion	C	10.4	1990	10	$ 953,455.27	Pre	1996	2	$ 1,207,808.61	2090	735	1642.57	2030	34	1.30	100%	$ 2,141.17
Wardell Service Reservoir (1.6 ML)		Drinking	Wardell	A	1.6	1990	2	$ 817,436.44	Pre	1996	1	$ 1,035,504.03	2090	626	1655.35	2030	34	1.26	100%	$ 2,078.69
Meerschaum Balance Tank (0.24 ML)		Drinking	Wardell	A	0.24	1989	0.24	$ 197,322.65	Pre	1996	1	$ 249,962.43	2089	626	399.59	2030	34	1.26	100%	$ 501.78
Pine Avenue Service Reservoir (20.3 ML)		Drinking	Ballina Island, North Ballina, West Ballir	B	20.3	1978	20	$ 5,944,787.32	Pre	1996	1	$ 7,530,678.71	2078	18991	396.53	2030	34	1.25	100%	$ 496.14
Basalt Court Service Reservoir (4.0 ML)		Drinking	Lennox Head, Skenners Head	B	4	1983	4	$ 2,020,642.03	Pre	1996	1	$ 2,559,688.87	2083	18991	134.78	2030	34	1.25	100%	$ 168.64
Ballina Heights Temporary Reservoir (0.2 ML)		Drinking	Ballina Heights	F	0.2	2005	0.2	$ 169,480.15	Post	2005	1	$ 214,692.38	2105	2416	88.87	2030	25	1.27	100%	$ 112.73
Russelton_service_reservoir (4.0 ML)		Drinking	A'ville Idustrial Estate	E	4	1984	4	$ 2,020,642.03	Pre	1996	1	$ 2,559,688.87	2084	5983	427.85	2030	34	1.31	100%	$ 559.77

Future

Description	Label (ID)	Drinking or Recycled Asset	DSP Area	DSP Area	Capacity (ML)	Year Commissioned	Capacity (ML)	Reference rate (2003/04$)	Pre/Post 1996	Effective Date of Commissioning	Asset Division between DSP Areas	Capital Cost (2011/12$)	Year of Renewal	Capacity (ETs)	$/ET	Year of Full Take up	Take up Period	ROI	% Water/ Wastewater	Capital Charge ($/ET)
Ross Lane Service Reservoir	WR2	Drinking	Cura B	G	3.5	2015	2.8	$ 1,031,324.15	Post	2025	1	$ 1,306,450.58	2115	2939	444.53	2030	5	2.01	100%	$ 893.99
Ballina Heights Service Reservoir	WR1	Drinking	Cura A & Ballina Heights	F	2.2	2015	1.8	External Figure	Post	2013	1	$ 1,654,000.00	2115	2416	684.63	2030	17	1.27	100%	$ 868.49
Pacific Pines Reservoir	WR3	Drinking	Skennars Head	B	1.2	2020	1	$ 508,728.52	Post	2020	1	$ 644,442.06	2120	18991	33.93	2029	9	1.58	100%	$ 53.58

Capital Charge: Treatment Plants - Future and Existing

Base Year	**2010**
Year when capacity taken up	**2030**

Total Cost of Treatment plants per Development Area

Development Area	Capital Charge per ET - Future	Capital Charge per ET - Existing
A	$ 387.04	$ 2,057.83
B	$ -	$ -
C	$ -	$ -
D	$ -	$ -
E	$ -	$ -
F	$ -	$ -
G	$ -	$ -

Existing

Label (ID)	Catchment	Drinking or Recycled Asset	DSP Area	DSP Area	Plant Type	Year Commissioned	Capacity (ML/d)	Reference rate (2007/08$)	Pre/Post 1996	Effective Date of Commissioning	Asset Servicing Ratio	Capital Cost (2011/12$)	Year of Renewal	Capacity (ETs)	$/ET	Year of Full Take up	Take up Period	ROI	% Water/ Wastewater	Capital Charge ($/ET)
Marom Creek WTP	Wardell	Drinking	Wardell, Alstonville, Wollongbar, A'ville	A	Sand Filter	1980	0.5	$ 910,800.00	Pre	1996	1	$ 1,025,113.42	2050	626	1638.74	2030	34	1.26	100%	$ 2,057.83

Future

Label (ID)	Catchment	Drinking or Recycled Asset	DSP Area	DSP Area	Plant Type	Year Commissioned	Capacity (ML/d)	Reference rate (2007/08$)	Pre/Post 1996	Effective Date of Commissioning	Asset Division between DSP Areas	Capital Cost (2011/12$)	Year of Renewal	Capacity (ETs)	$/ET	Year of Full Take up	Take up Period	ROI	% Water/ Wastewater	Capital Charge ($/ET)
Marom Creek PAC Plant	Wardell	Drinking	Wardell, Alstonville, Wollongbar, A'ville	A	PAC	2012	0.3	$708,400.00	Post	2012	1	$ 150,000.00	2082	626	239.79	2030	18	1.61	100%	$ 387.04

Appendix D

Capital Works Program

Renewals (extracted from BSC register) and New Works

BSC: Development Area A: - Wardell

CAPITAL WORKS PROGRAM ($'000) **2011**

Water

Project	Improved LOS	New System Asset	Renewals	Project Total	1 2011/12	2 2012/13	3 2013/14	4 2014/15	5 2015/16	6 2016/17	7 2017/18	8 2018/19	9 2019/20	10 2020/21	11 2021/22	12 2022/23	13 2023/24	14 2024/25	15 2025/26	16 2026/27	17 2027/28	18 2028/29	19 2029/30	20 2030/31	21 2031/32	22 2032/33	23 2033/34	24 2034/35	25 2035/36	26 2036/37	27 2037/38	28 2038/39	29 2039/40	30 2040/41
Exisiting Pipelines																																	
WR50P00401			100%	**68,398**																						$68,398							
WR50P00405			100%	**14,547**																						$14,547							
WR50P00406			100%	**6,636**																						$6,636							
WR50P00407			100%	**19,907**																						$19,907							
WR50P01201			100%	**39,303**																						$39,303							
WR50P13904			100%	**7,656**																						$7,656							
WR50P13905			100%	**45,939**																						$45,939							
WR50P01402			100%	**50,533**																						$50,533							
Treatment Plants																																	
Marom Creek PAC Plant		100%		**150,000**		150000																											
New Pipes																																	
DSPAUG_18		100%		**50,454**					50454.04																								
DSPAUG_19		100%		**75,182**					75182.38																								
DSPAUG_20		100%		**62,501**					62500.62																								
Miscellaneous																																	
Vehicle Replacement	0%	40%	60%	**2,387,539**	50000	51500	53100	54700	56400	58100	59900	61700	63600	65508	67473	69497	71582	73730	75942	78220	80567	82984	85473	88037	90678	93399	96201	99087	102059	105121	108275	111523	114869	118315
Water Mains Renewal Program	0%	0%	100%	**9,523,327**	200000	206000	212200	218600	225200	232000	239000	246200	253600	261208	269044	277116	285429	293992	302812	311896	321253	330890	340817	351042	361573	372420	383593	395101	406954	419162	431737	444689	458030	471771
Total				**12,502**	**250**	**408**	**265**	**273**	**470**	**290**	**299**	**308**	**317**	**327**	**337**	**347**	**357**	**368**	**379**	**390**	**402**	**414**	**426**	**439**	**452**	**466**	**480**	**747**	**509**	**524**	**540**	**556**	**573**	**590**
	Improved LOS		**$'000**	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Growth Works		**$'000**	**1,293**	20	170.6	21.24	21.88	210.69704	23.24	23.96	24.68	25.44	26.2032	26.9893	27.79897	28.63294	29.49193	30.37669	31.28799	32.22663	33.19343	34.18923	35.21491	36.27136	37.3595	38.48028	39.63469	40.82373	42.04844	43.3098971	44.60919	45.94747	47.32589
	Renewals		**$'000**	**11,209**	230	236.9	244.06	251.42	259.04	266.86	274.94	283.22	291.76	300.5128	309.5282	318.814	328.3785	338.2298	348.3767	358.828	369.5928	380.6806	392.101	403.8641	415.98	428.4594	441.3132	707.4716	468.1892	482.2348	496.70187	511.6029	526.951	542.7595
			Total	**12,502**																													
					2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041

Data supplied in Council Water and Sewer Asset Register & Renewals Program N:\AU\Wagga Wagga\Projects\23\14003\Tech\BSC Asset Register

Miscellaneous' Items supplied in Council 10yr Capital Works Program: N:\AU\Ballina\Projects\22\15241\Document Transfer\Incoming\BSC - Rod Dawson\2010_08_04 - Capital Works Program

Data extracted from Asset registers: Pipelines,reservoirs,pumps,treatment plants worksheets in this document based on the 'date of renewal' column

BSC: Development Area B - Ballina, Lennox Head, Skennars Head, East Ballina, West Ballina

CAPITAL WORKS PROGRAM ($'000) 2011

Water

Project	Type of works			Project Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Improved LOS	New System Assets	Renewals		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41
Existing Pipelines																																
WR20P05501			100%	30,115																	$30,115											
WR20P05502			100%	31,647																	$31,647											
WR30P03401			100%	20,928																	$20,928											
WR30P03402			100%	4,083																	$4,083											
WR30P03403			100%	22,459																	$22,459											
WR30P03404			100%	33,178																	$33,178											
WR30P03405			100%	55,637																	$55,637											
WR31P01301			100%	21,438																											$21,438	
WR31P01302			100%	39,125																											$39,125	
WR31P01303			100%	39,811																											$39,811	
WR31P01310			100%	5,104																											$5,104	
WR31P01309			100%	2,552																											$2,552	
WR23P03201			100%	20,935																				$20,935								
WR23P03202			100%	27,799																				$27,799								
WR23P03203			100%	53,196																							$53,196					
WR23P03204			100%	27,113																							$27,113					
WR23P03206			100%	63,149																							$63,149					
WR23P03207			100%	30,202																							$30,202					
WR23P03205			100%	4,118																							$4,118					
WR23P05701			100%	22,459																										$22,459		
WR23P05702			100%	6,125																										$6,125		
WR23P05703			100%	13,782																										$13,782		
WR21P00301			100%	17,099																						$17,099						
WR21P00302			100%	20,672																						$20,672						
WR30P03601			100%	31,392																					$31,392							
WR20P03402			100%	10,200																	$10,200											
WR20P03403			100%	5,800																	$5,800											
WR20P03404			100%	5,600																	$5,600											
WR20P08203			100%	27,819																				$27,819								
WR30P02801			100%	1,276																	$1,276											
WR30P02802			100%	68,143																	$68,143											
WR30P02803			100%	36,496																	$36,496											
WM310111P			100%	81,438																$81,438												
WM310112P			100%	100,116																$100,116												
WM310113P			100%	56,035																$56,035												
WM310114P			100%	108,335																$108,335												
WR30P02805			100%	4,083																	$4,083											
WR30P02804			100%	4,083																	$4,083											
WM230206P			100%	143,545																$143,545												
WM230207P			100%	175,444																$175,444												
WM230225P			100%	132,912																$132,912												
WR30P02201			100%	1,716																											$1,716	
WR30P02202			100%	55,942																											$55,942	
WR30P02203			100%	25,397																											$25,397	
WR23P10001			100%	49,767																										$49,767		
WR31P02201			100%	29,207																					$29,207							
WR31P02202			100%	23,366																					$23,366							
WR23P05501			100%	46,675																		$46,675										
WR23P05502			100%	44,616																		$44,616										
WR23P99901			100%	184,230																											$184,230	
WR23P05301			100%	29,605																		$29,605										
WR23P05302			100%	15,058																		$15,058										
WR20P01805			100%	50,487																				$50,487								
WR20P01806			100%	46,315																				$46,315								
WR20P01807			100%	46,315																				$46,315								
WR20P01808			100%	40,056																				$40,056								
WR20P01809			100%	50,070																				$50,070								
WR20P01810			100%	49,653																				$49,653								
WR20P01819			100%	27,400																	$27,400											
WM230211P			100%	68,051																$68,051												
WM230212P			100%	44,127																$44,127												
WM230222P			100%	9,038																$9,038												
WR20P05601			100%	19,907																											$19,907	
WR20P05602			100%	19,907																											$19,907	
WM230210P			100%	111,646																$111,646												
WR31P00901			100%	115,315																									$115,315			
WR31P00902			100%	27,456																									$27,456			
WR31P00903			100%	82,368																									$82,368			
WR31P00904			100%	21,965																									$21,965			
WR21P00403			100%	6,125																						$6,125						
WR21P00401			100%	19,562																						$19,562						
WR21P00402			100%	45,302																						$45,302						
WR23P01304			100%	15,313									$15,313																			
WR23P01306			100%	15,058									$15,058																			
WR23P01308			100%	15,313									$15,313																			
WR23P01310			100%	5,104									$5,104																			
WR23P01301			100%	17,099																			$17,099									
WR23P01302			100%	42,366																			$42,366									
WR23P01309			100%	3,828									$3,828																			
WR23P01307			100%	4,083									$4,083																			
WR23P01305			100%	3,828									$3,828																			
WR23P00702			100%	15,313																								$15,313				
WR23P00703			100%	24,710				$24,710																								
WM310107P			100%	465,635																$465,635												
WM310116P			100%	41,092																$41,092												
WM310108P			100%	114,312																$114,312												
WM310109P			100%	19,052																$19,052												
WM310110P			100%	21,667																$21,667												
WR20P03001			100%	36,241																				$36,241								

Project	Type of works			Project Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Improved LOS	New System Assets	Renewals		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41
WR20P03002			100%	9,188																				9,188									
WR20P01714			100%	14,200																	14,200												
WR20P01712			100%	6,636																	6,636												
WR20P01713			100%	8,422																	8,422												
WR30P01601			100%	8,933																	8,933												
WR30P01602			100%	66,867																	66,867												
WR30P01603			100%	8,422																	8,422												
WR30P01605			100%	19,907																												19,907	
WR30P01604			100%	5,491																	5,491												
WR23P01801			100%	39,303																			39,303										
WR23P01802			100%	30,626																			30,626										
WR20P05902			100%	22,800																	22,800												
WR20P05901			100%	29,095																	29,095												
WR20P10501			100%	10,000										10,000																				
WR20P07007			100%	64,314																												64,314	
WR20P07008			100%	21,438																												21,438	
WR20P07009			100%	5,104																												5,104	
WR20P07010			100%	9,698																												9,698	
WR20P02101			100%	58,189																	58,189												
WR23P07301			100%	20,417																					20,417								
WR23P07302			100%	18,886																					18,886								
WR23P07303			100%	16,079																					16,079								
WR23P07304			100%	38,538																					38,538								
WR23P07305			100%	11,740																					11,740								
WR23P07306			100%	67,377																					67,377								
WR23P07307			100%	22,714																					22,714								
WR23P07308			100%	26,032																					26,032								
WR23P07309			100%	22,714																					22,714								
WR23P07310			100%	12,250																					12,250								
WR23P07311			100%	30,371																					30,371								
WR23P07312			100%	29,095																					29,095								
WR23P01202			100%	22,200																	22,200												
WR23P01201			100%	21,183																	21,183												
WR20P00407			100%	51,927																				51,927									
WR20P00408			100%	86,699																				86,699									
WR20P00412			100%	18,120										18,120																				
WR20P00413			100%	15,823										15,823																				
WR20P00415			100%	18,886										18,886																				
WR20P00417			100%	25,011																					25,011								
WR20P00416			100%	5,870										5,870																				
WR20P00423			100%	17,846																											17,846		
WR20P00414			100%	2,807										2,807																				
WR20P00424			100%	6,636																			6,636										
WR20P03901			100%	22,204																												22,204	
WR20P03902			100%	15,313																												15,313	
WR20P02801			100%	28,329																	28,329												
WR20P02702			100%	8,933																					8,933								
WR20P02703			100%	13,271																					13,271								
WR20P02704			100%	36,496																					36,496								
WR20P02705			100%	14,803																					14,803								
WR20P02701			100%	32,947																					32,947								
WR20P07301			100%	57,314																				57,314									
WR20P07302			100%	49,764																				49,764									
WR23P45101			100%	118,404																		118,404											
WR23P07103			100%	14,758																			14,758										
WR23P07104			100%	8,580																					8,580								
WR23P07105			100%	18,533																					18,533								
WR23P07106			100%	13,042																					13,042								
WR23P07107			100%	33,634																					33,634								
WR23P07108			100%	39,468																					39,468								
WR23P07109			100%	6,864																					6,864								
WR23P01001			100%	37,006																			37,006										
WR23P01002			100%	31,647																			31,647										
WR20P01506			100%	60,486																	60,486												
WR20P02901			100%	36,241																				36,241									
WR21P01601			100%	26,287																							26,287						
WR21P01602			100%	9,188																							9,188						
WR21P01603			100%	8,933																							8,933						
WR21P01604			100%	4,849																							4,849						
WR21P01203			100%	4,083																							4,083						
WR21P01204			100%	32,923																							32,923						
WR21P01207			100%	32,668																							32,668						
WR21P01208			100%	41,345																							41,345						
WR23P02201			100%	16,079																								16,079					
WR23P02202			100%	16,079																								16,079					
WR23P01402			100%	22,400															22,400														
WR23P01401			100%	24,756															24,756														
WR30P03503			100%	18,376																	18,376												
WR30P03501			100%	64,825																				64,825									
WR30P03502			100%	70,950																				70,950									
WR23P07901			100%	24,246																					24,246								
WR23P00401			100%	8,000																								8,000					
WR23P07201			100%	29,095																					29,095								
WR23P07202			100%	44,663																					44,663								
WR23P07203			100%	42,366																					42,366								
WR23P07204			100%	120,207																					120,207								
WR30P02301			100%	69,929																												69,929	
WR21P02502			100%	4,400																							4,400						
WR21P02501			100%	74,000																							74,000						
WR21P02503			100%	210,000																							210,000						
WR21P01401			100%	9,443																						9,443							
WR21P01402			100%	7,656																						7,656							
WR21P01403			100%	9,188																						9,188							
WR20P05301			100%	32,157																									32,157				
WR20P05302			100%	32,157																									32,157				
WR30P00701			100%	8,933																	8,933												
WR30P00702			100%	13,271																	13,271												
WR23P08201			100%	22,459																					22,459								
WR20P01901			100%	28,074										28,074																				
WR20P01902			100%	27,308										27,308																				
WM230208P			100%	124,937																124,937													
WM230209P			100%	230,204																230,204													
WR20P01911			100%	52,166																				52,166									
WR20P01912			100%	57,314																				57,314									
WR20P01913			100%	49,764																				49,764									
WR20P01903			100%	29,172																											29,172		

Project	Type of works			Project Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Improved LOS	New System Assets	Renewals		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41
WR20P01904			100%	5,148																										$5,148		
WR20P01905			100%	41,527																										$41,527		
WR20P01906			100%	36,036																										$36,036		
WR20P01907			100%	5,148																										$5,148		
WR20P01915			100%	88,202																											$88,202	
WR20P01916			100%	52,166																											$52,166	
WR23P02301			100%	23,681																								$23,681				
WR20P06501			100%	18,886																				$18,886								
WR20P06502			100%	4,339																				$4,339								
WR20P06503			100%	10,209																				$10,209								
WR30P00306			100%	29,095																	$29,095											
WR30P00307			100%	62,273																	$62,273											
WR30P00308			100%	38,793																	$38,793											
WR23P08501			100%	57,168																								$57,168				
WR31P02101			100%	40,498																				$40,498								
WR20P00610			100%	16,844																	$16,844											
WR20P00612			100%	16,334																	$16,334											
WR20P00614			100%	23,480																	$23,480											
WR20P00617			100%	16,589																	$16,589											
WR20P00618			100%	2,042																	$2,042											
WR20P00619			100%	22,969																	$22,969											
WR20P00603			100%	39,468																											$39,468	
WR20P00604			100%	48,391																											$48,391	
WR20P00609			100%	6,891																	$6,891											
WR20P00611			100%	3,063																	$3,063											
WR20P00613			100%	2,807																	$2,807											
WR20P00605			100%	8,923																											$8,923	
WR20P04001			100%	17,865																											$17,865	
WR20P04001			100%	17,865																											$17,865	
WR31P00803			100%	26,798																									$26,798			
WR31P00802			100%	44,408																									$44,408			
WR31P00801			100%	40,324																									$40,324			
WR23P08101			100%	30,371																				$30,371								
WR31P01101			100%	53,085																											$53,085	
WR20P03203			100%	39,200										$39,200																		
WR20P03201			100%	27,053										$27,053																		
WR20P03202			100%	24,246										$24,246																		
WR20P02601			100%	41,600										$41,600																		
WR20P06701			100%	18,631																				$18,631								
WR20P06702			100%	18,631																				$18,631								
WR20P01101			100%	17,865																			$17,865									
WR20P01102			100%	18,376																			$18,376									
WR20P01103			100%	12,761																			$12,761									
WR20P01104			100%	13,271																			$13,271									
WR20P01105			100%	6,636																			$6,636									
WR20P01106			100%	11,995																			$11,995									
WR20P01108			100%	8,422																			$8,422									
WR20P01107			100%	3,063																			$3,063									
WR23P00101			100%	186,093																$186,093												
WR23P00104			100%	39,303															$39,303													
WR23P00105			100%	17,099															$17,099													
WM230301P			100%	88,785																$88,785												
WR23P00102			100%	29,207																$29,207												
WR23P00103			100%	9,188															$9,188													
WR23P09902			100%	39,814																								$39,814				
WR23P09903			100%	14,037																											$14,037	
WR20P06201			100%	51,554																					$51,554							
WR21P02001			100%	62,273																								$62,273				
WR21P02002			100%	43,897																								$43,897				
WR20P07101			100%	20,417																			$20,417									
WR20P07102			100%	16,589																			$16,589									
WR23P02401			100%	39,468																								$39,468				
WR23P02402			100%	25,397																								$25,397				
WR23P02403			100%	83,398																								$83,398				
WR23P02404			100%	17,503																								$17,503				
WR31P01501			100%	10,719																											$10,719	
WR31P01502			100%	7,912																											$7,912	
WR31P01503			100%	10,974																											$10,974	
WR20P02401			100%	58,700										$58,700																		
WR21P00101			100%	32,261																					$32,261							
WR21P00201			100%	11,485																					$11,485							
WR21P00206			100%	26,798																					$26,798							
WR21P00207			100%	24,501																					$24,501							
WR21P00208			100%	6,178										$6,178																		
WR23P03101			100%	15,101																							$15,101					
WR23P03102			100%	35,006																							$35,006					
WR23P03104			100%	28,142																							$28,142					
WR23P03103			100%	4,118																							$4,118					
WR20P10601			100%	9,600																	$9,600											
WR30P03201			100%	11,740																	$11,740											
WR20P07402			100%	16,600										$16,600																		
WR20P07401			100%	27,563										$27,563																		
WR23P03001			100%	57,314																							$57,314					
WR20P07201			100%	43,132																			$43,132									
WR20P07202			100%	36,496																			$36,496									
WR30P00601			100%	27,563																	$27,563											
WR21P01501			100%	7,656																					$7,656							
WR21P01502			100%	4,000																					$4,000							
WR21P01503			100%	7,400																					$7,400							
WR21P03604			100%	21,949																							$21,949					
WR21P03605			100%	27,053																							$27,053					
WR23P02901			100%	32,947																			$32,947									
WR23P02902			100%	101,587																					$101,587							
WR23P02903			100%	9,266																					$9,266							
WR23P02904			100%	33,290																											$33,290	
WR23P02906			100%	519,468																											$519,468	
WR23P10301			100%	73,692																											$73,692	
WR31P01601			100%	27,563																											$27,563	
WR31P01602			100%	10,464																											$10,464	
WR31P01603			100%	10,719																											$10,719	
WR23P01701			100%	27,308																			$27,308									
WR20P05201			100%	9,188																				$9,188								
WR20P05202			100%	7,000																				$7,000								
WR20P05203			100%	8,000																				$8,000								
WR23P01101			100%	34,430	$34,430																											
WR23P01102			100%	34,965																	$34,965											

Project	Type of works			Project Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Improved LOS	New System Assets	Renewals		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41
WR23P01103			100%	25,266																	$25,266												
WR23P01104			100%	65,894																								$65,894						
WR20P04702			100%	47,800																	$47,800												
WR20P04701			100%	60,997																	$60,997												
WR20P06002			100%	36,800																	$36,800												
WR20P06001			100%	59,465																	$59,465												
WR23P03401			100%	89,575																				$89,575									
WR23P07401			100%	17,099																					$17,099								
WR23P07402			100%	28,839																					$28,839								
WR23P07403			100%	17,355																					$17,355								
WR23P07404			100%	16,079																					$16,079								
WR23P07405			100%	38,282																					$38,282								
WR23P03301			100%	29,860																				$29,860									
WR20P00515			100%	130,281																				$130,281									
WR20P00504			100%	51,043										$51,043																				
WR20P00505			100%	35,985										$35,985																				
WR20P00513			100%	28,074																				$28,074									
WR20P00514			100%	24,501																				$24,501									
WR20P00516			100%	6,636																				$6,636									
WR20P08101			100%	90,605																					$90,605								
WR23P07701			100%	24,501																					$24,501								
WR20P03302			100%	42,000										$42,000																				
WR20P03301			100%	59,465										$59,465																				
WM310115P			100%	67,242																$67,242													
WM310403P			100%	37,357																$37,357													
WR23P02004			100%	55,598																								$55,598					
WR23P02005			100%	59,374																								$59,374					
WR23P02008			100%	26,542																									$26,542				
WR23P02006			100%	16,817																									$16,817				
WR23P02009			100%	3,318																									$3,318				
WR31P00709			100%	45,480																									$45,480				
WR31P00710			100%	3,338																									$3,338				
WR31P00711			100%	33,797																									$33,797				
WR31P00712			100%	5,841																									$5,841				
WR31P00713			100%	3,338																									$3,338				
WR21P01701			100%	24,756																						$24,756								
WR21P01702			100%	29,860																						$29,860								
WR21P01703			100%	21,693																						$21,693								
WR21P01704			100%	27,563																						$27,563								
WR21P01705			100%	21,949																						$21,949								
WR23P05401			100%	18,886																		$18,886												
WM210103P			100%	375,237						$375,237																								
WM210104P			100%	75,296						$75,296																								
WR20P01002			100%	50,135						$50,135																								
WM230201P			100%	239,242																$239,242													
WM230202P			100%	118,558																$118,558													
WM230203P			100%	166,937																$166,937													
WM230205P			100%	164,811																$164,811													
WM230204P			100%	43,329																$43,329													
WR30P00101			100%	30,115																	$30,115												
WR30P00102			100%	58,700																	$58,700												
WR30P00103			100%	62,528																	$62,528												
WR30P00104			100%	49,512																	$49,512												
WR20P01001			100%	42,282				$42,282																										
WR30P02901			100%	17,865																	$17,865												
WR23P00301			100%	15,800																									$15,800				
WM230302P			100%	223,292																$223,292													
WM230303P			100%	168,001																$168,001													
WR20P06601			100%	38,793																				$38,793									
WR23P01901			100%	27,053																								$27,053					
WR23P01902			100%	4,083																								$4,083					
WR23P01903			100%	14,547																								$14,547					
WR23P01904			100%	3,828																								$3,828					
WR23P01905			100%	28,329																								$28,329					
WR23P01906			100%	49,767																								$49,767					
WR23P01907			100%	7,656																								$7,656					
WR20P04601			100%	20,928										$20,928																				
WR20P04602			100%	6,200										$6,200																				
WR20P04603			100%	8,800										$8,800																				
WR21P01301			100%	43,387																							$43,387							
WR21P01302			100%	51,298																							$51,298							
WR30P03101			100%	66,867																	$66,867												
WM310401P			100%	9,526																$9,526													
WM310402P			100%	1,307																$1,307													
WM230307P			100%	46,785																$46,785													
WR23P09105			100%	36,036																	$36,036												
WR21P01904			100%	16,334										$16,334																				
WR21P01905			100%	22,714										$22,714																				
WR21P01906			100%	21,438										$21,438																				
WR21P01907			100%	19,141										$19,141																				
WR21P01908			100%	16,844										$16,844																				
WR21P01901			100%	32,947										$32,947																				
WR21P01902			100%	34,663										$34,663																				
WR21P01903			100%	31,918										$31,918																				
WR21P01801			100%	28,142										$28,142																				
WR21P01802			100%	52,166										$52,166																				
WR21P01803			100%	43,243										$43,243																				
WR21P01804			100%	36,722										$36,722																				
WR21P01805			100%	46,332										$46,332																				
WM310102P			100%	153,910																$153,910													
WR30P00901			100%	24,501																	$24,501												
WR30P00902			100%	2,552																	$2,552												
WR30P00903			100%	17,610																	$17,610												
WR23P07501			100%	23,480																					$23,480								
WR20P06101			100%	53,595																						$53,595								
WR30P03301			100%	22,969																	$22,969												
WR30P03302			100%	15,823																	$15,823												
WR31P02001			100%	47,362																					$47,362								
WR31P02002			100%	101,930																					$101,930								
WR31P02003			100%	55,598																					$55,598								
WR31P02005			100%	17,524																					$17,524								
WR31P02006			100%	21,438																					$21,438								
WR31P02004			100%	6,676																					$6,676								
WR23P09104			100%	78,250																			$78,250										
WR23P09102			100%	18,800																	$18,800												
WR23P09103			100%	23,225																	$23,225												

Project	Type of works			Project Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Improved LOS	New System Assets	Renewals		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41
WR20P06301			100%	35,475																					$35,475									
WR20P06302			100%	19,907																					$19,907									
WR23P02101			100%	7,656																									$7,656					
WR23P02102			100%	5,104																									$5,104					
WR23P02103			100%	9,953																									$9,953					
WR23P08701			100%	65,894																				$65,894										
WM230304P			100%	135,039																$135,039														
WR23P08702			100%	18,876																				$18,876										
WR20P02001			100%	31,136										$31,136																				
WR20P02002			100%	61,507										$61,507																				
WR20P02003			100%	37,006										$37,006																				
WM210101P			100%	191,549						$191,549																								
WM210102P			100%	273,050						$273,050																								
WR30P00201			100%	35,006																	$35,006												
WR30P00202			100%	72,072																	$72,072												
WR30P00203			100%	89,918																	$89,918												
WR30P00204			100%	66,924																	$66,924												
WR31P01201			100%	104,639																													$104,639	
WR21P00501			100%	24,367																						$24,367								
WR30P02401			100%	47,018																											$47,018			
WR20P05401			100%	28,074																							$28,074							
WR20P05402			100%	15,313																							$15,313							
WR31P01002			100%	108,977																													$108,977	
WR31P01004			100%	112,040																													$112,040	
WR31P01001			100%	89,232																									$89,232					
WR31P01003			100%	27,113																													$27,113	
WR31P01005			100%	7,510																													$7,510	
WR23P08401			100%	74,131																				$74,131										
WR23P08402			100%	30,888																				$30,888										
WR23P08403			100%	10,982																								$10,982						
WM230305P			100%	15,949																$15,949														
WM230306P			100%	22,329																$22,329														
WR23P01502			100%	28,000															$28,000															
WR23P01501			100%	35,730															$35,730															
WR20P01608			100%	107,563																				$107,563										
WR20P01603			100%	53,340																				$53,340										
WR20P01604			100%	88,202																													$88,202	
WR20P01605			100%	70,699																													$70,699	
WR23P45102			100%	22,651																		$22,651												
WR31P00101			100%	74,013																													$74,013	
WR23P00201			100%	65,208					$65,208																									
WR20P05101			100%	14,803																			$14,803											
WR20P05102			100%	5,200																			$5,200											
WR20P05103			100%	8,200																			$8,200											
WR23P07601			100%	23,990																					$23,990									
WR20P05701			100%	55,637																					$55,637									
WR20P05702			100%	51,298																					$51,298									
WR20P05703			100%	55,637																					$55,637									
WR30P03701			100%	37,006																								$37,006						
WR20P02501			100%	23,735																						$23,735								
WR20P02502			100%	23,990																						$23,990								
WR23P01602			100%	28,000															$28,000															
WR23P01601			100%	35,730															$35,730															
WR30P00801			100%	27,308																	$27,308												
WR30P00802			100%	31,392																	$31,392												
WR23P03502			100%	75,289																							$75,289						
WR23P03501			100%	85,800																							$85,800						
WR23P08001			100%	23,735																					$23,735								
Pump Stations																																		
Bassalt Court Bootser Pump			100%	175,815																							$ 175,815.11						
North Creek Road Supply Pump Station		100%		347,269		347269.261																												
East Ballina Booster Pump Station		100%		737,004		$ 737,003.79																												
Reservoirs																																		
Ballina Heights Reservoir		100%		1,494,651		$ 1,494,650.76																												
Kings Court Tank		100%		720,000		$ 720,000.00																												
Lennox Head Reservoir		100%		2,559,689		$ 2,559,688.87																												
Pacific Pines Reservoir		100%		644,442		$ 644,442.06																												
New Pipelines																																		
WPD10		100%		287,151				$287,151																										
WPD11		100%		206,352				$206,352																										
WPD12		100%		272,832				$272,832																										
WPD13		100%		216,012				$216,012																										
WPD14		100%		268,028				$268,028																										
WPD22		100%		446,934														$446,934																
WPD23		100%		537,571														$537,571																
WPD24		100%		258,600														$258,600																
WPD60		100%		149,423				$149,423																										
WPD50		100%		247,466				$247,466																										
WPD30		100%		698,382														$698,382																
WPD26		100%		314,221														$314,221																
Total				29,473	34	6,503	0	1,647	90	1,008	0	63	0	1,125	0	0	0	2,256	240	3,965	2,088	296	353	1,922	1,925	612	1,290	757	680	64	47	241	2,267	0
Improved LOS			**S'000**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Works			**S'000**	10,406	0	6503.054743	0	1647.2641	0	0	0	0	0	0	0	0	0	0	2255.708	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewals			**S'000**	19,067	34.43	0	0	0	89.918	1007.549	0	62.527	0	1124.702	0	0	0	0	240.206	3965.285	2088.06	295.895	353.202	1924.224	1924.55	611.509	1290.113108	756.716	680.321	64.314	47.018	241.047	2266.995	0
			Total	29,473																														
					2011 2012	2012 2013	2013 2014	2014 2015	2015 2016	2016 2017	2017 2018	2018 2019	2019 2020	2020 2021	2021 2022	2022 2023	2023 2024	2024 2025	2025 2026	2026 2027	2027 2028	2028 2029	2029 2030	2030 2031	2031 2032	2032 2033	2033 2034	2034 2035	2035 2036	2036 2037	2037 2038	2038 2039	2039 2040	2040 2041

Data supplied in Council Water and Sewer Asset Register & Renewals Program N:\AU\Wagga Wagga\Projects\23\14003\Tech\BSC Asset Register

Data extracted from Asset registers: Pipelines,reservoirs,pumps,treatment plants worksheets in this document based on the 'date of renewal' column

BSC: Development Area C - WUEA

CAPITAL WORKS PROGRAM ($'000) **2011**

Water

Project	Improved LOS	New System Asset	Renewals	Project Total	1 2011/12	2 2012/13	3 2013/14	4 2014/15	5 2015/16	6 2016/17	7 2017/18	8 2018/19	9 2019/20	10 2020/21	11 2021/22	12 2022/23	13 2023/24	14 2024/25	15 2025/26	16 2026/27	17 2027/28	18 2028/29	19 2029/30	20 2030/31	21 2031/32	22 2032/33	23 2033/34	24 2034/35	25 2035/36	26 2036/37	27 2037/38	28 2038/39	29 2039/40	30 2040/41
New Pipelines																																	
WPD40		100%	0%	**250,900**	$250,900																												
WPD41		100%	0%	**27,201**	$27,201																												
WPD42		100%	0%	**20,548**	$20,548																												
WPD43		100%	0%	**132,541**	$132,541																												
WPD44		100%	0%	**62,443**	$62,443																												
WPD45		100%	0%	**39,584**	$39,584																												
WPD46		100%	0%	**44,803**	$44,803																												
WPD47		100%	0%	**46,281**	$46,281																												
WPD48		100%	0%	**40,382**	$40,382																												
WPD49		100%	0%	**166,698**	$166,698																												
Total				**831**	**831**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Improved LOS	**$'000**		**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Growth Works	**$'000**		**831**	831.380648	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Renewals	**$'000**		**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total		**831**																													
					2011 2012	2012 2013	2013 2014	2014 2015	2015 2016	2016 2017	2017 2018	2018 2019	2019 2020	2020 2021	2021 2022	2022 2023	2023 2024	2024 2025	2025 2026	2026 2027	2027 2028	2028 2029	2029 2030	2030 2031	2031 2032	2032 2033	2033 2034	2034 2035	2035 2036	2036 2037	2037 2038	2038 2039	2039 2040	2040 2041

Data supplied in Council Water and Sewer Asset Register & Renewals Program N:\AU\Wagga Wagga\Projects\23\14003\Tech\BSC Asset Register

Data extracted from Asset registers: Pipelines,reservoirs,pumps,treatment plants worksheets in this document based on the 'date of renewal' column

BSC: Development Area E: Alstonville, Wollongbar

CAPITAL WORKS PROGRAM ($'000) 2011

Water

Project	Type of works			Project Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Improved LOS	ew System Asse	Renewals		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41
Existing Pipelines																																	
WR41P00303	30%	60%	10%	39,303																											$39,303		
WR41P00304	30%	60%	10%	42,111																												$42,111	
WR41P00305	30%	60%	10%	34,199																												$34,199	
WR41P00306	30%	60%	10%	10,464																												$10,464	
WR41P00302	30%	60%	10%	49,421																											$49,421		
WR41P00301	30%	60%	10%	49,764																												$49,764	
WR40P01701	30%	60%	10%	44,663																				$44,663									
WR40P02301	30%	60%	10%	28,829																				$28,829									
WR40P02302	30%	60%	10%	29,858																				$29,858									
WR40P02303	30%	60%	10%	33,634																				$33,634									
WR40P04604	30%	60%	10%	95,066																							$95,066						
WR40P04605	30%	60%	10%	49,078																							$49,078						
WR40P04601	30%	60%	10%	64,522																								$64,522					
WR40P04602	30%	60%	10%	63,492																								$63,492					
WR40P04603	30%	60%	10%	58,001																								$58,001					
WR40P01101	30%	60%	10%	39,125																					$39,125								
WR40P01102	30%	60%	10%	61,090																						$61,090								
WR40P01103	30%	60%	10%	33,634																							$33,634						
WR40P05601	30%	60%	10%	69,670																							$69,670						
WR40P05602	30%	60%	10%	67,610																							$67,610						
WR40P01610	30%	60%	10%	34,454				$34,454																									
WR40P01611	30%	60%	10%	43,132				$43,132																									
WR40P01614	30%	60%	10%	30,371				$30,371																									
WR40P01615	30%	60%	10%	25,777				$25,777																									
WR40P01616	30%	60%	10%	4,083				$4,083																									
WR40P01617	30%	60%	10%	30,626				$30,626																									
WR40P01618	30%	60%	10%	34,709				$34,709																									
WR40P01619	30%	60%	10%	25,522				$25,522																									
WR40P01627	30%	60%	10%	52,064																	$52,064												
WR40P01628	30%	60%	10%	109,232																	$109,232												
WR40P01631	30%	60%	10%	49,001																	$49,001												
WR40P01621	30%	60%	10%	64,178																	$64,178												
WR40P01622	30%	60%	10%	686																	$686												
WR40P01623	30%	60%	10%	76,534																	$76,534												
WR40P01624	30%	60%	10%	60,060																	$60,060												
WR40P01625	30%	60%	10%	64,522																	$64,522												
WR40P01626	30%	60%	10%	62,806																	$62,806												
WR41P01602	30%	60%	10%	169,884																						$169,884							
WR41P01605	30%	60%	10%	54,569																						$54,569							
WR41P01606	30%	60%	10%	72,072																						$72,072							
WR41P01607	30%	60%	10%	83,054																						$83,054							
WR40P01632	30%	60%	10%	51,480																									$51,480				
WR40P01633	30%	60%	10%	195,624																									$195,624				
WR40P01634	30%	60%	10%	65,208																									$65,208				
WR41P01608	30%	60%	10%	87,516																											$87,516		
WR41P01609	30%	60%	10%	74,818																											$74,818		
WR41P01601	30%	60%	10%	166,899																						$166,899							
WR40P01630	30%	60%	10%	168,168																								$168,168					
WR40P01629	30%	60%	10%	141,864																								$141,864					
WR40P03003	30%	60%	10%	17,355				$17,355																									
WR41P02101	30%	60%	10%	28,584																						$28,584							
WR41P02102	30%	60%	10%	15,313																						$15,313							
WR40P02703	30%	60%	10%	22,969																	$22,969												
WR40P02702	30%	60%	10%	5,491																			$5,491										
WR40P02701	30%	60%	10%	6,864																				$6,864									
WR40P06301	30%	60%	10%	59,976																								$59,976					
WR40P01901	30%	60%	10%	45,684				$45,684																									
WR40P01902	30%	60%	10%	21,949				$21,949																									
WR40P01909	30%	60%	10%	47,215				$47,215																									
WR40P01907	30%	60%	10%	4,083																	$4,083												
WR40P01910	30%	60%	10%	10,209																	$10,209												
WR40P01911	30%	60%	10%	15,568																	$15,568												
WR40P01906	30%	60%	10%	12,698																			$12,698										
WR40P05701	30%	60%	10%	52,853																				$52,853									
WR40P05702	30%	60%	10%	40,841																				$40,841									
WR40P05703	30%	60%	10%	50,450																				$50,450									
WR40P05704	30%	60%	10%	73,445																				$73,445									
WR40P05705	30%	60%	10%	40,154																				$40,154									
WR40P05706	30%	60%	10%	36,722																						$36,722							
WR40P05707	30%	60%	10%	22,994																						$22,994							
WR40P00801	30%	60%	10%	31,918																				$31,918									
WR40P00802	30%	60%	10%	30,202																				$30,202									
WR40P00803	30%	60%	10%	28,486																				$28,486									
WR40P00804	30%	60%	10%	12,698																				$12,698									
WR40P00806	30%	60%	10%	82,711																							$82,711						
WR40P00805	30%	60%	10%	6,676																				$6,676									
WR40P00703	30%	60%	10%	10,209				$10,209																									
WR40P00704	30%	60%	10%	71,386				$71,386																									
WR40P05403	30%	60%	10%	75,504																						$75,504							
WR40P05401	30%	60%	10%	36,036																												$36,036	
WR40P05402	30%	60%	10%	31,574																												$31,574	
WR40P02201	30%	60%	10%	31,136																	$31,136												
WR40P02202	30%	60%	10%	24,756																	$24,756												
WR40P09502	30%	60%	10%	14,547																		$14,547											
WR40P09503	30%	60%	10%	72,415																		$72,415											
WR40P09504	30%	60%	10%	5,148																				$5,148									
WR40P09505	30%	60%	10%	6,178																				$6,178									
WR40P09506	30%	60%	10%	17,160																				$17,160									
WR40P02601	30%	60%	10%	38,438																				$38,438									
WR41P02001	30%	60%	10%	35,350																						$35,350							
WR41P02002	30%	60%	10%	54,226																						$54,226							
WR41P02003	30%	60%	10%	34,320																						$34,320							
WR40P04703	30%	60%	10%	26,798																							$26,798						

WR40P04704	30%	60%	10%	27,819							$27,819			
WR40P04701	30%	60%	10%	18,190							$18,190			
WR40P04702	30%	60%	10%	17,160							$17,160			
WR40P01301	30%	60%	10%	18,631						$18,631				
WR40P01302	30%	60%	10%	7,146						$7,146				
WR40P01303	30%	60%	10%	9,188						$9,188				
WR40P03304	30%	60%	10%	16,844	$16,844									
WR40P03305	30%	60%	10%	30,881	$30,881									
WR40P03306	30%	60%	10%	29,095	$29,095									
WR40P03307	30%	60%	10%	28,584	$28,584									
WR40P03308	30%	60%	10%	23,990						$23,990				
WR40P03301	30%	60%	10%	8,237							$8,237			
WR40P03302	30%	60%	10%	13,385							$13,385			
WR40P03303	30%	60%	10%	3,432							$3,432			
WR40P01801	30%	60%	10%	26,798	$26,798									
WR40P01802	30%	60%	10%	14,547	$14,547									
WR40P02401	30%	60%	10%	18,190				$18,190						
WR41P09805	30%	60%	10%	35,350									$35,350	
WR41P09806	30%	60%	10%	5,834									$5,834	
WR41P09807	30%	60%	10%	18,533									$18,533	
WR41P09808	30%	60%	10%	56,971									$56,971	
WR41P09809	30%	60%	10%	21,965										$21,965
WR41P09801	30%	60%	10%	36,241									$36,241	
WR40P01201	30%	60%	10%	38,782					$38,782					
WR40P01202	30%	60%	10%	65,208						$65,208				
WR40P01203	30%	60%	10%	35,350						$35,350				
WR40P01204	30%	60%	10%	4,462						$4,462				
WR40P04906	30%	60%	10%	22,969	$22,969									
WR40P04907	30%	60%	10%	38,282	$38,282									
WR40P04908	30%	60%	10%	11,230	$11,230									
WR40P04903	30%	60%	10%	50,450			$50,450							
WR40P04904	30%	60%	10%	79,622			$79,622							
WR40P04905	30%	60%	10%	15,101			$15,101							
WR40P03201	30%	60%	10%	15,823	$15,823									
WM410104P	30%	60%	10%	485,638						$485,638				
WM410105P	30%	60%	10%	485,638						$485,638				
WM410106P	30%	60%	10%	18,678						$18,678				
WM410107P	30%	60%	10%	9,339						$9,339				
WR40P05901	30%	60%	10%	8,167				$8,167						
WR40P05902	30%	60%	10%	9,188				$9,188						
WR40P05903	30%	60%	10%	12,761				$12,761						
WR40P00104	30%	60%	10%	21,183	$21,183									
WR40P00105	30%	60%	10%	27,563	$27,563									
WR40P00106	30%	60%	10%	5,104	$5,104									
WR40P00107	30%	60%	10%	68,143	$68,143									
WR40P00108	30%	60%	10%	4,594	$4,594									
WR40P00101	30%	60%	10%	30,888	$30,888									
WR40P00102	30%	60%	10%	5,491	$5,491									
WR40P00901	30%	60%	10%	25,740					$25,740					
WR40P00902	30%	60%	10%	146,890							$146,890			
WR40P00903	30%	60%	10%	5,491							$5,491			
WR40P00904	30%	60%	10%	29,515							$29,515			
WR40P05501	30%	60%	10%	34,965										$34,965
WR40P05502	30%	60%	10%	6,380										$6,380
WR40P05503	30%	60%	10%	8,933										$8,933
WR40P04501	30%	60%	10%	52,166							$52,166			
WR40P04502	30%	60%	10%	42,900							$42,900			
WR40P04503	30%	60%	10%	60,403								$60,403		
WR40P04504	30%	60%	10%	76,534								$76,534		
WR40P04505	30%	60%	10%	40,841								$40,841		
WR40P04506	30%	60%	10%	59,717									$59,717	
WR40P04507	30%	60%	10%	59,374									$59,374	
WR40P04508	30%	60%	10%	54,569									$54,569	
WR41P00101	30%	60%	10%	27,053						$27,053				
WR41P00102	30%	60%	10%	49,512						$49,512				
WR41P00103	30%	60%	10%	54,106						$54,106				
WR41P00104	30%	60%	10%	26,798						$26,798				
WR41P00401	30%	60%	10%	28,074										$28,074
WR41P00402	30%	60%	10%	25,522										$25,522
WR40P06201	30%	60%	10%	44,408								$44,408		
WR40P04801	30%	60%	10%	41,527							$41,527			
WM410101P	30%	60%	10%	298,854						$298,854				
WM410102P	30%	60%	10%	186,784						$186,784				
WM410103P	30%	60%	10%	149,427						$149,427				
WR40P06001	30%	60%	10%	23,681								$23,681		
WR40P06002	30%	60%	10%	28,829								$28,829		
WR40P06003	30%	60%	10%	10,982								$10,982		
WR40P06004	30%	60%	10%	22,651								$22,651		
WR40P06005	30%	60%	10%	25,397								$25,397		
WR40P06006	30%	60%	10%	96,096								$96,096		
WR41P01401	30%	60%	10%	36,241							$36,241			
WR41P01402	30%	60%	10%	39,558							$39,558			
WR40P01501	30%	60%	10%	36,751				$36,751						
WR40P01502	30%	60%	10%	35,985				$35,985						
WR40P01503	30%	60%	10%	27,308				$27,308						
WR41P03901	30%	60%	10%	104,676									$104,676	
WR41P03902	30%	60%	10%	64,178									$64,178	
WR40P02801	30%	60%	10%	21,438	$21,438									
WR40P02802	30%	60%	10%	25,777	$25,777									
WR40P02803	30%	60%	10%	22,204			$22,204							
WR40P02901	30%	60%	10%	27,053		$27,053								
WR40P05001	30%	60%	10%	34,320				$34,320						
WR40P05002	30%	60%	10%	5,491				$5,491						
WR40P05003	30%	60%	10%	62,806				$62,806						
WR40P05004	30%	60%	10%	44,959				$44,959						
WR40P05005	30%	60%	10%	53,196				$53,196						
WR40P05006	30%	60%	10%	32,604				$32,604						
WR40P05801	30%	60%	10%	49,512				$49,512						
WR40P05802	30%	60%	10%	42,621				$42,621						
WR40P00401	30%	60%	10%	40,835	$40,835									
WR40P00402	30%	60%	10%	24,756	$24,756									
WR40P06401	30%	60%	10%	36,751								$36,751		
WR41P12504	30%	60%	10%	46,705						$46,705				
WR41P12505	30%	60%	10%	3,318						$3,318				
WR41P12506	30%	60%	10%	18,120						$18,120				
WR41P01501	30%	60%	10%	4,805						$4,805				
WR41P12501	30%	60%	10%	21,278						$21,278				
WR41P12502	30%	60%	10%	17,160						$17,160				
WR41P12503	30%	60%	10%	44,616						$44,616				
WR40P04401	30%	60%	10%	65,894								$65,894		
WR40P02501	30%	60%	10%	17,160				$17,160						

					2011 2012	2012 2013	2013 2014	2014 2015	2015 2016	2016 2017	2017 2018	2018 2019	2019 2020	2020 2021	2021 2022	2022 2023	2023 2024	2024 2025	2025 2026	2026 2027	2027 2028	2028 2029	2029 2030	2030 2031	2031 2032	2032 2033	2033 2034	2034 2035	2035 2036	2036 2037	2037 2038	2038 2039	2039 2040	2040 2041
WR40P06101	30%	60%	10%	105,404																								$105,404						
WR40P02001	30%	60%	10%	39,811																			$39,811											
WR40P02002	30%	60%	10%	35,693																			$35,693											
WR40P01401	30%	60%	10%	67,594																				$67,594										
WR40P01403	30%	60%	10%	32,128																				$32,128										
WR40P01406	30%	60%	10%	79,277																				$79,277										
WR40P01404	30%	60%	10%	27,956																				$27,956										
WR40P01405	30%	60%	10%	36,301																				$36,301										
WR40P01402	30%	60%	10%	5,424																				$5,424										
WR40P06601	30%	60%	10%	36,241																								$36,241						
WR41P01502	30%	60%	10%	23,338																						$23,338								
WR41P01503	30%	60%	10%	48,734																						$48,734								
WR41P02211	30%	60%	10%	54,226																												$54,226		
WR40P03001	30%	60%	10%	52,830				$52,830																										
WR40P06501	30%	60%	10%	28,329																								$28,329						
WR40P01001	30%	60%	10%	22,651																				$22,651										
WR40P01002	30%	60%	10%	8,580																				$8,580										
WR40P01003	30%	60%	10%	25,054																				$25,054										
WR40P01004	30%	60%	10%	26,770																				$26,770										
WR40P01005	30%	60%	10%	29,172																				$29,172										
WR40P01007	30%	60%	10%	28,829																				$28,829										
WR40P01006	30%	60%	10%	4,118																				$4,118										
WR40P00301	30%	60%	10%	69,670																	$69,670													
WR40P00302	30%	60%	10%	54,912																	$54,912													
WR40P00303	30%	60%	10%	73,445																		$73,445												
WR40P00308	30%	60%	10%	5,491																								$5,491						
WR40P00309	30%	60%	10%	0																														
WR40P00310	30%	60%	10%	0																														
WR40P00304	30%	60%	10%	0																														
WR40P00311	30%	60%	10%	0																														
WR40P00305	30%	60%	10%	0																														
WR40P00306	30%	60%	10%	0																														
WR40P00307	30%	60%	10%	0																														
WR40P00606	30%	60%	10%	53,085				$53,085																										
WR40P00605	30%	60%	10%	25,740				$25,740																										
WR40P00601	30%	60%	10%	31,294																				$31,294										
WR40P00602	30%	60%	10%	6,676																				$6,676										
WR40P00603	30%	60%	10%	47,566																				$47,566										
WR40P00604	30%	60%	10%	39,221																				$39,221										
WR41P00201	30%	60%	10%	37,752																												$37,752		
WR40P12007	30%	60%	10%	32,157																		$32,157												
WR40P12008	30%	60%	10%	38,282																		$38,282												
WR40P05101	30%	60%	10%	38,438																							$38,438							
WR40P05102	30%	60%	10%	41,184																													$41,184	
WM410301P	30%	60%	10%	1,109,871																							$1,109,871							
WR40P02101	30%	60%	10%	22,204																	$22,204													
WR40P02103	30%	60%	10%	5,870																						$5,870								
WR40P02102	30%	60%	10%	29,858																				$29,858										
WR40P02104	30%	60%	10%	8,933																						$8,933								
WR40P02105	30%	60%	10%	10,464																						$10,464								
New Pipelines																																		
WBP21		100%				52,512																												
WBP22		100%		72,492	72,492																													
Pump Stations																																		
Russelton Booster Pump Station - WBPC2		100%		513,504		$ 513,504.33																												
Total				12,720	72	566	0	1,085	0	0	0	0	0	0	0	0	27	0	0	0	962	231	94	1,618	104	3,120	2,055	954	310	312	0	838	371	0
Improved LOS			**$'000**	3,624	0	0	0	325.4856	0	0	0	0	0	0	0	0	8.1159	0	0	0	288.5901	69.2538	28.1079	485.3949	31.0941	935.9172	616.6161	286.1769	93.0096	93.6936	0	251.5437	111.3513	0
Growth Works			**$'000**	7,835	72.49242	566.0166469	0	650.9712	0	0	0	0	0	0	0	0	16.2318	0	0	0	577.1802	138.5076	56.2158	970.7898	62.1882	1871.834	1233.2322	572.3538	186.0192	187.3872	0	503.0874	222.7026	0
Renewals			**$'000**	1,208	0	0	0	108.4952	0	0	0	0	0	0	0	0	2.7053	0	0	0	96.1967	23.0846	9.3693	161.7983	10.3647	311.9724	205.5387	95.3923	31.0032	31.2312	0	83.8479	37.1171	0
			Total	12,667																														

Data supplied in Council Water and Sewer Asset Register & Renewals Program N:\AU\Wagga Wagga\Projects\23\14003\Tech\BSC Asset Register

Data extracted from Asset registers: Pipelines,reservoirs,pumps,treatment plants worksheets in this document based on the 'date of renewal' column

BSC: Development Area F: CURA A, Ballina Heights

CAPITAL WORKS PROGRAM ($'000) 2011

Water

Project	Type of works			Project Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Improved LOS	ew System Asse	Renewals		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41
New Pipelines																																		
WPD81		100%		278,674					$278,674																									
27		100%		193,006		$193,006																												
29		100%		715,154		$715,154																												
31		100%		259,299		$259,299																												
33		100%		221,171		$221,171																												
41		100%		132,249		$132,249																												
118		100%		84,202		$84,202																												
Pump Stations																																		
Cura A Booster Pump - RWRBP2		100%		175,815					$175,815																									
Ballina Heights High Level Zone - WBPC3		100%		369,000		$369,000																												
Total				2,429	**0**	**1,974**	**0**	**0**	**454**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Improved LOS		**$'000**		**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Works		**$'000**		**2,429**	0	1974.080925	0	0	454.488888	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewals		**$'000**		**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total		**2,429**																														

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041

Data supplied in Council Water and Sewer Asset Register & Renewals Program N:\AU\Wagga Wagga\Projects\23\14003\Tech\BSC Asset Register

Data extracted from Asset registers: Pipelines,reservoirs,pumps,treatment plants worksheets in this document based on the 'date of renewal' column

BSC: Development Area G - CURA B	
CAPITAL WORKS PROGRAM ($'000)	2011
Water	

Project	Type of works			Project Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Improved LOS	ew System Asset	Renewals		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41
Reservoirs																																		
Ross Lane Service Reservoir - WR2		100%		1,306,451					$1,306,451																									
Ross Lane Reservoir - RWR2		100%		2,073,277							$2,073,277																							
Total				3,380	0	0	0	0	1,306	0	2,073	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Improved LOS		**$'000**		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Works		**$'000**		3,380	0	0	0	0	1306.45058	0	2073.27668	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewals		**$'000**		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total		3,380																														

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041

Data supplied in Council Water and Sewer Asset Register & Renewals Program N:\AU\Wagga Wagga\Projects\23\14003\Tech\BSC Asset Register

Data extracted from Asset registers: Pipelines,reservoirs,pumps,treatment plants worksheets in this document based on the 'date of renewal' column

Appendix E

Reduction Amount Calculations

NPV of Annual Charges Method

Table 1 - Calculation of Developer Charges using the Direct NPV Method
Ballina Shire Council - Water Supply for Agglomerated Area 1 - Wardell, Ballina, Skennars Head, Lennox Head, Fig Tree Hill, WUEA, CURA B

Base Data

Capital charge per ET	(2011/12$)	**Varies across DSP areas**	
	Year 1	**2011** /12	
	Debt at end of 2010/11 ($'000)	-	include borrowings and overdraft
	Cash and investments at end of 2010/11 ($'000)		include all cash and investments, including sinking fund etc.
	Net debt ($'000)	-	
	Discount rate for future works	**7%**	

Assessments at year end

Year No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36
Residential (including backlog works)	**15,028**	**15,067**	**15,589**	**16,111**	**16,633**	**17,155**	**17,575**	**17,995**	**18,415**	**18,835**	**19,255**	**19,748**	**20,241**	**20,733**	**21,226**	**21,719**	**22,162**	**22,606**	**23,049**	**23,492**	**23,936**					
Non-residential	**954**	**980**	**1,006**	**1,031**	**1,057**	**1,083**	**1,102**	**1,121**	**1,140**	**1,159**	**1,178**	**1,195**	**1,212**	**1,229**	**1,247**	**1,264**	**1,276**	**1,289**	**1,301**	**1,314**	**1,326**					
ET per Residential assessment	**1.82**																									
ET per non-residential assessment	**19.68**																									
Capacity for future customers (ET)	-	0	0	0																						
	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32	1195.32

Capital works

Base year **2011** /12

Year		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36
Renewals	(2011/12$'000)"Renewals	34.43	0	0	108.4952	89.918	1007.549	0	62.527	0	1124.702	0	0	2.7053	0	240.206	3965.285	2184.2567	318.9796	362.5713	2084.0223					
	Inflation from Base year to Year 1 (%)	**0.00%**																								
	Capital Works for Improved Standards (2011/12$'000)	**0**	**0**	**0**	**325.4856**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8.1159**	**0**	**0**	**0**	**288.5901**	**69.2538**	**28.1079**	**485.3949**	**0**	**0**	**0**	**0**	**0**
	Government Grant on Works for Improved standards (2011/12$'000)																									
	Inflation from 2011/12 to 2011/12 (%)	**0.00%**																								
	Last year of the program	**2030** /31																								

PV of ET

Total equivalent tenements (ET)	46,117	46,692	48,146	49,601	51,055	52,510	53,647	54,783	55,920	57,057	58,194	59,430	60,666	61,902	63,137	64,373	65,425	66,477	67,529	68,581	69,633	0	0	0	0	0
Growth (ET)		575	1,454	1,454	1,454	1,454	1,137	1,137	1,137	1,137	1,137	1,236	0	1,236	1,236	1,236	1,052	1,052	1,052	1,052	1051.823546	-69632.52	0	0	0	0
PV of 10 years of growth (ET)		9,686																								
PV ETs		55,803																								

PV of renewal works

Year No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Renewals ($'000) in 2011/12$		34	0	0	108	90	1,008	0	63	0	1,125	0	0	3	0	240	3,965	2,184	319	363	2,084	0	0	0	0	0
PV of 50 year of renewals at discount rate of 7% pa		4,617																								
PV Renewals per ET ($)		**83**																								

PV of Works for Improved Standards to existing population

Year No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Works for Improved Standards ($'000) in 2011/12$ after Government grant		0	0	0	325	0	0	0	0	0	0	0	0	8	0	0	0	289	69	28	485	0	0	0	0	0
PV of works for Improved Standards at discount rate of 7% pa		265																								
PV Standards per ET ($)		**5**																								

The **Reduction Amount** is the greater of

(1)	PV Renewals per ET + PV Standards per ET	87
(2)	Capital Charge - {[N/(N-F)] * [Capital Charge - PV Renewals per ET - PV Standards per ET - Net Debt per ET]}	0

Where:

Capital Charge =	Varies across DSP areas
N - PV of present and future ETs =	55,803
F - Capacity for future customers =	0
Net debt per ET	0

Developer Charge Calculation

Reduction Amount is therefore $87 say **$90**

Developer Charge for 2011/12 in 2011/12$

	Capital Charge	Varies across DSP areas
less	Reduction amount	$90
	Developer Charge	**Refer to Summary**

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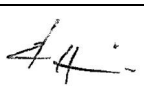
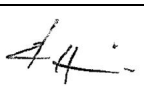
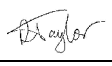
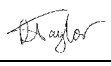
Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	T. Keyes	P. Hain		P. Hain		17/01/2012
1	C. West	P. Cox	On file	P. Cox	On file	16/05/2012
2	T. Keyes	D. Taylor		D. Taylor		05/06/2013