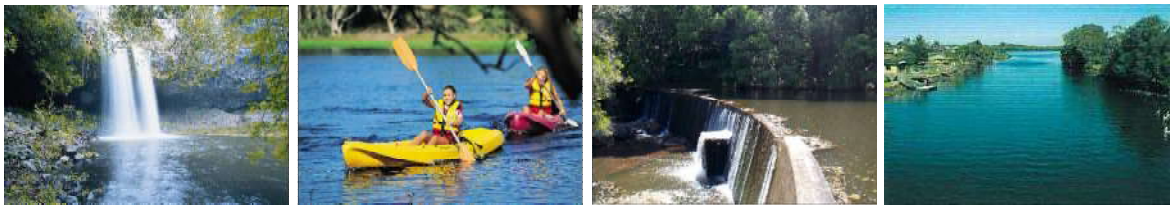

Ballina Shire Council

Development Servicing Plan for Water Supply Infrastructure

Adopted by Council:	27 Feb 2015
Registered by NSW Office of Water:	1 Jun 2015
Fees implemented from:	1 Jul 2015

GHD has prepared this Report on the basis of information provided by Ballina Shire Council, which GHD has not independently verified or checked ("Unverified Information") beyond the agreed scope of work.

GHD expressly disclaims responsibility in connection with the Unverified Information, including (but not limited to) errors in, or omissions from, the Report, which were caused or contributed to by errors in, or omissions from, the Unverified Information.

GHD has prepared the preliminary cost estimates of this Report ("Cost Estimate"):

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

The Cost Estimate has been prepared for the purpose of Section 64 wastewater developer charges and must not be used for any other purpose.

The Cost Estimate is a preliminary estimate only. Actual prices, costs and other variables may be different to those used to prepare the Cost Estimate and may change. Unless as otherwise specified in this Report, no detailed quotation has been obtained for actions identified in this Report. GHD does not represent, warrant or guarantee that the works can or will be undertaken at a cost which is the same or less than the Cost Estimate.

Where estimates of potential costs are provided with an indicated level of confidence, notwithstanding the conservatism of the level of confidence selected as the planning level, there remains a chance that the cost will be greater than the planning estimate, and any funding would not be adequate. The confidence level considered to be most appropriate for planning purposes will vary depending on the conservatism of the user and the nature of the project. The user should therefore select appropriate confidence levels to suit their particular risk profile.

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Appendices

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.

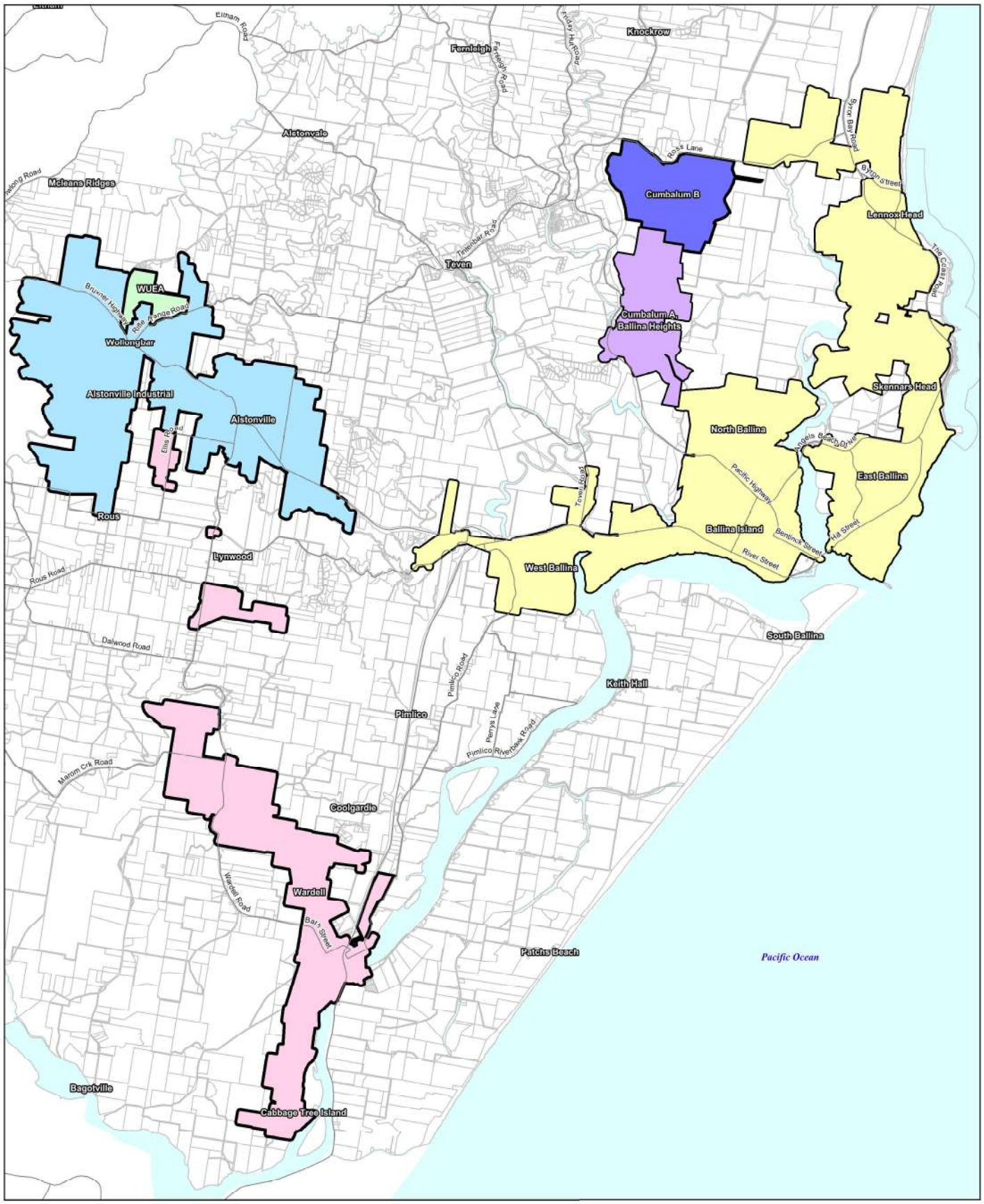
It should also be noted that these charges are exclusive of any developer charge that may be levied by Rous Water as a contribution towards bulk water infrastructure servicing the region. Current details of these charges may be obtained either from Rous Water, or from Council.

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	Developer Charge, less Reduction Amount ($ per ET)	Developer Charge after agglomeration ($ per ET)
Development Area A Wardell	11,102	11,102
Development Area B North Ballina Ballina Island East Ballina West Ballina Skennars Head Lennox Head Fig Tree Hill	2,885	2,882
Development Area E Alstonville Wollongbar Industrial Wollongbar	2,792	
Development Area C Wollongbar Urban Expansion Area (WUEA)	1,840	1,840
Development Area F Cumbalum Precinct A Ballina Heights	721	561
Development Area G Cumbalum Precinct B	463	



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

N

GHD

CLIENTS | PEOPLE | PERFORMANCE

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

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

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.

1.1 IPART Recommendations

IPART made a number of recommendations for amendments to the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (2002). Most of these recommendations have been adopted in this report with the following exceptions:

Background Documents in Electronic Format

The background documents to the report were not set up to be suitable for public exhibition. It was therefore determined that for this DSP this recommendation (1.c) would not be adopted.

Accredited Auditors

There are currently no accredited auditors and it is therefore not possible to adopt recommendation 3 at this time.

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 26/2/15. The DSP came into effect upon recognition by NSW Office of Water.

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 release of linen plan;
- Development consents involving building work – prior to release of the construction certificate;
- Development consents where no construction certificate is required – at the time of issue of the notification of consent, or prior to the commencement of approved development as may be determined by Council. Examples may include Exempt or Complying Development under the State Environmental Planning Policy No. 60 – Exempt and Complying Development and approvals under Part 5 of the Environmental Planning and Assessment Act 1979.

2.10 Deferred Payment

In general, developer contributions need to be paid as above. However, Council may decide to accept deferred or periodic payment in accordance with Council's Policy No. D10 *Deferral of Developer Contributions*. This document is subject to amendment and, as such, the latest version should be referred to. This can be obtained from Council's website.

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;
- 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.

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

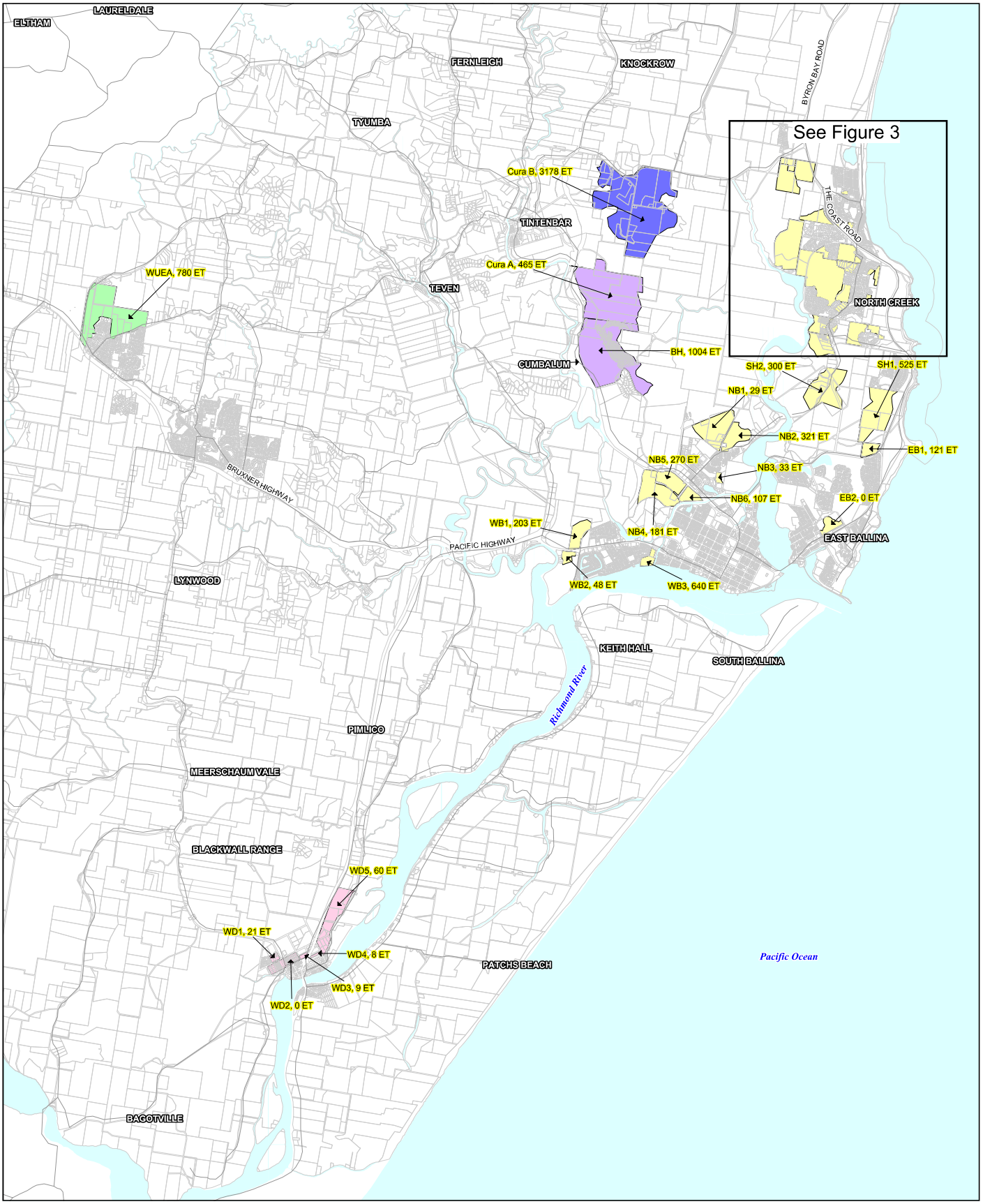
3.3.1 Future Development Areas

A number of key development areas, identified for future land supply in Ballina Shire, have been included in this plan for the purposes of determining infrastructure capacity and works within the plan. These areas, and their projected sizes, are shown in Figure 2 and Figure 3.

3.3.2 Development Summary

In addition, future development and infill growth has also been identified through all the Development Servicing Areas.

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



LEGEND

Major Road | Oceans and Waterways | DSP Area B | DSP Area F | WD1, 21 ET: Development Area ID, and Equivalent Tenement Count

Cadastral Boundaries | DSP Area A | DSP Area C | DSP Area G

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

Ballina Shire Council
Development Servicing Plan: Drinking Water Supply

Job Number 22-15470
Revision 0
Date 27 FEB 2015

Key Development Areas

Figure 2

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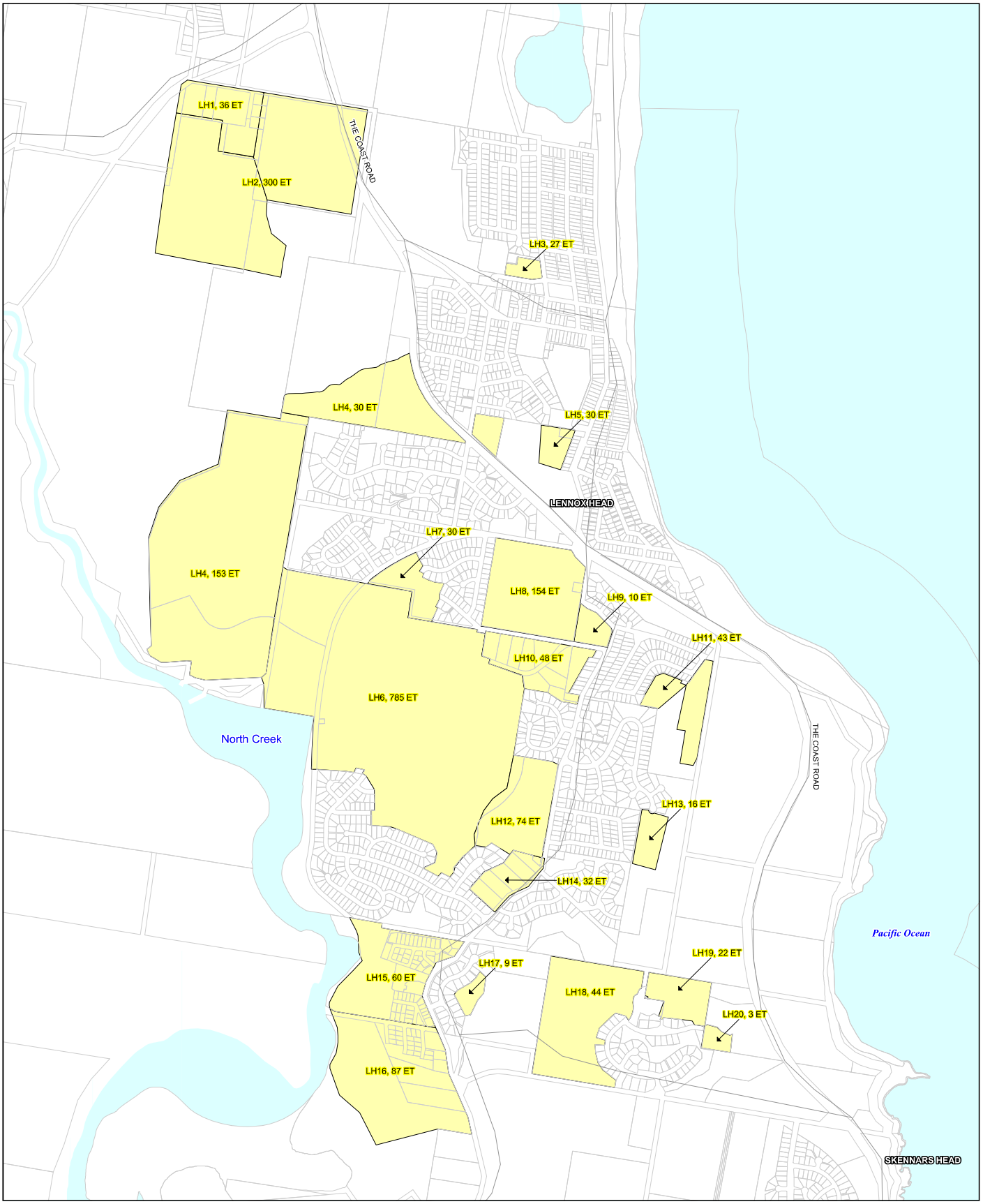
317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: BSC - Development Area, Cadastral Boundaries, Waterways (2012). Geoscience Australia - Major Roads, Place Names (2007). Created by: CM, RB



LEGEND

Major Road

Cadastral Boundaries

Oceans and Waterways

DSP Area B

LH16, 20 ET: Development Area ID, and Equivalent Tenement Count

1:15,000

0 0.2 0.4 0.6 0.8

Kilometres

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

Ballina Shire Council
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Key Development Areas - Insert Map

Figure 3

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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 - Development Area, Cadastral Boundaries, Waterways (2012). Geoscience Australia - Major Roads, Place Names (2011). Created by: CM, RB

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 C. Further information regarding how the timings were estimated for individual work items is provided in report Reference 4. 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 4).
- 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 4). (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, 2002):

- *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 to calculate the Reduction Amount, as per the 2012 Draft Guidelines (DPI, 2012). Note that this is a different and simpler method of calculation from the NPV method proposed by the 2002 Guidelines. As per the 2012 Draft Guidelines:
This method involves calculation of the present value (PV) of the future net income, which is the difference between the revenue from annual bills, and annual OMA cost, projected for new development over the next 30 years. This is divided by the PV of the new ETs over 30 years to give the reduction amount.

The reduction amount calculations for water are contained in Appendix A. The Reduction Amount was calculated using the 2011/2012 OMA costs and annual billing data, as per the basis year for the rest of the calculations. Note that in calculating the average bill per ET, the rate of water consumption was lowered from 230 kL/ET/annum to 155 kL/ET/annum, based on the lower rate of potable water consumption expected to occur in the future due to increased coverage of dual reticulation.

The calculated reduction amount was $385 per ET. Details of the reduction amount calculation are located in Appendix C.

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:

Development Charge Payable = Developer Charge[2] ($/ET) x 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 from the cost basis year to 2011/12 for Sydney (as per updating method in the Guidelines).

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

Development Area	Total Capital Charge per ET ($)	Total ET Growth (ET)	Proportion of Growth (%)	Weighted Capital ($)	Reduction amount ($)	Developer charge (prior to agglomeration) ($)
A	11,487	109	1.0%	113	385	11,102
B	3,270	5,319	48.1%	1,573	385	2,885
C	2,225	722	6.5%	145	385	1,840
E	1,106	1,782	16.1%	178	385	721
F	3,177	186	1.7%	54	385	2,792
G	849	2,939	26.6%	226	385	463

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, 2002) 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, 2002) was used to determine the adopted developer charge. The agglomerated charges are shown in Table 6.

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)

Area	Development Area	Total Capital Charge per ET ($/ET)	*Agglomeration inspection (70% of $/ET)*	Total ET Growth (ET)	Proportion of Growth	Weighted Capital Charge for Each Location ($/ET)	Capital Charge for each DSP Area ($/ET)	Reduction amount ($/ET)	Calculated & Adopted Developer Charge ($/ET)	Utility Wide Weighted Average Developer Charge per ET ($/ET)
A	Wardell	11,487	*8,041*	109	1.0%	113				
Total for Area A					**1.0%**	**113**	**11,487**	**385**	**11,102**	
B	North/East/West Ballina, Ballina Island, Skennars Head, Lennox Head	3,270	*2,289*	5319	48.1%	1,573				
E	Alstonville, Wollongbar	3,177		186	1.7%	54				
Total for areas B, E					**49.8%**	**1,627**	**3,267**	**385**	**2,882**	
C	WUEA	2,225	*1,557*	722	6.5%	145				
Total for Area C					**6.5%**	**145**	**2,225**	**385**	**1,840**	
F	CURA A, Ballina Heights	1,106	*774*	1782	16.1%	178				
G	CURA B	849		2939	26.6%	226				
Total for areas F, G					**42.7%**	**404**	**946**	**385**	**561**	
Total for all areas					**100%**	**2,289**				**1,904**

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. Department of Primary Industries (2012), *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater, 2012 – Consultation Draft*
3. 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*.
4. BSC (October 2011), *Ballina Shire Council – Water Supply Infrastructure Planning Report.*
5. Water Directorate (May 2009 Addendum), *Section 64 Determinations of Equivalent Tenements Guidelines.*

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

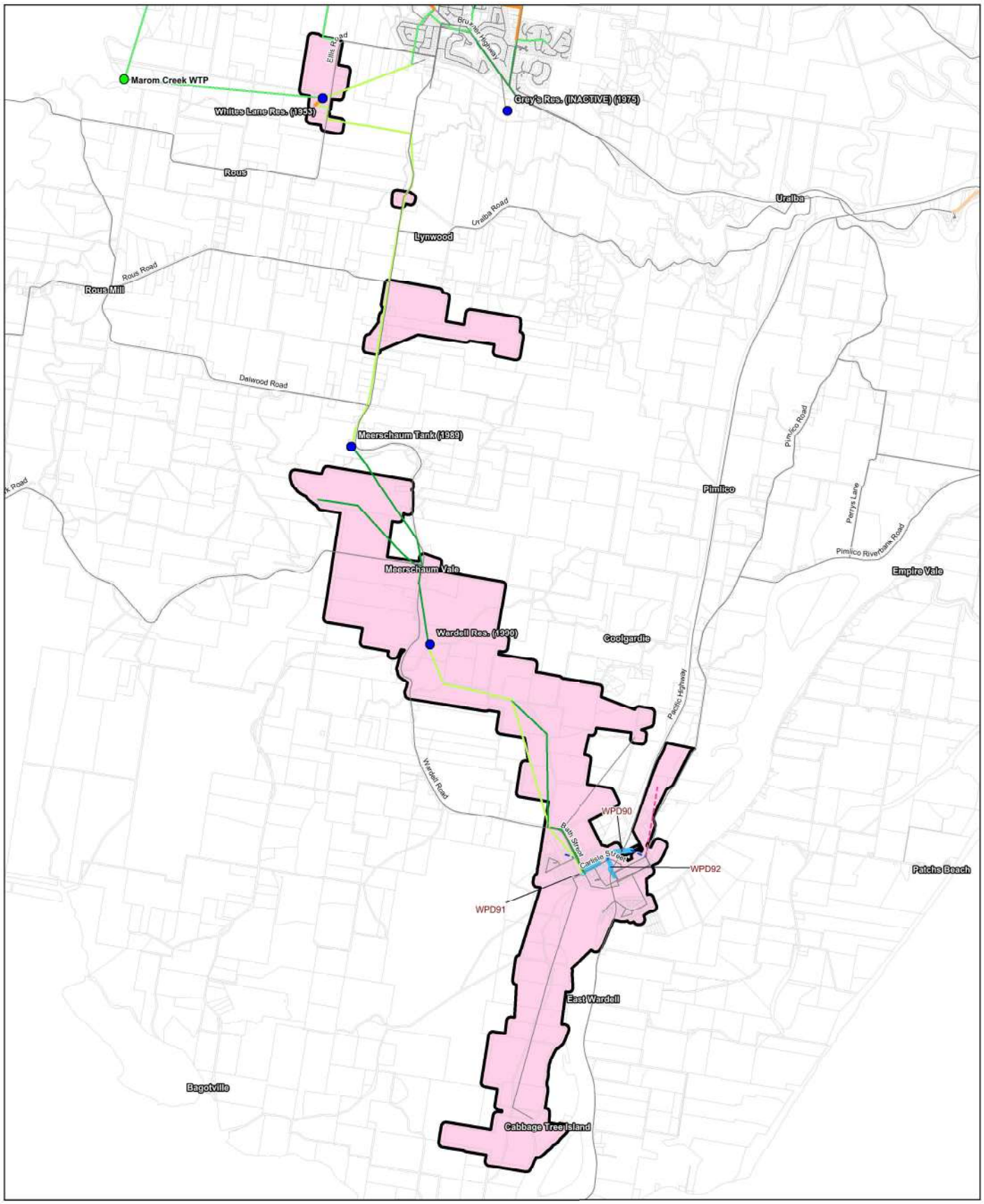
Table 7 provides an index to the figures defining the DSP areas provided in this section. Each figure (excluding Figure 1) indicates:

- 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



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

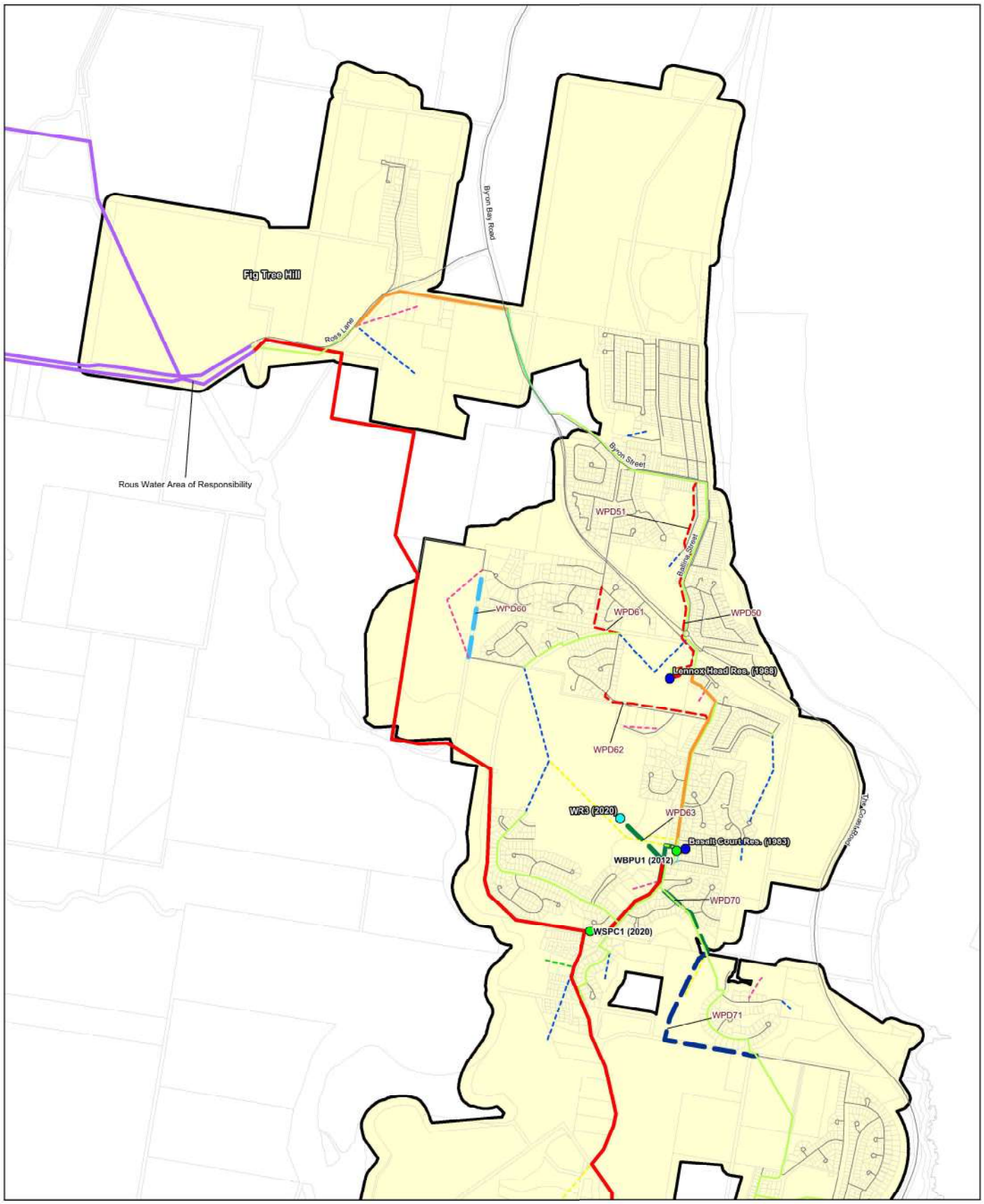
Job Number | 22-15470
Revision | 1
Date | 04 MAY 2012

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 Infrastructure, Future Infrastructure, Reticulation, Pumps, Reservoirs (2012). Navteq - Major Roads, Place Names (2011). Created by: CM



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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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

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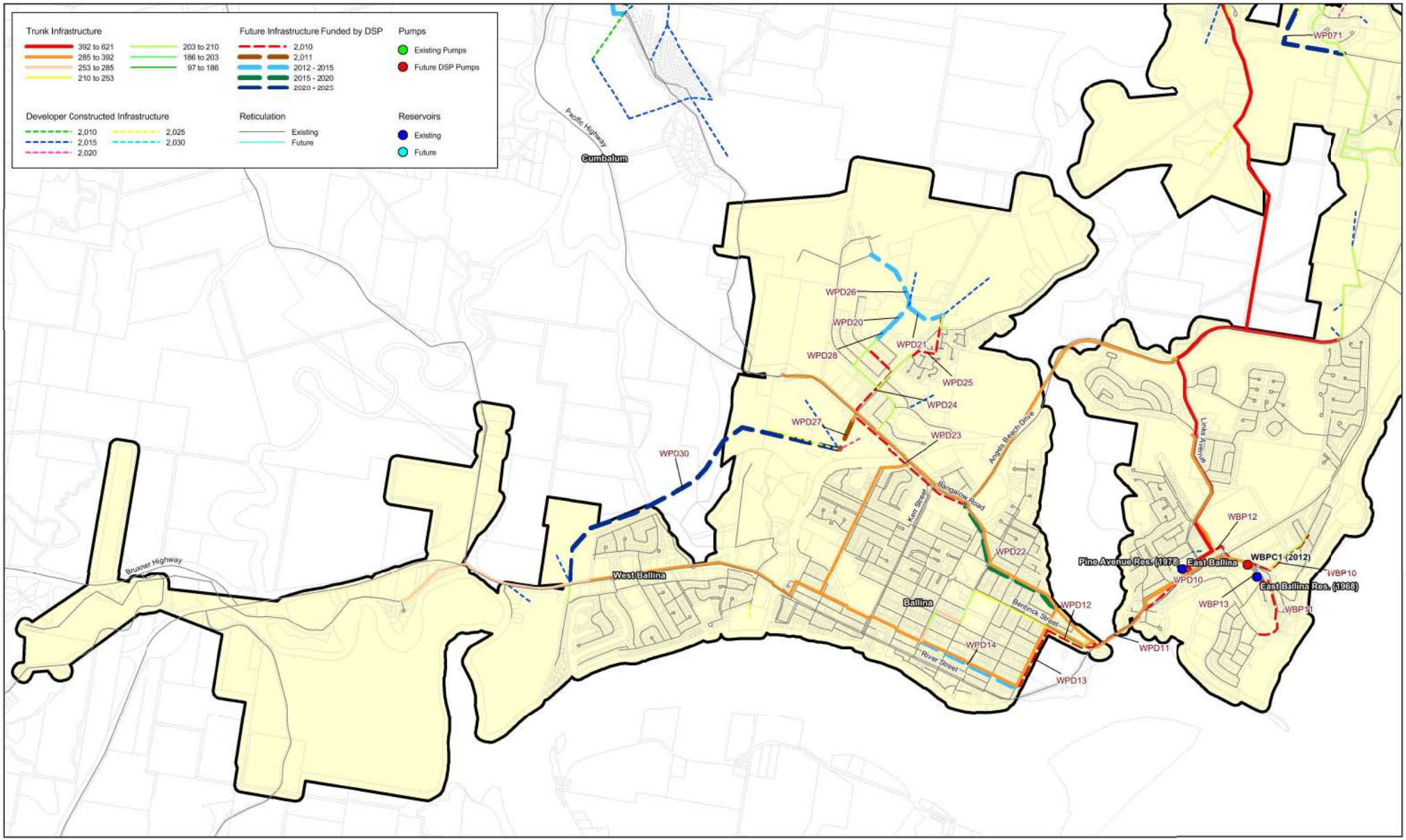
Job Number | 22-15470
Revision | 1
Date | 04 MAY 2012

DSP Area B - South

Figure 4

N:\AU\Toowoomba\Projects\22\15470\GIS\Maps\2215470_01B.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



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

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LEGEND

DSP Area B

Cadastral Boundaries

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Development Servicing Plan: Drinking Water Supply

Job Number	22-15470
Revision	1
Date	04 MAY 2012

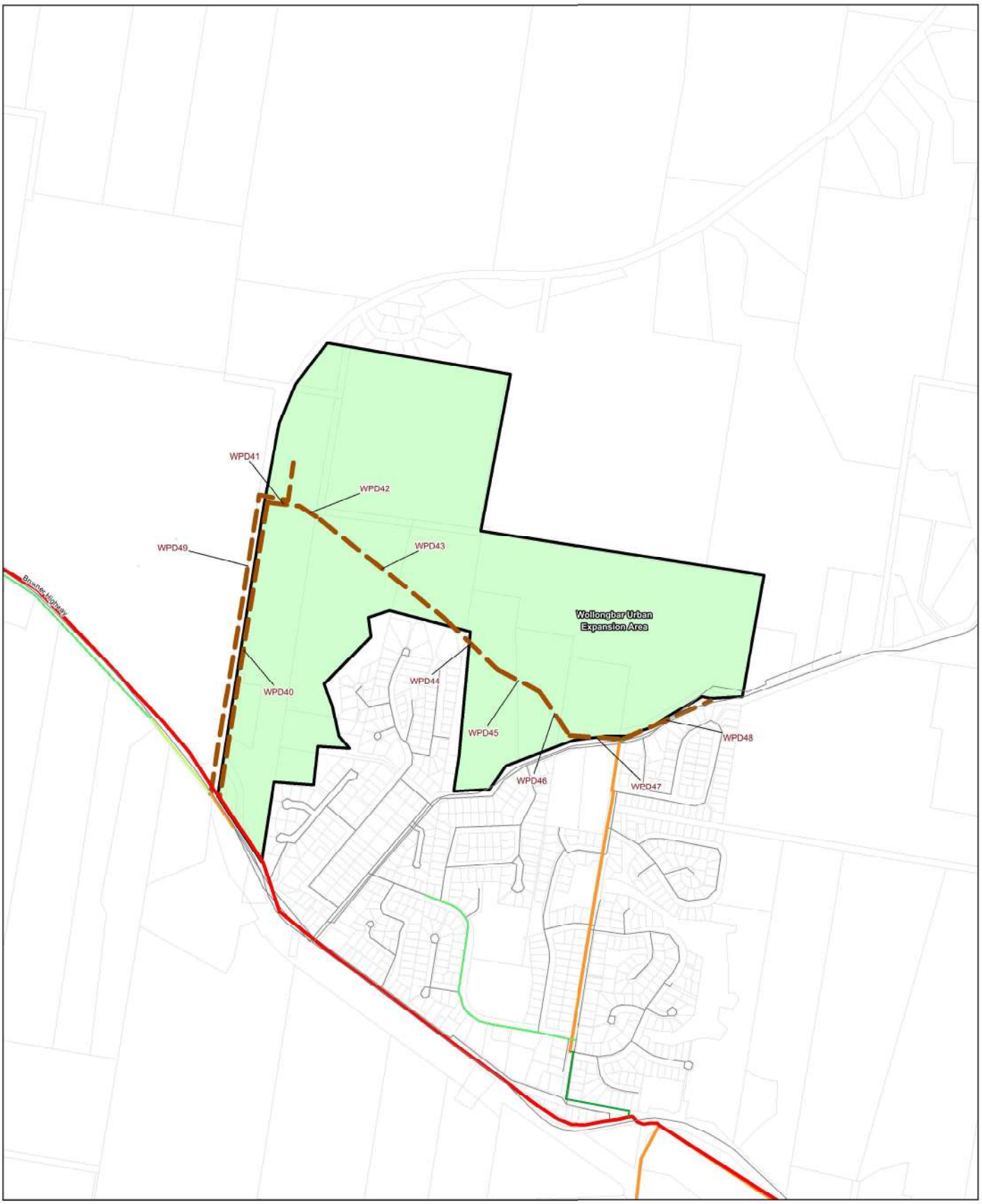
DSP Area B - West

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

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Development Servicing Plan - Drinking Water Supply

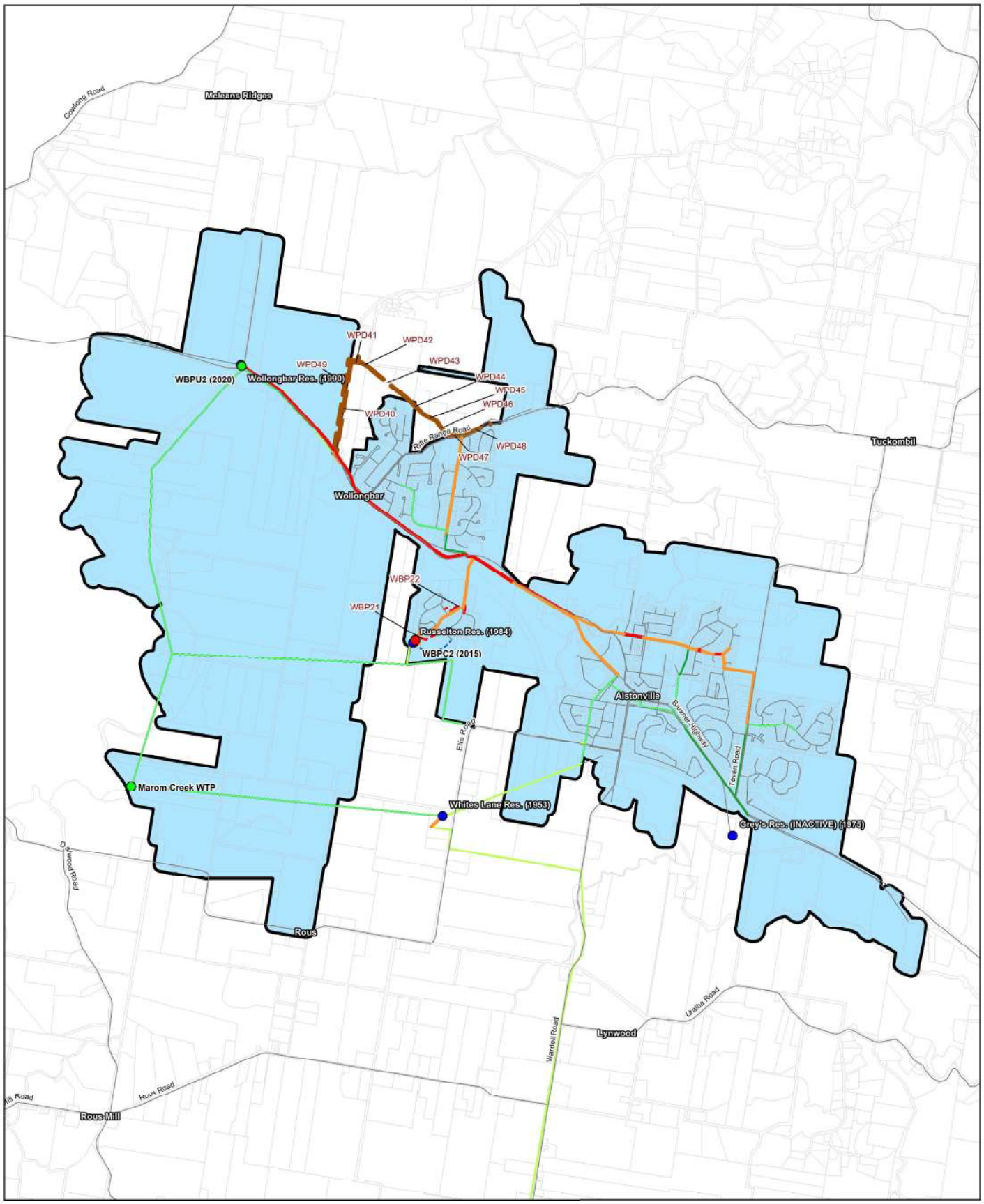
Job Number | 22-15470
Revision | 1
Date | 04 MAY 2012

DSP Area C
Wollongbar Urban Expansion Area

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

N

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Development Servicing Plan: Drinking Water Supply

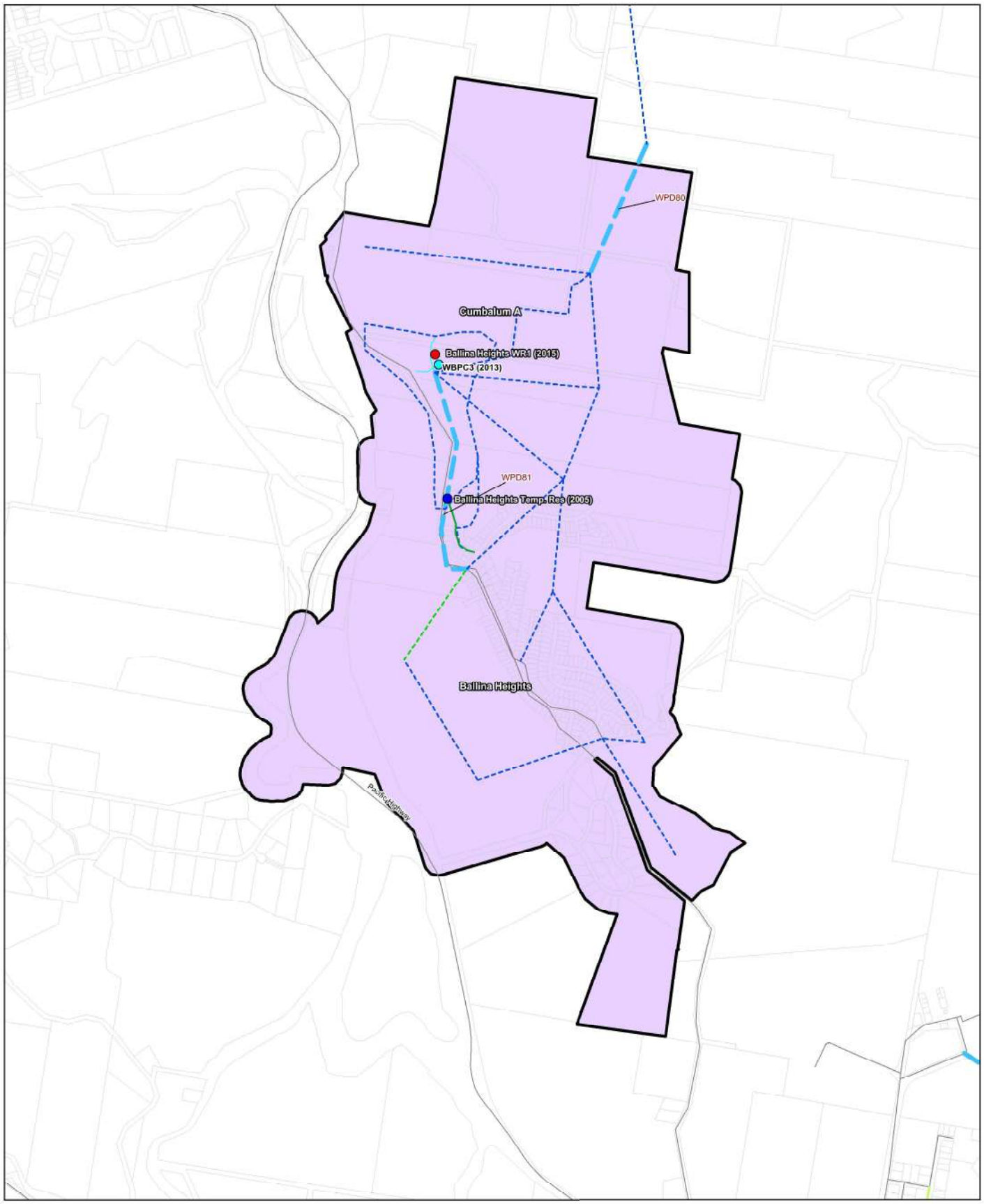
Job Number | 22-15470
Revision | 1
Date | 04 MAY 2012

DSP Area E
Alstonville Industrial, Alstonville, Wollongbar

Figure 7

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
219 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

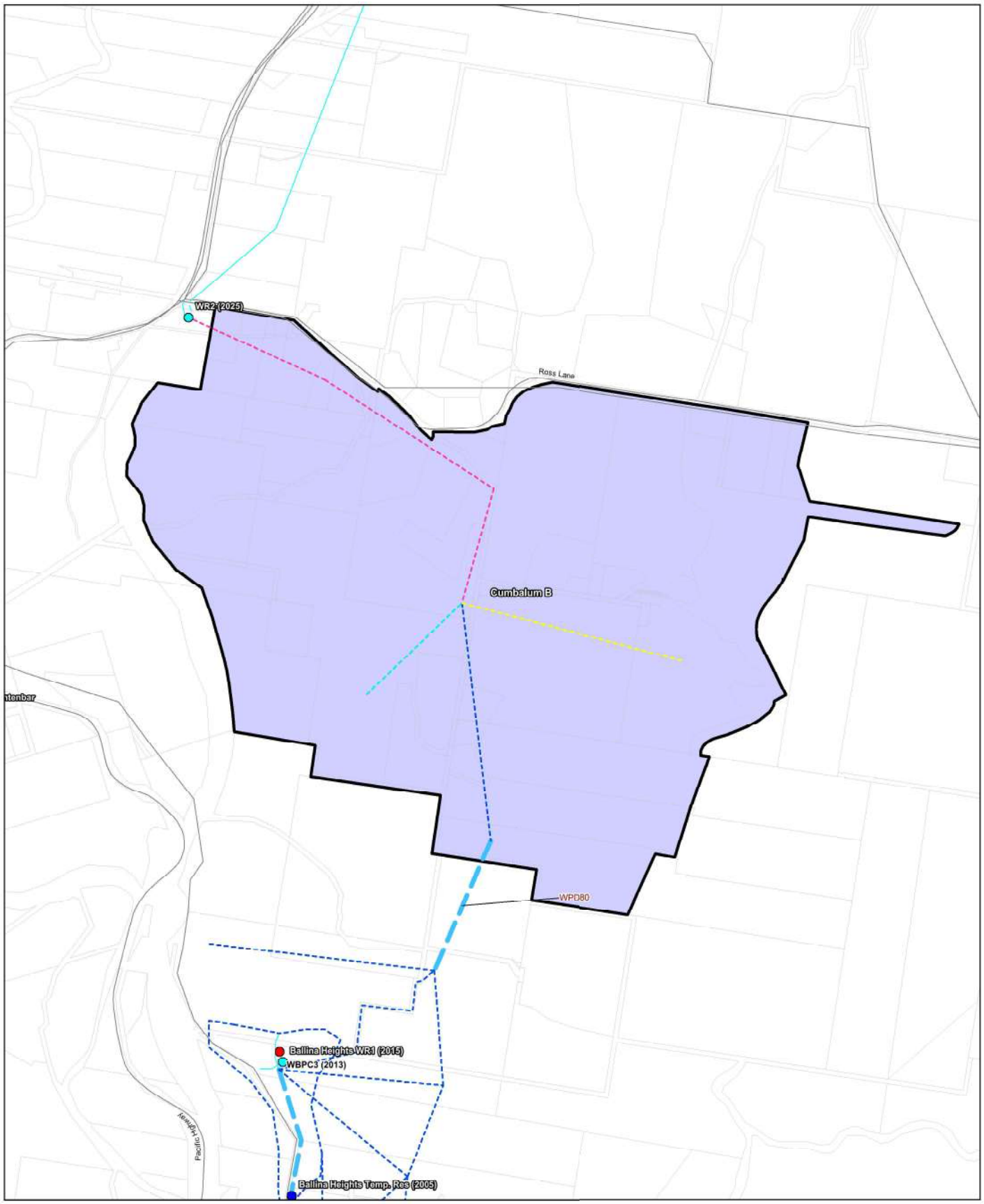
Job Number 22-15470
Revision 1
Date 11 MAY 2012

DSP Area 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

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

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

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

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

Appendix C

Capital Charge Calculations

Agglomeration Summary, Asset Evaluations and Reduction Amount

Agglomeration of Capital Charges

Area	Future Works				Existing Works				Total Capital cost per ET	Total ET Growth
	Pipelines	Reservoirs	Pumps	Treatment Plants	Pipelines	Reservoirs	Pumps	Treatment Plants		
A	167	-	-	841	5,254	2,141	1,377	1,707	**$11,487**	109
B	318	17	38	-	1,613	1,270	15	-	**$3,270**	5319
C	684	-	117	-	-	1,424	-	-	**$2,225**	722
E	21	-	48	-	1,362	1,606	140	-	**$3,177**	186
F	223	719	86	-	78	-	-	-	**$1,106**	1782
G	-	849	-	-	-	-	-	-	**$849**	2939

Agglomeration of Capital Charges

Reduction Amount: $ 385

Area	Development Area	Total Capital Charge per ET ($/ET)	*Agglomeration inspection (70% of $/ET)*	Total ET Growth (ET)	Proportion of Growth	Weighted Capital Charge for Each Location ($/ET)	With agglomeration: Capital Charge for each DSP Area ($/ET)	With agglomeration: Reduction amount ($/ET)	With agglomeration: Calculated & Adopted Developer Charge ($/ET)	Utility Wide Weighted Average Developer Charge per ET ($/ET)
A	Wardell	11,487	*8,041*	109	1.0%	113				
Total for Area A					**1.0%**	**113**	**11,487**	**385**	**11,102**	
B	North/East/West Ballina, Ballina Island, Skennars Head, Lennox Head	3,270	*2,289*	5319	48%	1,573				
E	Alstonville, Wollongbar	3,177		186	2%	54				
Total for areas B, E					**50%**	**1,627**	**3,267**	**385**	**2,882**	
C	WUEA	2,225	*1,557*	722	7%	145				
Total for Area C					**7%**	**145**	**2,225**	**385**	**1,840**	
F	CURA A, Ballina Heights	1,106	*774*	1782	16%	178				
G	CURA B	849		2939	27%	226				
Total for areas F, G					**43%**	**404**	**946**	**385**	**561**	
Total for all areas					**100%**	**2,289**				**1,904**

Reduction Amount by NPV of annual bills method

7%

Constant projected annual charges and OMA costs

Annual Water Charges (A)	414	$ per ET	= 2011/12 Minimum access charge + average consumption charge
Annual Water OMA Cost (B)	382	$ per ET	= $8.15m (2011/12 OMA) / 21,332 (2011/12 ET projection)
Future operating profits ('C)	32	$ per ET	

Year	Total ETs	New ETs per year	PV (New ETs) (over 30 years @ 5%)	Cumulative New ETs	Net Operating Results for New ETs ($'000)	PV (future operating profits) from new ETs over 30 years @ 5% ($'000)	Reduction Amount ($ per ET)
	(1)	(2) = $(1)_i - (1)_{i-1}$	(3) = PV of (2)	(4)	(5) = (4) * ('C)	(6) = PV of (5)	(7) = (6) / (3)
2010/11	20,633						
2011/12	21,332	699	**6,732.28**	699	22	**2,593.16**	**385**
2012/13	22,054	723		1,422	45		
2013/14	22,802	747		2,169	68		
2014/15	23,574	772		2,941	93		
2015/16	24,372	799		3,740	118		
2016/17	24,894	521		4,261	134		
2017/18	25,426	533		4,793	151		
2018/19	25,970	544		5,337	168		
2019/20	26,526	556		5,893	186		
2020/21	27,093	567		6,460	204		
2021/22	27,562	469		6,929	219		
2022/23	28,039	477		7,406	234		
2023/24	28,524	485		7,891	249		
2024/25	29,017	493		8,384	265		
2025/26	29,519	502		8,886	280		
2026/27	29,941	422		9,308	294		
2027/28	30,369	428		9,736	307		
2028/29	30,803	434		10,170	321		
2029/30	31,243	440		10,610	335		
2030/31	31,690	447		11,057	349		
2031/32				11,057	349		
2032/33				11,057	349		
2033/34				11,057	349		
2034/35				11,057	349		
2035/36				11,057	349		
2036/37				11,057	349		
2037/38				11,057	349		
2038/39				11,057	349		
2039/40				11,057	349		
2040/41				11,057	349		
2041/42				11,057	349		

Basis of Capacity and Growth

WTPs	Area	Capacity (ML, or ML/peak day)	Total possible ET served in the area?		kL/ET/ peak day	
Wardell Service Reservoir (1.6 ML)	A	1.6	941		1.70	
Meerschaum Balance Tank (0.24 ML)	A	0.24	141		1.70	
Pine Avenue Service Reservoir (20.3 ML)	B	20.3	12,254		1.66	Assumes 7% Urban Dual Reticulation with reduced demand of 1.08 kL/ET/Peak day
Basalt Court Service Reservoir (4.0 ML)	B	4	2,499		1.60	Assumes 16% Urban Dual Reticulation with reduced demand of 1.08 kL/ET/Peak day
Pacific Pines Reservoir	B	1.2	706		1.70	
East Ballina Reservoir	B	4	2,558		1.56	Assumes 22% Urban Dual Reticulation with reduced demand of 1.08 kL/ET/Peak day
Wollongbar Service Reservoir (10.4 ML)	C	10.4	1,529	Total of Wollongbar = 6500 ET (Split capacity as 25% to C, 75% to E)	1.70	
Wollongbar Service Reservoir (10.4 ML)	E	10.4	4,588	6500	1.70	
Russelton_service_reservoir (4.0 ML)	E	4	2,353		1.70	
Ballina Heights Service Reservoir	F	2.2	2,037		1.08	Assumes 100% Urban Dual Reticulation with reduced demand of 1.08 kL/ET/Peak day
Ross Lane Service Reservoir	G	3.5	3,241		1.08	Assumes 100% Urban Dual Reticulation with reduced demand of 1.08 kL/ET/Peak day

	Total System capacity		Year when capacity is taken up, or 2040 (default 30 years)	Population projection						
Inc. Areas	**Area**	**As reservoirs:**		**Service Area**	**2010 ET**	**2015 ET**	**2020 ET**	**2025 ET**	**2030 ET**	***Growth***
Wardell	A	1,082	2040	A	517	558	581	603	626	*109*
Ballina Island, EB, WB, NB, Skenners Head, Lennox Head	B	18,017	2025	B	13672	15523	16894	18132	18991	*5319*
WUEA	C	1,529	2040	C	13	195	377	557	735	*722*
Alst. Industr, Alstonville, Wollongbar	E	6,941	2040	E	5796	5842	5888	5935	5983	*186*
Cura A, Ballina Heights	F	2,037	2020	F	634	1785	2416	2416	2416	*1782*
Cura B	G	3,241	2040	G	0	469	938	1876	2939	*2939*
	Sum	**32,848**		**Total**	**20,633**	**24,372**	**27,093**	**29,519**	**31,690**	***11,057***

Development Area	First asset commissioned in	Effective commissioning year
A	Pre 1996	1996
B	Pre 1996	1996
C	Pre 1996	1996
D	N/A	
E	Pre 1996	1996
F	2005	2005
G	2015	2015

Capital Charge: Treatment Plants - Future and Existing

Basis of "Existing" = commissioning year up to 2010/2011. "Future" = all later years. Existing and Future calculations follow the same methodology, and so moving assets between the Existing & Future tables will not alter the overall charge per area

Total Cost of Treatment plants per Development Area		
Development Area	Capital Charge per ET - Future	Capital Charge per ET - Existing
A	$ 840.90	$ 1,707.27
B	$ -	$ -
C	$ -	$ -
D	$ -	$ -
E	$ -	$ -
F	$ -	$ -
G	$ -	$ -

Label (ID)	Catchment	Drinking or Recycled Asset	Service Area	Service Area	Plant Type	Year Commissioned	Capacity (ML/d)	Total Cost (2011/12 $, marked up from 2007/08 rates)	Effective Year of Commissioning	Discount Rate	PV (1995/96) of Capital Cost (2011/2012)	Year of Renewal	System Capacity (ETs)	Capital cost per ET (2011/2012$)	Year of Full Take up	Take up Period	ROI Factor	Capital Charge ($/ET)
Marom Creek WTP	Wardell	Drinking	Wardell, Alstonville, Wollongbar, A'ville Industrial Estate	A	Sand Filter	1980	0.5	$ 1,025,113	1996	3%	1,025,113	2050	1082	947.12	2040	46	1.80	$ 1,707.27
Marom Creek PAC Plant	Wardell	Drinking	Wardell, Alstonville, Wollongbar, A'ville Industrial Estate	A	PAC	2012	0.3	$ 797,310	1996	7%	288,982	2082	1082	266.99	2040	46	3.15	$ 840.90

Capital Charge: Pump Stations & Valves - Future and Existing

Basis of "Existing" = commissioning year up to 2010/2011. "Future" = all later years. Existing and Future calculations follow the same methodology, and so moving assets between the Existing & Future tables will not alter the overall charge per area

Total Cost of Pump Stations per Development Area			
Development Area		Capital Charge per ET - Future	Capital Charge per ET - Existing
A		$ -	$ 1,376.55
B		$ 37.51	$ 14.68
C		$ 117.28	$ -
D		$ -	$ -
E		$ 47.71	$ 140.22
F		$ 86.28	$ -
G		$ -	$ -

Existing

Description	Label (ID)	Drinking or Recycled Asset	Service Area	Service Area	Flow	Head	kW	Year Commissioned	kW	Total Cost (2011/12 $, marked up from 2007/08 rates)	Effective Year of Commissioning	Discount rate	PV (1995/96) of Capital Cost (2011/2012)	System Capacity (ETs)	Capital cost per ET (2011/2012$)	Year of Full Take up	Take up Period	ROI Factor	% Water/ Wastewater	Capital Charge ($2011/2012/ET)
Bassalt Court Booster Pump		Drinking	Lennox Head	B	15	40	9	1983	10	$ 175,815	1996	3%	175,815	18017	9.76	2025	31	1.50	100%	$ 14.68
Wollongbar Booster pump		Drinking	Wollongbar	E	46	25	18	1990	20	$ 269,972	1996	3%	269,972	6941	38.89	2040	46	1.80	100%	$ 70.11
Marom Creek Supply Pump		Drinking	Wardell, Alstonville, Wollongbar, A'ville	A	22	75	26	1980	25	$ 321,894	1996	3%	321,894	1082	297.40	2040	46	1.80	100%	$ 536.10
Lindendale Bore Lift Pump		Drinking	Wardell, Alstonville, Wollongbar, A'ville	E	16	88	22	1992	20	$ 269,972	1996	3%	269,972	6941	38.89	2040	46	1.80	100%	$ 70.11
Ellis Road Lift Pump		Drinking	Wardell, Alstonville, Wollongbar, A'ville	A	16	88	22	1992	20	$ 269,972	1996	3%	269,972	1082	249.43	2040	46	1.80	100%	$ 449.62
Ellis Road Booster Pump		Drinking	Wardell, Alstonville, Wollongbar, A'ville	A	11	88	15	1992	15	$ 234,668	1996	3%	234,668	1082	216.81	2040	46	1.80	100%	$ 390.83

Future

Description	Label (ID)	Drinking or Recycled Asset	Service Area	Service Area	Flow	Head	kW	Year Commissioned	kW	Total Cost (2011/12 $, marked up from 2007/08 rates)	Effective Year of Commissioning	Discount rate		Capacity (ETs)	$/ET	Year of Full Take up	Take up Period	ROI Factor	% Water/ Wastewater	Capital Charge ($/ET)
North Creek Road Supply Pump Station	WSPC1	Drinking	Lennox Head, Skenners Head	B	90	20	28	2015	30	$ 347,269	1996	7%	102,744	18017	5.70	2025	31	2.31	100%	$ 13.18
East Ballina Booster Pump	WBPC1	Drinking	East Ballina	B	50	35	28	2012	30	$ 347,269	1996	7%	125,866	18017	6.99	2025	31	2.31	100%	$ 16.15
Russelton Booster Pump	WBPC2	Drinking	A'ville Idustrial Estate	E	11	22	4	2012	5	$ 132,952	1996	7%	48,188	6941	6.94	2040	46	3.15	100%	$ 21.86
Ballina Heights High Level Zone	WBPC3	Drinking	Ballina Heights	F	18	20	6	2012	5	*$ 173,430.00*	2005	7%	108,003	2037	53.02	2020	17	1.63	100%	$ 86.28
Upgrade of Bassalt Court Booster pumps	WBPU1	Drinking	Lennox Head	B	15	40	9	2012	10	$ 175,815	1996	7%	63,723	18017	3.54	2025	31	2.31	100%	$ 8.18
Upgrade of Wollongbar Booster pumps	WBPU2	Drinking	Wollongbar	E	46	25	18	2020	20	$ 269,972	1996	7%	56,950	6941	8.20	2040	46	3.15	100%	$ 25.84
Upgrade of Wollongbar Booster pumps	WBPU2	Drinking	WUEA	C	46	25	18	2020	20	$ 269,972	1996	7%	56,950	1529	37.24	2040	46	3.15	100%	$ 117.28
Lumley's Lane PMZ	PMZ1	Drinking	Wardell	A				2012		*$ 97,326.00*	1996	7%	35,275	1082	32.59	2040	46	3.15	100%	$ 102.65
Southern Cross Dr PMZ	PMZ2	Drinking	North Ballina	B				2013		*$ 97,326.00*	1996	7%	32,968	18017	1.83	2025	31	2.31	100%	$ 4.23
Fox St PMZ	PMZ3	Drinking	Ballina Island	B				2016		*$ 125,534.00*	1996	7%	34,711	18017	1.93	2025	31	2.31	100%	$ 4.45
Temple St PMZ	PMZ4	Drinking	Ballina Island	B				2014		*$ 143,179.00*	1996	7%	45,327	18017	2.52	2025	31	2.31	100%	$ 5.82
Owen St PMZ	PMZ5	Drinking	Ballina Island	B				2015		*$ 131,270.00*	1996	7%	38,838	18017	2.16	2025	31	2.31	100%	$ 4.98
Bassalt Court Reservoir DMA	DMA1	Drinking	Lennox Head	B				2012		*$ 60,000.00*	1996	7%	21,747	18017	1.21	2025	31	2.31	100%	$ 2.79
Silver Gull Dr DMA	DMA2	Drinking	East Ballina	B				2013		*$ 60,000.00*	1996	7%	20,324	18017	1.13	2025	31	2.31	100%	$ 2.61
Seaview St DMA	DMA3	Drinking	East Ballina	B				2014		*$ 60,000.00*	1996	7%	18,994	18017	1.05	2025	31	2.31	100%	$ 2.44

^ ^ ^ ^ ^ ^

^ *Italicised cells are not indexed, but provided from external quotations for the works*

Capital Charge: Reservoirs - Future and Existing

Basis of "Existing" = commissioning year up to 2010/2011. "Future" = all later years. Existing and Future calculations follow the same methodology, and so moving assets between the Existing & Future tables will not alter the overall charge per area

Total Cost of Reservoirs per Development Area		
Service Area	Capital Charge per ET - Future	Capital Charge per ET - Existing
A	$ -	$ 2,140.87
B	$ 17.44	$ 1,270.36
C	$ -	$ 1,423.55
D	$ -	$ -
E	$ -	$ 1,605.73
F	$ 718.71	$ -
G	$ 848.65	$ -

Existing

Description	Label (ID)	Drinking or Recycled Asset	Service Area	Service Area	Capacity (ML)	Year Commissioned	Cost Indexing Capacity (ML)	Total Cost (2011/12 cost)	Effective Year of Commissioning	Discount Rate	PV (1995/96) of Capital Cost (2011/2012)	System Capacity (ETs)	Capital Cost per ET ($2011/2012)	Year when capacity is taken up	Take up Period	ROI Factor	% Water/ Waste water	Capital Charge ($/ET)
Wollongbar Service Reservoir (10.4 ML) (Area E uses 75% of capacity and cost)		Drinking	Wollongbar, Alstonville	E	10.4	1990	10.0	$ 3,623,426	1996	3%	3,623,426	6941	522	2040	46	1.80	100%	$ 940.99
Wollongbar Service Reservoir (10.4 ML) (Area C Uses 25% of capacity and cost)		Drinking	Wollongbar Urban Expansion	C	10.4	1990	10.0	$ 1,207,809	1996	3%	1,207,809	1529	790	2040	46	1.80	100%	$ 1,423.55
Wardell Service Reservoir (1.6 ML)		Drinking	Wardell	A	1.6	1990	2.0	$ 1,035,504	1996	3%	1,035,504	1082	957	2040	46	1.80	100%	$ 1,724.57
Meerschaum Balance Tank (0.24 ML)		Drinking	Wardell	A	0.2	1989	0.2	$ 249,962	1996	3%	249,962	1082	231	2040	46	1.80	100%	$ 416.30
Pine Avenue Service Reservoir (20.3 ML)		Drinking	Ballina Island, North Ballina, West Ballina, East Ballina	B	20.3	1978	20.0	$ 7,530,679	1996	3%	7,530,679	18017	418	2025	31	1.50	100%	$ 628.99
Basalt Court Service Reservoir (4.0 ML)		Drinking	Lennox Head, Skenners Head	B	4.0	1983	4.0	$ 2,559,689	1996	3%	2,559,689	18017	142	2025	31	1.50	100%	$ 213.79
East Ballina Reservoir (currently being recommissioned)		Drinking	East Ballina	B	4.0	1968	4.0	$ 2,559,689	1996	3%	2,559,689	18017	142	2025	31	1.50	200%	$ 427.59
Russelton_service_reservoir (4.0 ML)		Drinking	A'ville Idustrial Estate	E	4.0	1984	4.0	$ 2,559,689	1996	3%	2,559,689	6941	369	2040	46	1.80	100%	$ 664.74

Future

Description	Label (ID)	Drinking or Recycled Asset	Service Area	Service Area	Capacity (ML)	Year Commissioned	Cost Indexing Capacity (ML)	Total Cost (2011/12 cost)	Effective Year of Commissioning			Capacity (ETs)	$/ET	Year of Full Take up	Take up Period	ROI Factor	% Water/ Waste water	Capital Charge ($/ET)
Ross Lane Service Reservoir	WR2	Drinking	Cura B	G	3.5	2015	2.8	$ 1,306,451	2015	7%	1,306,451	3241	403	2040	27	2.11	100%	$ 848.65
Ballina Heights Service Reservoir *	WR1	Drinking	Cura A & Ballina Heights	F	2.2	2014	1.8	$ 1,654,000	2005	7%	899,666	2037	442	2020	17	1.63	100%	$ 718.71
Pacific Pines Reservoir	WR3	Drinking	Skennars Head	B	1.2	2020	1	$ 644,442	1996	7%	135,943	18017	8	2025	31	2.31	100%	$ 17.44

* Cost basis of Ballina Heights Service Reservoir from Ballina Heights Concept Design Report: $1100000+ 0.41*$1,350,000 (pro rata site works between recycled & drinking reservoir)=$1,654,000

Capital Charge: Pipelines - Future and Existing

Total Cost of Reservoirs per Development Area

Service Area	Capital Charge per ET - Future	Capital Charge per ET - Existing
A	$ 166.8	$ 5,254.5
B	$ 317.5	$ 1,679.9
C	$ 683.9	$ -
D	$ -	$ -
E	$ 21.2	$ 1,362.2
F	$ 222.7	$ 78.1
G	$ -	$ -

Basis of "Existing" = commissioning year up to 2010/2011. "Future" = all later years. Existing and Future calculations follow the same methodology, and so moving assets between the Existing & Future tables will not alter the overall charge per area

Label	Priced by PWD?	DIAMETER (Num)	PRESSURE_Z (Char)	MATERIAL (Char)	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 ($/m)	Total Rate 2011/12 ($/m) (2010/11 rate x 1.03)	Total Cost 2011/12 ($)	Service Area	Area	Date of Construction (first year of financial year)	Effective Year of Commissioning	Discount Rate	Pre or Post 1996 Asset	PV (1995/96) of Capital Cost (2011/2012)	System Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up (first year of financial year)	Take-up period (t) (years)	ROI Factor	Capital Charge per ET (2011/2012$)
FUTURE																												
WPD28		203	Gravity		Drinking	138.17	PVC	200	130	High	5	120	250	361	49,810	North Ballina	B	2011	1996	7%	Post	19,317	18017	1.1	2025	31	2.31	2.48
WPD20		203	Gravity		Drinking	249.71	PVC	200	130	High	5	120	250	361	90,020	North Ballina	B	2015	1996	7%	Post	26,634	18017	1.5	2025	31	2.31	3.42
WPD21		203	Gravity		Drinking	345.22	PVC	200	130	High	5	120	250	361	124,452	North Ballina	B	2015	1996	7%	Post	36,821	18017	2.0	2025	31	2.31	4.72
WPD10		450	Gravity	PVC	Drinking	512.77	PVC	450	400	Moderate	13	150	550	793	406,678	East Ballina	B	2015	1996	7%	Post	120,321	18017	6.7	2025	31	2.31	15.44
WPD11		500	PRZ	DICL	Drinking	456.33	DICL	500	323	High	14	335	658	949	432,982	Ballina Island	B	2015	1996	7%	Post	128,104	18017	7.1	2025	31	2.31	16.44
WPD12		450	PRZ	PVC	Drinking	487.2	PVC	450	400	High	13	300	700	1009	491,780	Ballina Island	B	2015	1996	7%	Post	145,500	18017	8.1	2025	31	2.31	18.67
WPD13		350	PRZ	PVC	Drinking	593.44	PVC	350	243	High	10	220	463	668	396,493	Ballina Island	B	2015	1996	7%	Post	117,308	18017	6.5	2025	31	2.31	15.05
WPD14		350	PRZ	PVC	Drinking	911.66	PVC	350	243	High	10	220	463	668	609,104	Ballina Island	B	2015	1996	7%	Post	180,212	18017	10.0	2025	31	2.31	23.12
WPD22		350	PRZ	PVC	Drinking	1,311.94	PVC	350	243	High	10	220	463	668	876,542	Ballina Island	B	2025	1996	7%	Post	131,834	18017	7.3	2025	31	2.31	16.92
WPD23		350	Gravity	PVC	Drinking	1,279.93	PVC	350	243	High	10	220	463	668	855,155	North Ballina	B	2012	1996	7%	Post	309,948	18017	17.2	2025	31	2.31	39.77
WPD24		350	Gravity	PVC	Drinking	759.1	PVC	350	243	High	10	220	463	668	507,175	North Ballina	B	2012	1996	7%	Post	183,824	18017	10.2	2025	31	2.31	23.59
WPD90		200	Gravity	PVC	Drinking	277.22	PVC	200	130			0	130	187	51,968	Wardell	A	2015	1996	7%	Post	15,375	1082	14.2	2040	46	3.15	44.74
WPD91		200	Gravity	PVC	Drinking	413.09	PVC	200	130			0	130	187	77,438	Wardell	A	2015	1996	7%	Post	22,911	1082	21.2	2040	46	3.15	66.67
WPD92		200	Gravity	PVC	Drinking	343.41	PVC	200	130			0	130	187	64,376	Wardell	A	2015	1996	7%	Post	19,046	1082	17.6	2040	46	3.15	55.42
WPD60		300	Gravity	PVC	Drinking	508.24	PVC	300	210	Moderate	8	90	300	433	219,865	Lennox Head	B	2015	1996	7%	Post	65,050	18017	3.6	2025	31	2.31	8.35
WPD50		300	PRZ	PVC	Drinking	841.72	PVC	300	210	Moderate	8	90	300	433	364,128	Lennox Head	B	2012	1996	7%	Post	131,977	18017	7.3	2025	31	2.31	16.93
WPD51		300	PRZ	PVC	Drinking	394.32	PVC	300	210	Moderate	8	90	300	433	170,583	Lennox Head	B	2012	1996	7%	Post	61,827	18017	3.4	2025	31	2.31	7.93
WBP13		300	Gravity		Drinking	222.14	PVC	300	210	Moderate	8	90	300	433	96,098	East Ballina	B	2015	1996	7%	Post	28,432	18017	1.6	2025	31	2.31	3.65
WPD81		300	Gravity	PVC	Drinking	947.87	PVC	300	210			0	210	303	287,034	Ballina Heights	F	2015	2005	7%	Post	146,914	2037	71.6	2020	17	1.63	116.57
WPD80		400		PVC	Drinking	604.31	PVC	400	300			0	300	433	261,425	Ballina Heights	F	2015	2005	7%	Post	132,895	2037	65.2	2020	17	1.63	106.17
WBP22		250	Gravity	PVC	Drinking	304.59	PVC	250	170			0	170	245	74,667	Alst. Industr	E	2012	1996	7%	Post	27,063	6941	3.9	2040	46	3.15	12.28
WPD30		300	Gravity		Drinking	2,375.45	PVC	300	210	High	8	180	390	562	1,335,906	North Ballina	B	2012	1996	7%	Post	484,194	18017	26.9	2025	31	2.31	62.13
WBP21		250	Gravity	PVC	Drinking	220.64	PVC	250	170			0	170	245	54,088	Alst. Industr	E	2012	1996	7%	Post	19,604	6941	2.8	2040	46	3.15	8.90
WPD25		200	Gravity		Drinking	569.31	PVC	200	130	High	5	120	250	361	205,236	North Ballina	B	2012	1996	7%	Post	74,387	18017	4.1	2025	31	2.31	9.55
WPD27		300		PVC	Drinking	300	PVC	300	210	High	8	180	390	562	168,714	North Ballina	B	2011	1996	7%	Post	65,430	18017	3.6	2025	31	2.31	8.40
WPD26		200	Gravity	PVC	Drinking	922.37	PVC	200	130	High	5	120	250	361	332,514	North Ballina	B	2015	1996	7%	Post	98,379	18017	5.5	2025	31	2.31	12.62
WPD40		300	Boosted	HOBAS	Drinking	853.402	HOBA	300	210			0	210	303	258,427	WUEA	C	2011	1996	7%	Post	100,223	1529	65.5	2040	46	3.15	206.39
WPD41		300		BluBrt	Drinking	92.52	BluB	300	210			0	210	303	28,017	WUEA	C	2011	1996	7%	Post	10,865	1529	7.1	2040	46	3.15	22.38
WPD42		300	Boosted	HOBAS	Drinking	69.89	HOBA	300	210			0	210	303	21,164	WUEA	C	2011	1996	7%	Post	8,208	1529	5.4	2040	46	3.15	16.90
WPD43		300	Gravity	HOBAS	Drinking	450.82	HOBA	300	210			0	210	303	136,517	WUEA	C	2011	1996	7%	Post	52,944	1529	34.6	2040	46	3.15	109.03
WPD44		300	Gravity	HOBAS	Drinking	212.39	HOBA	300	210			0	210	303	64,316	WUEA	C	2011	1996	7%	Post	24,943	1529	16.3	2040	46	3.15	51.36
WPD45		300	Gravity	HOBAS	Drinking	134.64	HOBA	300	210			0	210	303	40,772	WUEA	C	2011	1996	7%	Post	15,812	1529	10.3	2040	46	3.15	32.56
WPD46		300	Gravity	HOBAS	Drinking	152.39	HOBA	300	210			0	210	303	46,147	WUEA	C	2011	1996	7%	Post	17,897	1529	11.7	2040	46	3.15	36.85
WPD47		327	Gravity	HOBAS	Drinking	151.41	HOBA	325	218			0	218	315	47,669	WUEA	C	2011	1996	7%	Post	18,487	1529	12.1	2040	46	3.15	38.07
WPD48		143	Gravity	PVC	Drinking	274.71	PVC	150	105			0	105	151	41,594	WUEA	C	2011	1996	7%	Post	16,131	1529	10.5	2040	46	3.15	33.22
WPD49		143	Boosted	BluBrt	Drinking	1,134.00	BluB	150	105			0	105	151	171,699	WUEA	C	2011	1996	7%	Post	66,588	1529	43.5	2040	46	3.15	137.12
WPD70		250		PVC	Drinking	788.234	PVC	250	170			0	170	197	155,011	Skenners Head	B	2020	1996	7%	Post	32,699	18017	1.8	2025	31	2.31	4.20
WPD71		250		PVC	Drinking	1088.99	PVC	250	170			0	170	197	214,156	Skenners Head	B	2025	1996	7%	Post	32,210	18017	1.8	2025	31	2.31	4.13

Label	Priced by PWD?	DIAMETER (Num)	PRESSURE_Z (Char)	MATERIAL (Char)	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 ($/m)	Total Rate 2011/12 ($/m) (2010/11 rate x 1,03)	Total Cost 2011/12 ($)	Service Area	Area	Date of Construction (first year of financial year)	Effective Year of Commissioning	Discount Rate	Pre or Post 1996 Asset	PV (1995/96) of Capital Cost (2011/2012)	System Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up (first year of financial year)	Take-up period (t) (years)	ROI Factor	Capital Charge per ET (2011/2012$)
EXISTING																												
Label	DESCRIPT (Char)	DIAMETER (Num)	PRESSURE_Z (Char)	MATERIAL	Drinking Recycled Asset	Length	Material	Diameter	Rising Main Base Rate 2003 ($/m)	Construction Difficulty	Row Ref for diameter	Construction Difficulty Rate 2003 ($/m)	Total Rate 2003 ($/m)	Total Rate 2011 ($/m)	Total Cost 2011 ($)	Service Area	Area	Date of Construction	Date of Construction	Discount Rate	Pre or Post 1996 Asset	PV (1995/96) of Capital Cost (2011/2012)	Adopted Capacity (ETs)	Capital Cost per ET (2010/2011$)	Year when capacity is taken up	Take-up period (t) (years)	ROI Factor	Capital Charge per ET (2010/2011$)
WPD62		300	Boosted	PVC	Drinking	634.11	PVC	300	210	Moderate	8	90	300	433	274,316	Lennox Head	B	2010	1996	7%	Post	113,831	18017	6.3	2025	31	2.31	14.61
WPD61		300	Gravity	PVC	Drinking	378.1	PVC	300	210	Moderate	8	90	300	433	163,566	Lennox Head	B	2010	1996	7%	Post	67,674	18017	3.8	2025	31	2.31	8.71
WBP10		450	Gravity	PVC	Drinking	512.77	PVC	450	400	Moderate	13	150	550	793	406,678	East Ballina	B	2010	1996	7%	Post	168,757	18017	9.4	2025	31	2.31	21.65
WBP11		250	Gravity	PVC	Drinking	647.26	PVC	250	170	Moderate	6	75	245	353	228,670	East Ballina	B	2010	1996	7%	Post	94,890	18017	5.3	2025	31	2.31	12.18
WBP12		200	PRZ	PVC	Drinking	685.64	PVC	200	130	Moderate	5	60	190	274	187,852	East Ballina	B	2010	1996	7%	Post	77,952	18017	4.3	2025	31	2.31	10.00
1650	450DICL	467	Gravity	DICL	Drinking	167.31	DICL	450	295	Moderate	13	150	445	642	107,361	Lennox Head	B	1985	1996	3%	Pre	107,361	18017	6.0	2025	30	1.49	8.85
1002	200	203	Gravity		Drinking	64.88	PVC	200	130	High	5	120	250	361	23,389	North Ballina	B	1995	1996	3%	Pre	23,389	18017	1.3	2025	30	1.49	1.93
1009	200	203	Gravity		Drinking	103.68	PVC	200	130	High	5	120	250	361	37,366	North Ballina	B	1995	1996	3%	Pre	37,366	18017	2.1	2025	30	1.49	3.08
1013	200	203	Gravity		Drinking	128.24	PVC	200	130	High	5	120	250	361	46,231	North Ballina	B	1995	1996	3%	Pre	46,231	18017	2.6	2025	30	1.49	3.81
1016	200	203	Gravity		Drinking	173.58	PVC	200	130	High	5	120	250	361	62,576	North Ballina	B	1995	1996	3%	Pre	62,576	18017	3.5	2025	30	1.49	5.16
1018	600DICL	621	Gravity	DICL	Drinking	7.34	DICL	600	405	Moderate	15	200	605	872	6,403	East Ballina	B	1980	1996	3%	Pre	6,403	18017	0.4	2025	30	1.49	0.53
1032	450DICL	467	Gravity	DICL	Drinking	7.34	DICL	450	295	Moderate	13	150	445	642	4,710	East Ballina	B	1980	1996	3%	Pre	4,710	18017	0.3	2025	30	1.49	0.39
1055	600DICL	621	Gravity	DICL	Drinking	7.39	DICL	600	405	Moderate	15	200	605	872	6,447	East Ballina	B	1980	1996	3%	Pre	6,447	18017	0.4	2025	30	1.49	0.53
1064	200	203	Gravity		Drinking	229.34	PVC	200	130	High	5	120	250	361	82,677	North Ballina	B	1992	1996	3%	Pre	82,677	18017	4.6	2025	30	1.49	6.82
1066	600DICL	621	Gravity	DICL	Drinking	7.2	DICL	600	405	Moderate	15	200	605	872	6,281	East Ballina	B	1980	1996	3%	Pre	6,281	18017	0.3	2025	30	1.49	0.52
1079	450DICL	467	Gravity	DICL	Drinking	22.49	DICL	450	295	Moderate	13	150	445	642	14,432	East Ballina	B	1980	1996	3%	Pre	14,432	18017	0.8	2025	30	1.49	1.19
1087	200	203	PRZ		Drinking	166.92	PVC	200	130	High	5	120	250	361	60,175	Ballina Island	B	1979	1996	3%	Pre	60,175	18017	3.3	2025	30	1.49	4.96
1089	600DICL	621	Gravity	DICL	Drinking	6.66	DICL	600	405	Moderate	15	200	605	872	5,810	East Ballina	B	1980	1996	3%	Pre	5,810	18017	0.3	2025	30	1.49	0.48
1093	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	70.85	PVC	300	210	High	8	180	390	562	39,845	Ballina Island	B	1980	1996	3%	Pre	39,845	18017	2.2	2025	30	1.49	3.29
1094	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	141.96	PVC	300	210	High	8	180	390	562	79,835	Ballina Island	B	1980	1996	3%	Pre	79,835	18017	4.4	2025	30	1.49	6.58
11	200	203	Gravity		Drinking	299.48	PVC	200	130	Moderate	5	60	190	274	82,046	East Ballina	B	1992	1996	3%	Pre	82,046	18017	4.6	2025	30	1.49	6.77
1110	250	253	PRZ		Drinking	380.23	PVC	250	170		0	170	245	93,205	West Ballina	B	1984	1996	3%	Pre	93,205	18017	5.2	2025	30	1.49	7.69
1113	300	313	PRZ	DICL	Drinking	138.59	DICL	300	210		0	0	210	303	42,271	West Ballina	B	1980	1996	3%	Pre	42,271	18017	2.3	2025	30	1.49	3.49
1118	450	467	Gravity	DICL	Drinking	86.87	DICL	450	295	Moderate	13	150	445	642	55,744	East Ballina	B	1980	1996	3%	Pre	55,744	18017	3.1	2025	30	1.49	4.60
1135	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	221.9	PVC	300	210	High	8	180	390	562	124,792	Ballina Island	B	1980	1996	3%	Pre	124,792	18017	6.9	2025	30	1.49	10.29
1189	200	203	Gravity		Drinking	266.84	PVC	200	130			0	130	187	50,022	Fig Tree Hill	B	1987	1996	3%	Pre	50,022	18017	2.8	2025	30	1.49	4.13
1190	300DICL	313	Gravity	DICL	Drinking	232.45	DICL	300	210			0	210	303	70,391	Fig Tree Hill	B	1987	1996	3%	Pre	70,391	18017	3.9	2025	30	1.49	5.81
1191	300DICL	313	Gravity	DICL	Drinking	232.45	DICL	300	210			0	210	303	70,391	Fig Tree Hill	B	1987	1996	3%	Pre	70,391	18017	3.9	2025	30	1.49	5.81
1192	300DICL	313	Gravity	DICL	Drinking	94.8	DICL	300	210			0	210	303	28,707	Fig Tree Hill	B	1987	1996	3%	Pre	28,707	18017	1.6	2025	30	1.49	2.37
1194	300DICL	313	Gravity	DICL	Drinking	620.94	DICL	300	210			0	210	303	188,033	Fig Tree Hill	B	1987	1996	3%	Pre	188,033	18017	10.4	2025	30	1.49	15.51
12	300DICL	313	Gravity	DICL	Drinking	28.26	DICL	300	210	Moderate	8	90	300	433	12,234	East Ballina	B	1992	1996	3%	Pre	12,234	18017	0.7	2025	30	1.49	1.01
1286	200	203	Lennox Head		Drinking	326.64	PVC	200	130	Moderate	5	60	190	274	89,493	Lennox Head	B	1975	1996	3%	Pre	89,493	18017	5.0	2025	30	1.49	7.38
13	200	203	Gravity		Drinking	190.15	PVC	200	130			0	130	187	35,646	Skenners Head	B	1980	1996	3%	Pre	35,646	18017	2.0	2025	30	1.49	2.94
1325	200	203	Boosted		Drinking	14.71	PVC	200	130	Moderate	5	60	190	274	4,030	Lennox Head	B	1978	1996	3%	Pre	4,030	18017	0.2	2025	30	1.49	0.33
1326	200	203	Boosted		Drinking	14.71	PVC	200	130	Moderate	5	60	190	274	4,030	Lennox Head	B	1978	1996	3%	Pre	4,030	18017	0.2	2025	30	1.49	0.33
1328	200	203	Boosted		Drinking	92.85	PVC	200	130	Moderate	5	60	190	274	25,439	Lennox Head	B	1975	1996	3%	Pre	25,439	18017	1.4	2025	30	1.49	2.10
1332	300	285	Boosted		Drinking	109.47	PVC	275	190	Moderate	7	82.5	273	393	43,016	Lennox Head	B	1975	1996	3%	Pre	43,016	18017	2.4	2025	30	1.49	3.55
1333	300	285	Boosted		Drinking	113.09	PVC	275	190	Moderate	7	82.5	273	393	44,438	Lennox Head	B	1975	1996	3%	Pre	44,438	18017	2.5	2025	30	1.49	3.67
1334	200	203	Boosted		Drinking	106.39	PVC	200	130	Moderate	5	60	190	274	29,149	Lennox Head	B	1975	1996	3%	Pre	29,149	18017	1.6	2025	30	1.49	2.40
1346	200	203	Gravity		Drinking	399.7	PVC	200	130			0	130	187	74,928	Fig Tree Hill	B	1980	1996	3%	Pre	74,928	18017	4.2	2025	30	1.49	6.18
1349	200	203	Boosted		Drinking	219.93	PVC	200	130	Moderate	5	60	190	274	60,256	Lennox Head	B	1991	1996	3%	Pre	60,256	18017	3.3	2025	30	1.49	4.97
1350	200	203	Boosted		Drinking	274.37	PVC	200	130	Moderate	5	60	190	274	75,172	Lennox Head	B	1981	1996	3%	Pre	75,172	18017	4.2	2025	30	1.49	6.20
1352	200	203	Boosted		Drinking	221.26	PVC	200	130	Moderate	5	60	190	274	60,621	Lennox Head	B	1989	1996	3%	Pre	60,621	18017	3.4	2025	30	1.49	5.00
1376	200	203	Boosted		Drinking	47.79	PVC	200	130	Moderate	5	60	190	274	13,094	Lennox Head	B	1981	1996	3%	Pre	13,094	18017	0.7	2025	30	1.49	1.08
1377	200	203	Boosted		Drinking	17.02	PVC	200	130	Moderate	5	60	190	274	4,663	Lennox Head	B	1981	1996	3%	Pre	4,663	18017	0.3	2025	30	1.49	0.38
1378	200	203	Boosted		Drinking	47.79	PVC	200	130	Moderate	5	60	190	274	13,094	Lennox Head	B	1981	1996	3%	Pre	13,094	18017	0.7	2025	30	1.49	1.08
1387	200	203	Boosted		Drinking	17.02	PVC	200	130	Moderate	5	60	190	274	4,663	Lennox Head	B	1980	1996	3%	Pre	4,663	18017	0.3	2025	30	1.49	0.38
1388	200	203	Boosted		Drinking	42.85	PVC	200	130	Moderate	5	60	190	274	11,740	Lennox Head	B	1981	1996	3%	Pre	11,740	18017	0.7	2025	30	1.49	0.97
1389	200	203	Boosted		Drinking	42.85	PVC	200	130	Moderate	5	60	190	274	11,740	Lennox Head	B	1980	1996	3%	Pre	11,740	18017	0.7	2025	30	1.49	0.97
1390	200	203	Boosted		Drinking	139.76	PVC	200	130	Moderate	5	60	190	274	38,291	Lennox Head	B	1981	1996	3%	Pre	38,291	18017	2.1	2025	30	1.49	3.16
1391	200	203	Boosted		Drinking	48.32	PVC	200	130	Moderate	5	60	190	274	13,239	Lennox Head	B	1981	1996	3%	Pre	13,239	18017	0.7	2025	30	1.49	1.09
1392	200	203	Boosted		Drinking	247.16	PVC	200	130	Moderate	5	60	190	274	67,717	Lennox Head	B	1981	1996	3%	Pre	67,717	18017	3.8	2025	30	1.49	5.59
1393	200	203	Boosted		Drinking	88.31	PVC	200	130	Moderate	5	60	190	274	24,195	Lennox Head	B	1981	1996	3%	Pre	24,195	18017	1.3	2025	30	1.49	2.00
1395	200	203	Boosted		Drinking	95.15	PVC	200	130	Moderate	5	60	190	274	26,069	Lennox Head	B	1981	1996	3%	Pre	26,069	18017	1.4	2025	30	1.49	2.15
1398	200	203	Boosted		Drinking	249.72	PVC	200	130	Moderate	5	60	190	274	68,418	Lennox Head	B	1983	1996	3%	Pre	68,418	18017	3.8	2025	30	1.49	5.64
1404	200	203	Gravity		Drinking	255.5	PVC	200	130			0	130	187	47,896	Skenners Head	B	1983	1996	3%	Pre	47,896	18017	2.7	2025	30	1.49	3.95
1406	200	203	Gravity		Drinking	25.4	PVC	200	130			0	130	187	4,761	Skenners Head	B	1983	1996	3%	Pre	4,761	18017	0.3	2025	30	1.49	0.39
1410	200	203	Gravity		Drinking	263.41	PVC	200	130			0	130	187	49,379	Skenners Head	B	1983	1996	3%	Pre	49,379	18017	2.7	2025	30	1.49	4.07
1414	200	203	Gravity	AC	Drinking	185.18	AC	200	130			0	130	187	34,714	Skenners Head	B	1983	1996	3%	Pre	34,714	18017	1.9	2025	30	1.49	2.86
1416	200	203	Gravity		Drinking	77.88	PVC	200	130			0	130	187	14,599	Skenners Head	B	1983	1996	3%	Pre	14,599	18017	0.8	2025	30	1.49	1.20
1419	200	203	Gravity		Drinking	405.6	PVC	200	130			0	130	187	76,034	Skenners Head	B	1989	1996	3%	Pre	76,034	18017	4.2	2025	30	1.49	6.27
1424	200	203	Gravity		Drinking	69.03	PVC	200	130	Moderate	5	60	190	274	18,913	Lennox Head	B	1985	1996	3%	Pre	18,913	18017	1.0	2025	30	1.49	1.56
1425	200	204	Gravity	DICL	Drinking	64.43	DICL	200	130	Moderate	5	60	190	274	17,653	Lennox Head	B	1990	1996	3%	Pre	17,653	18017	1.0	2025	30	1.49	1.46
1426	200	203	Gravity		Drinking	175.41	PVC	200	130	Moderate	5	60	190	274	48,059	Lennox Head	B	1985	1996	3%	Pre	48,059	18017	2.7	2025	30	1.49	3.96
1428	200	204	Gravity	DICL	Drinking	133.15	DICL	200	130	Moderate	5	60	190	274	36,480	Lennox Head	B	1990	1996	3%	Pre	36,480	18017	2.0	2025	30	1.49	3.01
1433	200	203	Gravity		Drinking	384.58	PVC	200	130	Moderate	5	60	190	274	105,367	Lennox Head	B	1990	1996	3%	Pre	105,367	18017	5.8	2025	30	1.49	8.69
1434	200	203	Gravity		Drinking	79.13	PVC	200	130	Moderate	5	60	190	274	21,680	Lennox Head	B	1990	1996	3%	Pre	21,680	18017	1.2	2025	30	1.49	1.79
1447	200	203	Gravity		Drinking	93.37	PVC	200	130	Moderate	5	60	190	274	25,582	Lennox Head	B	1995	1996	3%	Pre	25,582	18017	1.4	2025	30	1.49	2.11
1449	200	203	Gravity		Drinking	45.58	PVC	200	130	Moderate	5	60	190	274	12,488	Lennox Head	B	1985	1996	3%	Pre	12,488	18017	0.7	2025	30	1.49	1.03
1450	200	203	Gravity		Drinking	45.58	PVC	200	130	Moderate	5	60	190	274	12,488	Lennox Head	B	1985	1996	3%	Pre	12,488	18017	0.7	2025	30	1.49	1.03
1451	200	203	Gravity		Drinking	24.36	PVC	200	130	Moderate	5	60	190	274	6,674	Lennox Head	B	1985	1996	3%	Pre	6,674	18017	0.4	2025	30	1.49	0.55
1452	200	203	Gravity		Drinking	24.36	PVC	200	130	Moderate	5	60	190	274	6,674	Lennox Head	B	1985	1996	3%	Pre	6,674	18017	0.4	2025	30	1.49	0.55
1453	200	203	Gravity		Drinking	96.56	PVC	200	130	Moderate	5	60	190	274	26,456	Lennox Head	B	1985	1996	3%	Pre	26,456	18017	1.5	2025	30	1.49	2.18

Label	Priced by PWD?	DIAMETER (Num)	PRESSURE_Z (Char)	MATERIAL (Char)	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 ($/m)	Total Rate 2011/12 ($/m) (2010/11 rate x 1,03)	Total Cost 2011/12 ($)	Service Area	Area	Date of Construction (first year of financial year)	Effective Year of Commissioning	Discount Rate	Pre or Post 1996 Asset	PV (1995/96) of Capital Cost (2011/2012)	System Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up (first year of financial year)	Take-up period (t) (years)	ROI Factor	Capital Charge per ET (2011/2012$)
1454	200	203	Gravity		Drinking	148.5	PVC	200	130	Moderate	5	60	190	274	40,686	Lennox Head	B	1985	1996	3%	Pre	40,686	18017	2.3	2025	30	1.49	3.36
1458	200	203	Gravity		Drinking	56.22	PVC	200	130	Moderate	5	60	190	274	15,403	Lennox Head	B	1985	1996	3%	Pre	15,403	18017	0.9	2025	30	1.49	1.27
1459	200	203	Gravity		Drinking	82.36	PVC	200	130	Moderate	5	60	190	274	22,570	Lennox Head	B	1985	1996	3%	Pre	22,570	18017	1.3	2025	30	1.49	1.86
1461	200	203	Boosted		Drinking	18.27	PVC	200	130	Moderate	5	60	190	274	5,006	Lennox Head	B	1979	1996	3%	Pre	5,006	18017	0.3	2025	30	1.49	0.41
1463	200	203	Boosted		Drinking	72.78	PVC	200	130	Moderate	5	60	190	274	19,940	Lennox Head	B	1971	1996	3%	Pre	19,940	18017	1.1	2025	30	1.49	1.64
1464	200	203	Gravity		Drinking	77.88	PVC	200	130			0	130	187	14,599	Skenners Head	B	1983	1996	3%	Pre	14,599	18017	0.8	2025	30	1.49	1.20
1465	200	203	Gravity		Drinking	46.4	PVC	200	130			0	130	187	8,698	Skenners Head	B	1983	1996	3%	Pre	8,698	18017	0.5	2025	30	1.49	0.72
1466	200	203	Gravity		Drinking	248.35	PVC	200	130			0	130	187	46,556	Skenners Head	B	1992	1996	3%	Pre	46,556	18017	2.6	2025	30	1.49	3.84
1467	200	203	Gravity		Drinking	89.12	PVC	200	130			0	130	187	16,706	Skenners Head	B	1994	1996	3%	Pre	16,706	18017	0.9	2025	30	1.49	1.38
1474	450DICL	467	Gravity	DICL	Drinking	97.95	DICL	450	295			0	295	425	41,667	Fig Tree Hill	B	1980	1996	3%	Pre	41,667	18017	2.3	2025	30	1.49	3.44
1488	200	203	Gravity		Drinking	86.69	PVC	200	130			0	130	187	16,251	Skenners Head	B	1994	1996	3%	Pre	16,251	18017	0.9	2025	30	1.49	1.34
1490	200	203	Gravity		Drinking	90.79	PVC	200	130			0	130	187	17,019	Skenners Head	B	1992	1996	3%	Pre	17,019	18017	0.9	2025	30	1.49	1.40
1491	200	203	Gravity		Drinking	226.12	PVC	200	130			0	130	187	42,388	Skenners Head	B	1992	1996	3%	Pre	42,388	18017	2.4	2025	30	1.49	3.50
1492	200	203	Gravity		Drinking	150.12	PVC	200	130			0	130	187	28,141	Skenners Head	B	1992	1996	3%	Pre	28,141	18017	1.6	2025	30	1.49	2.32
1493	200	203	Gravity		Drinking	201.37	PVC	200	130			0	130	187	37,749	Skenners Head	B	1994	1996	3%	Pre	37,749	18017	2.1	2025	30	1.49	3.11
15	200	203	Gravity		Drinking	194.1	PVC	200	130	Moderate	5	60	190	274	53,180	East Ballina	B	1992	1996	3%	Pre	53,180	18017	3.0	2025	30	1.49	4.39
151	450DICL	467	Gravity	DICL	Drinking	328.34	DICL	450	295	Moderate	13	150	445	642	210,692	East Ballina	B	1987	1996	3%	Pre	210,692	18017	11.7	2025	30	1.49	17.38
1530	200	203	Gravity		Drinking	207.33	PVC	200	130	Moderate	5	60	190	274	56,804	Lennox Head	B	1995	1996	3%	Pre	56,804	18017	3.2	2025	30	1.49	4.69
1531	200	203	Gravity		Drinking	32.81	PVC	200	130	Moderate	5	60	190	274	8,989	Lennox Head	B	1995	1996	3%	Pre	8,989	18017	0.5	2025	30	1.49	0.74
1540	200	203	Gravity		Drinking	113.33	PVC	200	130			0	130	187	21,245	Skenners Head	B	1994	1996	3%	Pre	21,245	18017	1.2	2025	30	1.49	1.75
1541	200	203	Gravity		Drinking	125.77	PVC	200	130			0	130	187	23,577	Skenners Head	B	1994	1996	3%	Pre	23,577	18017	1.3	2025	30	1.49	1.94
1542	100	102	Gravity		Drinking	224.04	PVC	100	70			0	70	101	22,615	Skenners Head	B	1994	1996	3%	Pre	22,615	18017	1.3	2025	30	1.49	1.87
1581	300	285	Boosted		Drinking	209.85	PVC	275	190	Moderate	7	82.5	273	393	82,460	Lennox Head	B	1979	1996	3%	Pre	82,460	18017	4.6	2025	30	1.49	6.80
1599	200	203	Gravity		Drinking	233.07	PVC	200	130	Moderate	5	60	190	274	63,857	Lennox Head	B	1988	1996	3%	Pre	63,857	18017	3.5	2025	30	1.49	5.27
16	450DICL	467	Gravity	DICL	Drinking	1,295.31	DICL	450	295	Moderate	13	150	445	642	831,187	Lennox Head	B	1987	1996	3%	Pre	831,187	18017	46.1	2025	30	1.49	68.55
1601	200	203	Gravity		Drinking	181.68	PVC	200	130	Moderate	5	60	190	274	49,777	Lennox Head	B	1988	1996	3%	Pre	49,777	18017	2.8	2025	30	1.49	4.11
1602	200	203	Gravity		Drinking	18.61	PVC	200	130	Moderate	5	60	190	274	5,099	Lennox Head	B	1988	1996	3%	Pre	5,099	18017	0.3	2025	30	1.49	0.42
1604	200	203	Gravity		Drinking	82.18	PVC	200	130	Moderate	5	60	190	274	22,516	Lennox Head	B	1988	1996	3%	Pre	22,516	18017	1.2	2025	30	1.49	1.86
1605	200	203	Gravity		Drinking	93	PVC	200	130	Moderate	5	60	190	274	25,480	Lennox Head	B	1988	1996	3%	Pre	25,480	18017	1.4	2025	30	1.49	2.10
1616	200	203	Gravity		Drinking	32.83	PVC	200	130	Moderate	5	60	190	274	8,995	Lennox Head	B	1995	1996	3%	Pre	8,995	18017	0.5	2025	30	1.49	0.74
1617	200	203	Gravity		Drinking	17.13	PVC	200	130	Moderate	5	60	190	274	4,693	Lennox Head	B	1995	1996	3%	Pre	4,693	18017	0.3	2025	30	1.49	0.39
1619	200	203	Gravity		Drinking	80.27	PVC	200	130	Moderate	5	60	190	274	21,992	Lennox Head	B	1995	1996	3%	Pre	21,992	18017	1.2	2025	30	1.49	1.81
1621	200	203	Gravity		Drinking	58.16	PVC	200	130	Moderate	5	60	190	274	15,940	Lennox Head	B	1995	1996	3%	Pre	15,940	18017	0.9	2025	30	1.49	1.31
1635	200	285	Boosted		Drinking	150.72	PVC	275	190	Moderate	7	82.5	273	393	59,225	Lennox Head	B	1975	1996	3%	Pre	59,225	18017	3.3	2025	30	1.49	4.88
1637	300	285	Boosted		Drinking	167.28	PVC	275	190	Moderate	7	82.5	273	393	65,732	Lennox Head	B	1981	1996	3%	Pre	65,732	18017	3.6	2025	30	1.49	5.42
1639	300	285	Boosted		Drinking	146.24	PVC	275	190	Moderate	7	82.5	273	393	57,464	Lennox Head	B	1981	1996	3%	Pre	57,464	18017	3.2	2025	30	1.49	4.74
164	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	25.76	PVC	300	210	High	8	180	390	562	14,487	Ballina Island	B	1980	1996	3%	Pre	14,487	18017	0.8	2025	30	1.49	1.19
1640	300	285	Boosted		Drinking	173.72	PVC	275	190	Moderate	7	82.5	273	393	68,262	Lennox Head	B	1989	1996	3%	Pre	68,262	18017	3.8	2025	30	1.49	5.63
1641	300	285	Boosted		Drinking	60.33	PVC	275	190	Moderate	7	82.5	273	393	23,706	Lennox Head	B	1981	1996	3%	Pre	23,706	18017	1.3	2025	30	1.49	1.96
1642	200	203	Boosted		Drinking	33.95	PVC	200	130	Moderate	5	60	190	274	9,302	Lennox Head	B	1981	1996	3%	Pre	9,302	18017	0.5	2025	30	1.49	0.77
1643	300	285	Boosted		Drinking	64.79	PVC	275	190	Moderate	7	82.5	273	393	25,459	Lennox Head	B	1989	1996	3%	Pre	25,459	18017	1.4	2025	30	1.49	2.10
1647	300	285	Boosted		Drinking	167.28	PVC	275	190	Moderate	7	82.5	273	393	65,732	Lennox Head	B	1981	1996	3%	Pre	65,732	18017	3.6	2025	30	1.49	5.42
1650	200	203	Gravity		Drinking	52	PVC	200	130	Moderate	5	60	190	274	14,247	Lennox Head	B	1980	1996	3%	Pre	14,247	18017	0.8	2025	30	1.49	1.18
1651	600DICL	621	Gravity	DICL	Drinking	7.07	DICL	600	405	Moderate	15	200	605	872	6,168	East Ballina	B	1980	1996	3%	Pre	6,168	18017	0.3	2025	30	1.49	0.51
1653	375	361	Gravity		Drinking	255.98	PVC	350	243	High	10	220	463	668	171,027	North Ballina	B	1987	1996	3%	Pre	171,027	18017	9.5	2025	30	1.49	14.11
167	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	195.73	PVC	300	210	High	8	180	390	562	110,075	Ballina Island	B	1989	1996	3%	Pre	110,075	18017	6.1	2025	30	1.49	9.08
17	450DICL	467	Gravity	DICL	Drinking	852.39	DICL	450	295	Moderate	13	150	445	642	546,970	Lennox Head	B	1987	1996	3%	Pre	546,970	18017	30.4	2025	30	1.49	45.11
171	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	239.44	PVC	300	210	High	8	180	390	562	134,656	Ballina Island	B	1989	1996	3%	Pre	134,656	18017	7.5	2025	30	1.49	11.11
175	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	228.93	PVC	300	210	High	8	180	390	562	128,746	Ballina Island	B	1985	1996	3%	Pre	128,746	18017	7.1	2025	30	1.49	10.62
176	250	253	PRZ		Drinking	121.66	PVC	250	170	High	6	150	320	461	56,139	Ballina Island	B	1985	1996	3%	Pre	56,139	18017	3.1	2025	30	1.49	4.63
177	300 not 100	300	PRZ		Drinking	10.58	PVC	300	210	High	8	180	390	562	5,939	Ballina Island	B	1985	1996	3%	Pre	5,939	18017	0.3	2025	30	1.49	0.49
178	450DICL	467	Gravity	DICL	Drinking	688.38	DICL	450	295	Moderate	13	150	445	642	441,727	East Ballina	B	1987	1996	3%	Pre	441,727	18017	24.5	2025	30	1.49	36.43
179	331	331	Gravity		Drinking	2,594.68	PVC	325	227	High	9	200	427	615	1,596,386	North Ballina	B	1994	1996	3%	Pre	1,596,386	18017	88.6	2025	30	1.49	131.67
18	450DICL	467	Gravity	DICL	Drinking	2,635.66	DICL	450	295	Moderate	13	150	445	642	1,691,277	Lennox Head	B	1987	1996	3%	Pre	1,691,277	18017	93.9	2025	30	1.49	139.49
181	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	211.67	PVC	300	210	High	8	180	390	562	119,039	Ballina Island	B	1985	1996	3%	Pre	119,039	18017	6.6	2025	30	1.49	9.82
186	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	124.57	PVC	300	210	High	8	180	390	562	70,056	Ballina Island	B	1985	1996	3%	Pre	70,056	18017	3.9	2025	30	1.49	5.78
187	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	133.99	PVC	300	210	High	8	180	390	562	75,353	Ballina Island	B	1985	1996	3%	Pre	75,353	18017	4.2	2025	30	1.49	6.22
188	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	134.7	PVC	300	210	High	8	180	390	562	75,753	Ballina Island	B	1985	1996	3%	Pre	75,753	18017	4.2	2025	30	1.49	6.25
189	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	63.59	PVC	300	210	High	8	180	390	562	35,762	Ballina Island	B	1985	1996	3%	Pre	35,762	18017	2.0	2025	30	1.49	2.95
190	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	112.07	PVC	300	210	High	8	180	390	562	63,028	Ballina Island	B	1985	1996	3%	Pre	63,028	18017	3.5	2025	30	1.49	5.20
191	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	17.32	PVC	300	210	High	8	180	390	562	9,740	Ballina Island	B	1985	1996	3%	Pre	9,740	18017	0.5	2025	30	1.49	0.80
194	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	45.56	PVC	300	210	High	8	180	390	562	25,622	Ballina Island	B	1985	1996	3%	Pre	25,622	18017	1.4	2025	30	1.49	2.11
195	375.200012	361	PRZ	PVC	Drinking	367.83	PVC	350	243	High	10	220	463	668	245,757	Ballina Island	B	1985	1996	3%	Pre	245,757	18017	13.6	2025	30	1.49	20.27
196	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	42.09	PVC	300	210	High	8	180	390	562	23,671	Ballina Island	B	1985	1996	3%	Pre	23,671	18017	1.3	2025	30	1.49	1.95
198	450DICL	467	Gravity	DICL	Drinking	298.85	DICL	450	295	Moderate	13	150	445	642	191,769	East Ballina	B	1987	1996	3%	Pre	191,769	18017	10.6	2025	30	1.49	15.82
199	450DICL	467	Gravity	DICL	Drinking	49.6	DICL	450	295	Moderate	13	150	445	642	31,828	East Ballina	B	1987	1996	3%	Pre	31,828	18017	1.8	2025	30	1.49	2.63
20	450DICL	467	Gravity	DICL	Drinking	257.32	DICL	450	295	Moderate	13	150	445	642	165,120	Lennox Head	B	1987	1996	3%	Pre	165,120	18017	9.2	2025	30	1.49	13.62
201	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	74.59	PVC	300	210	High	8	180	390	562	41,948	Ballina Island	B	1985	1996	3%	Pre	41,948	18017	2.3	2025	30	1.49	3.46
203	375.200012	361	PRZ	PVC	Drinking	70.58	PVC	350	243	High	10	220	463	668	47,156	Ballina Island	B	1986	1996	3%	Pre	47,156	18017	2.6	2025	30	1.49	3.89
204	200	203	PRZ		Drinking	81.42	PVC	200	130	High	5	120	250	361	29,352	Ballina Island	B	1986	1996	3%	Pre	29,352	18017	1.6	2025	30	1.49	2.42
208	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	93.21	PVC	300	210	High	8	180	390	562	52,419	Ballina Island	B	1980	1996	3%	Pre	52,419	18017	2.9	2025	30	1.49	4.32
209	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	15.07	PVC	300	210	High	8	180	390	562	8,475	Ballina Island	B	1980	1996	3%	Pre	8,475	18017	0.5	2025	30	1.49	0.70
21	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	67.9	PVC	300	210			0	210	303	20,561	West Ballina	B	1988	1996	3%	Pre	20,561	18017	1.1	2025	30	1.49	1.70
212	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	383.1	PVC	300	210	High	8	180	390	562	215,448	Ballina Island	B	1980	1996	3%	Pre	215,448	18017	12.0	2025	30	1.49	17.77
214	450DICL	467	Gravity	DICL	Drinking	49.8	DICL	450	295	Moderate	13	150	445	642	31,956	East Ballina	B	1987	1996	3%	Pre	31,956	18017	1.8	2025	30	1.49	2.64
23	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	217.78	PVC	300	210			0	210	303	65,948	West Ballina	B	1988	1996	3%	Pre	65,948	18017	3.7	2025	30	1.49	5.44
231	450DICL	467	Gravity	DICL	Drinking	292.05	DICL	450	295	Moderate	13	150	445	642	187,406	East Ballina	B	1987	1996	3%	Pre	187,406	18017	10.4	2025	30	1.49	15.46

Label	Priced by PWD?	DIAMETER (Num)	PRESSURE_Z (Char)	MATERIAL (Char)	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 ($/m)	Total Rate 2011/12 ($/m) (2010/11 rate x 1,03)	Total Cost 2011/12 ($)	Service Area	Area	Date of Construction (first year of financial year)	Effective Year of Commissioning	Discount Rate	Pre or Post 1996 Asset	PV (1995/96) of Capital Cost (2011/2012)	System Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up (first year of financial year)	Take-up period (t) (years)	ROI Factor	Capital Charge per ET (2011/2012$)
24	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	101.67	PVC	300	210			0	210	303	30,788	West Ballina	B	1988	1996	3%	Pre	30,788	18017	1.7	2025	30	1.49	2.54
248	450DICL	467	Gravity	DICL	Drinking	23.31	DICL	450	295	Moderate	13	150	445	642	14,958	East Ballina	B	1987	1996	3%	Pre	14,958	18017	0.8	2025	30	1.49	1.23
25	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	64.52	PVC	300	210			0	210	303	19,538	West Ballina	B	1980	1996	3%	Pre	19,538	18017	1.1	2025	30	1.49	1.61
26	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	250.15	PVC	300	210			0	210	303	75,750	West Ballina	B	1980	1996	3%	Pre	75,750	18017	4.2	2025	30	1.49	6.25
262	450DICL	467	Gravity	DICL	Drinking	72.6	DICL	450	295	Moderate	13	150	445	642	46,587	East Ballina	B	1987	1996	3%	Pre	46,587	18017	2.6	2025	30	1.49	3.84
28	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	162.28	PVC	300	210			0	210	303	49,142	West Ballina	B	1980	1996	3%	Pre	49,142	18017	2.7	2025	30	1.49	4.05
283	450DICL	467	PRZ	DICL	Drinking	787.21	DICL	450	295	Moderate	13	150	445	642	505,145	East Ballina	B	1987	1996	3%	Pre	505,145	18017	28.0	2025	30	1.49	41.66
29	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	253.04	PVC	300	210			0	210	303	76,626	West Ballina	B	1980	1996	3%	Pre	76,626	18017	4.3	2025	30	1.49	6.32
31	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	336	PVC	300	210			0	210	303	101,748	West Ballina	B	1980	1996	3%	Pre	101,748	18017	5.6	2025	30	1.49	8.39
324	300PVCM_S1_12	295	Gravity	PVCM_S	Drinking	486.72	PVC	300	210	High	8	180	390	562	273,722	North Ballina	B	1987	1996	3%	Pre	273,722	18017	15.2	2025	30	1.49	22.58
33	300DICL	313	PRZ	DICL	Drinking	34.69	DICL	300	210			0	210	303	10,505	West Ballina	B	1980	1996	3%	Pre	10,505	18017	0.6	2025	30	1.49	0.87
34	300DICL	313	PRZ	DICL	Drinking	18	DICL	300	210			0	210	303	5,451	West Ballina	B	1980	1996	3%	Pre	5,451	18017	0.3	2025	30	1.49	0.45
358	300PVCM_S1_12	295	Gravity	PVCM_S	Drinking	231.82	PVC	300	210	High	8	180	390	562	130,371	North Ballina	B	1981	1996	3%	Pre	130,371	18017	7.2	2025	30	1.49	10.75
359	300PVCM_S1_12	295	Gravity	PVCM_S	Drinking	326.07	PVC	300	210	High	8	180	390	562	183,375	North Ballina	B	1980	1996	3%	Pre	183,375	18017	10.2	2025	30	1.49	15.12
360	200	203	Gravity		Drinking	82.76	PVC	200	130	High	5	120	250	361	29,835	North Ballina	B	1981	1996	3%	Pre	29,835	18017	1.7	2025	30	1.49	2.46
382	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	66.8	PVC	300	210	High	8	180	390	562	37,567	Ballina Island	B	1980	1996	3%	Pre	37,567	18017	2.1	2025	30	1.49	3.10
401	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	228.56	PVC	300	210	High	8	180	390	562	128,538	Ballina Island	B	1981	1996	3%	Pre	128,538	18017	7.1	2025	30	1.49	10.60
419	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	261.97	PVC	300	210	High	8	180	390	562	147,327	Ballina Island	B	1980	1996	3%	Pre	147,327	18017	8.2	2025	30	1.49	12.15
420	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	37.8	PVC	300	210	High	8	180	390	562	21,258	Ballina Island	B	1980	1996	3%	Pre	21,258	18017	1.2	2025	30	1.49	1.75
437	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	242.27	PVC	300	210	High	8	180	390	562	136,248	Ballina Island	B	1980	1996	3%	Pre	136,248	18017	7.6	2025	30	1.49	11.24
451	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	85.2	PVC	300	210	High	8	180	390	562	47,915	Ballina Island	B	1980	1996	3%	Pre	47,915	18017	2.7	2025	30	1.49	3.95
455	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	322.98	PVC	300	210	High	8	180	390	562	181,637	Ballina Island	B	1980	1996	3%	Pre	181,637	18017	10.1	2025	30	1.49	14.98
471	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	238.74	PVC	300	210	High	8	180	390	562	134,263	Ballina Island	B	1980	1996	3%	Pre	134,263	18017	7.5	2025	30	1.49	11.07
485	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	217.21	PVC	300	210	High	8	180	390	562	122,155	Ballina Island	B	1980	1996	3%	Pre	122,155	18017	6.8	2025	30	1.49	10.08
486	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	225.01	PVC	300	210	High	8	180	390	562	126,541	Ballina Island	B	1980	1996	3%	Pre	126,541	18017	7.0	2025	30	1.49	10.44
4_2#	457	467	Boosted		Drinking	688.94	PVC	450	400	Moderate	13	150	550	793	546,398	Lennox Head	B	1987	1996	3%	Pre	546,398	18017	30.3	2025	30	1.49	45.07
500	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	154.62	PVC	300	210	High	8	180	390	562	86,955	Ballina Island	B	1980	1996	3%	Pre	86,955	18017	4.8	2025	30	1.49	7.17
514	400	400	PRZ		Drinking	3.76	PVC	400	300	High	12	260	560	808	3,036	Ballina Island	B	1980	1996	3%	Pre	3,036	18017	0.2	2025	30	1.49	0.25
515	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	17.64	PVC	300	210	High	8	180	390	562	9,920	Ballina Island	B	1980	1996	3%	Pre	9,920	18017	0.6	2025	30	1.49	0.82
529	375	361	PRZ		Drinking	28.82	PVC	350	243	High	10	220	463	668	19,255	Ballina Island	B	1980	1996	3%	Pre	19,255	18017	1.1	2025	30	1.49	1.59
551	392	400	PRZ		Drinking	27.94	PVC	400	300	High	12	260	560	808	22,562	Ballina Island	B	1987	1996	3%	Pre	22,562	18017	1.3	2025	30	1.49	1.86
565	300DICL	313	PRZ	DICL	Drinking	257.98	DICL	300	210	High	8	180	390	562	145,083	Ballina Island	B	1987	1996	3%	Pre	145,083	18017	8.1	2025	30	1.49	11.97
575	375.200012	361	Gravity	PVC	Drinking	186.32	PVC	350	243	Moderate	10	110	353	510	94,931	East Ballina	B	1987	1996	3%	Pre	94,931	18017	5.3	2025	30	1.49	7.83
58	200	203	PRZ		Drinking	171.23	PVC	200	130			0	130	187	32,099	West Ballina	B	1984	1996	3%	Pre	32,099	18017	1.8	2025	30	1.49	2.65
588	400	400	Gravity		Drinking	18.6	PVC	400	300	Moderate	12	130	430	620	11,533	East Ballina	B	1987	1996	3%	Pre	11,533	18017	0.6	2025	30	1.49	0.95
6	450DICL	467	Gravity	DICL	Drinking	1,211.23	DICL	450	295	Moderate	13	150	445	642	777,247	Lennox Head	B	1987	1996	3%	Pre	777,247	18017	43.1	2025	30	1.49	64.11
610	375.200012	361	Gravity	PVC	Drinking	22.78	PVC	350	243	Moderate	10	110	353	510	11,607	East Ballina	B	1987	1996	3%	Pre	11,607	18017	0.6	2025	30	1.49	0.96
626	204	204	Gravity		Drinking	19.31	PVC	200	130	Moderate	5	60	190	274	5,291	East Ballina	B	1980	1996	3%	Pre	5,291	18017	0.3	2025	30	1.49	0.44
627	600DICL	621	Gravity	DICL	Drinking	7.88	DICL	600	405	Moderate	15	200	605	872	6,875	East Ballina	B	1980	1996	3%	Pre	6,875	18017	0.4	2025	30	1.49	0.57
657	300PVCM_S1_12	295	Gravity	PVCM_S	Drinking	14.98	PVC	300	210	Moderate	8	90	300	433	6,467	East Ballina	B	1980	1996	3%	Pre	6,467	18017	0.4	2025	30	1.49	0.53
671	300PVCM_S1_12	295	Gravity	PVCM_S	Drinking	238.34	PVC	300	210	Moderate	8	90	300	433	103,106	East Ballina	B	1988	1996	3%	Pre	103,106	18017	5.7	2025	30	1.49	8.50
685	300PVCM_S1_12	295	Gravity	PVCM_S	Drinking	29.49	PVC	300	210	Moderate	8	90	300	433	12,757	East Ballina	B	1980	1996	3%	Pre	12,757	18017	0.7	2025	30	1.49	1.05
7	450DICL	467	Gravity	DICL	Drinking	1,539.12	DICL	450	295	Moderate	13	150	445	642	987,638	Lennox Head	B	1987	1996	3%	Pre	987,638	18017	54.8	2025	30	1.49	81.46
707	300PVCM_S1_12	295	Gravity	PVCM_S	Drinking	313.2	PVC	300	210	Moderate	8	90	300	433	135,490	East Ballina	B	1987	1996	3%	Pre	135,490	18017	7.5	2025	30	1.49	11.18
708	300PVCM_S1_12	295	Gravity	PVCM_S	Drinking	821.74	PVC	300	210	Moderate	8	90	300	433	355,485	East Ballina	B	1972	1996	3%	Pre	355,485	18017	19.7	2025	30	1.49	29.32
8	200	203	Gravity		Drinking	449.42	PVC	200	130	Moderate	5	60	190	274	123,132	East Ballina	B	1992	1996	3%	Pre	123,132	18017	6.8	2025	30	1.49	10.16
822	450	467	Gravity	DICL	Drinking	561.77	DICL	450	295	Moderate	13	150	445	642	360,482	East Ballina	B	1992	1996	3%	Pre	360,482	18017	20.0	2025	30	1.49	29.73
825	250	253	PRZ		Drinking	669.91	PVC	250	170			0	170	245	164,222	West Ballina	B	1984	1996	3%	Pre	164,222	18017	9.1	2025	30	1.49	13.54
852	250	253	PRZ		Drinking	169.78	PVC	250	170			0	170	245	41,620	West Ballina	B	1988	1996	3%	Pre	41,620	18017	2.3	2025	30	1.49	3.43
868	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	51.48	PVC	300	210	High	8	180	390	562	28,951	Ballina Island	B	1980	1996	3%	Pre	28,951	18017	1.6	2025	30	1.49	2.39
897	300PVCM_S1_12	295	PRZ	PVCM_S	Drinking	265.1	PVC	300	210	High	8	180	390	562	149,087	Ballina Island	B	1980	1996	3%	Pre	149,087	18017	8.3	2025	30	1.49	12.30
914	400PE	325	PRZ	PE	Drinking	58.91	PE	325	227	High	9	200	427	615	36,245	Ballina Island	B	1994	1996	3%	Pre	36,245	18017	2.0	2025	30	1.49	2.99
925	200	203	Gravity		Drinking	454.65	PVC	200	130	Moderate	5	60	190	274	124,565	East Ballina	B	1974	1996	3%	Pre	124,565	18017	6.9	2025	30	1.49	10.27
928	331	331	PRZ		Drinking	51.38	PVC	325	227	High	9	200	427	615	31,612	Ballina Island	B	1994	1996	3%	Pre	31,612	18017	1.8	2025	30	1.49	2.61
931	300PVCM_S1_12	295	Gravity	PVCM_S	Drinking	133.28	PVC	300	210	Moderate	8	90	300	433	57,657	East Ballina	B	1972	1996	3%	Pre	57,657	18017	3.2	2025	30	1.49	4.76
941	200PVCM_S1_12	210	PRZ	PVCM_S	Drinking	16.97	PVC	200	130	Moderate	5	60	190	274	4,649	East Ballina	B	1980	1996	3%	Pre	4,649	18017	0.3	2025	30	1.49	0.38
964	200PVCM_S1_12	210	Gravity	PVCM_S	Drinking	9.73	PVC	200	130	Moderate	5	60	190	274	2,666	East Ballina	B	1980	1996	3%	Pre	2,666	18017	0.1	2025	30	1.49	0.22
967	200	203	Gravity		Drinking	34.55	PVC	200	130	High	5	120	250	361	12,455	North Ballina	B	1981	1996	3%	Pre	12,455	18017	0.7	2025	30	1.49	1.03
968	200	203	Gravity		Drinking	156.68	PVC	200	130	High	5	120	250	361	56,483	North Ballina	B	1981	1996	3%	Pre	56,483	18017	3.1	2025	30	1.49	4.66
972	200	203	Gravity		Drinking	81.77	PVC	200	130	High	5	120	250	361	29,478	North Ballina	B	1981	1996	3%	Pre	29,478	18017	1.6	2025	30	1.49	2.43
973	200	203	Gravity		Drinking	109.96	PVC	200	130	High	5	120	250	361	39,648	North Ballina	B	1981	1996	3%	Pre	39,648	18017	2.2	2025	30	1.49	3.27
974	200	203	Gravity		Drinking	11.97	PVC	200	130	High	5	120	250	361	4,315	North Ballina	B	1981	1996	3%	Pre	4,315	18017	0.2	2025	30	1.49	0.36
975	200	203	Gravity		Drinking	286.29	PVC	200	130	High	5	120	250	361	103,208	North Ballina	B	1981	1996	3%	Pre	103,208	18017	5.7	2025	30	1.49	8.51
976	200	203	Gravity		Drinking	178.53	PVC	200	130	High	5	120	250	361	64,360	North Ballina	B	1981	1996	3%	Pre	64,360	18017	3.6	2025	30	1.49	5.31
977	200	203	Gravity		Drinking	72.75	PVC	200	130	High	5	120	250	361	26,226	North Ballina	B	1995	1996	3%	Pre	26,226	18017	1.5	2025	30	1.49	2.16
9927	FV	467	Gravity	AC	Drinking	57.73	AC	450	400	Moderate	13	150	550	793	45,786	Lennox Head	B	1980	1996	3%	Pre	45,786	18017	2.5	2025	30	1.49	3.78
998	450DICL	467	Gravity	DICL	Drinking	11.53	DICL	450	295	Moderate	13	150	445	642	7,399	East Ballina	B	1980	1996	3%	Pre	7,399	18017	0.4	2025	30	1.49	0.61
999	450DICL	467	Gravity	DICL	Drinking	7.34	DICL	450	295	Moderate	13	150	445	642	4,710	East Ballina	B	1980	1996	3%	Pre	4,710	18017	0.3	2025	30	1.49	0.39
BC_CV_BYP	Basalt Court Control Val	467	Boosted	DICL	Drinking	28.89	DICL	450	295	Moderate	13	150	445	642	18,538	Lennox Head	B	1981	1996	3%	Pre	18,538	18017	1.0	2025	30	1.49	1.53
BHWDP2405	Ballina Heights Manually	200	Gravity	PVC	Drinking	198.86	PVC	200	130			0	130	187	37,278	Ballina Heights	F	2005	2005	7%	Post	37,278	2037	18.3	2020	16	1.58	28.97
BHWDP2406	Ballina Heights Manually	200	Gravity	PVC	Drinking	44.64	PVC	200	130			0	130	187	8,368	Ballina Heights	F	2005	2005	7%	Post	8,368	2037	4.1	2020	16	1.58	6.50
BHWDP2407	Ballina Heights Manually	200	Gravity	PVC	Drinking	292.97	PVC	200	130			0	130	187	54,920	Ballina Heights	F	2005	2005	7%	Post	54,920	2037	27.0	2020	16	1.58	42.68
MA000642	200AC	196	Boosted	AC	Drinking	275.8	AC	200	130			0	130	187	51,701	Wollongbar	E	1988	1996	3%	Pre	51,701	6941	7.4	2040	45	1.78	13.27
MA0011	FV Butterfly Valve	467	Gravity	AC	Drinking	10.24	AC	450	400	Moderate	13	150	550	793	8,121	Lennox Head	B	1987	1996	3%	Pre	8,121	18017	0.5	2025	30	1.49	0.67
MA0012	FV Butterfly Valve	467	Gravity	AC	Drinking	23.05	AC	450	400	Moderate	13	150	550	793	18,281	Lennox Head	B	1987	1996	3%	Pre	18,281	18017	1.0	2025	30	1.49	1.51
MA001660	200AC_D	186	Gravity	AC	Drinking	619.22	AC	200	130			0	130	187	116,079	Fig Tree Hill	B	1987	1996	3%	Pre	116,079	18017	6.4	2025	30	1.49	9.57
MA001660_B	Fig Tree Hill Isolation Val	186	Gravity	AC	Drinking	31.65	AC	200	130			0	130	187	5,933	Fig Tree Hill	B	1987	1996	3%	Pre	5,933	18017	0.3	2025	30	1.49	0.49
NCMCVFCV1	FV Butterfly Valve	467	Gravity	AC	Drinking	22.46	AC	450	400	Moderate	13	150	550	793	17,813	Lennox Head	B	1987	1996	3%	Pre	17,813	18017	1.0	2025	30	1.49	1.47
P001	200AC	196	Boosted	AC	Drinking	381.58	AC	200	130			0	130	187	71,531	Wollongbar	E	1989	1996	3%	Pre	71,531	6941	10.3	2040	45	1.78	18.36
P002	200DICL	204	Boosted	DICL	Drinking	8.97	DICL	200	130			0	130	187	1,682	Wollongbar	E	1991	1996	3%	Pre	1,682	6941	0.2	2040	45	1.78	0.43
P003	200AC	196	Boosted	AC	Drinking	485.51	AC	200	130			0	130	187	91,014	Wollongbar	E	1989	1996	3%	Pre	91,014	6941	13.1	2040	45	1.78	23.36

Label	Priced by PWD?	DIAMETER (Num)	PRESSURE_Z (Char)	MATERIAL (Char)	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 ($/m)	Total Rate 2011/12 ($/m) (2010/11 rate x 1,03)	Total Cost 2011/12 ($)	Service Area	Area	Date of Construction (first year of financial year)	Effective Year of Commissioning	Discount Rate	Pre or Post 1996 Asset	PV (1995/96) of Capital Cost (2011/2012)	System Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up (first year of financial year)	Take-up period (t) (years)	ROI Factor	Capital Charge per ET (2011/2012$)
P004	200DICL	204	Boosted	DICL	Drinking	273.19	DICL	200	130			0	130	187	51,212	Wollongbar	E	1989	1996	3%	Pre	51,212	6941	7.4	2040	45	1.78	13.15
P009	150DICL	153	Gravity	DICL	Drinking	111,34	DICL	150	105			0	105	151	16,858	Alstonville	E	1991	1996	3%	Pre	16,858	6941	2.4	2040	45	1.78	4.33
P010	300	285	Gravity		Drinking	80,71	PVC	275	190			0	190	274	22,113	Alst. Industr	E	1979	1996	3%	Pre	22,113	6941	3.2	2040	45	1.78	5.68
P011	200	203	Gravity		Drinking	178,03	PVC	200	130			0	130	187	33,374	Alst. Industr	E	1979	1996	3%	Pre	33,374	6941	4.8	2040	45	1.78	8.57
P016	300AC	295	Gravity	AC	Drinking	109,23	AC	300	210			0	210	303	33,077	Wollongbar	E	1984	1996	3%	Pre	33,077	6941	4.8	2040	45	1.78	8.49
P017	300AC	295	Gravity	AC	Drinking	423,44	AC	300	210			0	210	303	128,226	Wollongbar	E	1984	1996	3%	Pre	128,226	6941	18.5	2040	45	1.78	32.92
P018	450DICL	467	Gravity	DICL	Drinking	424,18	DICL	450	295			0	295	425	180,442	Wollongbar	E	1984	1996	3%	Pre	180,442	6941	26.0	2040	45	1.78	46.32
P021	525HOBAS	561	Boosted	HOBAS	Drinking	1,051,24	HOBA	600	405			0	405	584	613,935	Wollongbar	E	1991	1996	3%	Pre	613,935	6941	88.4	2040	45	1.78	157.60
P022	525HOBAS	561	Gravity	HOBAS	Drinking	384,15	HOBA	600	405			0	405	584	224,347	Wollongbar	E	1991	1996	3%	Pre	224,347	6941	32.3	2040	45	1.78	57.59
P023	525HOBAS	561	Gravity	HOBAS	Drinking	4,25	HOBA	600	405			0	405	584	2,482	Wollongbar	E	1993	1996	3%	Pre	2,482	6941	0.4	2040	45	1.78	0.64
P024	525HOBAS	561	Gravity	HOBAS	Drinking	5,59	HOBA	600	405			0	405	584	3,265	Wollongbar	E	1980	1996	3%	Pre	3,265	6941	0.5	2040	45	1.78	0.84
P030	300HOBAS	327	Boosted	HOBAS	Drinking	853,4	HOBA	325	218			0	218	315	268,682	Wollongbar	E	1972	1996	3%	Pre	268,682	6941	38.7	2040	45	1.78	68.97
P040	300HOBAS	327	Gravity	HOBAS	Drinking	142,44	HOBA	325	218			0	218	315	44,845	Wollongbar	E	1973	1996	3%	Pre	44,845	6941	6.5	2040	45	1.78	11.51
P042	300HOBAS	327	Gravity	HOBAS	Drinking	37,34	HOBA	325	218			0	218	315	11,756	Wollongbar	E	2001	1996	7%	Post	8,969	6941	1.3	2040	45	3.09	3.99
P044	300DICL	313	Gravity	DICL	Drinking	67,56	DICL	300	210			0	210	303	20,465	Wollongbar	E	2001	1996	7%	Post	15,612	6941	2.2	2040	45	3.09	6.95
P045	300BluBrt	285	Gravity	BluBrt	Drinking	296,25	BluB	275	190			0	190	274	81,167	Wollongbar	E	1988	1996	3%	Pre	81,167	6941	11.7	2040	45	1.78	20.84
P047	300BluBrt	285	Gravity	BluBrt	Drinking	350,98	BluB	275	190			0	190	274	96,162	Wollongbar	E	1988	1996	3%	Pre	96,162	6941	13.8	2040	45	1.78	24.69
P049	150BluBrt	143	Gravity	BluBrt	Drinking	12,33	BluB	150	105			0	105	151	1,867	Wollongbar	E	1978	1996	3%	Pre	1,867	6941	0.3	2040	45	1.78	0.48
P089	450DICL	467	Boosted	DICL	Drinking	14,6	DICL	450	295			0	295	425	6,211	Wollongbar	E	1991	1996	3%	Pre	6,211	6941	0.9	2040	45	1.78	1.59
P090	375DICL	392	Boosted	DICL	Drinking	19,47	DICL	400	255			0	255	368	7,159	Wollongbar	E	1991	1996	3%	Pre	7,159	6941	1.0	2040	45	1.78	1.84
P091	450DICL	467	Boosted	DICL	Drinking	8,5	DICL	450	295			0	295	425	3,616	Wollongbar	E	1991	1996	3%	Pre	3,616	6941	0.5	2040	45	1.78	0.93
P106	200AC	196	Boosted	AC	Drinking	61,77	AC	200	130			0	130	187	11,579	Wollongbar	E	2004	1996	7%	Post	7,211	6941	1.0	2040	45	3.09	3.21
P130	525HOBAS	561	Boosted	HOBAS	Drinking	25,59	HOBA	600	405			0	405	584	14,945	Wollongbar	E	1972	1996	3%	Pre	14,945	6941	2.2	2040	45	1.78	3.84
P138	200AC	196	Boosted	AC	Drinking	47,39	AC	200	130			0	130	187	8,884	Wollongbar	E	1972	1996	3%	Pre	8,884	6941	1.3	2040	45	1.78	2.28
P174	200AC	196	Boosted	AC	Drinking	87,27	AC	200	130			0	130	187	16,360	Wollongbar	E	1981	1996	3%	Pre	16,360	6941	2.4	2040	45	1.78	4.20
P175	200AC	196	Boosted	AC	Drinking	217,22	AC	200	130			0	130	187	40,720	Wollongbar	E	1981	1996	3%	Pre	40,720	6941	5.9	2040	45	1.78	10.45
P192	200AC	196	Gravity	AC	Drinking	89,46	AC	200	130			0	130	187	16,774	Wollongbar	E	1988	1996	3%	Pre	16,774	6941	2.4	2040	45	1.78	4.31
P205	200AC	196	Gravity	AC	Drinking	21,64	AC	200	130			0	130	187	4,057	Wollongbar	E	1988	1996	3%	Pre	4,057	6941	0.6	2040	45	1.78	1.04
P230	300AC	295	Gravity	AC	Drinking	231,03	AC	300	210			0	210	303	69,961	Wollongbar	E	1978	1996	3%	Pre	69,961	6941	10.1	2040	45	1.78	17.96
P251	300AC	295	Gravity	AC	Drinking	133,43	AC	300	210			0	210	303	40,405	Alst. Industr	E	1978	1996	3%	Pre	40,405	6941	5.8	2040	45	1.78	10.37
P254	300AC	295	Gravity	AC	Drinking	439,99	AC	300	210			0	210	303	133,238	Alst. Industr	E	1979	1996	3%	Pre	133,238	6941	19.2	2040	45	1.78	34.20
P255	300AC	295	Gravity	AC	Drinking	159,11	AC	300	210			0	210	303	48,182	Alst. Industr	E	1984	1996	3%	Pre	48,182	6941	6.9	2040	45	1.78	12.37
P266	300	285	Gravity		Drinking	22,74	PVC	275	190			0	190	274	6,230	Alst. Industr	E	1979	1996	3%	Pre	6,230	6941	0.9	2040	45	1.78	1.60
P275	500DICL	520	Boosted	DICL	Drinking	109,11	DICL	500	323			0	323	466	50,820	Wollongbar	E	1972	1996	3%	Pre	50,820	6941	7.3	2040	45	1.78	13.05
P277	300DICL	313	Boosted	DICL	Drinking	117,44	DICL	300	210			0	210	303	35,563	Wollongbar	E	1969	1996	3%	Pre	35,563	6941	5.1	2040	45	1.78	9.13
P289	200AC	196	Boosted	AC	Drinking	26,69	AC	200	130			0	130	187	4,998	Wollongbar	E	1980	1996	3%	Pre	4,998	6941	0.7	2040	45	1.78	1.28
P293	525HOBAS	561	Gravity	HOBAS	Drinking	89,83	HOBA	600	405			0	405	584	52,462	Wollongbar	E	1993	1996	3%	Pre	52,462	6941	7.6	2040	45	1.78	13.47
P294	525HOBAS	561	Gravity	HOBAS	Drinking	205,54	HOBA	600	405			0	405	584	120,037	Wollongbar	E	1991	1996	3%	Pre	120,037	6941	17.3	2040	45	1.78	30.81
P295	525HOBAS	561	Boosted	HOBAS	Drinking	977,15	HOBA	600	405			0	405	584	570,665	Wollongbar	E	1972	1996	3%	Pre	570,665	6941	82.2	2040	45	1.78	146.50
P319	200AC	196	Gravity	AC	Drinking	129,78	AC	200	130			0	130	187	24,329	Alstonville	E	1989	1996	3%	Pre	24,329	6941	3.5	2040	45	1.78	6.25
P320	200AC	196	Gravity	AC	Drinking	15,58	AC	200	130			0	130	187	2,921	Alstonville	E	1990	1996	3%	Pre	2,921	6941	0.4	2040	45	1.78	0.75
P332	200AC	196	Gravity	AC	Drinking	116,64	AC	200	130			0	130	187	21,865	Alstonville	E	1985	1996	3%	Pre	21,865	6941	3.2	2040	45	1.78	5.61
P336	200AC	196	Gravity	AC	Drinking	41,64	AC	200	130			0	130	187	7,806	Alstonville	E	1985	1996	3%	Pre	7,806	6941	1.1	2040	45	1.78	2.00
P338	200AC	196	Gravity	AC	Drinking	75,98	AC	200	130			0	130	187	14,243	Alstonville	E	1985	1996	3%	Pre	14,243	6941	2.1	2040	45	1.78	3.66
P341	200AC	196	Gravity	AC	Drinking	82,97	AC	200	130			0	130	187	15,554	Alstonville	E	1985	1996	3%	Pre	15,554	6941	2.2	2040	45	1.78	3.99
P370	200AC	196	Gravity	AC	Drinking	98,56	AC	200	130			0	130	187	18,476	Alstonville	E	1985	1996	3%	Pre	18,476	6941	2.7	2040	45	1.78	4.74
P400	375DICL	392	Gravity	DICL	Drinking	181,51	DICL	400	255			0	255	368	66,743	Alstonville	E	1990	1996	3%	Pre	66,743	6941	9.6	2040	45	1.78	17.13
P402	150DICL	153	Gravity	DICL	Drinking	142,1	DICL	150	105			0	105	151	21,515	Alstonville	E	1991	1996	3%	Pre	21,515	6941	3.1	2040	45	1.78	5.52
P405	150AC	146	Gravity	AC	Drinking	18,9	AC	150	105			0	105	151	2,862	Alstonville	E	1991	1996	3%	Pre	2,862	6941	0.4	2040	45	1.78	0.73
P406	200AC	196	Gravity	AC	Drinking	352,01	AC	200	130			0	130	187	65,988	Alstonville	E	1984	1996	3%	Pre	65,988	6941	9.5	2040	45	1.78	16.94
P414	375DICL	392	Gravity	DICL	Drinking	52,29	DICL	400	255			0	255	368	19,228	Alstonville	E	1991	1996	3%	Pre	19,228	6941	2.8	2040	45	1.78	4.94
P417	375DICL	392	Gravity	DICL	Drinking	83,71	DICL	400	255			0	255	368	30,781	Alstonville	E	1990	1996	3%	Pre	30,781	6941	4.4	2040	45	1.78	7.90
P418	300DICL	313	Gravity	DICL	Drinking	85,58	DICL	300	210			0	210	303	25,915	Alstonville	E	1990	1996	3%	Pre	25,915	6941	3.7	2040	45	1.78	6.65
P436	300DICL	313	Gravity	DICL	Drinking	281,59	DICL	300	210			0	210	303	85,271	Alstonville	E	1980	1996	3%	Pre	85,271	6941	12.3	2040	45	1.78	21.89
P439	300DICL	313	Gravity	DICL	Drinking	46,68	DICL	300	210			0	210	303	14,136	Alstonville	E	1990	1996	3%	Pre	14,136	6941	2.0	2040	45	1.78	3.63
P457	150AC	146	Gravity	AC	Drinking	221,66	AC	150	105			0	105	151	33,565	Alstonville	E	1970	1996	3%	Pre	33,565	6941	4.8	2040	45	1.78	8.62
P466	200AC	196	Boosted	AC	Drinking	29,16	AC	200	130			0	130	187	5,466	Wollongbar	E	1991	1996	3%	Pre	5,466	6941	0.8	2040	45	1.78	1.40
P472	300DICL	313	Gravity	DICL	Drinking	107,67	DICL	300	210			0	210	303	32,605	Alstonville	E	1990	1996	3%	Pre	32,605	6941	4.7	2040	45	1.78	8.37
P473	300DICL	313	Gravity	DICL	Drinking	73,76	DICL	300	210			0	210	303	22,336	Alstonville	E	1990	1996	3%	Pre	22,336	6941	3.2	2040	45	1.78	5.73
P479	300DICL	313	Gravity	DICL	Drinking	84,52	DICL	300	210			0	210	303	25,594	Alstonville	E	1990	1996	3%	Pre	25,594	6941	3.7	2040	45	1.78	6.57
P487	300DICL	313	Gravity	DICL	Drinking	19,17	DICL	300	210			0	210	303	5,805	Alstonville	E	1990	1996	3%	Pre	5,805	6941	0.8	2040	45	1.78	1.49
P488	300DICL	313	Gravity	DICL	Drinking	40,75	DICL	300	210			0	210	303	12,340	Alstonville	E	1990	1996	3%	Pre	12,340	6941	1.8	2040	45	1.78	3.17
P489	300DICL	313	Gravity	DICL	Drinking	67,44	DICL	300	210			0	210	303	20,422	Alstonville	E	1990	1996	3%	Pre	20,422	6941	2.9	2040	45	1.78	5.24
P490	300DICL	313	Gravity	DICL	Drinking	271,01	DICL	300	210			0	210	303	82,067	Alstonville	E	1990	1996	3%	Pre	82,067	6941	11.8	2040	45	1.78	21.07
P491	300DICL	313	Gravity	DICL	Drinking	24,81	DICL	300	210			0	210	303	7,513	Alstonville	E	1990	1996	3%	Pre	7,513	6941	1.1	2040	45	1.78	1.93
P492	300DICL	313	Gravity	DICL	Drinking	70,03	DICL	300	210			0	210	303	21,206	Alstonville	E	1990	1996	3%	Pre	21,206	6941	3.1	2040	45	1.78	5.44
P493	300DICL	313	Gravity	DICL	Drinking	15,88	DICL	300	210			0	210	303	4,809	Alstonville	E	1990	1996	3%	Pre	4,809	6941	0.7	2040	45	1.78	1.23
P494	300DICL	313	Gravity	DICL	Drinking	102,24	DICL	300	210			0	210	303	30,960	Alstonville	E	1990	1996	3%	Pre	30,960	6941	4.5	2040	45	1.78	7.95
P495	300DICL	313	Gravity	DICL	Drinking	20,6	DICL	300	210			0	210	303	6,238	Alstonville	E	1990	1996	3%	Pre	6,238	6941	0.9	2040	45	1.78	1.60
P496	300DICL	313	Gravity	DICL	Drinking	107,01	DICL	300	210			0	210	303	32,405	Alstonville	E	1990	1996	3%	Pre	32,405	6941	4.7	2040	45	1.78	8.32
P497	300AC	295	Gravity	AC	Drinking	638,48	AC	300	210			0	210	303	193,345	Alstonville	E	1984	1996	3%	Pre	193,345	6941	27,9	2040	45	1.78	49.63
P498	450DICL	467	Gravity	DICL	Drinking	637,13	DICL	450	295			0	295	425	271,029	Alstonville	E	1990	1996	3%	Pre	271,029	6941	39,0	2040	45	1.78	69,58
P499	300AC	295	Gravity	AC	Drinking	20,81	AC	300	210			0	210	303	6,302	Alstonville	E	1984	1996	3%	Pre	6,302	6941	0,9	2040	45	1.78	1,62
P500	300AC	295	Gravity	AC	Drinking	117	AC	300	210			0	210	303	35,430	Alstonville	E	1984	1996	3%	Pre	35,430	6941	5,1	2040	45	1.78	9,10
P504	300DICL	313	Gravity	DICL	Drinking	199,96	DICL	300	210			0	210	303	60,552	Alstonville	E	1990	1996	3%	Pre	60,552	6941	8,7	2040	45	1.78	15,54
P505	300DICL	313	Gravity	DICL	Drinking	267,17	DICL	300	210			0	210	303	80,904	Alstonville	E	1990	1996	3%	Pre	80,904	6941	11,7	2040	45	1.78	20,77
P524	200PVC_12	203	Gravity	PVC	Drinking	74,44	PVC	200	130			0	130	187	13,955	Alstonville	E	1973	1996	3%	Pre	13,955	6941	2,0	2040	45	1.78	3,58
P525	200AC	196	Gravity	AC	Drinking	188,2	AC	200	130			0	130	187	35,280	Alstonville	E	1973	1996	3%	Pre	35,280	6941	5,1	2040	45	1.78	9,06
P528	200AC	196	Gravity	AC	Drinking	90,83	AC	200	130			0	130	187	17,027	Alstonville	E	1973	1996	3%	Pre	17,027	6941	2,5	2040	45	1.78	4,37
P536	200AC	196	Gravity	AC	Drinking	64,06	AC	200	130			0	130	187	12,009	Alstonville	E	1972	1996	3%	Pre	12,009	6941	1,7	2040	45	1.78	3,08
P563	200AC	196	Gravity	AC	Drinking	113,28	AC	200	130			0	130	187	21,235	Alstonville	E	1970	1996	3%	Pre	21,235	6941	3,1	2040	45	1.78	5,45

Label	Priced by PWD?	DIAMETER (Num)	PRESSURE_Z (Char)	MATERIAL (Char)	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 ($/m)	Total Rate 2011/12 ($/m) (2010/11 rate x 1,03)	Total Cost 2011/12 ($)	Service Area	Area	Date of Construction (first year of financial year)	Effective Year of Commissioning	Discount Rate	Pre or Post 1996 Asset	PV (1995/96) of Capital Cost (2011/2012)	System Capacity (ETs)	Capital Cost per ET (2011/2012$)	Year when capacity is taken up (first year of financial year)	Take-up period (t) (years)	ROI Factor	Capital Charge per ET (2011/2012$)
P564	200AC	196	Gravity	AC	Drinking	221.74	AC	200	130			0	130	187	41,567	Alstonville	E	1970	1996	3%	Pre	41,567	6941	6.0	2040	45	1.78	10.67
P566	200AC	196	Gravity	AC	Drinking	75.74	AC	200	130			0	130	187	14,198	Alstonville	E	1970	1996	3%	Pre	14,198	6941	2.0	2040	45	1.78	3.64
P568	200AC	196	Gravity	AC	Drinking	14.99	AC	200	130			0	130	187	2,810	Alstonville	E	1984	1996	3%	Pre	2,810	6941	0.4	2040	45	1.78	0.72
P573	300AC	295	Gravity	AC	Drinking	221.46	AC	300	210			0	210	303	67,063	Alstonville	E	1984	1996	3%	Pre	67,063	6941	9.7	2040	45	1.78	17.22
P576	200AC	196	Gravity	AC	Drinking	92.26	AC	200	130			0	130	187	17,295	Alstonville	E	1982	1996	3%	Pre	17,295	6941	2.5	2040	45	1.78	4.44
P582	200AC	196	Gravity	AC	Drinking	17.5	AC	200	130			0	130	187	3,281	Alstonville	E	1970	1996	3%	Pre	3,281	6941	0.5	2040	45	1.78	0.84
P583	200AC	196	Gravity	AC	Drinking	77.04	AC	200	130			0	130	187	14,442	Alstonville	E	1973	1996	3%	Pre	14,442	6941	2.1	2040	45	1.78	3.71
P585	200AC	196	Gravity	AC	Drinking	17.79	AC	200	130			0	130	187	3,335	Alstonville	E	1970	1996	3%	Pre	3,335	6941	0.5	2040	45	1.78	0.86
P586	150AC	146	Gravity	AC	Drinking	16.33	AC	150	105			0	105	151	2,473	Alstonville	E	1984	1996	3%	Pre	2,473	6941	0.4	2040	45	1.78	0.63
P587	200AC	196	Gravity	AC	Drinking	188.73	AC	200	130			0	130	187	35,379	Alstonville	E	1975	1996	3%	Pre	35,379	6941	5.1	2040	45	1.78	9.08
P598	200AC	196	Gravity	AC	Drinking	120.97	AC	200	130			0	130	187	22,677	Alstonville	E	1970	1996	3%	Pre	22,677	6941	3.3	2040	45	1.78	5.82
P599	200AC	196	Gravity	AC	Drinking	46.35	AC	200	130			0	130	187	8,689	Alstonville	E	1984	1996	3%	Pre	8,689	6941	1.3	2040	45	1.78	2.23
P600	200AC	196	Gravity	AC	Drinking	304.14	AC	200	130			0	130	187	57,014	Alstonville	E	1984	1996	3%	Pre	57,014	6941	8.2	2040	45	1.78	14.64
P615	200AC	196	Gravity	AC	Drinking	16.97	AC	200	130			0	130	187	3,181	Alstonville	E	1970	1996	3%	Pre	3,181	6941	0.5	2040	45	1.78	0.82
P624	300DICL	313	Gravity	DICL	Drinking	176.77	DICL	300	210			0	210	303	53,529	Alstonville	E	1990	1996	3%	Pre	53,529	6941	7.7	2040	45	1.78	13.74
P625	300DICL	313	Gravity	DICL	Drinking	15.53	DICL	300	210			0	210	303	4,703	Alstonville	E	1990	1996	3%	Pre	4,703	6941	0.7	2040	45	1.78	1.21
P626	300AC	295	Gravity	AC	Drinking	69.92	AC	300	210			0	210	303	21,173	Alstonville	E	1994	1996	3%	Pre	21,173	6941	3.1	2040	45	1.78	5.44
P637	200AC	196	Gravity	AC	Drinking	157.33	AC	200	130			0	130	187	29,493	Alstonville	E	1970	1996	3%	Pre	29,493	6941	4.2	2040	45	1.78	7.57
UNK300	300DICL	153	Gravity	DICL	Drinking	340.34	DICL	150	105			0	105	151	51,531	Wollongbar	E	1989	1996	3%	Pre	51,531	6941	7.4	2040	45	1.78	13.23
W008	200BluBrt	203	Gravity	BluBrt	Drinking	257.2	BluB	200	130			0	130	187	48,215	Wardell	A	1974	1996	3%	Pre	48,215	1082	44.5	2040	45	1.78	79.38
W015	150DICL	153	Gravity	DICL	Drinking	250.85	DICL	150	105			0	105	151	37,981	Wardell	A	1974	1996	3%	Pre	37,981	1082	35.1	2040	45	1.78	62.53
W053	150DICL	153	Gravity	DICL	Drinking	15.37	DICL	150	105			0	105	151	2,327	Wardell	A	1990	1996	3%	Pre	2,327	1082	2.2	2040	45	1.78	3.83
W054	200BluBrt	203	Gravity	BluBrt	Drinking	1,895.02	BluB	200	130			0	130	187	355,240	Wardell	A	1990	1996	3%	Pre	355,240	1082	328.2	2040	45	1.78	584.83
W055	150DICL	153	Gravity	DICL	Drinking	684.35	DICL	150	105			0	105	151	103,617	Wardell	A	1990	1996	3%	Pre	103,617	1082	95.7	2040	45	1.78	170.59
W056	200BluBrt	203	Gravity	BluBrt	Drinking	10.44	BluB	200	130			0	130	187	1,957	Wardell	A	1990	1996	3%	Pre	1,957	1082	1.8	2040	45	1.78	3.22
W057	200BluBrt	203	Gravity	BluBrt	Drinking	628.17	BluB	200	130			0	130	187	117,757	Wardell	A	1990	1996	3%	Pre	117,757	1082	108.8	2040	45	1.78	193.86
W058	200BluBrt	203	Gravity	BluBrt	Drinking	352.06	BluB	200	130			0	130	187	65,997	Wardell	A	1990	1996	3%	Pre	65,997	1082	61.0	2040	45	1.78	108.65
W059	200BluBrt	203	Gravity	BluBrt	Drinking	552.35	BluB	200	130			0	130	187	103,544	Wardell	A	1974	1996	3%	Pre	103,544	1082	95.7	2040	45	1.78	170.46
W061	150DICL	153	Gravity	DICL	Drinking	172.51	DICL	150	105			0	105	151	26,120	Wardell	A	1980	1996	3%	Pre	26,120	1082	24.1	2040	45	1.78	43.00
W063	200BluBrt	203	Gravity	BluBrt	Drinking	524.6	BluB	200	130			0	130	187	98,379	Wardell	A	1990	1996	3%	Pre	98,379	1082	90.9	2040	45	1.78	161.96
W064	200BluBrt	203	Gravity	BluBrt	Drinking	22.35	BluB	200	130			0	130	187	4,190	Wardell	A	1990	1996	3%	Pre	4,190	1082	3.9	2040	45	1.78	6.90
W065	150PVC	143	Gravity	PVC	Drinking	9.54	PVC	150	105			0	105	151	1,444	Wardell	A	1980	1996	3%	Pre	1,444	1082	1.3	2040	45	1.78	2.38
W066	150PVC	143	Gravity	PVC	Drinking	910.21	PVC	150	105			0	105	151	137,815	Wardell	A	1990	1996	3%	Pre	137,815	1082	127.3	2040	45	1.78	226.88
W067	150PVC	143	Gravity	PVC	Drinking	270.27	PVC	150	105			0	105	151	40,922	Wardell	A	1990	1996	3%	Pre	40,922	1082	37.8	2040	45	1.78	67.37
W068	150PVC	143	Gravity	PVC	Drinking	105.32	PVC	150	105			0	105	151	15,947	Wardell	A	1982	1996	3%	Pre	15,947	1082	14.7	2040	45	1.78	26.25
W069	150PVC	143		PVC	Drinking	14.44	PVC	150	105			0	105	151	2,186	Wardell	A	1982	1996	3%	Pre	2,186	1082	2.0	2040	45	1.78	3.60
W070	150PVC	143	Gravity	PVC	Drinking	208.17	PVC	150	105			0	105	151	31,519	Wardell	A	1982	1996	3%	Pre	31,519	1082	29.1	2040	45	1.78	51.89
W071	200DICL	204	Gravity	DICL	Drinking	369.97	DICL	200	130			0	130	187	69,355	Wardell	A	1990	1996	3%	Pre	69,355	1082	64.1	2040	45	1.78	114.18
W072	200DICL	204	Gravity	DICL	Drinking	367.94	DICL	200	130			0	130	187	68,974	Wardell	A	1990	1996	3%	Pre	68,974	1082	63.7	2040	45	1.78	113.55
W073	150DICL	153	Gravity	DICL	Drinking	294.68	DICL	150	105			0	105	151	44,617	Wardell	A	1990	1996	3%	Pre	44,617	1082	41.2	2040	45	1.78	73.45
W074	custom	153	Gravity		Drinking	332.49	PVC	150	105			0	105	151	50,342	Wardell	A	1990	1996	3%	Pre	50,342	1082	46.5	2040	45	1.78	82.88
W075	150DICL	153	Gravity	DICL	Drinking	955.88	DICL	150	105			0	105	151	144,730	Wardell	A	1990	1996	3%	Pre	144,730	1082	133.7	2040	45	1.78	238.27
W076	150DICL	153	Gravity	DICL	Drinking	13.99	DICL	150	105			0	105	151	2,118	Wardell	A	1990	1996	3%	Pre	2,118	1082	2.0	2040	45	1.78	3.49
W077	150DICL	153	Gravity	DICL	Drinking	374.21	DICL	150	105			0	105	151	56,659	Wardell	A	1990	1996	3%	Pre	56,659	1082	52.3	2040	45	1.78	93.28
W079	200DICL	204	Gravity	DICL	Drinking	35.05	DICL	200	130			0	130	187	6,570	Wardell	A	1990	1996	3%	Pre	6,570	1082	6.1	2040	45	1.78	10.82
W080	150AC	146	Gravity	AC	Drinking	572.12	AC	150	105			0	105	151	86,625	Wardell	A	1982	1996	3%	Pre	86,625	1082	80.0	2040	45	1.78	142.61
W081	150PVC	143	Gravity	PVC	Drinking	915.93	PVC	150	105			0	105	151	138,681	Wardell	A	1982	1996	3%	Pre	138,681	1082	128.1	2040	45	1.78	228.31
W082	200BluBrt	203	Gravity	BluBrt	Drinking	17.76	BluB	200	130			0	130	187	3,329	Wardell	A	1980	1996	3%	Pre	3,329	1082	3.1	2040	45	1.78	5.48
W083	150PVC	143	Gravity	PVC	Drinking	28.23	PVC	150	105			0	105	151	4,274	Wardell	A	1982	1996	3%	Pre	4,274	1082	3.9	2040	45	1.78	7.04
W084	300DICL	313	Gravity	DICL	Drinking	94.58	DICL	300	210			0	210	303	28,635	Wardell	A	1990	1996	3%	Pre	28,635	1082	26.5	2040	45	1.78	47.14
W089	200DICL	204	Gravity	DICL	Drinking	156.35	DICL	200	130			0	130	187	29,309	Wardell	A	1990	1996	3%	Pre	29,309	1082	27.1	2040	45	1.78	48.25
W090	200DICL	204	Gravity	DICL	Drinking	170.75	DICL	200	130			0	130	187	32,009	Wardell	A	1990	1996	3%	Pre	32,009	1082	29.6	2040	45	1.78	52.70
W091	200DICL	204	Gravity	DICL	Drinking	202.44	DICL	200	130			0	130	187	37,949	Wardell	A	1990	1996	3%	Pre	37,949	1082	35.1	2040	45	1.78	62.48
W092	200DICL	204	Gravity	DICL	Drinking	114.95	DICL	200	130			0	130	187	21,549	Wardell	A	1990	1996	3%	Pre	21,549	1082	19.9	2040	45	1.78	35.48
W094	200DICL	204	Gravity	DICL	Drinking	141.96	DICL	200	130			0	130	187	26,612	Wardell	A	1990	1996	3%	Pre	26,612	1082	24.6	2040	45	1.78	43.81
W095	200DICL	204	Gravity	DICL	Drinking	122.86	DICL	200	130			0	130	187	23,035	Wardell	A	1990	1996	3%	Pre	23,035	1082	21.3	2040	45	1.78	37.92
W096	200DICL	204	Gravity	DICL	Drinking	142.38	DICL	200	130			0	130	187	26,691	Wardell	A	1990	1996	3%	Pre	26,691	1082	24.7	2040	45	1.78	43.94
W097	200DICL	204	Gravity	DICL	Drinking	151.19	DICL	200	130			0	130	187	28,342	Wardell	A	1990	1996	3%	Pre	28,342	1082	26.2	2040	45	1.78	46.66
W098	200DICL	204	Gravity	DICL	Drinking	340.74	DICL	200	130			0	130	187	63,875	Wardell	A	1990	1996	3%	Pre	63,875	1082	59.0	2040	45	1.78	105.16
W099	200DICL	204	Gravity	DICL	Drinking	580.09	DICL	200	130			0	130	187	108,744	Wardell	A	1990	1996	3%	Pre	108,744	1082	100.5	2040	45	1.78	179.02
W100	203	203	Gravity		Drinking	183.57	PVC	200	130			0	130	187	34,412	Wardell	A	1990	1996	3%	Pre	34,412	1082	31.8	2040	45	1.78	56.65
W101	200DICL	204	Gravity	DICL	Drinking	123.26	DICL	200	130			0	130	187	23,106	Wardell	A	1990	1996	3%	Pre	23,106	1082	21.3	2040	45	1.78	38.04
W102	200DICL	204	Gravity	DICL	Drinking	515.34	DICL	200	130			0	130	187	96,606	Wardell	A	1990	1996	3%	Pre	96,606	1082	89.3	2040	45	1.78	159.04
W103	200DICL	204	Gravity	DICL	Drinking	32.46	DICL	200	130			0	130	187	6,085	Wardell	A	1990	1996	3%	Pre	6,085	1082	5.6	2040	45	1.78	10.02
W104	300DICL	313	Gravity	DICL	Drinking	7.19	DICL	300	210			0	210	303	2,177	Wardell	A	1990	1996	3%	Pre	2,177	1082	2.0	2040	45	1.78	3.58
W105	200DICL	204	Gravity	DICL	Drinking	367.59	DICL	200	130			0	130	187	68,908	Wardell	A	1990	1996	3%	Pre	68,908	1082	63.7	2040	45	1.78	113.44
W106	200DICL	204	Whites Lane	DICL	Drinking	126.49	DICL	200	130			0	130	187	23,712	Wardell	A	1990	1996	3%	Pre	23,712	1082	21.9	2040	45	1.78	39.04
W107	200DICL	204	Gravity	DICL	Drinking	775.99	DICL	200	130			0	130	187	145,467	Wardell	A	1990	1996	3%	Pre	145,467	1082	134.4	2040	45	1.78	239.48
W108	200DICL	204	Gravity	DICL	Drinking	337.12	DICL	200	130			0	130	187	63,197	Wardell	A	1990	1996	3%	Pre	63,197	1082	58.4	2040	45	1.78	104.04
W109	150DICL	153	Gravity	DICL	Drinking	444.99	DICL	150	105			0	105	151	67,376	Wardell	A	1980	1996	3%	Pre	67,376	1082	62.2	2040	45	1.78	110.92
W115	200DICL	204	Gravity	DICL	Drinking	169.2	DICL	200	130			0	130	187	31,718	Wardell	A	1990	1996	3%	Pre	31,718	1082	29.3	2040	45	1.78	52.22
W116	300DICL	313	Gravity	DICL	Drinking	10.41	DICL	300	210			0	210	303	3,152	Wardell	A	1990	1996	3%	Pre	3,152	1082	2.9	2040	45	1.78	5.19
W120	200DICL	204	Gravity	DICL	Drinking	28.82	DICL	200	130			0	130	187	5,403	Wardell	A	1990	1996	3%	Pre	5,403	1082	5.0	2040	45	1.78	8.89
W121	200DICL	204	Gravity	DICL	Drinking	422.48	DICL	200	130			0	130	187	79,198	Wardell	A	1990	1996	3%	Pre	79,198	1082	73.2	2040	45	1.78	130.38
W122	200DICL	204	Gravity	DICL	Drinking	227.41	DICL	200	130			0	130	187	42,630	Wardell	A	1990	1996	3%	Pre	42,630	1082	39.4	2040	45	1.78	70.18
W126	150DICL	153	Gravity	DICL	Drinking	1,323.37	DICL	150	105			0	105	151	200,371	Wardell	A	1990	1996	3%	Pre	200,371	1082	185.1	2040	45	1.78	329.87