Ballina Shire Council

Development Servicing Plan for Wastewater and Recycled 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.

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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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Executive Summary

This Development Servicing Plan (DSP) details wastewater and recycled 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 Primary Industries (NOW), pursuant to section 306 (3) of the *Water Management Act 2000*.

The areas covered by this DSP are shown in Figure 1. The wastewater 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 Environment, Climate Change and Water (DECCW).

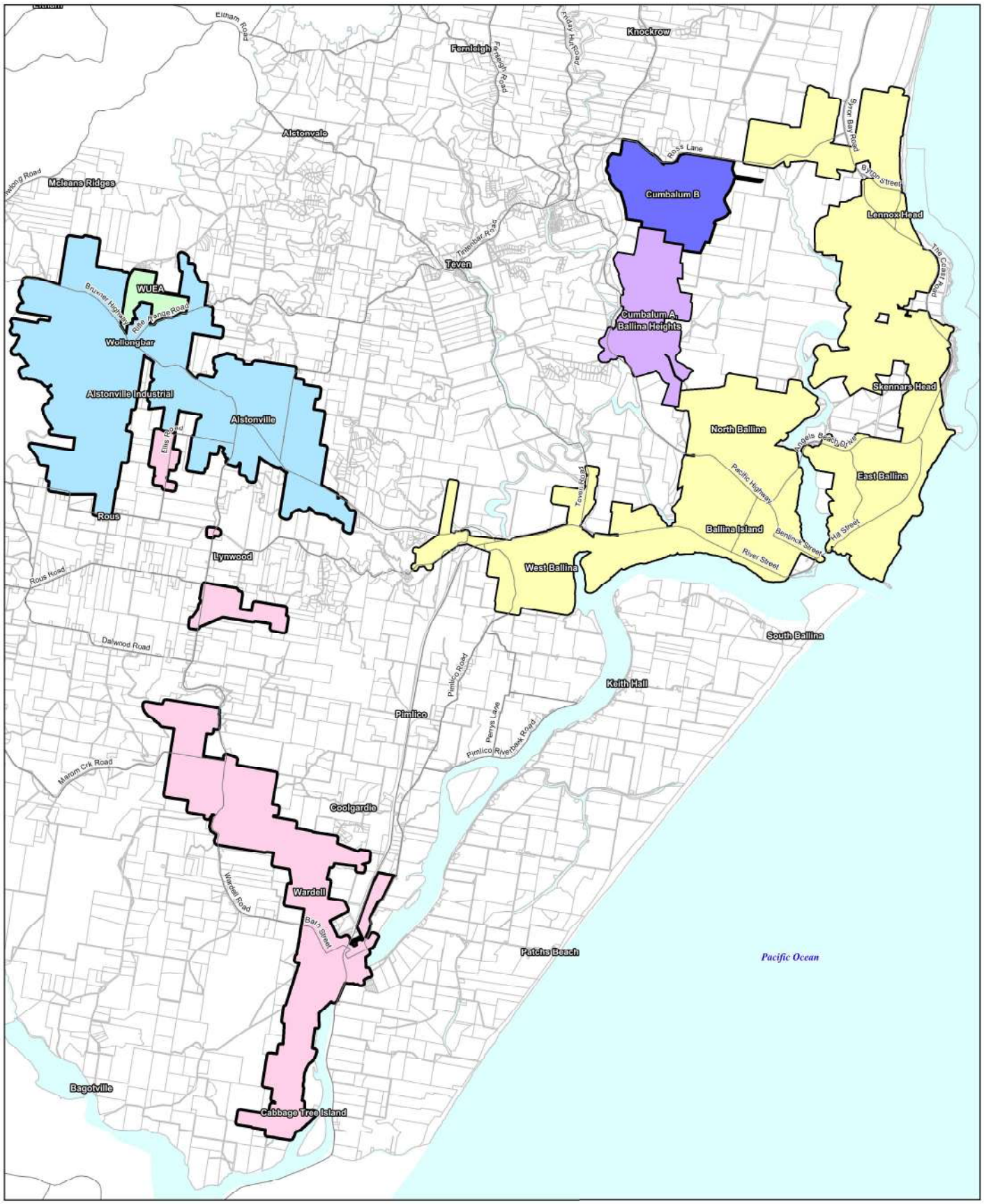
In the period between any review, developer charges will be indexed annually (1st day of July) on the basis of movements on the CPI for Sydney, in the preceding 12 months to December, excluding the impact of GST. Current contribution rates are listed in Council's Annual Fees and Charges Document.

The Developer shall be responsible for the full cost of the design and construction of wastewater reticulation works within subdivisions. In addition to this Wastewater DSP there are other Council plans that apply to provision of infrastructure for developments.

Table 1 Summary of Wastewater Developer Charges (2011/12 rates)

Area	Developer Charge, less Reduction Amount ($ per ET)	Developer Charge 30% Agglomeration Rules applied ($ per ET)
DSP Area A * Wardell	16,376	4,410
DSP Area C Wollongbar Expansion Area	11,673	12,300
DSP Area E Alstonville and Wollongbar	6,120	4,410
DSP Area B Ballina Island North Ballina West Ballina Pacific Pines Estate Henderson Land Central and South	4,365	
DSP Area F Cumbalum Precinct A Ballina Heights	3,304	2,808
DSP Area G Cumbalum Precinct B	2,387	
* Capital charge has been reduced by $7,891, in accordance with the subsidy explained in Section 7.7. Note the Utility Wide Weighted Average Developer Charge, less reduction amount of $1,351, is $4,290 per ET (excluding the effect of subsidies)		

A background document titled *Ballina Shire Council – Wastewater Infrastructure Planning* (GHD, 2011) identifies the characteristics of the assets covered by this DSP and is available from Council's website.



LEGEND

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

1:80,000

0 1 2 3 4

Kilometres

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

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ballina SHIRE COUNCIL

Ballina Shire Council
Development Servicing Plan: Drinking Water Supply

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

DSP Areas Overview

Figure 1

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

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1. Introduction

Section 64 of the *Local Government Act 1993* enables a local government council to levy developer charges for water supply, wastewater 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 that details the wastewater and recycled water developer charges to be levied on development areas utilising a water utility's wastewater infrastructure.

This DSP covers wastewater developer charges in regard to development areas served by Ballina Shire Council.

This DSP has been prepared in accordance with the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (2002) [1] issued by the Minister for Land and Water Conservation (now administered by the Department of Environment, Climate Change and Water (DECCW)), 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.

This DSP supersedes all previous wastewater contributions, policies and charges adopted by the Council prior to the adoption of this DSP. This DSP takes precedence over any of Council's codes or policies where there are any inconsistencies relating to wastewater developer charges.

[1] The calculation method for the Reduction Amount (See Section 7.4) was taken from the Draft 2012 Guidelines, as requested by the NSW Office of Water

2. Administration

2.1 Name of Development Servicing Plan

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

2.2 Purpose of the Plan

The aims and objectives of this DSP are to:

- Ensure that adequate wastewater infrastructure is provided for as part of new development;
- 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 wastewater 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 wastewater works, including pump stations within subdivisions that service only that development.

2.8 Developments Requiring Forward Funding

Council will generally not support development applications that require the provision of wastewater 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 cost.

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 Development Services Plan 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 Development Servicing Plan 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 wastewater 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 wastewater 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 wastewater 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 wastewater 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[2]

Time Period	Projected Shire ET Growth	Total Serviced ETs	Total Shire Population
2010	-	18,309	42,546
2010 – 2015	1,501	19,810	45,356
2015 – 2020	1,538	21,348	48,116
2020 – 2025	1,562	22,910	50,786
2025 – 2030	1,561	24,471	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;

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

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

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

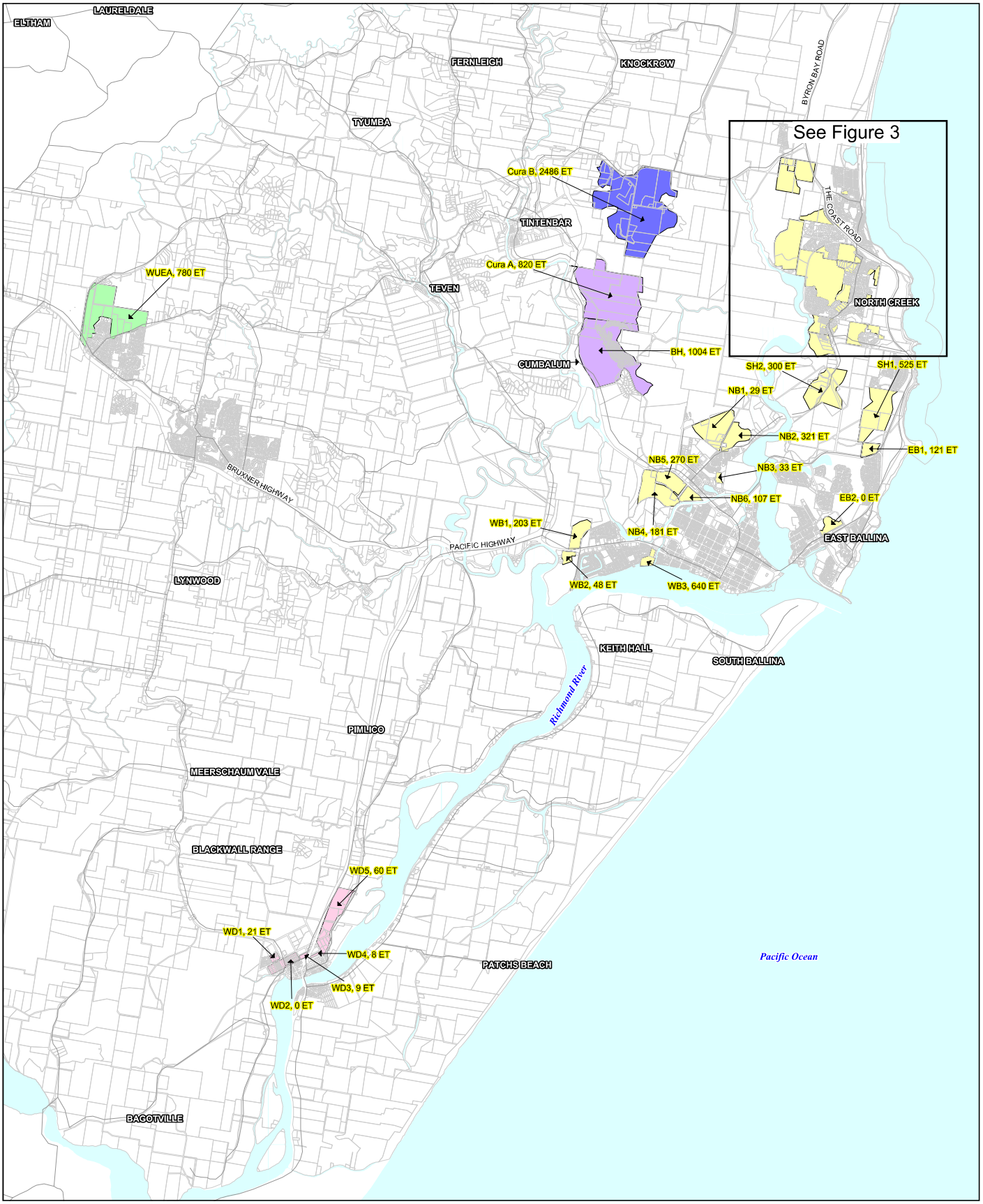
3.3.1 Future Development Areas

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 in 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: Wastewater

Job Number 22-15470
Revision 0
Date 27 FEB 2015

Key Development Areas

Figure 2

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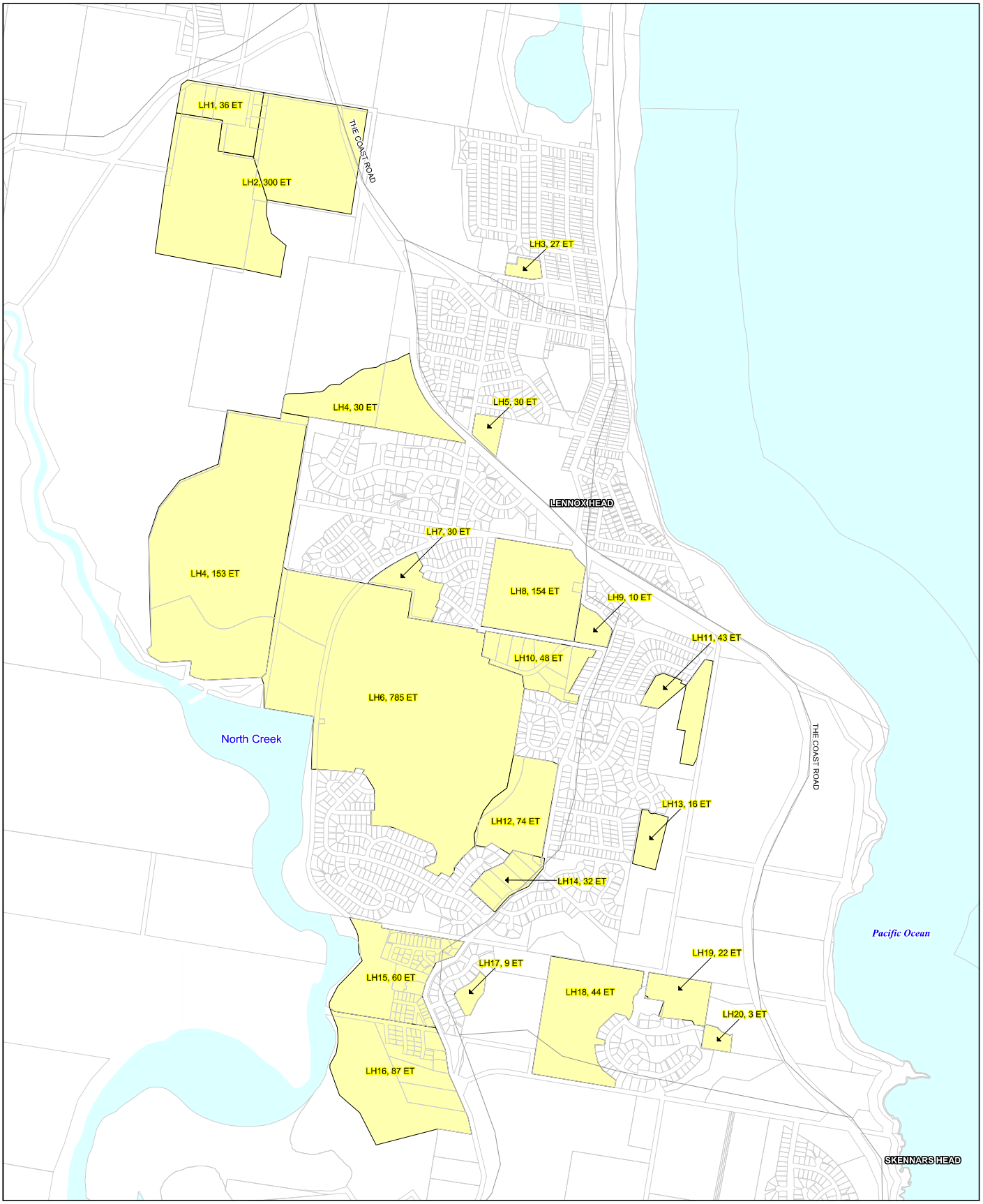
317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

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. Wastewater Infrastructure

This plan levies developer charges towards the cost of providing wastewater 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:

- Existing Distribution and Trunk Mains;
- Existing Wastewater Pumping Stations;
- Existing Wastewater Treatment Works;
- Proposed Trunk Infrastructure; and
- Recycled Water Infrastructure.

The existing and proposed wastewater 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 costs of works serving the area covered by this DSP are provided in Appendix A.

The capital costs for wastewater 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. Note that any gravity mains with a diameter less than or equal to 150 mm (except as noted below) were classed as reticulation mains and were therefore not included in the calculation of the capital charge per ET. However, these gravity mains are included in the figures of 11 to show connectivity between potential developments and the sewage treatment plants. For the Wollongbar area an additional difficulty rate for 10% rock was included.

For the Wollongbar Urban Expansion Area (WUEA) some gravity mains of diameter 150 mm have been included as DSP costs, as determined by BSC. For the WUEA costs were provided based on the contracts for the works. These have been incorporated instead of using the reference rates for these items.

The pump station 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.

Cost estimates for recycled water infrastructure, which is part of the imminent construction program, prepared by the NSW Public Works Department on behalf of Ballina Shire Council were used for the schemes located in Ballina, Ballina Heights, Cumbalum Urban Release Area (Precinct A & B) as well as Lennox Head, East Ballina and Skennars Head. Some infrastructure costs were prorated in the asset register to adequately account for the entire cost of the system.

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 A. Further information regarding how the timings were estimated for individual work items is provided in report Reference 3. Dates identified are approximate only and are contingent on development proceeding.

5. Standards of Service

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

5.1 Desired Standards of Service

The wastewater network is required to meet the following standards of service.

Effluent Quality

- Sewage effluent meeting Environment Protection Authority 90 Percentile License Limits (BOD, SS, total N, NH_3N, Oil and Grease, Total P, Faecal coliforms);

Water Quality

- Recycled water quality to comply with Council's Recycled Water Management Plan and the Australian Recycled Water Guidelines.

Chokages

- All wastewater chokes removed and service restored within 8 hours;

Overflows and Odour

- Wastewater overflows to the environment less than one per 100 km of mains per year; and,
- Odour complaints less than 1 per 1000 properties per year.

6. Design Parameters

Investigation and design of wastewater system components is based on the *Manual of Practice: Sewer Design* (1984) and the *Manual of Practice: Sewage Pumping Station Design* (1986). These Manuals were prepared by the former NSW Public Works Department. In order to determine the infrastructure requirements over the planning horizon, the trunk wastewater system was modelled using Haestad Method's SewerCAD software, to determine the performance of the existing and proposed systems under projected hydraulic loads.

The GHD Watewater Infrastructure Planning report (Reference 4) relates to the system components in this DSP.

6.1 Planning and Design Parameters

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

Gravity Mains

- Mannings "n" friction value = 0.014;
- Minimum velocity at Peak Wet Weather Flow (PWWF) = 0.6m/s;

Trunk wastewater pump stations

- Emergency storage = 8 hours @ Average Dry Weather Flow (ADWF), where the ADWF is the average dry weather flow of the pump stations gravity catchment only;
- Duty pump to be capable of matching PWWF inflow;

Rising Mains

- Minimum velocity = 0.75m/s;
- Maximum velocity = 2.0m/s.

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 3 below.

Table 3 Service Areas

Service Areas	Localities Included
Area A	Wardell
Area B	Lennox Head Skennars Head East Ballina 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.
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 for wastewater are contained in Appendix A.

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 wastewater 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.

7.5 Methodology for Determining Developer Charges to be Paid

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

$$\text{Development Charge Payable} = \text{Developer Charge}^{3}\ (\$/\text{ET}) \times \text{ETs}$$

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

[3] 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 sewage production 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 sewage production (see Section 7.5.6).

7.5.4 Historical Sewage Production Method

This is applicable where historical water consumption information is available.

The ET loading will be determined by assessing the historical water consumption and applying an appropriate discharge factor for 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 sewage production (such as a heavy industrial development).

For the calculation of ETs 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.

7.6 Developer Charges

The developer charges determined prior to any agglomeration or cross-subsidy are shown in Table 4. The charges calculated were updated to 2011/12 rates by applying the CPI rate to December 2010 for Sydney (as per updating method in the Guidelines).

Table 4 Developer Charges determined prior to Agglomeration

Development Area	Total Capital Charge per ET ($)	Total ET Growth (ET)	Proportion of Growth (%)	Weighted Capital ($)	Reduction amount ($)	Developer charge (prior to agglomeration or subsidies) ($)	Developer charge with subsidies (prior to agglomeration) ($)
A*	17,727	120	0.9%	160	1,351	16,376	8,486
B	5,715	6814	51.1%	2923	1,351	4,365	4,365
C	13,024	780	5.9%	763	1,351	11,673	11,673
E	7,471	179	1.3%	100	1,351	6,120	6,120
F	4,655	2490	18.7%	870	1,351	3,304	3,304
G	3,738	2939	22.1%	825	1,351	2,387	2,387

* Area A (Wardell) will be subsidised to equal Area B's Developer Charge; see Section 7.7

7.7 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. This final Developer Change includes a subsidy for the Wardell wastewater developer charge of $7891. The subsidy will be achieved by increasing annual wastewater bills by an equivalent amount (around $1 per year)

7.8 Agglomeration of Service Areas

Once the developer 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 5. The charges calculated were updated to 2011/12 rates by applying the CPI rate to December 2010 for Sydney (as per updating method in the Guidelines).

Note that due to the subsidy applied to Area A (Wardell), it will have the same charge as to Areas B and E, though these areas are not technically agglomerated, since agglomeration is to take place prior to reductions and subsidies.

Table 5 Adopted Developer Charges after Agglomeration (2011/12 rates)

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 Developer Charge ($/ET)	Utility Wide Weighted Average Developer Charge per ET ($/ET)	*Subsidies ($/ET)*	Adopted Developer Charge, after subsidies ($/ET)
A	17,727	12,409	120	0.9%	160					7,891	4,410
C	13,024		780	5.9%	763						12,300
Total for Area A & C				6.8%	922	13,651	1,351	12,300		-	
E	7,471	5,230	179	1.3%	100					-	
B	5,715		6814	51.1%	2,923					-	
Total for Areas E & B				52.5%	3,024	5,760	1,351	4,410			4,410
F	4,655	3,258	2490	18.7%	870					-	
G	3,738		2939	22.1%	825					-	
Total for Areas F & G				40.8%	1,695	4,159	1,351	2,808			2,808
Total for all areas				100.00%	5,641		1,351		4,290		
Note Area A is subsidised by $7891 as per Section 7.7											

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. GHD (June 2011), *Ballina Shire Council – Wastewater Infrastructure Planning, Summary of Updates.*
5. Water Directorate (May 2009 Addendum), *Section 64 Determinations of Equivalent Tenements Guidelines.*
6. Department of Energy, Utilities and Sustainability (DEUS) (October 2004), Circular: *Additional Agglomeration Options for Section 64 Development Servicing Plans (DSPs) for Water Supply and Sewerage*.
7. GHD (2011), *Report for Lennox Head Sewage Pump Station 3001 Pump Upgrade Recommendation.*
8. NSW Water Solutions (NSW Public Works Department) (November 2011), *Ballina Shire Council – Ballina Recycled Water Storage & Distribution Systems: Concept Design Report*
9. NSW Water Solutions (NSW Public Works Department) (November 2011), *Ballina Shire Council – Lennox Head Recycled Water Storage & Distribution Systems: Concept Design Report*

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 (2004), *Ballina Shire Council – Water Supply Infrastructure – Development Servicing Plan* (anticipated to be revised in the 2011/12 financial year).
- Rous Water (2003), *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

ADWF	Average Dry Weather Flow
Annual Demand	Total annual sewer loading
BOD	Biochemical oxygen demand. Used as a measure of the 'strength' of wastewater.
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
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/d	Kilolitres per day
kL/a	Kilolitres per annum
LEP	Local Environmental Plan
MEERA	Modern Equivalent Engineering Replacement Asset
ML/d	Megalitres per day
NHMRC	National Health and Medical Research Council
NPV	Net Present Value
OMA	Operation, maintenance and administration (costs)
Peak Day Demand	Highest water consumption on one day in a year
Post 1996 Asset	An Asset that was commissioned by a water utility on or after 1 January 1996 or that is yet to be commissioned

Pre-1996 Asset	An Asset that was commissioned by a water utility before 1 January 1996
PV	Present value. The value now of money, or ETs, in the future.
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
PWWF	Peak Wet Weather Flow
PS	Pumping Station
RWTP	Recycled Water Treatment Plant
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
SS	Suspended solids, or the concentration of particles in wastewater. Used as a measure of the 'strength' of sewage.
TRB	Typical residential bill
WWTP	Wastewater Treatment Plant

11. DSP Areas

Table 6 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[4];
- The extent of existing trunk infrastructure;

Table 6 Figure Index

Figure Number	Scheme	Locality	DSP Area
1	Wastewater	Ballina Shire	All DSP Areas
2	Wastewater	Wardell	DSP Area A
3	Wastewater	Ballina (Area B north)	DSP Area B (north)
4	Wastewater	Ballina (Area B south)	DSP Area B (south)
5	Wastewater	Ballina (Area B west)	DSP Area B (west)
6	Wastewater	Wollongbar Urban Expansion Area	DSP Area C
7	Wastewater	Cumbalum A, Cumbalum B and Ballina Heights	DSP Areas F and G
8	Wastewater	Wollongbar and Alstonville	DSP Area E
9	Recycled	Skennars Head, Lennox Head and Fig Tree Hill	DSP Area B (North)
10	Recycled	Skennars Head, East Ballina, Ballina Island	DSP Area B (South)
11	Recycled	North Ballina, Ballina Island, West Ballina	DSP Area B (West)
12	Recycled	Cumbalum A, Ballina Heights	DSP Area F
13	Recycled	Cumbalum B	DSP Area G

[4] 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

- Pump Stations
- Pump Storage Upgrade
- Waste Water Treatment Plants
- Existing Gravity Mains
- Future Gravity Mains
- Existing Rising Mains
- Cadastre Boundaries

0 100 200 300 400 500
Metres

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

N

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ballina

Ballina Shire Council
BSC Wastewater DSP

Job Number | 22-15241
Revision | 4
Date | 11 MAY 2012

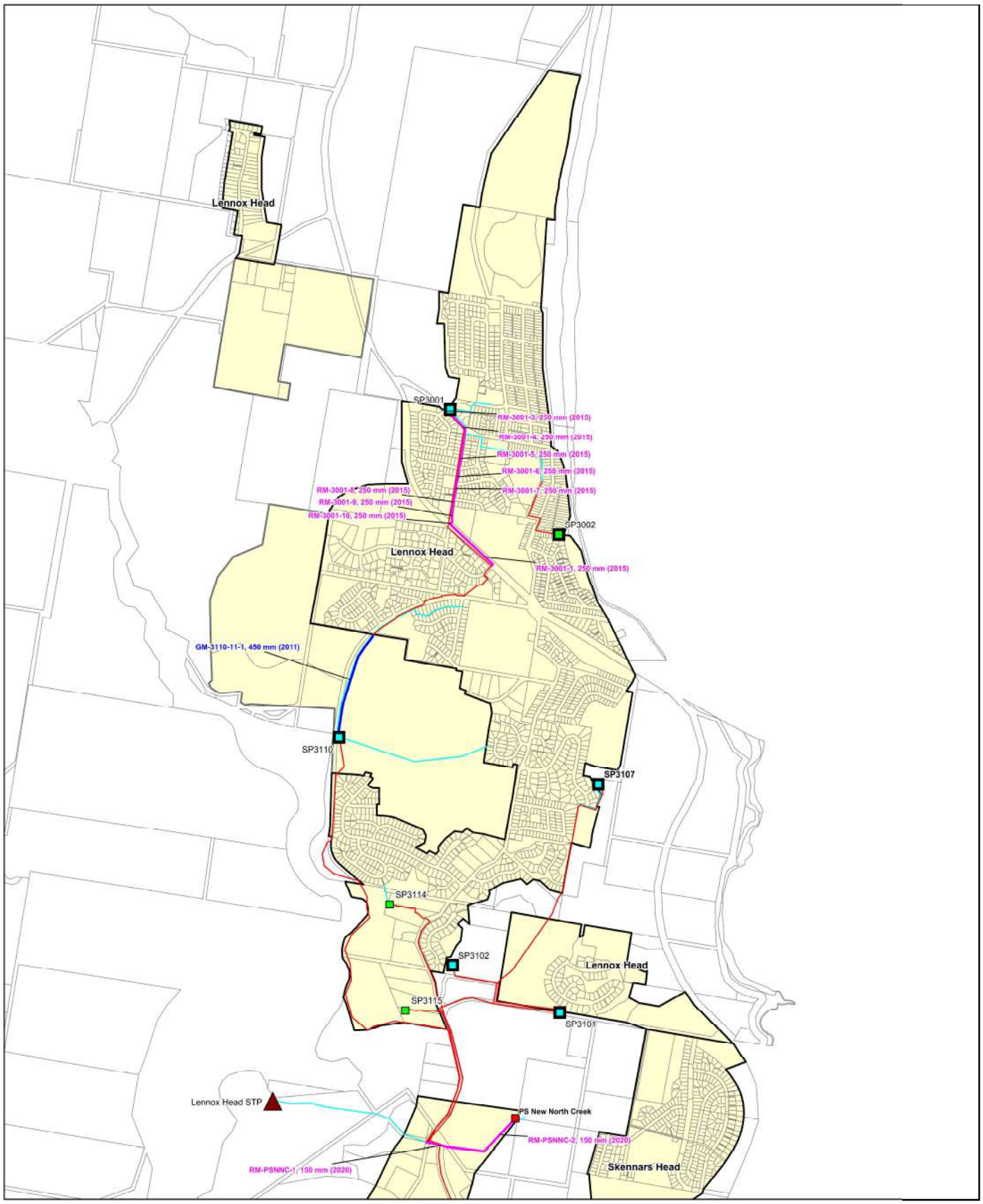
Area A (Wardell)

Figure 2

N:\AU\Toowoomba\Projects\22\15241\GIS\Maps\2215241_22.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: Ballina Shire Council - Cadastre Boundaries (2010). GHD - Service Areas (2010), Capital Works (Gravity Mains, Rising Mains), Pump Stations, Sewerage Treatment Plants. Created by: CM



LEGEND

Recycled Water Treatment Plant
New Pump Station
Pump Station Upgrade
Existing Pump Station
Pump Storage Upgrade
Future Gravity Mains
Existing Gravity Mains
Future Rising Mains
Existing Rising Mains
Cadastre Boundaries

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

N

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Ballina Shire Council
BSC Wastewater DSP

Job Number | 22-15241
Revision | 5
Date | 30 APR 2014

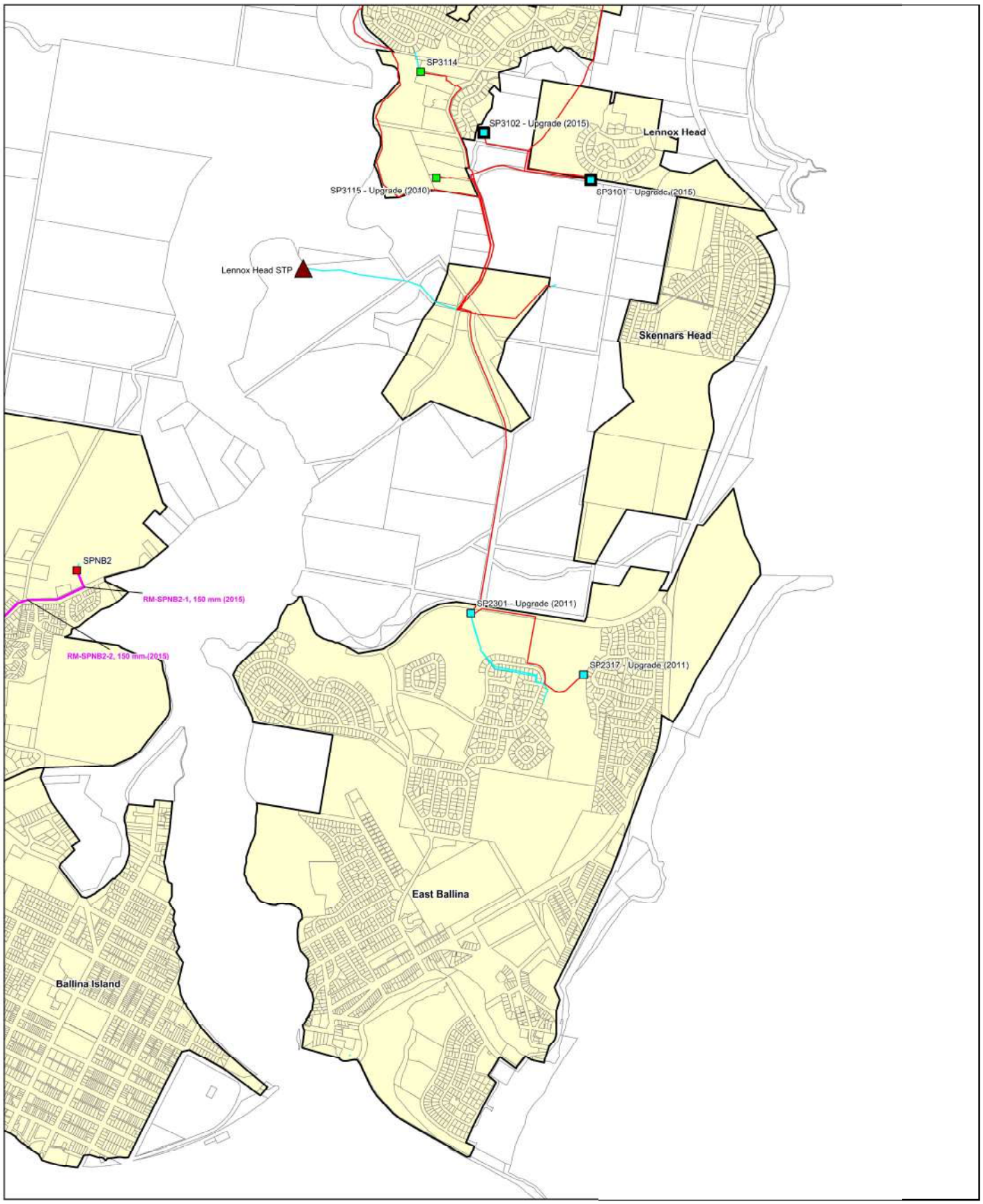
Area B (North)

Figure 3

N:\AU\Toowoomba\Projects\22\15241\GIS\Maps\2215241_28.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: Ballina Shire Council - Cadastre Boundaries (2010). GHD - Service Areas (2010), Capital Works (Gravity Mains, Rising Mains), Pump Stations, Sewerage Treatment Plants. Created by: CM



LEGEND

- Recycled Water Treatment Plant
- New Pump Station
- Pump Station Upgrade
- Existing Pump Station
- Pump Storage Upgrade
- Future Gravity Mains
- Existing Gravity Mains
- Future Rising Mains
- Existing Rising Mains
- Cadastre Boundaries

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

N

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Ballina Shire Council
BSC Wastewater DSP

Job Number | 22-15241
Revision | 5
Date | 30 APR 2014

Area B (South)

Figure 4

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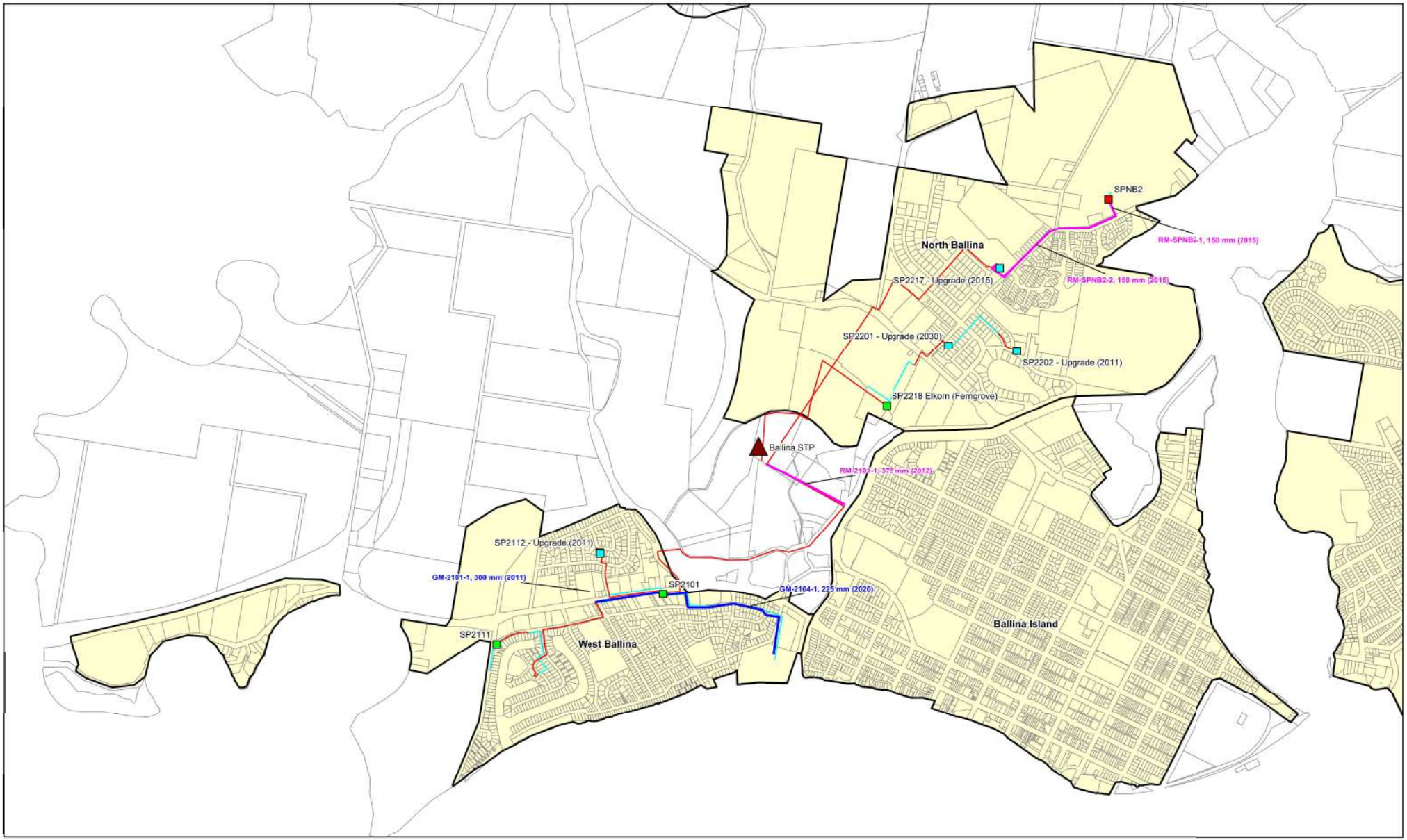
317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: Ballina Shire Council - Cadastre Boundaries (2010). GHD - Service Areas (2010), Capital Works (Gravity Mains, Rising Mains), Pump Stations, Sewerage Treatment Plants. Created by: CM



1:20,000 (at A3)

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

N

LEGEND

- Recycled Water Treatment Plant
- New Pump Station
- Pump Station Upgrade
- Existing Pump Station
- Pump Storage Upgrade
- Future Gravity Mains
- Existing Gravity Mains
- Future Rising Mains
- Existing Rising Mains
- Cadastre Boundaries

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Ballina Shire Council
BSC Wastewater DSP

Job Number 22-15241
Revision 5
Date 30 APR 2014

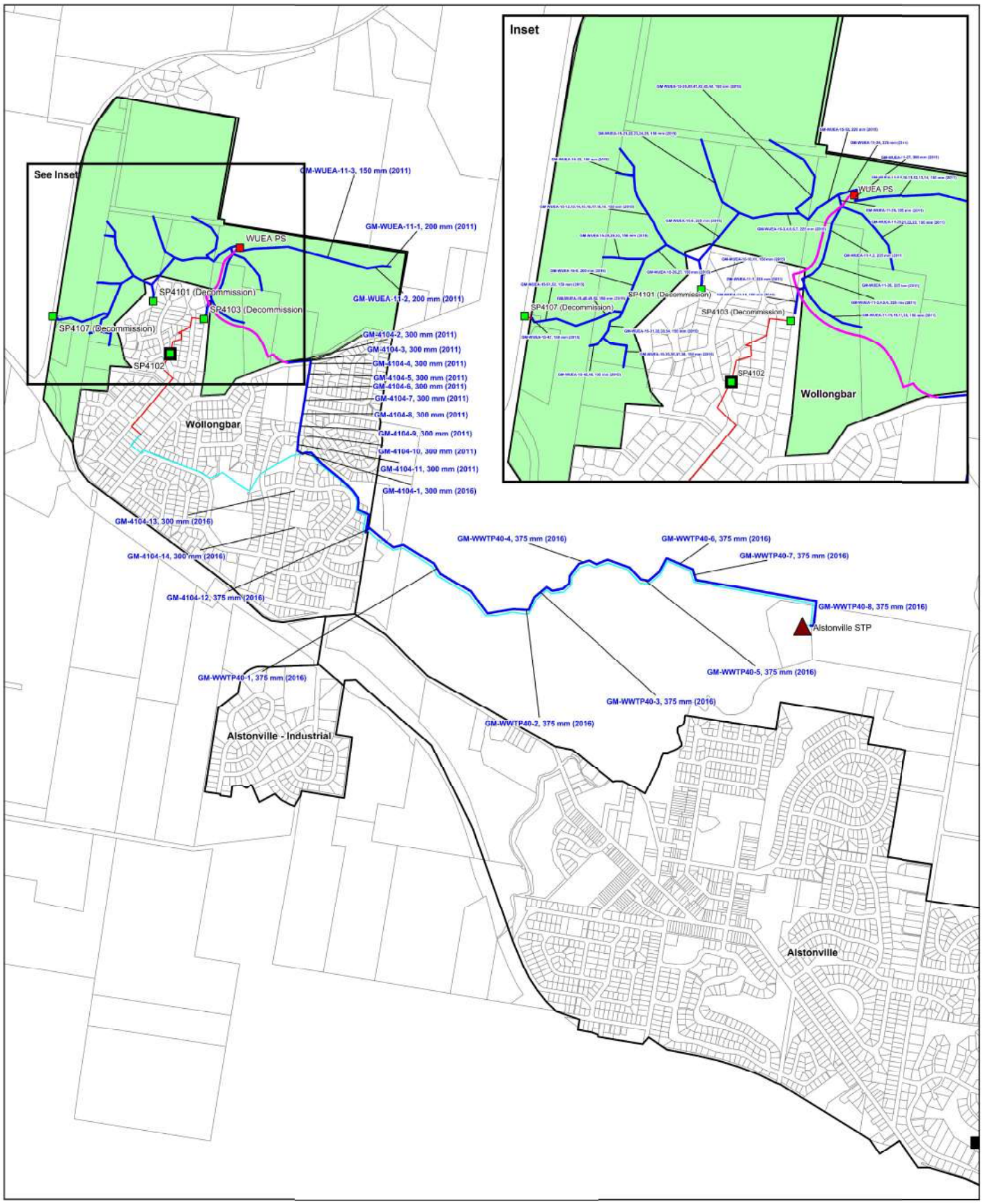
Area B (West)

Figure 5

N:\AU\Toowoomba\Projects\22\15241\GIS\Maps\2215241_30.wor

Data source: Ballina Shire Council (2010) - Cadastre boundary, Existing Gravity Mains, Existing Rising Mains, Existing Pump Station. GHD - New Pump Station, Pump Station Upgrade, Existing Pump Station,Pump Storage Upgrade, Future Gravity Mains.

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

- Wastewater Treatment Plant
- New Pump Station
- Pump Station Upgrade
- Existing Pump Station
- Pump Storage Upgrade
- Future Rising Mains
- Existing Rising Mains
- Future Gravity Mains
- Existing Gravity Mains
- Area C

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
BSC Wastewater DSP

Job Number 22-15241
Revision 5
Date 30 APR 2014

Area C (Wollongbar UEA)

Figure 6

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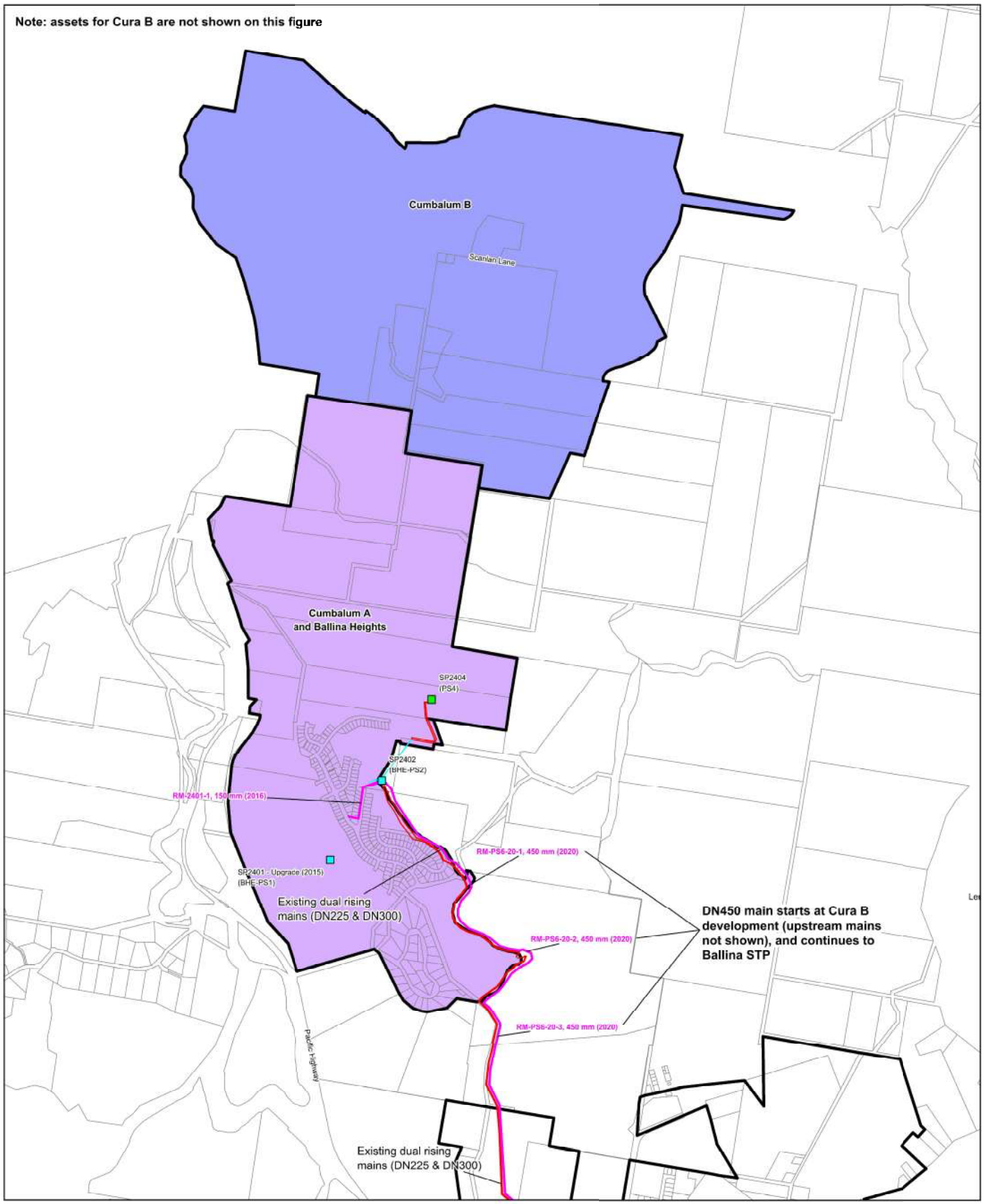
317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: Ballina Shire Council - Cadastre Boundaries (2010). GHD - Service Areas (2010), Capital Works (Gravity Mains, Rising Mains), Pump Stations, Sewerage Treatment Plants. Created by: CM



LEGEND

- New Pump Station
- Pump Station Upgrade
- Existing Pump Station
- Existing Gravity Mains
- Existing Rising Mains
- Future Rising Mains
- Area F
- Area G
- Cadastre Boundaries

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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Ballina Shire Council
BSC Wastewater DSP

Job Number 22-15241
Revision 5
Date 30 APR 2014

Area F and G (Cumbalum A and Ballina Heights and Cumbalum B)

Figure 7

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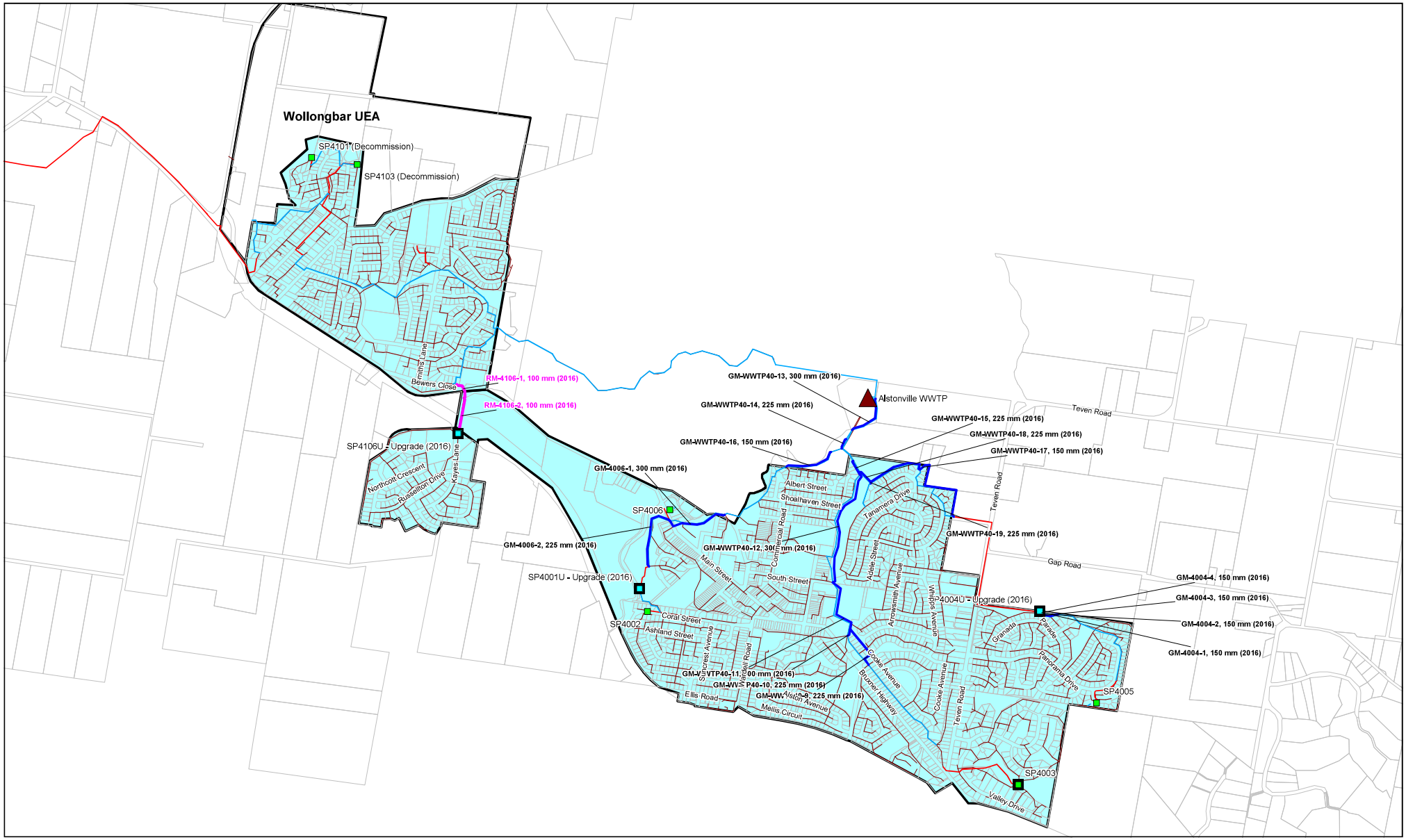
317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: Ballina Shire Council - Cadastre Boundaries (2010). GHD - Service Areas (2010), Capital Works (Gravity Mains, Rising Mains), Pump Stations, Sewerage Treatment Plants. Created by: CM



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0 150 300 450 600

Metres

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

LEGEND

- Wastewater Treatment Plant
- Pump Station Upgrade
- Existing Pump Station
- Pump Storage Upgrade
- Future Gravity Mains
- Existing Gravity Mains
- Future Rising Mains
- Existing Rising Mains
- Gravity Reticulation
- Cadastre Boundaries
- Area E

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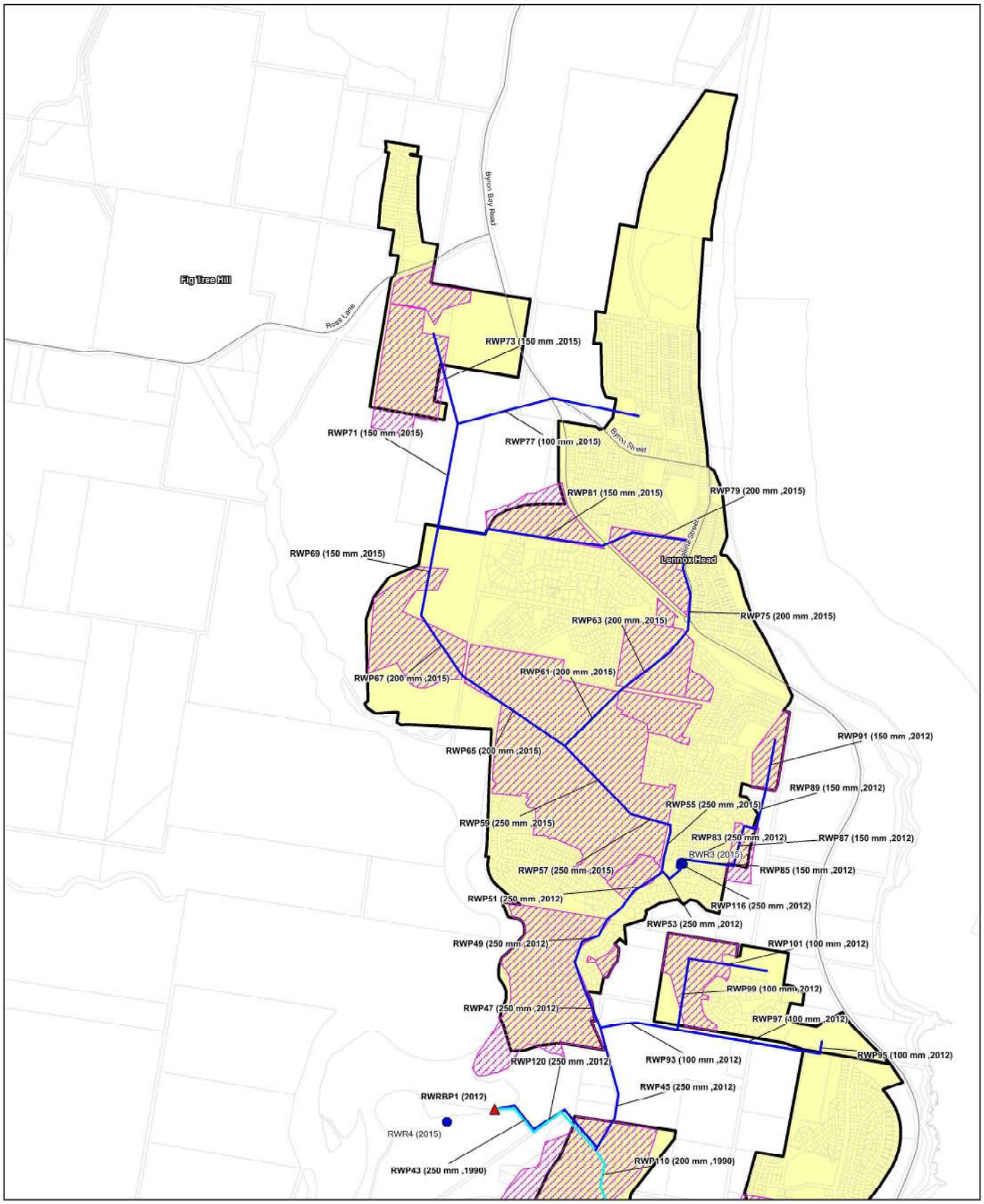
Ballina Shire Council
BSC Wastewater DSP

Job Number 22-15241
Revision 5
Date 30 APR 2014

DSP Area E (Alstonville and Wollongbar) Figure 8

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
Pumps
Reservoirs
Recycled Water Pipe Network
Existing
Future
Recycled Water Development Areas
Urban Dual Reticulation

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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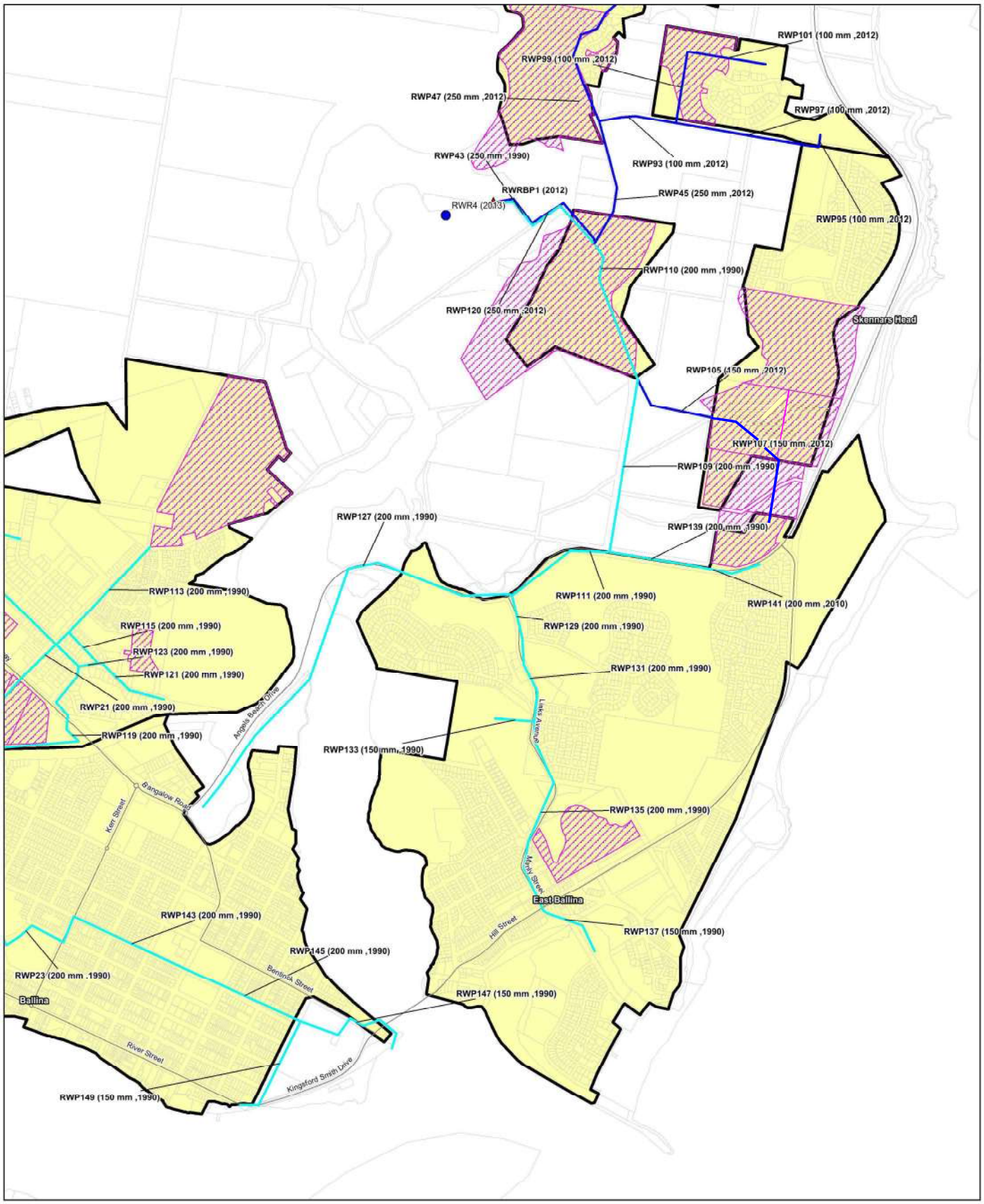
Ballina Shire Council
Development Servicing Plan - Recycled Water

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

DSP Area B - North

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



LEGEND

DSP Area
Cadastral Boundaries
Major Roads
Pumps
Reservoirs
Recycled Water Pipe Network
Existing
Future
Recycled Water Development Areas
Urban Dual Reticulation

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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Ballina Shire Council
Development Servicing Plan - Recycled Water

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

DSP Area B - South

Figure 10

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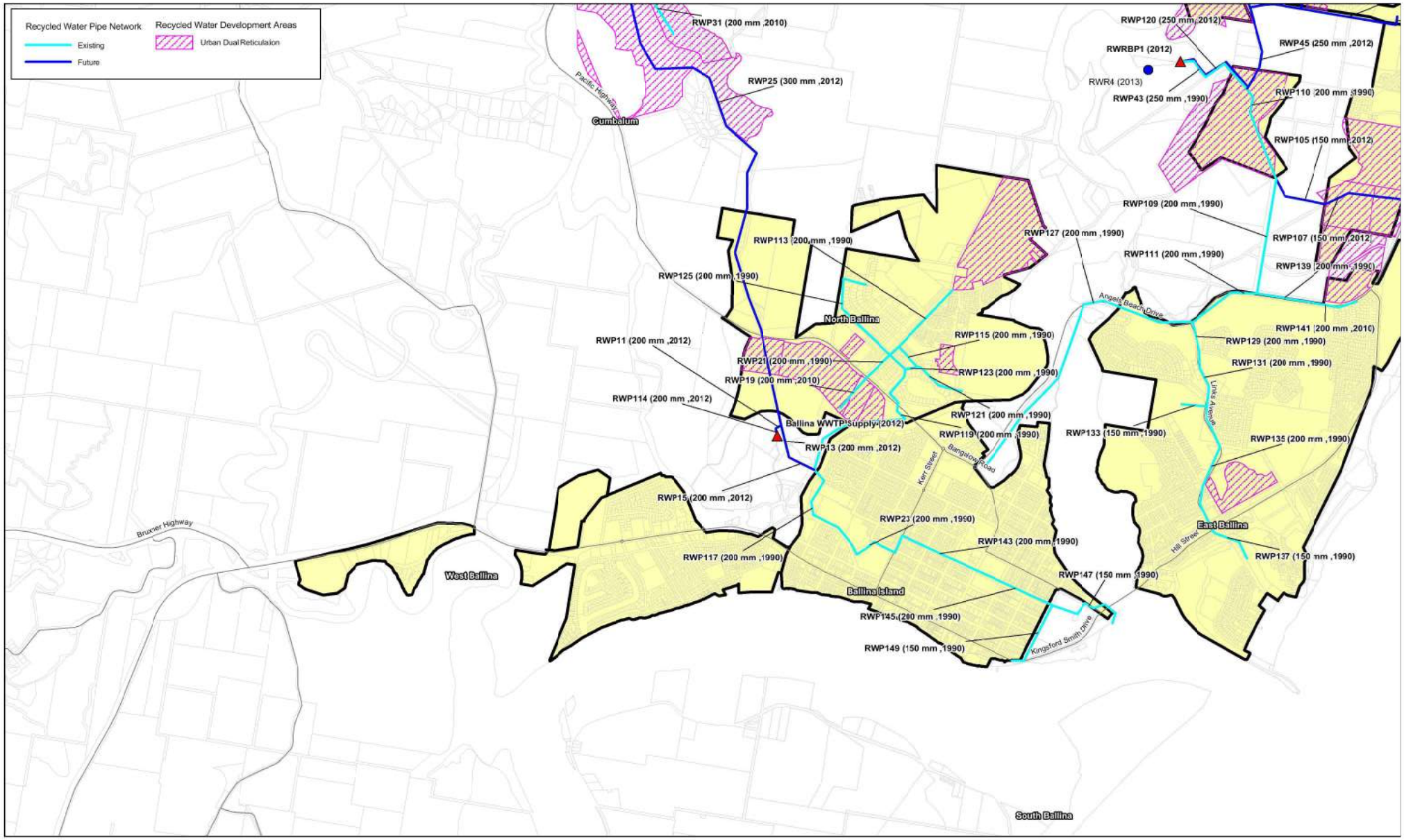
317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: BSC - DSP Areas, Cadastral Boundaries, Pumps, Reservoirs, Recycled Water Pipe Network (2012). Navteq - Major Roads, Place Names (2011). Created by: CM



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0 0.5 1 1.5

Kilometres

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

N

LEGEND

- DSP Area
- Cadastral Boundaries
- Major Roads
- Pumps
- Reservoirs

CLIENTS | PEOPLE | PERFORMANCE

Ballina Shire Council
Development Servicing Plan - Recycled Water

Job Number 22-15470
Revision 1
Date 11 MAY 2012

DSP Area B - West

Figure 11

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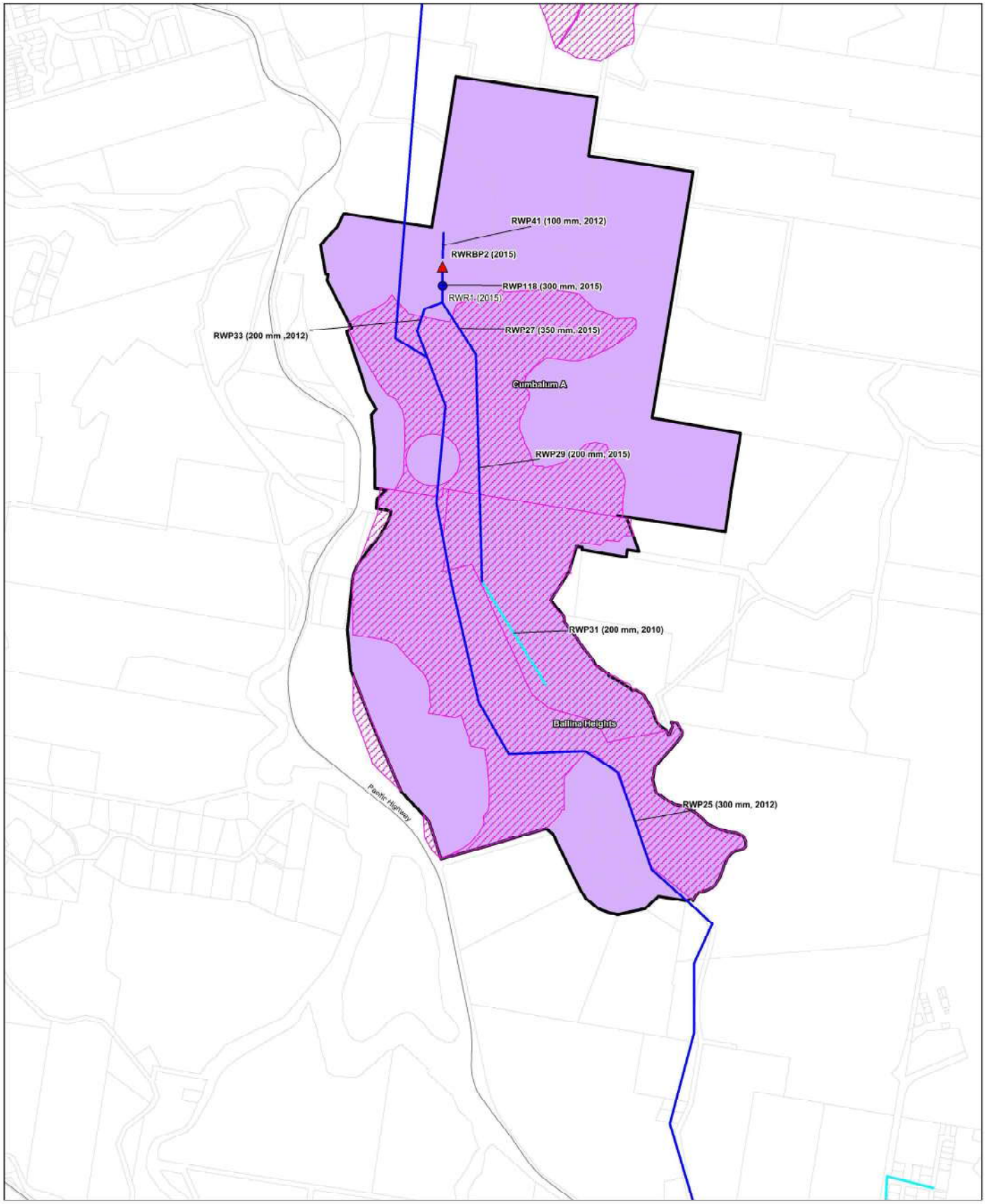
Data source: BSC - DSP Areas, Cadastral Boundaries, Recycled Water Pipe Network, Pumps, Reservoirs (2012). Navteq - Major Roads, Place Names (2011). Created by: CM

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
Pumps
Reservoirs
Recycled Water Pipe Network
Existing
Future
Recycled Water Development Areas
Urban Dual Reticulation

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 - Recycled Water

DSP Area F
Cumbalum A, Ballina Heights

Job Number 22-15170
Revision 2
Date 30 APR 2014

Figure 12

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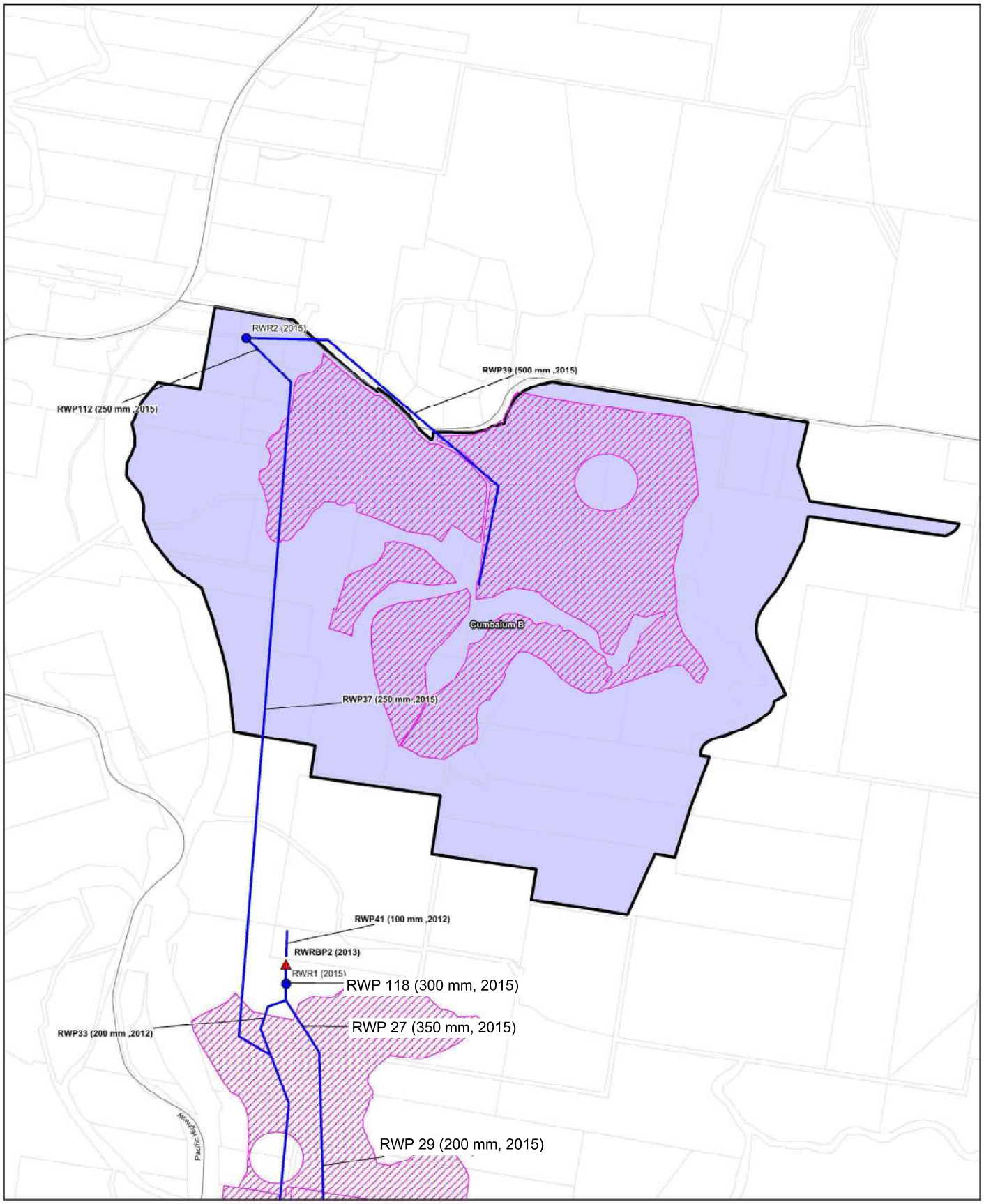
317 River Street Ballina NSW 2478 Australia T 61 2 6620 6500 F 61 2 6620 6501 E bnkmail@ghd.com W www.ghd.com.au

Data source: BSC - DSP Areas, Cadastral Boundaries, Pumps, Reservoirs, Recycled Water Pipe Network (2012). Navteq - Major Roads, Place Names (2011). Created by: CM



LEGEND

DSP Area
Cadastral Boundaries
Major Roads
Pumps
Reservoirs
Recycled Water Pipe Network
Existing
Future
Recycled Water Development Areas
Urban Dual Reticulation

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

N

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CLIENTS | PEOPLE | PERFORMANCE

Ballina Shire Council
Development Servicing Plan - Recycled Water

Job Number 22-15470
Revision 1
Date 11 MAY 2012

DSP Area G: Cumbalum B

Figure 13

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

Data source: BSC - DSP Areas, Cadastral Boundaries, Pumps, Reservoirs, Recycled Water Pipe Network (2012). Navteq - Major Roads, Place Names (2011). Created by: CM

Appendix A

Capital Charge Calculation

Extracted spreadsheets from calculation process

Capital Charge per ET, Summary of Calculations

		Future Works				Existing Works				Recycled	Total Capital
	Development Area	Gravity Mains	Rising Mains	SPS	STWs	Gravity Mains	Rising Mains	SPS	STWs	Infrastructure	cost per ET
Wardell	A	76	-	-	755	-	2,590	2,607	11,699	-	**17,727**
Ballina Island, EB, WB, NB, Skenners Head, Lennox Head	B	39	40	289	1,118	235	823	288	2,153	730	**5,715**
WUEA	C	4,696	208	2,963	40	-	-	716	4,401	-	**13,024**
Alst. Industr, Alstonville, Wollongbar	F	-	425	92	2,509	15	624	160	-	829	**4,655**
Cura A, Ballina Heights	E	203	15	633	40	1,242	742	196	4,401	-	**7,471**
Cura B	G	-	475	-	2,509	4	-	-	-	750	**3,738**

30% agglomeration rules applied

With agglomeration

Reduction amount: $ 1,351

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 Developer Charge ($/ET)	Utility Wide Weighted Average Developer Charge per ET ($/ET)	*Subsidies ** ($/ET)	Adopted Developer Charge, after subsidies ($/ET)	Area
A	**17,727**	*12,409*	120	0.9%	160					*7,891*	**4,410**	**Area A**
C	**13,024**		780	5.9%	763						**12,300**	**Area C**
Total for Area A & C				**6.8%**	**922**	**13,651**	**1,351**	**12,300**		-		
E	**7,471**	*5,230*	179	1.3%	100					-		
B	**5,715**		6814	51.1%	2,923					-		
Total for Areas E & B				**52.5%**	**3,024**	**5,760**	**1,351**	**4,410**			**4,410**	**Areas E & B**
F	**4,655**	*3,258*	2490	18.7%	870					-		
G	**3,738**		2939	22.1%	825					-		
Total for Areas F & G				**40.8%**	**1,695**	**4,159**	**1,351**	**2,808**			**2,808**	**Areas F & G**
Total for all areas				**100.00%**	**5,641**		**1,351**		**4,290**			

* Note Area A is subsidised by $7891 as per Section 7.7

Reduction Amount by NPV of annual bills method

7%

Constant projected annual charges and OMA costs

Annual Sewerage Charges (A)	630	$ per ET	= 2011/12 Access charge
Annual Sewerage OMA Cost (B)	518	$ per ET	= $8.88 m (2011/12 actual OMA) / 17,162 (2011/12 ET projection)
Future operating profits ('C)	112	$ per ET	

Year	Total ETs	New ETs per year	PV (New ETs) (over 30 years @ 7%)	Cumulative New ETs	Net Operating Results for New ETs ($'000)	PV (future operating profits) from new ETs over 30 years @ 7% ($'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	16,351						
2011/12	17,162	811	8,282.80	811	91	11,186.38	**1,351**
2012/13	18,013	851		1,663	187		
2013/14	18,907	894		2,556	288		
2014/15	19,845	938		3,494	393		
2015/16	20,829	984		4,479	504		
2016/17	21,536	706		5,185	583		
2017/18	22,266	730		5,915	665		
2018/19	23,021	755		6,670	750		
2019/20	23,801	781		7,451	838		
2020/21	24,608	807		8,258	929		
2021/22	25,139	530		8,788	989		
2022/23	25,680	542		9,329	1,049		
2023/24	26,233	553		9,883	1,112		
2024/25	26,799	565		10,448	1,175		
2025/26	27,376	577		11,025	1,240		
2026/27	27,859	483		11,508	1,295		
2027/28	28,351	492		12,000	1,350		
2028/29	28,852	501		12,501	1,406		
2029/30	29,361	509		13,010	1,464		
2030/31	29,879	518		13,529	1,522		
2031/32				13,529	1,522		
2032/33				13,529	1,522		
2033/34				13,529	1,522		
2034/35				13,529	1,522		
2035/36				13,529	1,522		
2036/37				13,529	1,522		
2037/38				13,529	1,522		
2038/39				13,529	1,522		
2039/40				13,529	1,522		
2040/41				13,529	1,522		
2041/42				13,529	1,522		

Basis of Capacity and Full Take-up Year, including Population Projections

Inc. Areas	Area	STP Catchment	Correpsonding Capacity of System (sum of % of plant capacity noted)	Year when capacity is taken up, or 2040 (default 30 years)	Population projection Service area	2010 ET	2015 ET	2020 ET	2025 ET	2030 ET	*Growth*
Wardell	A	Wardell (100%)	507	2025	A	409	447	489	509	529	*120*
Ballina Island, EB, WB, NB, Skenners Head, Lennox Head	B	Lennox Head STP (100%) and Ballina RWF (50%)	18,220	2030	B	11326	13282	15377	16959	18140	*6814*
WUEA	C	Alstonville STP (15% of STP capacity)	730	2030	C	0	195	390	585	780	*780*
Alst. Industr, Alstonville, Wollongbar	E	Alstonville STP (85% of STP capacity)	4,135	2030	E	3943	3975	4045	4078	4122	*179*
Cura A, Ballina Heights	F	Ballina RWF (25% of capacity)	3,272	2030	F	672	2254	3162	3162	3162	*2490*
Cura B	G	Ballina RWF (25% of capacity)	3,272	2030	G	207	676	1145	2083	3146	*2939*
					Total	**16,351**	**20,829**	**24,608**	**27,376**	**29,879**	***13,322***

Plant capacity:	ET	Basis
Ballina	13087	Upgrade/design basis: 1,832 ML/year, 140 kL/a/ET, 70% run time
Lennox Head STP	11676	2011 DSP/Planning Report Planning basis for upgrades
Alstonville STP	4865	2011 DSP/Planning Report Planning basis for upgrades
Wardell	507	2011 DSP/Planning Report Planning basis for upgrades

Ballina Plant figures:					
Scenario	Flow Rate	Membrane up time	kl/a	kL/a/ET	ET
Current	63	70%	1,390,738	140	9933.84
Ultimate	83	70%	1,832,242	140	13087.44

DSP - Existing Gravity Mains

Area	STP Catchment	Correpsonding Capacity of System (sum of % of plant capacity noted)	Year when capacity is taken up, or 2040 (default 30 years)	Capital Charge per ET
A	Wardell (100%)	507	2025	0
B	Lennox Head STP (100%) and Ballina RWF (50%)	18,220	2030	235
C	Alstonville STP (15% of STP capacity)	730	2030	0
E	Alstonville STP (85% of STP capacity)	4,135	2030	1,242
F	Ballina RWF (25% of capacity)	3,272	2030	15
G	Ballina RWF (25% of capacity)	3,272	2030	4

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	Area	PS Catchment	Diameter (mm)	Length (Unified) (m)	Year of Construction	Material	Relevant material rate to apply	Total Rate (2003$/m)	Total Rate (2010$/m)	Capital Cost (2010$)	Capital Cost (2011/12$ = 2010 price x 1.03)	Pre or Post 1996 Asset	Discount Rate	Effective Year of Commissioning (Financial year starting)*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
MH-229-Diversion Link	B	MH-229	304.8	26.5	2010	unplasticised poly vinyl chloride	Relining	313	438	11,612	11,961	Post	7%	1995	4,335	18,220	$ 0.24	2030	36	2.58	0.61
P-1006	B	MH-1169	225	26.5	1975	Vitrious Clay	Relining	238	333	8,830	9,095	Pre	3%	1995	16,426	18,220	$ 0.90	2030	36	1.60	1.44
P-1007	B	MH-1170	225	34.5	2010	unplasticised poly vinyl chloride	Relining	238	333	11,495	11,840	Post	7%	1995	4,291	18,220	$ 0.24	2030	36	2.58	0.61
P-1008	B	MH-1171	381	10	1995	unplasticised poly vinyl chloride	Relining	405	567	5,670	5,840	Pre	3%	1995	5,840	18,220	$ 0.32	2030	36	1.60	0.51
P-1057	B	2173	304.8	4	2010	unplasticised poly vinyl chloride	Relining	313	438	1,753	1,805	Post	7%	1995	654	18,220	$ 0.04	2030	36	2.58	0.09
P-1059	B	MH-272	304.8	17	2010	unplasticised poly vinyl chloride	Relining	313	438	7,449	7,673	Post	7%	1995	2,781	18,220	$ 0.15	2030	36	2.58	0.39
P-1084a	B	MH-NB4	225	152.5	1975	Vitrious Clay	Relining	238	333	50,813	52,337	Pre	3%	1995	94,527	18,220	$ 5.19	2030	36	1.60	8.31
P-1095a	F	MH-Cura A SP2403	254	48	2010	unplasticised poly vinyl chloride	Relining	238	333	15,994	16,473	Post	7%	1995	5,971	3,272	$ 1.82	2030	36	2.58	4.71
P-1115	B	MH-864	304.8	39.5	1980	Vitrious Clay	Relining	313	438	17,309	17,828	Pre	3%	1995	27,776	18,220	$ 1.52	2030	36	1.60	2.44
P-1116	B	MH-1324	304.8	10	1980	Cast Iron	DICL	313	438	4,382	4,513	Pre	3%	1995	7,032	18,220	$ 0.39	2030	36	1.60	0.62
P-1117	B	MH-861	304.8	83	1980	Vitrious Clay	Relining	313	438	36,371	37,462	Pre	3%	1995	58,364	18,220	$ 3.20	2030	36	1.60	5.13
P-1134	F	MH-Cura A SP2402	381	33	1995	unplasticised poly vinyl chloride	Relining	405	567	18,711	19,272	Pre	3%	1995	19,272	3,272	$ 5.89	2030	36	1.60	9.43
P-1144	B	MH-1256	225	32.5	1975	Vitrious Clay	Relining	238	333	10,829	11,154	Pre	3%	1995	20,145	18,220	$ 1.11	2030	36	1.60	1.77
P-1145	B	MH-1257	225	246	1975	Vitrious Clay	Relining	238	333	81,967	84,426	Pre	3%	1995	152,483	18,220	$ 8.37	2030	36	1.60	13.40
P-235	B	MH-271	304.8	73	1994	Vitrious Clay	DICL	313	438	31,989	32,948	Pre	3%	1995	33,937	18,220	$ 1.86	2030	36	1.60	2.98
P-236	B	B8	304.8	73.5	1994	Vitrious Clay	DICL	313	438	32,208	33,174	Pre	3%	1995	34,169	18,220	$ 1.88	2030	36	1.60	3.00
P-237	B	MH-273	304.8	41	1994	Vitrious Clay	Relining	313	438	17,966	18,505	Pre	3%	1995	19,060	18,220	$ 1.05	2030	36	1.60	1.67
P-251	B	MH-288	304.8	88	1980	Vitrious Clay	Relining	313	438	38,552	39,718	Pre	3%	1995	61,880	18,220	$ 3.40	2030	36	1.60	5.44
P-252	B	MH-289	304.8	29.5	1980	Vitrious Clay	Relining	313	438	12,927	13,315	Pre	3%	1995	20,744	18,220	$ 1.14	2030	36	1.60	1.82
P-253	B	MH-290	304.8	37.5	1980	Vitrious Clay	Relining	313	438	16,433	16,925	Pre	3%	1995	26,369	18,220	$ 1.45	2030	36	1.60	2.32
P-254	B	MH-293	304.8	40.5	1980	Vitrious Clay	Relining	313	438	17,747	18,280	Pre	3%	1995	28,479	18,220	$ 1.56	2030	36	1.60	2.50
P-256	B	MH-295	304.8	53.5	1980	Vitrious Clay	Relining	313	438	23,444	24,147	Pre	3%	1995	37,620	18,220	$ 2.06	2030	36	1.60	3.31
P-258	B	MH-297	225	71.5	1980	Vitrious Clay	Relining	238	333	23,824	24,539	Pre	3%	1995	38,230	18,220	$ 2.10	2030	36	1.60	3.36
P-259	B	MH-298	225	81	1980	Vitrious Clay	Relining	238	333	26,989	27,799	Pre	3%	1995	43,310	18,220	$ 2.38	2030	36	1.60	3.81
P-260	B	MH-299	225	79.5	1980	Vitrious Clay	Relining	238	333	26,489	27,284	Pre	3%	1995	42,508	18,220	$ 2.33	2030	36	1.60	3.74
P-261	B	MH-300	225	60	1980	Vitrious Clay	Relining	238	333	19,992	20,592	Pre	3%	1995	32,081	18,220	$ 1.76	2030	36	1.60	2.82
P-262	B	MH-301	225	72	1980	Vitrious Clay	Relining	238	333	23,990	24,710	Pre	3%	1995	38,498	18,220	$ 2.11	2030	36	1.60	3.38
P-274	B	MH-314	304.8	30	1994	Vitrious Clay	Relining	313	438	13,146	13,540	Pre	3%	1995	13,947	18,220	$ 0.77	2030	36	1.60	1.23
P-275	B	MH-315	304.8	67.5	1994	Vitrious Clay	Relining	313	438	29,579	30,466	Pre	3%	1995	31,380	18,220	$ 1.72	2030	36	1.60	2.76
P-276	B	MH-316	304.8	48.5	1994	Vitrious Clay	Relining	313	438	21,253	21,890	Pre	3%	1995	22,547	18,220	$ 1.24	2030	36	1.60	1.98
P-277	B	MH-317	304.8	66	1994	Vitrious Clay	Relining	313	438	28,921	29,789	Pre	3%	1995	30,683	18,220	$ 1.68	2030	36	1.60	2.70
P-278	B	MH-312	304.8	92.5	1994	Vitrious Clay	Relining	313	438	40,534	41,750	Pre	3%	1995	43,002	18,220	$ 2.36	2030	36	1.60	3.78
P-498	B	MH-547	304.8	63.5	1979	Vitrious Clay	DICL	313	438	27,826	28,660	Pre	3%	1995	45,992	18,220	$ 2.52	2030	36	1.60	4.04
P-567	B	MH-546	304.8	16	1979	Vitrious Clay	DICL	313	438	7,011	7,222	Pre	3%	1995	11,588	18,220	$ 0.64	2030	36	1.60	1.02
P-602	B	MH-133	304.8	81	1979	Vitrious Clay	DICL	313	438	35,494	36,559	Pre	3%	1995	58,667	18,220	$ 3.22	2030	36	1.60	5.15
P-603	B	MH-592	304.8	82.5	1979	Vitrious Clay	DICL	313	438	36,152	37,236	Pre	3%	1995	59,753	18,220	$ 3.28	2030	36	1.60	5.25
P-604	B	MH-593	304.8	76.5	1979	Vitrious Clay	DICL	313	438	33,522	34,528	Pre	3%	1995	55,407	18,220	$ 3.04	2030	36	1.60	4.87
P-605	B	MH-594	304.8	76.5	1979	Vitrious Clay	DICL	313	438	33,522	34,528	Pre	3%	1995	55,407	18,220	$ 3.04	2030	36	1.60	4.87
P-606	B	MH-116	304.8	44.5	1979	Vitrious Clay	DICL	313	438	19,500	20,085	Pre	3%	1995	32,230	18,220	$ 1.77	2030	36	1.60	2.83
P-718	B	MH-291	304.8	30	1980	Vitrious Clay	Relining	313	438	13,146	13,540	Pre	3%	1995	21,095	18,220	$ 1.16	2030	36	1.60	1.85
P-720	B	MH-296	304.8	83.5	1980	Vitrious Clay	Relining	313	438	36,590	37,687	Pre	3%	1995	58,716	18,220	$ 3.22	2030	36	1.60	5.16
P-721	B	MH-682	304.8	36	1980	Vitrious Clay	Relining	313	438	15,775	16,248	Pre	3%	1995	25,315	18,220	$ 1.39	2030	36	1.60	2.22
P-722	B	MH-294	304.8	35.5	1980	Vitrious Clay	Relining	313	438	15,556	16,023	Pre	3%	1995	24,963	18,220	$ 1.37	2030	36	1.60	2.19
P-723	B	MH-663	304.8	74	1980	Vitrious Clay	Relining	313	438	32,427	33,400	Pre	3%	1995	52,035	18,220	$ 2.86	2030	36	1.60	4.57
P-724	B	MH-292	304.8	86	1980	Vitrious Clay	Relining	313	438	37,685	38,816	Pre	3%	1995	60,474	18,220	$ 3.32	2030	36	1.60	5.31
P-738	B	MH-313	304.8	12.5	1994	Vitrious Clay	Relining	313	438	5,478	5,642	Pre	3%	1995	5,811	18,220	$ 0.32	2030	36	1.60	0.51
P-739	B	MH-673	304.8	99.5	1994	Vitrious Clay	Relining	313	438	43,601	44,909	Pre	3%	1995	46,256	18,220	$ 2.54	2030	36	1.60	4.06
P-740	B	MH-674	304.8	115.5	1994	Vitrious Clay	Relining	313	438	50,612	52,130	Pre	3%	1995	53,694	18,220	$ 2.95	2030	36	1.60	4.72
P-741	B	MH-270	304.8	102	1994	Vitrious Clay	DICL	313	438	44,696	46,037	Pre	3%	1995	47,418	18,220	$ 2.60	2030	36	1.60	4.17
P-742	B	MH-675	304.8	69.5	1994	Vitrious Clay	DICL	313	438	30,455	31,369	Pre	3%	1995	32,310	18,220	$ 1.77	2030	36	1.60	2.84
P-743	B	MH-269	304.8	116.5	1994	Vitrious Clay	DICL	313	438	51,050	52,582	Pre	3%	1995	54,159	18,220	$ 2.97	2030	36	1.60	4.76
P-744	B	MH-676	304.8	87	1994	Vitrious Clay	DICL	313	438	38,123	39,267	Pre	3%	1995	40,445	18,220	$ 2.22	2030	36	1.60	3.55
P-745	B	MH-677	304.8	85	1994	Vitrious Clay	DICL	313	438	37,247	38,364	Pre	3%	1995	39,515	18,220	$ 2.17	2030	36	1.60	3.47
P-746	B	MH-678	304.8	28.5	1994	Vitrious Clay	DICL	313	438	12,489	12,863	Pre	3%	1995	13,249	18,220	$ 0.73	2030	36	1.60	1.16
P-809	B	MH-717	381	11	1986	Vitrious Clay	DICL	405	567	6,237	6,424	Pre	3%	1995	8,382	18,220	$ 0.46	2030	36	1.60	0.74
P-832	B	MH-1124	762	929	2009	Reinforced Concrete Pipe	Relining	870	1218	1,131,522	1,165,468	Post	7%	1995	451,988	18,220	$ 24.81	2030	36	2.58	64.03
P-1086a	B	MH-SP3115-1	225	8.5	2010		DICL	238	333	2,832	2,917	Post	7%	1995	1,057	18,220	$ 0.06	2030	36	2.58	0.15
P-1093a	F	MH-Cura A BHEPS3	304.8	9.5	2010		DICL	313	438	4,163	4,288	Post	7%	1995	1,554	3,272	$ 0.48	2030	36	2.58	1.23
P-1097a	G	MH-Cura B. PS10 Defered North	304.8	13.5	2010		DICL	313	438	5,916	6,093	Post	7%	1995	2,208	3,272	$ 0.68	2030	36	2.58	1.74
P-1098a	G	MH-Cura B PS11	225	10	2010		DICL	238	333	3,332	3,432	Post	7%	1995	1,244	3,272	$ 0.38	2030	36	2.58	0.98
P-1100a	G	MH-Cura B PS 8	304.8	10.5	2010		DICL	313	438	4,601	4,739	Post	7%	1995	1,718	3,272	$ 0.53	2030	36	2.58	1.36
P-1101a	B	MH-1330	225	98.5	2010		DICL	238	333	32,820	33,805	Post	7%	1995	12,252	18,220	$ 0.67	2030	36	2.58	1.74
P-1102a	B	MH-1230	304.8	46.5	2010		DICL	313	438	20,376	20,988	Post	7%	1995	7,607	18,220	$ 0.42	2030	36	2.58	1.08
P-1107a	B	MH-1236	225	33	2010		DICL	238	333	10,996	11,325	Post	7%	1995	4,105	18,220	$ 0.23	2030	36	2.58	0.58
P-237	E	MH-813	304.8	19.5	1991	Vitrious Clay	Relining	313	438	8,545	8,801	Pre	3%	1995	9,906	4,135	$ 2.40	2030	36	1.60	3.83
P-238	E	MH-815	304.8	32.5	1991	Vitrious Clay	Relining	313	438	14,242	14,669	Pre	3%	1995	16,510	4,135	$ 3.99	2030	36	1.60	6.39
P-239	E	MH-816	304.8	44.5	1991	Vitrious Clay	Relining	313	438	19,500	20,085	Pre	3%	1995	22,606	4,135	$ 5.47	2030	36	1.60	8.75
P-240	E	MH-817	304.8	146.5	1991	Vitrious Clay	Relining	313	438	64,196	66,122	Pre	3%	1995	74,421	4,135	$ 18.00	2030	36	1.60	28.81
P-241	E	MH-818	304.8	43.5	1991	Vitrious Clay	Relining	313	438	19,062	19,634	Pre	3%	1995	22,098	4,135	$ 5.34	2030	36	1.60	8.55
P-242	E	MH-819	304.8	156	1991	Vitrious Clay	Relining	313	438	69,236	71,313	Pre	3%	1995	80,263	4,135	$ 19.41	2030	36	1.60	31.07
P-243	E	MH-820	304.8	116	1991	Vitrious Clay	Relining	313	438	50,831	52,356	Pre	3%	1995	58,927	4,135	$ 14.25	2030	36	1.60	22.81
P-244	E	MH-821	304.8	43.5	1991	Vitrious Clay	Relining	313	438	19,062	19,634	Pre	3%	1995	22,098	4,135	$ 5.34	2030	36	1.60	8.55
P-245	E	MH-822	304.8	75	1991	Vitrious Clay	Relining	313	438	32,865	33,851	Pre	3%	1995	38,100	4,135	$ 9.21	2030	36	1.60	14.75
P-246	E	MH-823	304.8	49	1991	Vitrious Clay	Relining	313	438	21,472	22,116	Pre	3%	1995	24,892	4,135	$ 6.02	2030	36	1.60	9.64
P-247	E	MH-824	304.8	19	1991	Vitrious Clay	Relining	313	438	8,326	8,576	Pre	3%	1995	9,652	4,135	$ 2.33	2030	36	1.60	3.74
P-248	E	MH-825	304.8	68	1991	Vitrious Clay	Relining	313	438	29,798	30,692	Pre	3%	1995	34,544	4,135	$ 8.35	2030	36	1.60	13.37
P-249	E	MH-826	304.8	59.5	1991	Vitrious Clay	Relining	313	438	26,073	26,855	Pre	3%	1995	30,226	4,135	$ 7.31	2030	36	1.60	11.70
P-250	E	MH-827	304.8	26	1991	Vitrious Clay	Relining	313	438	11,393	11,735	Pre	3%	1995	13,208	4,135	$ 3.19	2030	36	1.60	5.11
P-251	E	MH-828	304.8	51.5	1991	Vitrious Clay	Relining	313	438	22,567	23,244	Pre	3%	1995	26,162	4,135	$ 6.33	2030	36	1.60	10.13
P-252	E	MH-829	304.8	45	1991	Vitrious Clay	Relining	313	438	19,719	20,311	Pre	3%	1995	22,860	4,135	$ 5.53	2030	36	1.60	8.85
P-253	E	MH-830	304.8	35.5	1991	Vitrious Clay	Relining	313	438	15,556	16,023	Pre	3%	1995	18,034	4,135	$ 4.36	2030	36	1.60	6.98
P-254	E	MH-831	304.8	53.5	1991	Vitrious Clay	Relining	313	438	23,444	24,147	Pre	3%	1995	27,178	4,135	$ 6.57	2030	36	1.60	10.52
P-255	E	MH-832	304.8	37.5	1991	Vitrious Clay	Relining	313	438	16,433	16,925	Pre	3%	1995	19,050	4,135	$ 4.61	2030	36	1.60	7.37

Label	Area	PS Catchment	Diameter (mm)	Length (Unified) (m)	Year of Construction	Material	Relevant material rate to apply	Total Rate (2003$/m)	Total Rate (2010$/m)	Capital Cost (2010$)	Capital Cost (2011/12$ = 2010 price x 1.03)	Pre or Post 1996 Asset	Discount Rate	Effective Year of Commissioning (Financial year starting)*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
P-256	E	MH-833	304.8	30	1991	Vitrious Clay	Relining	313	438	13,146	13,540	Pre	3%	1995	15,240	4,135	$ 3.69	2030	36	1.60	5.90
P-257	E	MH-834	304.8	61.5	1991	Vitrious Clay	Relining	313	438	26,949	27,758	Pre	3%	1995	31,242	4,135	$ 7.55	2030	36	1.60	12.09
P-258	E	MH-835	304.8	87.5	1991	Vitrious Clay	Relining	313	438	38,343	39,493	Pre	3%	1995	44,449	4,135	$ 10.75	2030	36	1.60	17.21
P-259	E	MH-836	304.8	76.5	1991	Vitrious Clay	Relining	313	438	33,522	34,528	Pre	3%	1995	38,862	4,135	$ 9.40	2030	36	1.60	15.04
P-260	E	MH-837	304.8	39	1991	Vitrious Clay	Relining	313	438	17,090	17,602	Pre	3%	1995	19,812	4,135	$ 4.79	2030	36	1.60	7.67
P-261	E	MH-838	304.8	66	1991	Vitrious Clay	Relining	313	438	28,921	29,789	Pre	3%	1995	33,528	4,135	$ 8.11	2030	36	1.60	12.98
P-262	E	MH-839	304.8	62	1991	Vitrious Clay	Relining	313	438	27,168	27,983	Pre	3%	1995	31,496	4,135	$ 7.62	2030	36	1.60	12.19
P-263	E	MH-840	304.8	108.5	1991	Vitrious Clay	Relining	313	438	46,668	48,068	Pre	3%	1995	54,101	4,135	$ 13.08	2030	36	1.60	20.94
P-264	E	MH-841	304.8	49	1991	Vitrious Clay	Relining	313	438	21,472	22,116	Pre	3%	1995	24,892	4,135	$ 6.02	2030	36	1.60	9.64
P-265	E	MH-842	304.8	516.5	1991	Vitrious Clay	Relining	313	438	226,330	233,120	Pre	3%	1995	262,379	4,135	$ 63.45	2030	36	1.60	101.58
P-266	E	MH-843	304.8	96.5	1991	Vitrious Clay	Relining	313	438	42,286	43,555	Pre	3%	1995	49,021	4,135	$ 11.85	2030	36	1.60	18.98
P-267	E	MH-814	304.8	21	1991	Vitrious Clay	Relining	313	438	9,202	9,478	Pre	3%	1995	10,668	4,135	$ 2.58	2030	36	1.60	4.13
P-416	E	MH-470	225	76.5	1975	Vitrious Clay	Relining	237	332	25,383	26,144	Pre	3%	1995	47,219	4,135	$ 11.42	2030	36	1.60	18.28
P-417	E	MH-471	225	56	1975	Vitrious Clay	Relining	237	332	18,581	19,138	Pre	3%	1995	34,566	4,135	$ 8.36	2030	36	1.60	13.38
P-418	E	MH-472	225	58.5	1975	Vitrious Clay	Relining	237	332	19,410	19,993	Pre	3%	1995	36,109	4,135	$ 8.73	2030	36	1.60	13.98
P-419	E	MH-473	225	77.5	1989	Vitrious Clay	Relining	237	332	25,715	26,486	Pre	3%	1995	31,626	4,135	$ 7.65	2030	36	1.60	12.24
P-420	E	MH-474	225	34.5	1988	Vitrious Clay	Relining	237	332	11,447	11,791	Pre	3%	1995	14,501	4,135	$ 3.51	2030	36	1.60	5.61
P-423	E	MH-477	225	37	1991	Vitrious Clay	Relining	237	332	12,277	12,645	Pre	3%	1995	14,232	4,135	$ 3.44	2030	36	1.60	5.51
P-424	E	MH-478	225	64.5	1991	Vitrious Clay	Relining	237	332	21,401	22,043	Pre	3%	1995	24,810	4,135	$ 6.00	2030	36	1.60	9.60
P-425	E	MH-479	225	59.5	1991	Vitrious Clay	Relining	237	332	19,742	20,334	Pre	3%	1995	22,887	4,135	$ 5.53	2030	36	1.60	8.86
P-427	E	MH-481	225	65.5	1991	Vitrious Clay	Relining	237	332	21,733	22,385	Pre	3%	1995	25,194	4,135	$ 6.09	2030	36	1.60	9.75
P-429	E	MH-483	225	31	1991	Vitrious Clay	Relining	237	332	10,286	10,594	Pre	3%	1995	11,924	4,135	$ 2.88	2030	36	1.60	4.62
P-431	E	MH-485	225	45.5	1991	Vitrious Clay	Relining	237	332	15,097	15,550	Pre	3%	1995	17,501	4,135	$ 4.23	2030	36	1.60	6.78
P-432	E	MH-486	225	73	1991	Vitrious Clay	Relining	237	332	24,221	24,948	Pre	3%	1995	28,079	4,135	$ 6.79	2030	36	1.60	10.87
P-434	E	MH-488	225	23.5	1991	Vitrious Clay	Relining	237	332	7,797	8,031	Pre	3%	1995	9,039	4,135	$ 2.19	2030	36	1.60	3.50
P-435	E	MH-489	225	37	1991	Vitrious Clay	Relining	237	332	12,277	12,645	Pre	3%	1995	14,232	4,135	$ 3.44	2030	36	1.60	5.51
P-436	E	MH-490	225	48.5	1991	Vitrious Clay	Relining	237	332	16,092	16,575	Pre	3%	1995	18,655	4,135	$ 4.51	2030	36	1.60	7.22
P-437	E	MH-491	225	35	1991	Vitrious Clay	Relining	237	332	11,613	11,961	Pre	3%	1995	13,463	4,135	$ 3.26	2030	36	1.60	5.21
P-443	E	MH-497	225	38.5	1991	Vitrious Clay	Relining	237	332	12,774	13,158	Pre	3%	1995	14,809	4,135	$ 3.58	2030	36	1.60	5.73
P-460	E	MH-514	225	12	1991	*Vitrious Clay*	*Relining*	237	332	3,982	4,101	Pre	3%	1995	4,616	4,135	$ 1.12	2030	36	1.60	1.79
P-461	E	MH-487	225	12	1991	Vitrious Clay	Relining	237	332	3,982	4,101	Pre	3%	1995	4,616	4,135	$ 1.12	2030	36	1.60	1.79
P-694	E	MH-650	225	58	1991	Vitrious Clay	Relining	237	332	19,244	19,822	Pre	3%	1995	22,310	4,135	$ 5.39	2030	36	1.60	8.64
P-698	E	MH-649	225	78.5	1988	Vitrious Clay	Relining	237	332	26,046	26,828	Pre	3%	1995	32,995	4,135	$ 7.98	2030	36	1.60	12.77
P-699	E	MH-475	225	28	1988	Vitrious Clay	Relining	237	332	9,290	9,569	Pre	3%	1995	11,769	4,135	$ 2.85	2030	36	1.60	4.56
P-700	E	MH-482	225	41	1991	Vitrious Clay	Relining	237	332	13,604	14,012	Pre	3%	1995	15,771	4,135	$ 3.81	2030	36	1.60	6.11
P-702	E	MH-484	225	36	1991	Vitrious Clay	Relining	237	332	11,945	12,303	Pre	3%	1995	13,847	4,135	$ 3.35	2030	36	1.60	5.36
P-703	E	MH-652	225	36.5	1991	Vitrious Clay	Relining	237	332	12,111	12,474	Pre	3%	1995	14,040	4,135	$ 3.40	2030	36	1.60	5.44
P-704	E	MH-651	225	17	1991	Vitrious Clay	Relining	237	332	5,641	5,810	Pre	3%	1995	6,539	4,135	$ 1.58	2030	36	1.60	2.53
P-973	E	MH-490	225	26.5	1991	Vitrious Clay	Relining	237	332	8,793	9,056	Pre	3%	1995	10,193	4,135	$ 2.46	2030	36	1.60	3.95
P-230	E	MH-359	304.8	61	1973	Vitrious Clay	Relining	313	438	26,730	27,532	Pre	3%	1995	52,754	4,135	$ 12.76	2030	36	1.60	20.42
P-231	E	MH-808	400	62	1983	Vitrious Clay	Relining	435	609	37,787	38,921	Pre	3%	1995	55,491	4,135	$ 13.42	2030	36	1.60	21.48
P-232	E	MH-809	400	75	1983	Vitrious Clay	Relining	435	609	45,710	47,081	Pre	3%	1995	67,127	4,135	$ 16.23	2030	36	1.60	25.99
P-233	E	MH-810	400	60.5	1983	Vitrious Clay	Relining	435	609	36,873	37,979	Pre	3%	1995	54,149	4,135	$ 13.09	2030	36	1.60	20.96
P-234	E	MH-811	400	55	1983	Vitrious Clay	Relining	435	609	33,521	34,526	Pre	3%	1995	49,226	4,135	$ 11.90	2030	36	1.60	19.06
P-235	E	MH-812	381	25	1983	*Vitrious Clay*	*Relining*	405	567	14,175	14,600	Pre	3%	1995	20,816	4,135	$ 5.03	2030	36	1.60	8.06
P-236	E	MH-368	225	56	1983	*Vitrious Clay*	*Relining*	237	332	18,581	19,138	Pre	3%	1995	27,287	4,135	$ 6.60	2030	36	1.60	10.56
P-300	E	MH-347	225	16	1973	Vitrious Clay	Relining	237	332	5,309	5,468	Pre	3%	1995	10,477	4,135	$ 2.53	2030	36	1.60	4.06
P-314	E	MH-362	304.8	43	1973	Vitrious Clay	Relining	313	438	18,843	19,408	Pre	3%	1995	37,188	4,135	$ 8.99	2030	36	1.60	14.40
P-316	E	MH-364	304.8	65.5	1973	Vitrious Clay	Relining	313	438	28,702	29,563	Pre	3%	1995	56,646	4,135	$ 13.70	2030	36	1.60	21.93
P-317	E	MH-365	304.8	63	1973	Vitrious Clay	Relining	313	438	27,607	28,435	Pre	3%	1995	54,484	4,135	$ 13.18	2030	36	1.60	21.09
P-318	E	MH-366	304.8	37	1973	Vitrious Clay	Relining	313	438	16,213	16,700	Pre	3%	1995	31,999	4,135	$ 7.74	2030	36	1.60	12.39
P-319	E	MH-367	304.8	60.5	1973	Vitrious Clay	Relining	313	438	26,511	27,306	Pre	3%	1995	52,322	4,135	$ 12.65	2030	36	1.60	20.26
P-320	E	MH-369	225	59	1973	*Vitrious Clay*	*Relining*	237	332	19,576	20,163	Pre	3%	1995	38,635	4,135	$ 9.34	2030	36	1.60	14.96
P-321	E	MH-370	225	49.5	1973	*Vitrious Clay*	*Relining*	237	332	16,424	16,917	Pre	3%	1995	32,414	4,135	$ 7.84	2030	36	1.60	12.55
P-322	E	MH-371	225	113	1973	*Vitrious Clay*	*Relining*	237	332	37,493	38,618	Pre	3%	1995	73,996	4,135	$ 17.89	2030	36	1.60	28.65
P-330	E	MH-873	304.8	81.8	1973	*Vitrious Clay*	*Relining*	313	438	35,845	36,920	Pre	3%	1995	70,743	4,135	$ 17.11	2030	36	1.60	27.39
P-333	E	MH-382	225	9	1989	Vitrious Clay	Relining	237	332	2,986	3,076	Pre	3%	1995	3,673	4,135	$ 0.89	2030	36	1.60	1.42
P-334	E	MH-383	225	112	1989	Vitrious Clay	Relining	237	332	37,162	38,276	Pre	3%	1995	45,704	4,135	$ 11.05	2030	36	1.60	17.69
P-341	E	MH-878	304.8	85.6	1973	*Vitrious Clay*	*Relining*	313	438	37,510	38,635	Pre	3%	1995	74,029	4,135	$ 17.90	2030	36	1.60	28.66
P-345	E	MH-394	304.8	30	1973	Vitrious Clay	Relining	313	438	13,146	13,540	Pre	3%	1995	25,945	4,135	$ 6.27	2030	36	1.60	10.04
P-349	E	MH-398	225	72.5	1973	Vitrious Clay	Relining	237	332	24,056	24,777	Pre	3%	1995	47,476	4,135	$ 11.48	2030	36	1.60	18.38
P-645	E	MH-396	225	99	1973	Vitrious Clay	Relining	237	332	32,848	33,834	Pre	3%	1995	64,829	4,135	$ 15.68	2030	36	1.60	25.10
P-647	E	MH-617	225	51	1973	Vitrious Clay	Relining	237	332	16,922	17,429	Pre	3%	1995	33,397	4,135	$ 8.08	2030	36	1.60	12.93
P-649	E	MH-618	225	45	1973	Vitrious Clay	Relining	237	332	14,931	15,379	Pre	3%	1995	29,468	4,135	$ 7.13	2030	36	1.60	11.41
P-650	E	MH-620	304.8	81	1973	Vitrious Clay	Relining	313	438	35,494	36,559	Pre	3%	1995	70,051	4,135	$ 16.94	2030	36	1.60	27.12
P-651	E	MH-393	304.8	62.5	1973	Vitrious Clay	Relining	313	438	27,388	28,209	Pre	3%	1995	54,052	4,135	$ 13.07	2030	36	1.60	20.93
P-652	E	MH-621	304.8	40.5	1973	Vitrious Clay	Relining	313	438	17,747	18,280	Pre	3%	1995	35,025	4,135	$ 8.47	2030	36	1.60	13.56
P-666	E	MH-631	225	71.5	1989	Vitrious Clay	Relining	237	332	23,724	24,435	Pre	3%	1995	29,177	4,135	$ 7.06	2030	36	1.60	11.30
P-667	E	MH-373	225	80	1989	Vitrious Clay	Relining	237	332	26,544	27,340	Pre	3%	1995	32,646	4,135	$ 7.89	2030	36	1.60	12.64
P-676	E	MH-636	225	58	1973	Vitrious Clay	Relining	237	332	19,244	19,822	Pre	3%	1995	37,980	4,135	$ 9.18	2030	36	1.60	14.70
P-677	E	MH-348	225	72.5	1973	Vitrious Clay	Relining	237	332	24,056	24,777	Pre	3%	1995	47,476	4,135	$ 11.48	2030	36	1.60	18.38
P-678	E	MH-637	225	69.5	1973	Vitrious Clay	Relining	237	332	23,060	23,752	Pre	3%	1995	45,511	4,135	$ 11.01	2030	36	1.60	17.62
P-679	E	MH-355	225	42.5	1973	Vitrious Clay	Relining	237	332	14,102	14,525	Pre	3%	1995	27,831	4,135	$ 6.73	2030	36	1.60	10.77
P-680	E	MH-638	225	25	1973	Vitrious Clay	Relining	237	332	8,295	8,544	Pre	3%	1995	16,371	4,135	$ 3.96	2030	36	1.60	6.34

Future GM

Area	STP Catchment	Correpsonding Capacity of System (sum of % of plant capacity noted)	Year when capacity is taken up, or 2040 (default 30 years)	Capital Charge per ET
A	Wardell (100%)	507	2025	76
B	Lennox Head STP (100%) and Ballina RWF (50%)	18,220	2030	39
C	Alstonville STP (15% of STP capacity)	730	2030	4,696
E	Alstonville STP (85% of STP capacity)	4,135	2030	203
F	Ballina RWF (25% of capacity)	3,272	2030	0
G	Ballina RWF (25%	3,272	2030	0

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	Area	PS Catchment	Diameter (mm)	Length (m)	Year	Material	Total Rate (2003$/m)	Total Rate (2010$/m)	Capital Cost (2010$)	Capital Cost (2011/12$ = 2010 price x 1.03)	Pre or Post 1996 Asset	Discount Rate	Effective Year of Commissioning (Financial year starting)*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
GM-3110-11-1	B	SP3110	450	628	2011	New	496	694	436,083	449,166	Post	7%	1995	152,148	18,220	$ 8.35	2030	36	2.58	21.55
GM-2101-1	B	SP2101	300	393.5	2011	Vitrious Clay	313	438	172,432	177,605	Post	7%	1995	60,161	18,220	$ 3.30	2030	36	2.58	8.52
GM-2104-1	B	SP2104	225	1,009.00	2020	Vitrious Clay	238	333	336,199	346,285	Post	7%	1995	63,803	18,220	$ 3.50	2030	36	2.58	9.04
GM-4104-1	C	SP4104	300	25.5	2016	unplasticised poly vinyl chloride	328	459	11,710	12,061	Post	7%	1995	2,913	730	$ 3.99	2030	36	2.58	10.30
GM-WUEA-15-53	C	WUEA	225	60.0	2015	unplasticised poly vinyl chloride	251	351	21,084	21,717	Post	7%	1995	5,612	730	$ 7.69	2030	36	2.58	19.85
GM-WUEA-11-24	C	WUEA	300	46.0	2011	unplasticised poly vinyl chloride	328	459	21,123	21,757	Post	7%	1995	7,370	730	$ 10.10	2030	36	2.58	26.07
GM-WUEA-11-25	C	WUEA	225	28.5	2011	unplasticised poly vinyl chloride	251	351	10,015	10,315	Post	7%	1995	3,494	730	$ 4.79	2030	36	2.58	12.36
GM-WUEA-11-26	C	WUEA	225	55.0	2011	unplasticised poly vinyl chloride	251	351	19,327	19,907	Post	7%	1995	6,743	730	$ 9.24	2030	36	2.58	23.85
GM-4104-2	C	SP4104	300	52.0	2011	unplasticised poly vinyl chloride	328	459	23,878	24,595	Post	7%	1995	8,331	730	$ 11.42	2030	36	2.58	29.47
GM-4104-3	C	SP4104	300	52.0	2011	unplasticised poly vinyl chloride	328	459	23,878	24,595	Post	7%	1995	8,331	730	$ 11.42	2030	36	2.58	29.47
GM-4104-4	C	SP4104	300	28.5	2011	unplasticised poly vinyl chloride	328	459	13,087	13,480	Post	7%	1995	4,566	730	$ 6.26	2030	36	2.58	16.15
GM-4104-5	C	SP4104	300	60.0	2011	unplasticised poly vinyl chloride	328	459	27,552	28,379	Post	7%	1995	9,613	730	$ 13.17	2030	36	2.58	34.00
GM-4104-6	C	SP4104	300	56.5	2011	unplasticised poly vinyl chloride	328	459	25,945	26,723	Post	7%	1995	9,052	730	$ 12.40	2030	36	2.58	32.02
GM-4104-7	C	SP4104	300	55.0	2011	unplasticised poly vinyl chloride	328	459	25,256	26,014	Post	7%	1995	8,812	730	$ 12.08	2030	36	2.58	31.17
GM-4104-8	C	SP4104	300	63.0	2011	unplasticised poly vinyl chloride	328	459	28,930	29,797	Post	7%	1995	10,093	730	$ 13.83	2030	36	2.58	35.70
GM-4104-9	C	SP4104	300	47.5	2011	unplasticised poly vinyl chloride	328	459	21,812	22,466	Post	7%	1995	7,610	730	$ 10.43	2030	36	2.58	26.92
GM-4104-10	C	SP4104	300	28.5	2011	unplasticised poly vinyl chloride	328	459	13,087	13,480	Post	7%	1995	4,566	730	$ 6.26	2030	36	2.58	16.15
GM-4104-11	C	SP4104	300	54.0	2011	unplasticised poly vinyl chloride	328	459	24,797	25,541	Post	7%	1995	8,652	730	$ 11.86	2030	36	2.58	30.60
GM-WUEA-15-51	C	WUEA	150	54.5	2015	unplasticised poly vinyl chloride	207	290	21,655	22,304	Post	7%	1995	5,764	730	$ 7.90	2030	36	2.58	20.39
GM-WUEA-11-27	C	WUEA	300	7.0	2011	unplasticised poly vinyl chloride	328	459	3,214	3,311	Post	7%	1995	1,121	730	$ 1.54	2030	36	2.58	3.97
GM-4104-12	C	SP4104	375	117.0	2016	unplasticised poly vinyl chloride	423	592	69,287	71,366	Post	7%	1995	17,236	730	$ 23.62	2030	36	2.58	60.96
GM-WWTP40-1	C	Alstonville WWTP	375	721.5	2016	unplasticised poly vinyl chloride	423	592	427,272	440,090	Post	7%	1995	106,288	730	$ 145.65	2030	36	2.58	375.93
GM-WWTP40-2	C	Alstonville WWTP	375	20.0	2016	unplasticised poly vinyl chloride	423	592	11,844	12,199	Post	7%	1995	2,946	730	$ 4.04	2030	36	2.58	10.42
GM-WWTP40-3	C	Alstonville WWTP	375	202.0	2016	unplasticised poly vinyl chloride	423	592	119,624	123,213	Post	7%	1995	29,758	730	$ 40.78	2030	36	2.58	105.25
GM-WWTP40-4	C	Alstonville WWTP	375	365.0	2016	unplasticised poly vinyl chloride	423	592	216,153	222,638	Post	7%	1995	53,770	730	$ 73.68	2030	36	2.58	190.18
GM-WWTP40-5	C	Alstonville WWTP	375	229.0	2016	unplasticised poly vinyl chloride	423	592	135,614	139,682	Post	7%	1995	33,735	730	$ 46.23	2030	36	2.58	119.32
GM-WWTP40-6	C	Alstonville WWTP	375	122.0	2016	unplasticised poly vinyl chloride	423	592	72,248	74,416	Post	7%	1995	17,972	730	$ 24.63	2030	36	2.58	63.57
GM-WWTP40-7	C	Alstonville WWTP	375	568.5	2016	unplasticised poly vinyl chloride	423	592	336,666	346,766	Post	7%	1995	83,748	730	$ 114.76	2030	36	2.58	296.21
GM-WWTP40-8	C	Alstonville WWTP	375	121.0	2016	unplasticised poly vinyl chloride	423	592	71,656	73,806	Post	7%	1995	17,825	730	$ 24.43	2030	36	2.58	63.05
GM-4104-13	C	SP4104	300	366.0	2011	unplasticised poly vinyl chloride	328	459	168,067	173,109	Post	7%	1995	58,638	730	$ 80.35	2030	36	2.58	207.40
GM-4104-14	C	SP4104	300	130.0	2011	unplasticised poly vinyl chloride	328	459	59,696	61,487	Post	7%	1995	20,828	730	$ 28.54	2030	36	2.58	73.67
GM-WUEA-15-1	C	WUEA	225	38.5	2015	unplasticised poly vinyl chloride	251	351	38,346	39,497	Post	7%	1995	10,207	730	$ 13.99	2030	36	2.58	36.10
GM-WUEA-15-2	C	WUEA	225	49.5	2015	unplasticised poly vinyl chloride	251	351	49,303	50,782	Post	7%	1995	13,123	730	$ 17.98	2030	36	2.58	46.41
GM-WUEA-15-3	C	WUEA	225	35.5	2015	unplasticised poly vinyl chloride	251	351	35,358	36,419	Post	7%	1995	9,411	730	$ 12.90	2030	36	2.58	33.29
GM-WUEA-15-4	C	WUEA	225	25.5	2015	unplasticised poly vinyl chloride	251	351	25,398	26,160	Post	7%	1995	6,760	730	$ 9.26	2030	36	2.58	23.91
GM-WUEA-15-5	C	WUEA	225	60.0	2015	unplasticised poly vinyl chloride	251	351	59,761	61,553	Post	7%	1995	15,907	730	$ 21.80	2030	36	2.58	56.26
GM-WUEA-15-6	C	WUEA	225	53.5	2015	unplasticised poly vinyl chloride	251	351	53,287	54,885	Post	7%	1995	14,183	730	$ 19.44	2030	36	2.58	50.17
GM-WUEA-15-7	C	WUEA	225	36.5	2015	unplasticised poly vinyl chloride	251	351	36,354	37,445	Post	7%	1995	9,676	730	$ 13.26	2030	36	2.58	34.23
GM-WUEA-15-8	C	WUEA	225	152.0	2015	unplasticised poly vinyl chloride	251	351	189,875	195,571	Post	7%	1995	50,539	730	$ 69.26	2030	36	2.58	178.75
GM-WUEA-11-1	C	WUEA	225	34.5	2011	unplasticised poly vinyl chloride	251	351	34,362	35,393	Post	7%	1995	11,989	730	$ 16.43	2030	36	2.58	42.40

Label	Area	PS Catchment	Diameter (mm)	Length (m)	Year	Material	Total Rate (2003$/m)	Total Rate (2010$/m)	Capital Cost (2010$)	Capital Cost (2011/12$ = 2010 price x 1.03)	Pre or Post 1996 Asset	Discount Rate	Effective Year of Commissioning (Financial year starting)*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
GM-WUEA-11-2	C	WUEA	225	47.0	2011	unplasticised poly vinyl chloride	251	351	46,812	48,217	Post	7%	1995	16,333	730	$ 22.38	2030	36	2.58	57.77
GM-WUEA-11-3	C	WUEA	225	24.0	2011	unplasticised poly vinyl chloride	251	351	23,904	24,621	Post	7%	1995	8,340	730	$ 11.43	2030	36	2.58	29.50
GM-WUEA-11-4	C	WUEA	225	23.0	2011	unplasticised poly vinyl chloride	251	351	22,908	23,595	Post	7%	1995	7,993	730	$ 10.95	2030	36	2.58	28.27
GM-WUEA-11-5	C	WUEA	225	26.5	2011	unplasticised poly vinyl chloride	251	351	26,394	27,186	Post	7%	1995	9,209	730	$ 12.62	2030	36	2.58	32.57
GM-WUEA-11-6	C	WUEA	225	21.5	2011	unplasticised poly vinyl chloride	251	351	21,414	22,057	Post	7%	1995	7,471	730	$ 10.24	2030	36	2.58	26.43
GM-WUEA-11-7	C	WUEA	225	17.5	2011	unplasticised poly vinyl chloride	251	351	17,430	17,953	Post	7%	1995	6,081	730	$ 8.33	2030	36	2.58	21.51
GM-WUEA-15-9	C	WUEA	200	139.5	2015	unplasticised poly vinyl chloride	237	332	197,395	203,317	Post	7%	1995	52,541	730	$ 72.00	2030	36	2.58	185.83
GM-WUEA-11-8	C	WUEA	200	35.0	2011	unplasticised poly vinyl chloride	237	332	24,926	25,674	Post	7%	1995	8,697	730	$ 11.92	2030	36	2.58	30.76
GM-WUEA-11-9	C	WUEA	200	64.0	2011	unplasticised poly vinyl chloride	237	332	45,579	46,947	Post	7%	1995	15,902	730	$ 21.79	2030	36	2.58	56.25
GM-WUEA-11-10	C	WUEA	150	353.5	2011	unplasticised poly vinyl chloride	207	290	251,755	259,308	Post	7%	1995	87,836	730	$ 120.37	2030	36	2.58	310.67
GM-WUEA-11-11	C	WUEA	150	135.0	2011	unplasticised poly vinyl chloride	207	290	96,144	99,028	Post	7%	1995	33,544	730	$ 45.97	2030	36	2.58	118.64
GM-WUEA-11-12	C	WUEA	150	58.0	2011	unplasticised poly vinyl chloride	207	290	41,306	42,546	Post	7%	1995	14,412	730	$ 19.75	2030	36	2.58	50.97
GM-WUEA-11-13	C	WUEA	150	21.5	2011	unplasticised poly vinyl chloride	207	290	15,312	15,771	Post	7%	1995	5,342	730	$ 7.32	2030	36	2.58	18.90
GM-WUEA-15-52	C	#N/A	150	50.5	2015	unplasticised poly vinyl chloride	207	290	20,065	20,667	Post	7%	1995	5,341	730	$ 7.32	2030	36	2.58	18.89
GM-WUEA-11-14	C	WUEA	150	12.5	2011	unplasticised poly vinyl chloride	207	290	8,902	9,169	Post	7%	1995	3,106	730	$ 4.26	2030	36	2.58	10.99
GM-WUEA-15-10	C	WUEA	150	36.5	2015	unplasticised poly vinyl chloride	207	290	36,354	37,445	Post	7%	1995	9,676	730	$ 13.26	2030	36	2.58	34.23
GM-WUEA-15-11	C	WUEA	150	34.5	2015	unplasticised poly vinyl chloride	207	290	34,362	35,393	Post	7%	1995	9,146	730	$ 12.53	2030	36	2.58	32.35
GM-WUEA-15-12	C	WUEA	150	44.5	2015	unplasticised poly vinyl chloride	207	290	12,896	13,283	Post	7%	1995	3,433	730	$ 4.70	2030	36	2.58	12.14
GM-WUEA-15-13	C	WUEA	150	18.0	2015	unplasticised poly vinyl chloride	207	290	5,216	5,373	Post	7%	1995	1,388	730	$ 1.90	2030	36	2.58	4.91
GM-WUEA-15-14	C	WUEA	150	45.5	2015	unplasticised poly vinyl chloride	207	290	13,186	13,581	Post	7%	1995	3,510	730	$ 4.81	2030	36	2.58	12.41
GM-WUEA-15-15	C	WUEA	150	28.0	2015	unplasticised poly vinyl chloride	207	290	8,114	8,358	Post	7%	1995	2,160	730	$ 2.96	2030	36	2.58	7.64
GM-WUEA-15-16	C	WUEA	150	17.0	2015	unplasticised poly vinyl chloride	207	290	4,927	5,074	Post	7%	1995	1,311	730	$ 1.80	2030	36	2.58	4.64
GM-WUEA-15-17	C	WUEA	150	35.5	2015	unplasticised poly vinyl chloride	207	290	10,288	10,597	Post	7%	1995	2,738	730	$ 3.75	2030	36	2.58	9.69
GM-WUEA-15-18	C	WUEA	150	21.5	2015	unplasticised poly vinyl chloride	207	290	6,231	6,418	Post	7%	1995	1,658	730	$ 2.27	2030	36	2.58	5.87
GM-WUEA-15-19	C	WUEA	150	55.5	2015	unplasticised poly vinyl chloride	207	290	16,084	16,566	Post	7%	1995	4,281	730	$ 5.87	2030	36	2.58	15.14
GM-WUEA-15-20	C	WUEA	150	43.5	2015	unplasticised poly vinyl chloride	207	290	12,606	12,984	Post	7%	1995	3,355	730	$ 4.60	2030	36	2.58	11.87
GM-WUEA-15-21	C	WUEA	150	48.5	2015	unplasticised poly vinyl chloride	207	290	14,055	14,477	Post	7%	1995	3,741	730	$ 5.13	2030	36	2.58	13.23
GM-WUEA-15-22	C	WUEA	150	16.5	2015	unplasticised poly vinyl chloride	207	290	4,782	4,925	Post	7%	1995	1,273	730	$ 1.74	2030	36	2.58	4.50
GM-WUEA-15-23	C	WUEA	150	60.0	2015	unplasticised poly vinyl chloride	207	290	17,388	17,910	Post	7%	1995	4,628	730	$ 6.34	2030	36	2.58	16.37
GM-WUEA-15-24	C	WUEA	150	58.5	2015	unplasticised poly vinyl chloride	207	290	16,953	17,462	Post	7%	1995	4,512	730	$ 6.18	2030	36	2.58	15.96
GM-WUEA-15-25	C	WUEA	150	23.5	2015	unplasticised poly vinyl chloride	207	290	6,810	7,015	Post	7%	1995	1,813	730	$ 2.48	2030	36	2.58	6.41
GM-WUEA-15-26	C	WUEA	150	39.0	2015	unplasticised poly vinyl chloride	207	290	12,534	12,910	Post	7%	1995	3,336	730	$ 4.57	2030	36	2.58	11.80
GM-WUEA-15-27	C	WUEA	150	24.5	2015	unplasticised poly vinyl chloride	207	290	9,357	9,638	Post	7%	1995	2,491	730	$ 3.41	2030	36	2.58	8.81
GM-WUEA-15-28	C	WUEA	150	42.5	2015	unplasticised poly vinyl chloride	207	290	12,317	12,686	Post	7%	1995	3,278	730	$ 4.49	2030	36	2.58	11.60
GM-WUEA-15-29	C	WUEA	150	38.0	2015	unplasticised poly vinyl chloride	207	290	11,012	11,343	Post	7%	1995	2,931	730	$ 4.02	2030	36	2.58	10.37
GM-WUEA-15-30	C	WUEA	150	20.0	2015	unplasticised poly vinyl chloride	207	290	5,796	5,970	Post	7%	1995	1,543	730	$ 2.11	2030	36	2.58	5.46
GM-WUEA-15-31	C	WUEA	150	13.0	2015	unplasticised poly vinyl chloride	207	290	3,767	3,880	Post	7%	1995	1,003	730	$ 1.37	2030	36	2.58	3.55
GM-WUEA-15-32	C	WUEA	150	22.5	2015	unplasticised poly vinyl chloride	207	290	6,521	6,716	Post	7%	1995	1,736	730	$ 2.38	2030	36	2.58	6.14
GM-WUEA-15-33	C	WUEA	150	25.5	2015	unplasticised poly vinyl chloride	207	290	7,390	7,612	Post	7%	1995	1,967	730	$ 2.70	2030	36	2.58	6.96
GM-WUEA-15-34	C	WUEA	150	21.0	2015	unplasticised poly vinyl chloride	207	290	6,086	6,268	Post	7%	1995	1,620	730	$ 2.22	2030	36	2.58	5.73
GM-WUEA-15-35	C	WUEA	150	23.5	2015	unplasticised poly vinyl chloride	207	290	6,810	7,015	Post	7%	1995	1,813	730	$ 2.48	2030	36	2.58	6.41
GM-WUEA-15-36	C	WUEA	150	40.0	2015	unplasticised poly vinyl chloride	207	290	11,592	11,940	Post	7%	1995	3,085	730	$ 4.23	2030	36	2.58	10.91
GM-WUEA-15-37	C	WUEA	150	28.0	2015	unplasticised poly vinyl chloride	207	290	8,114	8,358	Post	7%	1995	2,160	730	$ 2.96	2030	36	2.58	7.64
GM-WUEA-15-38	C	WUEA	150	24.5	2015	unplasticised poly vinyl chloride	207	290	7,100	7,313	Post	7%	1995	1,890	730	$ 2.59	2030	36	2.58	6.68
GM-WUEA-15-39	C	WUEA	150	48.5	2015	unplasticised poly vinyl chloride	207	290	48,306	49,756	Post	7%	1995	12,858	730	$ 17.62	2030	36	2.58	45.48
GM-WUEA-15-40	C	WUEA	150	14.5	2015	unplasticised poly vinyl chloride	207	290	14,442	14,875	Post	7%	1995	3,844	730	$ 5.27	2030	36	2.58	13.60
GM-WUEA-15-41	C	WUEA	150	49.0	2015	unplasticised poly vinyl chloride	207	290	48,804	50,269	Post	7%	1995	12,990	730	$ 17.80	2030	36	2.58	45.95
GM-WUEA-15-42	C	WUEA	150	50.0	2015	unplasticised poly vinyl chloride	207	290	49,801	51,295	Post	7%	1995	13,255	730	$ 18.16	2030	36	2.58	46.88
GM-WUEA-15-43	C	WUEA	150	45.5	2015	unplasticised poly vinyl chloride	207	290	45,318	46,678	Post	7%	1995	12,062	730	$ 16.53	2030	36	2.58	42.66
GM-WUEA-15-44	C	WUEA	150	48.5	2015	unplasticised poly vinyl chloride	207	290	48,306	49,756	Post	7%	1995	12,858	730	$ 17.62	2030	36	2.58	45.48
GM-WUEA-11-15	C	WUEA	150	23.0	2011	unplasticised poly vinyl chloride	207	290	22,908	23,595	Post	7%	1995	7,993	730	$ 10.95	2030	36	2.58	28.27
GM-WUEA-11-16	C	WUEA	150	44.0	2011	unplasticised poly vinyl chloride	207	290	43,824	45,139	Post	7%	1995	15,290	730	$ 20.95	2030	36	2.58	54.08
GM-WUEA-11-17	C	WUEA	150	60.0	2011	unplasticised poly vinyl chloride	207	290	59,761	61,553	Post	7%	1995	20,850	730	$ 28.57	2030	36	2.58	73.75
GM-WUEA-11-18	C	WUEA	150	48.0	2011	unplasticised poly vinyl chloride	207	290	47,808	49,243	Post	7%	1995	16,680	730	$ 22.86	2030	36	2.58	59.00
GM-WUEA-15-45	C	WUEA	150	21.0	2015	unplasticised poly vinyl chloride	207	290	6,086	6,268	Post	7%	1995	1,620	730	$ 2.22	2030	36	2.58	5.73
GM-WUEA-15-46	C	WUEA	150	20.5	2015	unplasticised poly vinyl chloride	207	290	5,941	6,119	Post	7%	1995	1,581	730	$ 2.17	2030	36	2.58	5.59
GM-WUEA-11-19	C	WUEA	150	58.0	2011	unplasticised poly vinyl chloride	207	290	57,769	59,502	Post	7%	1995	20,155	730	$ 27.62	2030	36	2.58	71.29
GM-WUEA-11-20	C	WUEA	150	53.0	2011	unplasticised poly vinyl chloride	207	290	52,789	54,372	Post	7%	1995	18,418	730	$ 25.24	2030	36	2.58	65.14
GM-WUEA-11-21	C	WUEA	150	50.0	2011	unplasticised poly vinyl chloride	207	290	49,801	51,295	Post	7%	1995	17,375	730	$ 23.81	2030	36	2.58	61.45
GM-WUEA-11-22	C	WUEA	150	49.0	2011	unplasticised poly vinyl chloride	207	290	48,804	50,269	Post	7%	1995	17,028	730	$ 23.33	2030	36	2.58	60.23
GM-WUEA-11-23	C	WUEA	150	60.5	2011	unplasticised poly vinyl chloride	207	290	60,259	62,066	Post	7%	1995	21,024	730	$ 28.81	2030	36	2.58	74.36
GM-WUEA-15-47	C	WUEA	150	12.0	2015	unplasticised poly vinyl chloride	207	290	11,952	12,311	Post	7%	1995	3,181	730	$ 4.36	2030	36	2.58	11.25
GM-WUEA-15-48	C	WUEA	150	22.0	2015	unplasticised poly vinyl chloride	207	290	21,912	22,570	Post	7%	1995	5,832	730	$ 7.99	2030	36	2.58	20.63
GM-WUEA-15-49	C	WUEA	150	38.0	2015	unplasticised poly vinyl chloride	207	290	37,848	38,984	Post	7%	1995	10,074	730	$ 13.80	2030	36	2.58	35.63
GM-WUEA-15-50	C	WUEA	150	60.5	2015	unplasticised poly vinyl chloride	207	290	60,259	62,066	Post	7%	1995	16,039	730	$ 21.98	2030	36	2.58	56.73
GM-WWTP40-9	E	Alstonville WWTP	225	259.0	2016	unplasticised poly vinyl chloride	237	332	85,936	88,514	Post	7%	1995	21,377	4,135	$ 5.17	2030	36	2.58	13.34
GM-WWTP40-10	E	Alstonville WWTP	225	43.0	2016	unplasticised poly vinyl chloride	237	332	14,267	14,695	Post	7%	1995	3,549	4,135	$ 0.86	2030	36	2.58	2.22
GM-WWTP40-11	E	Alstonville WWTP	300	329.5	2016	unplasticised poly vinyl chloride	313	438	144,387	148,719	Post	7%	1995	35,917	4,135	$ 8.69	2030	36	2.58	22.42
GM-WWTP40-12	E	Alstonville WWTP	300	662.5	2016	unplasticised poly vinyl chloride	313	438	290,308	299,017	Post	7%	1995	72,216	4,135	$ 17.46	2030	36	2.58	45.07
GM-4006-1	E	SP4006	300	312.0	2016	unplasticised poly vinyl chloride	313	438	136,718	140,820	Post	7%	1995	34,010	4,135	$ 8.22	2030	36	2.58	21.23
GM-4006-2	E	SP4006	225	381.0	2016	unplasticised poly vinyl chloride	237	332	126,416	130,208	Post	7%	1995	31,447	4,135	$ 7.60	2030	36	2.58	19.63
GM-WWTP40-13	E	Alstonville WWTP	300	247.5	2016	unplasticised poly vinyl chloride	313	438	108,455	111,708	Post	7%	1995	26,979	4,135	$ 6.52	2030	36	2.58	16.84
GM-WWTP40-14	E	Alstonville WWTP	225	60.0	2016	unplasticised poly vinyl chloride	237	332	19,908	20,505	Post	7%	1995	4,952	4,135	$ 1.20	2030	36	2.58	3.09
GM-WWTP40-15	E	Alstonville WWTP	225	89.5	2016	unplasticised poly vinyl chloride	237	332	29,696	30,587	Post	7%	1995	7,387	4,135	$ 1.79	2030	36	2.58	4.61
GM-WWTP40-16	E	Alstonville WWTP	150	261.0	2016	unplasticised poly vinyl chloride	195	273	71,253	73,391	Post	7%	1995	17,725	4,135	$ 4.29	2030	36	2.58	11.06
GM-WWTP40-17	E	Alstonville WWTP	150	809.5	2016	unplasticised poly vinyl chloride	195	273	220,994	227,623	Post	7%	1995	54,974	4,135	$ 13.29	2030	36	2.58	34.31
GM-WWTP40-18	E	Alstonville WWTP	225	80.5	2016	unplasticised poly vinyl chloride	237	332	26,710	27,511	Post	7%	1995	6,644	4,135	$ 1.61	2030	36	2.58	4.15
GM-WWTP40-19	E	Alstonville WWTP	225	7.5	2016	unplasticised poly vinyl chloride	237	332	2,489	2,563	Post	7%	1995	619	4,135	$ 0.15	2030	36	2.58	0.39
GM-4004-1	E	SP4004	150	69.5	2016	unplasticised poly vinyl chloride	195	273	18,974	19,543	Post	7%	1995	4,720	4,135	$ 1.14	2030	36	2.58	2.95
GM-4004-2	E	SP4004	150	25.0	2016	unplasticised poly vinyl chloride	195	273	6,825	7,030	Post	7%	1995	1,698	4,135	$ 0.41	2030	36	2.58	1.06
GM-4004-3	E	Alstonville	150	4.5	2016	unplasticised poly vinyl chloride	195	273	1,229	1,265	Post	7%	1995	306	4,135	$ 0.07	2030	36	2.58	0.19
GM-5006-1	A	SP5006	150	323.4	2011	unplasticised poly vinyl chloride	105	147	47,540	48,966	Post	7%	1995	16,586	507	$ 32.71	2025	31	2.31	75.63

Existing RM

Area	STP Catchment	Correpsonding Capacity of System (sum of % of plant capacity noted)	Year when capacity is taken up, or 2040 (default 30 years)	Capital Charge per ET
A	Wardell (100%)	507	2025	2,590
B	Lennox Head STP (100%) and Ballina RWF (50%)	18,220	2030	823
C	Alstonville STP (15% of STP capacity)	730	2030	0
E	Alstonville STP (85% of STP capacity)	4,135	2030	742
F	Ballina RWF (25% of capacity)	3,272	2030	624
G	Ballina RWF (25% of capacity)	3,272	2030	0

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		Area	Diameter (mm)	Length (Unified) (m)	Actual Commissioning Year	Material	Total Rate 2003 ($/m)	Total Rate 2010 ($/m)	2010 Cost	Capital Cost (2011/12$ = 2010 price x 1.03)	Pre or Post 1996 Asset	Discount Rate	Effective Year of Commissioning (Financial year starting)*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
FM-1004	FM-1004	B	225	2	1984	Asbestos Cement	224	313	626	645	Pre	3%	1995	893	18,220	$ 0.05	2030	36	1.60	0.08
FM-1004	FM-1004	B	250	163	1990	unplasticised poly vinyl chloride	238	333	54,312	55,941	Pre	3%	1995	64,851	18,220	$ 3.56	2030	36	1.60	5.70
FM-1015	FM-1015	F	225	1,598.00	2010	unplasticised poly vinyl chloride	224	313	500,387	515,399	Post	7%	1995	186,804	3,272	$ 57.10	2030	36	2.58	147.37
FM-1021	FM-1021	B	375	5	1987	unplasticised poly vinyl chloride	313	438	2,191	2,257	Pre	3%	1995	2,859	18,220	$ 0.16	2030	36	1.60	0.25
FM-1025	FM-1025	B	375	1,867.50	1987	unplasticised poly vinyl chloride	313	438	818,339	842,889	Pre	3%	1995	1,067,746	18,220	$ 58.60	2030	36	1.60	93.82
FM-1026	FM-1026	B	375	578.5	1987	unplasticised poly vinyl chloride	313	438	253,499	261,104	Pre	3%	1995	330,758	18,220	$ 18.15	2030	36	1.60	29.06
FM-1028	FM-1028	B	300	1,004.50	1995	unplasticised poly vinyl chloride	263	368	369,857	380,953	Pre	3%	1995	380,953	18,220	$ 20.91	2030	36	1.60	33.47
FM-1029	FM-1029	F	225	523	2010	unplasticised poly vinyl chloride	224	313	163,769	168,682	Post	7%	1995	61,138	3,272	$ 18.69	2030	36	2.58	48.23
FM-1029	FM-1029	B	63	9.5	1980	Poly-ethylene	143	200	1,904	1,961	Pre	3%	1995	3,056	18,220	$ 0.17	2030	36	1.60	0.27
FM-1033	FM-1033	B	150	8.5	1981	Asbestos Cement	183	256	2,172	2,237	Pre	3%	1995	3,384	18,220	$ 0.19	2030	36	1.60	0.30
FM-1037	FM-1037	B	150	9.5	1979	unplasticised poly vinyl chloride	183	256	2,427	2,500	Pre	3%	1995	4,012	18,220	$ 0.22	2030	36	1.60	0.35
FM-1044	FM-1044	B	300	68	1995	unplasticised poly vinyl chloride	263	368	25,038	25,789	Pre	3%	1995	25,789	18,220	$ 1.42	2030	36	1.60	2.27
FM-1047	FM-1047	B	150	5.5	2009	unplasticised poly vinyl chloride	183	256	1,405	1,447	Post	7%	1995	561	18,220	$ 0.03	2030	36	2.58	0.08
FM-1048	FM-1048	F	150	5	2009	unplasticised poly vinyl chloride	183	256	1,278	1,316	Post	7%	1995	510	3,272	$ 0.16	2030	36	2.58	0.40
FM-1049	FM-1049	B	375	5.5	1995	unplasticised poly vinyl chloride	313	438	2,410	2,482	Pre	3%	1995	2,482	18,220	$ 0.14	2030	36	1.60	0.22
FM-1052	FM-1052	B	152.4	7.5	1979	unplasticised poly vinyl chloride	183	256	1,916	1,974	Pre	3%	1995	3,167	18,220	$ 0.17	2030	36	1.60	0.28
FM-1053	FM-1053	F	150	449.5	2009	unplasticised poly vinyl chloride	183	256	114,847	118,293	Post	7%	1995	45,876	3,272	$ 14.02	2030	36	2.58	36.19
FM-1053	FM-1053	B	100	202	1985	unplasticised poly vinyl chloride	165	230	46,558	47,955	Pre	3%	1995	64,448	18,220	$ 3.54	2030	36	1.60	5.66
FM-1061	FM-1061	F	300	6.5	2009	unplasticised poly vinyl chloride	263	368	2,393	2,465	Post	7%	1995	956	3,272	$ 0.29	2030	36	2.58	0.75
FM-1062	FM-1062	B	63	155.5	1980	Poly-ethylene	143	200	31,167	32,102	Pre	3%	1995	50,015	18,220	$ 2.75	2030	36	1.60	4.39
FM-1092	FM-1092	B	250	319	1990	unplasticised poly vinyl chloride	238	333	106,291	109,480	Pre	3%	1995	126,917	18,220	$ 6.97	2030	36	1.60	11.15
FM-1093	FM-1093	B	100	380.5	1983	unplasticised poly vinyl chloride	165	230	87,700	90,331	Pre	3%	1995	128,791	18,220	$ 7.07	2030	36	1.60	11.32
FM-1127	FM-1127	B	150	1,110.50	1992	Blue Brute	183	256	283,733	292,245	Pre	3%	1995	319,344	18,220	$ 17.53	2030	36	1.60	28.06
FM-413	FM-413	B	250	134	1990	unplasticised poly vinyl chloride	238	333	44,649	45,988	Pre	3%	1995	53,313	18,220	$ 2.93	2030	36	1.60	4.68
FM-507	FM-507	B	450	65	1976	unplasticised poly vinyl chloride	435	609	39,615	40,804	Pre	3%	1995	71,550	18,220	$ 3.93	2030	36	1.60	6.29
FM-517	FM-517	B	200	28.5	2010	unplasticised poly vinyl chloride	195	273	7,781	8,014	Post	7%	1995	2,905	18,220	$ 0.16	2030	36	2.58	0.41
FM-520	FM-520	B	200	76.5	2010	unplasticised poly vinyl chloride	195	273	20,885	21,511	Post	7%	1995	7,797	18,220	$ 0.43	2030	36	2.58	1.10
FM-522	FM-522	B	375	25.5	1985	Asbestos Cement	313	438	11,174	11,509	Pre	3%	1995	15,468	18,220	$ 0.85	2030	36	1.60	1.36
FM-524	FM-524	B	150	623.5	1993	unplasticised poly vinyl chloride	183	256	159,304	164,083	Pre	3%	1995	174,076	18,220	$ 9.55	2030	36	1.60	15.30
FM-526	FM-526	B	450	336.5	1976	unplasticised poly vinyl chloride	435	609	205,086	211,238	Pre	3%	1995	370,407	18,220	$ 20.33	2030	36	1.60	32.55
FM-527	FM-527	B	200	38	2010	unplasticised poly vinyl chloride	195	273	10,374	10,685	Post	7%	1995	3,873	18,220	$ 0.21	2030	36	2.58	0.55
FM-528	FM-528	B	125	786	1982	unplasticised poly vinyl chloride	170	238	187,068	192,680	Pre	3%	1995	282,957	18,220	$ 15.53	2030	36	1.60	24.86
FM-529	FM-529	B	250	30.5	1990	unplasticised poly vinyl chloride	238	333	10,163	10,467	Pre	3%	1995	12,135	18,220	$ 0.67	2030	36	1.60	1.07
FM-552	FM-552	B	150	490.5	1981	Asbestos Cement	183	256	125,323	129,082	Pre	3%	1995	195,249	18,220	$ 10.72	2030	36	1.60	17.16
FM-593	FM-593	F	250	16	2009	unplasticised poly vinyl chloride	238	333	5,331	5,491	Post	7%	1995	2,130	3,272	$ 0.65	2030	36	2.58	1.68
FM-595	FM-595	B	63	778.5	1985	unplasticised poly vinyl chloride	143	200	156,037	160,718	Pre	3%	1995	215,992	18,220	$ 11.86	2030	36	1.60	18.98
FM-606	FM-606	B	150	6.50	2010	unplasticised poly vinyl chloride	183	256	1,661	1,711	Post	7%	1995	620	18,220	$ 0.03	2030	36	2.58	0.09
FM-609	FM-609	B	375	13	1995	unplasticised poly vinyl chloride	313	438	5,697	5,867	Pre	3%	1995	5,867	18,220	$ 0.32	2030	36	1.60	0.52
FM-637	FM-637	B	225	19.5	1981	Asbestos Cement	224	313	6,106	6,289	Pre	3%	1995	9,513	18,220	$ 0.52	2030	36	1.60	0.84
FM-640	FM-640	B	210.7	1,309.50	2010	unplasticised poly vinyl chloride	195	273	357,494	368,218	Post	7%	1995	133,459	18,220	$ 7.33	2030	36	2.58	18.91
FM-641	FM-641	B	150	45.5	1979	unplasticised poly vinyl chloride	183	256	11,625	11,974	Pre	3%	1995	19,215	18,220	$ 1.05	2030	36	1.60	1.69
FM-642-1	FM-642-1	B	150	262.5	1979	unplasticised poly vinyl chloride	183	256	67,069	69,081	Pre	3%	1995	110,854	18,220	$ 6.08	2030	36	1.60	9.74

Label		Area	Diameter (mm)	Length (Unified) (m)	Actual Commissioning Year	Material	Total Rate 2003 ($/m)	Total Rate 2010 ($/m)	2010 Cost	Capital Cost (2011/12$ = 2010 price x 1.03)	Pre or Post 1996 Asset	Discount Rate	Effective Year of Commissioning (Financial year starting)*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
FM-647-1	FM-647-1	B	474	1,183.50	1976	unplasticised poly vinyl chloride	496	694	821,822	846,477	Pre	3%	1995	1,484,303	18,220	$ 81.47	2030	36	1.60	130.42
FM-653	FM-653	B	150	6	2010	unplasticised poly vinyl chloride	183	256	1,533	1,579	Post	7%	1995	572	18,220	$ 0.03	2030	36	2.58	0.08
FM-659	FM-659	B	150	18	2010	unplasticised poly vinyl chloride	183	256	4,599	4,737	Post	7%	1995	1,717	18,220	$ 0.09	2030	36	2.58	0.24
FM-660	FM-660	B	230	606	1981	Asbestos Cement	224	313	189,759	195,452	Pre	3%	1995	295,638	18,220	$ 16.23	2030	36	1.60	25.98
FM-705	FM-705	B	375	1,039.00	1985	Asbestos Cement	313	438	455,290	468,948	Pre	3%	1995	630,228	18,220	$ 34.59	2030	36	1.60	55.38
FM-707	FM-707	B	375	274.5	1985	Asbestos Cement	313	438	120,286	123,894	Pre	3%	1995	166,504	18,220	$ 9.14	2030	36	1.60	14.63
FM-747	FM-747	B	225	130	1981	Asbestos Cement	224	313	40,707	41,929	Pre	3%	1995	63,421	18,220	$ 3.48	2030	36	1.60	5.57
FM-759	FM-759	B	225	67	1981	Asbestos Cement	224	313	20,980	21,609	Pre	3%	1995	32,686	18,220	$ 1.79	2030	36	1.60	2.87
FM-761	FM-761	B	225	67	1981	Asbestos Cement	224	313	20,980	21,609	Pre	3%	1995	32,686	18,220	$ 1.79	2030	36	1.60	2.87
FM-765	FM-765	B	225	80.5	1981	Asbestos Cement	224	313	25,207	25,963	Pre	3%	1995	39,272	18,220	$ 2.16	2030	36	1.60	3.45
FM-771	FM-771	B	225	110.5	1981	Asbestos Cement	224	313	34,601	35,639	Pre	3%	1995	53,908	18,220	$ 2.96	2030	36	1.60	4.74
FM-779	FM-779	B	225	208.5	1981	Asbestos Cement	224	313	65,288	67,247	Pre	3%	1995	101,717	18,220	$ 5.58	2030	36	1.60	8.94
FM-780	FM-780	B	225	387.5	1981	Asbestos Cement	224	313	121,339	124,979	Pre	3%	1995	189,042	18,220	$ 10.38	2030	36	1.60	16.61
FM-818	FM-818	F	300	62.5	2009	unplasticised poly vinyl chloride	263	368	23,013	23,703	Post	7%	1995	9,192	3,272	$ 2.81	2030	36	2.58	7.25
FM-820	FM-820	F	225	54.5	2009	unplasticised poly vinyl chloride	224	313	17,066	17,578	Post	7%	1995	6,817	3,272	$ 2.08	2030	36	2.58	5.38
FM-822	FM-822	F	300	97.5	2009	unplasticised poly vinyl chloride	263	368	35,900	36,976	Post	7%	1995	14,340	3,272	$ 4.38	2030	36	2.58	11.31
FM-824	FM-824	F	225	95.5	2009	unplasticised poly vinyl chloride	224	313	29,904	30,801	Post	7%	1995	11,945	3,272	$ 3.65	2030	36	2.58	9.42
FM-825	FM-825	F	300	448	2009	unplasticised poly vinyl chloride	263	368	164,954	169,902	Post	7%	1995	65,891	3,272	$ 20.14	2030	36	2.58	51.98
FM-826	FM-826	F	300	280	2009	unplasticised poly vinyl chloride	263	368	103,096	106,189	Post	7%	1995	41,182	3,272	$ 12.59	2030	36	2.58	32.49
FM-827	FM-827	F	225	596.5	2009	unplasticised poly vinyl chloride	224	313	186,784	192,388	Post	7%	1995	74,611	3,272	$ 22.80	2030	36	2.58	58.86
FM-828	FM-828	F	225	116.5	2009	unplasticised poly vinyl chloride	224	313	36,480	37,574	Post	7%	1995	14,572	3,272	$ 4.45	2030	36	2.58	11.50
FM-871	FM-871	B	200	368	2010	unplasticised poly vinyl chloride	195	273	100,464	103,478	Post	7%	1995	37,505	18,220	$ 2.06	2030	36	2.58	5.31
FM-872	FM-872	B	200	389	2010	unplasticised poly vinyl chloride	195	273	106,197	109,383	Post	7%	1995	39,645	18,220	$ 2.18	2030	36	2.58	5.62
FM-873	FM-873	B	250	284	1990	unplasticised poly vinyl chloride	238	333	94,629	97,468	Pre	3%	1995	112,992	18,220	$ 6.20	2030	36	1.60	9.93
FM-874	FM-874	B	250	390.5	1990	unplasticised poly vinyl chloride	238	333	130,115	134,018	Pre	3%	1995	155,364	18,220	$ 8.53	2030	36	1.60	13.65
FM-875	FM-875	B	375	286.5	1987	unplasticised poly vinyl chloride	313	438	125,544	129,311	Pre	3%	1995	163,807	18,220	$ 8.99	2030	36	1.60	14.39
FM-876	FM-876	B	375	428	1987	unplasticised poly vinyl chloride	313	438	187,550	193,176	Pre	3%	1995	244,710	18,220	$ 13.43	2030	36	1.60	21.50
FM-881	FM-881	F	100	183	2009	unplasticised poly vinyl chloride	165	230	42,179	43,444	Post	7%	1995	16,848	3,272	$ 5.15	2030	36	2.58	13.29
FM-882	FM-882	F	100	118.5	2009	unplasticised poly vinyl chloride	165	230	27,313	28,132	Post	7%	1995	10,910	3,272	$ 3.33	2030	36	2.58	8.61
FM-896	FM-896	F	225	130.5	2009	unplasticised poly vinyl chloride	224	313	40,864	42,090	Post	7%	1995	16,323	3,272	$ 4.99	2030	36	2.58	12.88
FM-900	FM-900	F	225	124.5	2009	unplasticised poly vinyl chloride	224	313	38,985	40,155	Post	7%	1995	15,573	3,272	$ 4.76	2030	36	2.58	12.29
FM-901	FM-901	B	375	279.5	1985	Asbestos Cement	313	438	122,477	126,151	Pre	3%	1995	169,537	18,220	$ 9.31	2030	36	1.60	14.90
FM-902	FM-902	B	375	253.5	1985	Asbestos Cement	313	438	111,084	114,416	Pre	3%	1995	153,766	18,220	$ 8.44	2030	36	1.60	13.51
FM-905	FM-905	B	250	223	1990	unplasticised poly vinyl chloride	238	333	74,304	76,533	Pre	3%	1995	88,722	18,220	$ 4.87	2030	36	1.60	7.80
FM-907	FM-907	B	250	188.5	1990	unplasticised poly vinyl chloride	238	333	62,808	64,692	Pre	3%	1995	74,996	18,220	$ 4.12	2030	36	1.60	6.59
FM-909	FM-909	B	250	181	1990	unplasticised poly vinyl chloride	238	333	60,309	62,118	Pre	3%	1995	72,012	18,220	$ 3.95	2030	36	1.60	6.33
FM-911	FM-911	B	250	113.5	1990	unplasticised poly vinyl chloride	238	333	37,818	38,953	Pre	3%	1995	45,157	18,220	$ 2.48	2030	36	1.60	3.97
FM-912	FM-912	B	250	34	1990	unplasticised poly vinyl chloride	238	333	11,329	11,669	Pre	3%	1995	13,527	18,220	$ 0.74	2030	36	1.60	1.19
FM-921	FM-921	B	250	74.5	1990	unplasticised poly vinyl chloride	238	333	24,823	25,568	Pre	3%	1995	29,640	18,220	$ 1.63	2030	36	1.60	2.60
FM-922	FM-922	B	100	5.5	1985	unplasticised poly vinyl chloride	165	230	1,268	1,306	Pre	3%	1995	1,755	18,220	$ 0.10	2030	36	1.60	0.15
FM-923	FM-923	B	250	90.5	1990	unplasticised poly vinyl chloride	238	333	30,155	31,059	Pre	3%	1995	36,006	18,220	$ 1.98	2030	36	1.60	3.16
FM-924	FM-924	B	150	4.5	1979	unplasticised poly vinyl chloride	183	256	1,150	1,184	Pre	3%	1995	1,900	18,220	$ 0.10	2030	36	1.60	0.17
FM-925	FM-925	B	250	194	1990	unplasticised poly vinyl chloride	238	333	64,641	66,580	Pre	3%	1995	77,184	18,220	$ 4.24	2030	36	1.60	6.78
FM-927	FM-927	B	150	7	1993	unplasticised poly vinyl chloride	183	256	1,789	1,842	Pre	3%	1995	1,954	18,220	$ 0.11	2030	36	1.60	0.17
FM-932	FM-932	B	450	19.5	1976	unplasticised poly vinyl chloride	435	609	11,885	12,241	Pre	3%	1995	21,465	18,220	$ 1.18	2030	36	1.60	1.89
FM-940	FM-940	B	150	122	2010	unplasticised poly vinyl chloride	183	256	31,171	32,106	Post	7%	1995	11,637	18,220	$ 0.64	2030	36	2.58	1.65
FM-941	FM-941	B	150	207	2010	unplasticised poly vinyl chloride	183	256	52,889	54,475	Post	7%	1995	19,744	18,220	$ 1.08	2030	36	2.58	2.80
FM-942	FM-942	B	150	91.5	2010	unplasticised poly vinyl chloride	183	256	23,378	24,080	Post	7%	1995	8,728	18,220	$ 0.48	2030	36	2.58	1.24
FM-943	FM-943	B	150	65	2010	unplasticised poly vinyl chloride	183	256	16,608	17,106	Post	7%	1995	6,200	18,220	$ 0.34	2030	36	2.58	0.88
FM-945	FM-945	B	150	105.5	2010	unplasticised poly vinyl chloride	183	256	26,955	27,764	Post	7%	1995	10,063	18,220	$ 0.55	2030	36	2.58	1.43
FM-947	FM-947	B	150	73.5	2010	unplasticised poly vinyl chloride	183	256	18,779	19,343	Post	7%	1995	7,011	18,220	$ 0.38	2030	36	2.58	0.99
FM-948	FM-948	B	150	87.5	2010	unplasticised poly vinyl chloride	183	256	22,356	23,027	Post	7%	1995	8,346	18,220	$ 0.46	2030	36	2.58	1.18
FM-951	FM-951	B	225	103.5	1981	Asbestos Cement	224	313	32,409	33,382	Pre	3%	1995	50,493	18,220	$ 2.77	2030	36	1.60	4.44

Label		Area	Diameter (mm)	Length (Unified) (m)	Actual Commissioning Year	Material	Total Rate 2003 ($/m)	Total Rate 2010 ($/m)	2010 Cost	Capital Cost (2011/12$ = 2010 price x 1.03)	Pre or Post 1996 Asset	Discount Rate	Effective Year of Commissioning (Financial year starting)*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
FM-952	FM-952	B	225	151.5	1981	Asbestos Cement	224	313	47,440	48,863	Pre	3%	1995	73,910	18,220	$ 4.06	2030	36	1.60	6.49
FM-969	FM-969	B	375	5.5	1985	Asbestos Cement	313	438	2,410	2,482	Pre	3%	1995	3,336	18,220	$ 0.18	2030	36	1.60	0.29
FM-973	FM-973	F	100	144	2009	unplasticised poly vinyl chloride	165	230	33,190	34,186	Post	7%	1995	13,258	3,272	$ 4.05	2030	36	2.58	10.46
FM-974	FM-974	F	152.4	19.5	2009	unplasticised poly vinyl chloride	183	256	4,982	5,132	Post	7%	1995	1,990	3,272	$ 0.61	2030	36	2.58	1.57
FM-976	FM-976	F	300	596	2009	unplasticised poly vinyl chloride	263	368	219,447	226,031	Post	7%	1995	87,659	3,272	$ 26.79	2030	36	2.58	69.15
FM-978	FM-978	F	225	604	2009	unplasticised poly vinyl chloride	224	313	189,133	194,807	Post	7%	1995	75,549	3,272	$ 23.09	2030	36	2.58	59.60
FM-978	FM-978	B	150	9	1983	unplasticised poly vinyl chloride	183	256	2,300	2,368	Pre	3%	1995	3,377	18,220	$ 0.19	2030	36	1.60	0.30
FM-983	FM-983	F	225	133	2009	unplasticised poly vinyl chloride	224	313	41,647	42,896	Post	7%	1995	16,636	3,272	$ 5.08	2030	36	2.58	13.12
FM-988	FM-988	B	63	2.5	1985	unplasticised poly vinyl chloride	143	200	501	516	Pre	3%	1995	694	18,220	$ 0.04	2030	36	1.60	0.06
FM-907		E	150	2.5	1985	unplasticised poly vinyl chloride	*183*	256.2	641	660	Pre	3%	1995	887	4,135	$ 0.21	2030	36	1.60	0.34
FM-887		E	100	4	1985	unplasticised poly vinyl chloride	*152*	212.8	851	877	Pre	3%	1995	1,178	4,135	$ 0.28	2030	36	1.60	0.46
FM-1076		E	150	4	1985	unplasticised poly vinyl chloride	*183*	256.2	1,025	1,056	Pre	3%	1995	1,419	4,135	$ 0.34	2030	36	1.60	0.55
FM-905		E	50	4	1985	unplasticised poly vinyl chloride	*121*	169.4	678	698	Pre	3%	1995	938	4,135	$ 0.23	2030	36	1.60	0.36
FM-888		E	100	6	1985	unplasticised poly vinyl chloride	*152*	212.8	1,277	1,315	Pre	3%	1995	1,767	4,135	$ 0.43	2030	36	1.60	0.68
FM-901		E	150	6.5	1985	unplasticised poly vinyl chloride	*183*	256.2	1,665	1,715	Pre	3%	1995	2,305	4,135	$ 0.56	2030	36	1.60	0.89
FM-893		E	100	7	1985	unplasticised poly vinyl chloride	*152*	212.8	1,490	1,534	Pre	3%	1995	2,062	4,135	$ 0.50	2030	36	1.60	0.80
FM-220		E	100	7	1985	unplasticised poly vinyl chloride	*152*	212.8	1,490	1,534	Pre	3%	1995	2,062	4,135	$ 0.50	2030	36	1.60	0.80
FM-895		E	150	7.5	1985	unplasticised poly vinyl chloride	*183*	256.2	1,922	1,979	Pre	3%	1995	2,660	4,135	$ 0.64	2030	36	1.60	1.03
FM-900		E	50	7.5	1985	unplasticised poly vinyl chloride	*121*	169.4	1,271	1,309	Pre	3%	1995	1,759	4,135	$ 0.43	2030	36	1.60	0.68
FM-899		E	50	8	1985	unplasticised poly vinyl chloride	*121*	169.4	1,355	1,396	Pre	3%	1995	1,876	4,135	$ 0.45	2030	36	1.60	0.73
FM-206		E	150	8	1985	unplasticised poly vinyl chloride	*183*	256.2	2,050	2,111	Pre	3%	1995	2,837	4,135	$ 0.69	2030	36	1.60	1.10
FM-227		E	100	8	1985	unplasticised poly vinyl chloride	*152*	212.8	1,702	1,753	Pre	3%	1995	2,357	4,135	$ 0.57	2030	36	1.60	0.91
FM-223		E	150	9.5	1985	unplasticised poly vinyl chloride	*183*	256.2	2,434	2,507	Pre	3%	1995	3,369	4,135	$ 0.81	2030	36	1.60	1.30
FM-225		E	152.4	10	1985	unplasticised poly vinyl chloride	*183*	256.2	2,562	2,639	Pre	3%	1995	3,546	4,135	$ 0.86	2030	36	1.60	1.37
FM-228		E	100	10	1985	unplasticised poly vinyl chloride	*152*	212.8	2,128	2,192	Pre	3%	1995	2,946	4,135	$ 0.71	2030	36	1.60	1.14
FM-1073		E	150	11	1985	unplasticised poly vinyl chloride	*183*	256.2	2,818	2,903	Pre	3%	1995	3,901	4,135	$ 0.94	2030	36	1.60	1.51
FM-911		E	100	15	1985	unplasticised poly vinyl chloride	*152*	212.8	3,192	3,288	Pre	3%	1995	4,418	4,135	$ 1.07	2030	36	1.60	1.71
FM-902		E	150	19	1985	unplasticised poly vinyl chloride	*183*	256.2	4,868	5,014	Pre	3%	1995	6,738	4,135	$ 1.63	2030	36	1.60	2.61
FM-579		E	50	42	1985	unplasticised poly vinyl chloride	*121*	169.4	7,115	7,328	Pre	3%	1995	9,849	4,135	$ 2.38	2030	36	1.60	3.81
FM-891		E	32	52.5	1985	unplasticised poly vinyl chloride	*105.5*	147.7	7,754	7,987	Pre	3%	1995	10,734	4,135	$ 2.60	2030	36	1.60	4.16
FM-582		E	150	60	1985	unplasticised poly vinyl chloride	*183*	256.2	15,372	15,833	Pre	3%	1995	21,278	4,135	$ 5.15	2030	36	1.60	8.24
FM-209		E	32	77	1985	unplasticised poly vinyl chloride	*105.5*	147.7	11,373	11,714	Pre	3%	1995	15,743	4,135	$ 3.81	2030	36	1.60	6.09
FM-205		E	50	118.5	1985	unplasticised poly vinyl chloride	*121*	169.4	20,074	20,676	Pre	3%	1995	27,787	4,135	$ 6.72	2030	36	1.60	10.76
FM-224		E	150	140	1985	unplasticised poly vinyl chloride	*183*	256.2	35,868	36,944	Pre	3%	1995	49,650	4,135	$ 12.01	2030	36	1.60	19.22
FM-1070		E	50	206.5	1985	unplasticised poly vinyl chloride	*121*	169.4	34,981	36,031	Pre	3%	1995	48,422	4,135	$ 11.71	2030	36	1.60	18.75
FM-219		E	38	270.5	1985	unplasticised poly vinyl chloride	*113.56*	158,984	43,005	44,295	Pre	3%	1995	59,529	4,135	$ 14.40	2030	36	1.60	23.05
FM-578		E	100	279	1985	unplasticised poly vinyl chloride	*152*	212.8	59,371	61,152	Pre	3%	1995	82,184	4,135	$ 19.87	2030	36	1.60	31.82
FM-687		E	150	297.5	1985	unplasticised poly vinyl chloride	*183*	256.2	76,220	78,506	Pre	3%	1995	105,506	4,135	$ 25.51	2030	36	1.60	40.85
FM-229		E	100	321	1985	unplasticised poly vinyl chloride	*152*	212.8	68,309	70,358	Pre	3%	1995	94,555	4,135	$ 22.87	2030	36	1.60	36.61
FM-1081		E	100	456.5	1985	unplasticised poly vinyl chloride	*152*	212.8	97,143	100,057	Pre	3%	1995	134,469	4,135	$ 32.52	2030	36	1.60	52.06
FM-1069		E	100	596.5	1985	unplasticised poly vinyl chloride	*152*	212.8	126,935	130,743	Pre	3%	1995	175,708	4,135	$ 42.49	2030	36	1.60	68.02
FM-581		E	150	669	1985	unplasticised poly vinyl chloride	*183*	256.2	171,398	176,540	Pre	3%	1995	237,255	4,135	$ 57.37	2030	36	1.60	91.85
FM-207		E	80	2,942.00	1985	unplasticised poly vinyl chloride	*139.6*	195.44	574,984	592,234	Pre	3%	1995	795,913	4,135	$ 192.47	2030	36	1.60	308.13
FM-602		A	150	6.5	1993	unplasticised poly vinyl chloride	*183*	256.2	1,665	1,715	Pre	3%	1995	1,820	507	$ 3.59	2025	31	1.50	5.40
FM-1102		A	100	7.5	1993	unplasticised poly vinyl chloride	*152*	212.8	1,596	1,644	Pre	3%	1995	1,744	507	$ 3.44	2025	31	1.50	5.18
FM-1100		A	200	10.5	1993	unplasticised poly vinyl chloride	*203*	284.2	2,984	3,074	Pre	3%	1995	3,261	507	$ 6.43	2025	31	1.50	9.68
FM-1098		A	150	13	1993	unplasticised poly vinyl chloride	*183*	256.2	3,331	3,431	Pre	3%	1995	3,639	507	$ 7.18	2025	31	1.50	10.80
FM-1149		A	150	48.5	1993	unplasticised poly vinyl chloride	*183*	256.2	12,426	12,798	Pre	3%	1995	13,578	507	$ 26.78	2025	31	1.50	40.30
FM-1103		A	100	255	1993	unplasticised poly vinyl chloride	*152*	212.8	54,264	55,892	Pre	3%	1995	59,296	507	$ 116.95	2025	31	1.50	176.00
FM-1068		A	100	315.5	1993	unplasticised poly vinyl chloride	*152*	212.8	67,138	69,153	Pre	3%	1995	73,364	507	$ 144.70	2025	31	1.50	217.75
FM-1099		A	150	375.5	1993	unplasticised poly vinyl chloride	*183*	256.2	96,203	99,089	Pre	3%	1995	105,124	507	$ 207.34	2025	31	1.50	312.02
FM-191		A	200	785	1993	unplasticised poly vinyl chloride	*203*	284.2	223,097	229,790	Pre	3%	1995	243,784	507	$ 480.84	2025	31	1.50	723.57
FM-190		A	200	1181.5	1993	unplasticised poly vinyl chloride	*203*	284.2	335,782	345,856	Pre	3%	1995	366,918	507	$ 723.70	2025	31	1.50	1089.05
RM-3107-1		B	250	15	2010	DICL	238	333	4998	5,148	Post	7%	1995	1,866	18,220	$ 0.10	2030	36	2.58	0.26
RM-3107-2		B	200	158.5	2010	DICL	195	273	43271	44,569	Post	7%	1995	16,154	18,220	$ 0.89	2030	36	2.58	2.29
RM-3107-3		B	200	104	2010	DICL	195	273	28392	29,244	Post	7%	1995	10,599	18,220	$ 0.58	2030	36	2.58	1.50
RM-3115-1		B	100	258.5	2010	DICL	165	230	59581	61,368	Post	7%	1995	22,243	18,220	$ 1.22	2030	36	2.58	3.15
RM-3115-2		B	150	16	2010	DICL	183	256	4088	4,211	Post	7%	1995	1,526	18,220	$ 0.08	2030	36	2.58	0.22

^ Italicised rates indicate cost basis = Trunk Mains, rather than Rising Mains

Future RM

Area	STP Catchment	Correpsonding Capacity of System (sum of % of plant capacity noted)	Year when capacity is taken up, or 2040 (default 30 years)	Capital Charge per ET
A	Wardell (100%)	507	2025	0
B	Lennox Head STP (100%) and Ballina RWF (50%)	18,220	2030	40
C	Alstonville STP (15% of STP capacity)	730	2030	208
E	Alstonville STP (85% of STP capacity)	4,135	2030	15
F	Ballina RWF (25% of capacity)	3,272	2030	425
G	Ballina RWF (25% of capacity)	3,272	2030	475

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	Area	PS Catchment	Diameter (mm)	Length (m)	Year to be commissioned	Material	Total Rate (2003$/m)	Total Rate (2010$/m)	2010 Cost	Year Commissioned	Capital Cost (2011/12$)	Pre or Post 1996 asset	Discount Rate	Effective Year of Commissioning (Financial year starting)^	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
RM-2101-1	B	SP2101	375	505	2012	DICL	313	438	$ 221,291	2012	227,930	Post	7%	1995	72,157	18,220	$ 3.96	2030	36	2.58	10.22
RM-PSNNC-1	B	PS New North Creek	150	595	2020	DICL	183	256	$ 152,023	2020	156,583	Post	7%	1995	28,850	18,220	$ 1.58	2030	36	2.58	4.09
RM-PSNNC-2	B	PS New North Creek	150	24	2020	DICL	183	256	$ 6,132	2020	6,316	Post	7%	1995	1,164	18,220	$ 0.06	2030	36	2.58	0.16
RM-3001-1	B	SP3001	250	382.5	2015	DICL	238	333	$ 127,449	2015	131,272	Post	7%	1995	33,923	18,220	$ 1.86	2030	36	2.58	4.81
RM-2401-1	F	SP2401	150	480.00	2016	DICL	183	256	$ 122,640	2016	126,319	Post	7%	1995	30,508	3,272	$ 9.32	2030	36	2.58	24.07
RM-SPNB2-1	B	SPNB2	150	7.5	2015	DICL	183	256	$ 1,916	2015	1,974	Post	7%	1995	510	18,220	$ 0.03	2030	36	2.58	0.07
RM-SPNB2-2	B	SPNB2	150	997	2015	DICL	183	256	$ 254,734	2015	262,376	Post	7%	1995	67,803	18,220	$ 3.72	2030	36	2.58	9.61
RM-3001-3	B	SP3001	250	121	2015	DICL	238	333	$ 40,317	2015	41,527	Post	7%	1995	10,731	18,220	$ 0.59	2030	36	2.58	1.52
RM-3001-4	B	SP3001	250	129.5	2015	DICL	238	333	$ 43,149	2015	44,444	Post	7%	1995	11,485	18,220	$ 0.63	2030	36	2.58	1.63
RM-3001-5	B	SP3001	250	139.5	2015	DICL	238	333	$ 46,481	2015	47,876	Post	7%	1995	12,372	18,220	$ 0.68	2030	36	2.58	1.75
RM-3001-6	B	SP3001	250	68	2015	DICL	238	333	$ 22,658	2015	23,337	Post	7%	1995	6,031	18,220	$ 0.33	2030	36	2.58	0.85
RM-3001-7	B	SP3001	250	69	2015	DICL	238	333	$ 22,991	2015	23,681	Post	7%	1995	6,119	18,220	$ 0.34	2030	36	2.58	0.87
RM-3001-8	B	SP3001	250	86.5	2015	DICL	238	333	$ 28,822	2015	29,686	Post	7%	1995	7,672	18,220	$ 0.42	2030	36	2.58	1.09
RM-3001-9	B	SP3001	250	73	2015	DICL	238	333	$ 24,324	2015	25,053	Post	7%	1995	6,474	18,220	$ 0.36	2030	36	2.58	0.92
RM-3001-10	B	SP3001	250	230	2015	DICL	238	333	$ 76,636	2015	78,935	Post	7%	1995	20,398	18,220	$ 1.12	2030	36	2.58	2.89
RM-WUEA-1	C	Wollongbar	150	8.5	2011	DICL	*195*	273	$ 2,321	2011	2,390	Post	7%	1995	810	730	$ 1.11	2030	36	2.58	2.86
RM-WUEA-2	C	Wollongbar	150	25.5	2011	DICL	*195*	273	$ 6,962	2011	7,170	Post	7%	1995	2,429	730	$ 3.33	2030	36	2.58	8.59
RM-WUEA-3	C	Wollongbar	300	740.0	2020	DICL	*283*	396.2	$ 293,188	2020	301,984	Post	7%	1995	55,640	730	$ 76.25	2030	36	2.58	196.80
RM-4106-1	E	Wollongbar	100	103.5	2011	DICL	*164*	229.6	$ 23,764	2011	24,477	Post	7%	1995	8,291	4,135	$ 2.00	2030	36	2.58	5.17
RM-4106-2	E	Wollongbar	100	204.5	2011	DICL	164	229.6	$ 46,953	2011	48,362	Post	7%	1995	16,382	4,135	$ 3.96	2030	36	2.58	10.22
RM-PS6-20-1	G	Cura B PS6 North	450	52	2020	DICL	435	609	$ 31,692	2020	32,643	Post	7%	1995	6,014	3,272	$ 1.84	2030	36	2.58	4.74
RM-PS6-20-2	G	Cura B PS6 North	450	3,700.00	2020	DICL	435	609	$ 2,255,027	2020	2,322,677	Post	7%	1995	427,951	3,272	$ 130.80	2030	36	2.58	337.61
RM-PS6-20-3	G	Cura B PS6 North	450	1,456.50	2020	DICL	435	609	$ 887,688	2020	914,319	Post	7%	1995	168,462	3,272	$ 51.49	2030	36	2.58	132.90
FM-1013	F		300	1597	2013	DICL	263	368	$ 588,015	2013	605,656	Post	7%	1995	179,192	3,272	$ 54.77	2030	36	2.58	141.36
FM-1027	F		300	522	2013	DICL	263	368	$ 192,200	2013	197,966	Post	7%	1995	58,571	3,272	$ 17.90	2030	36	2.58	46.21
FM-1031	F		300	1085.5	2013	DICL	263	368	$ 399,681	2013	411,672	Post	7%	1995	121,799	3,272	$ 37.23	2030	36	2.58	96.09
FM-1032	F		200	1097.5	2013	DICL	195	273	$ 299,618	2013	308,606	Post	7%	1995	91,305	3,272	$ 27.91	2030	36	2.58	72.03
FM-894	F		300	138	2013	DICL	263	368	$ 50,812	2013	52,336	Post	7%	1995	15,484	3,272	$ 4.73	2030	36	2.58	12.22
FM-898	F		300	121.5	2013	DICL	263	368	$ 44,736	2013	46,078	Post	7%	1995	13,633	3,272	$ 4.17	2030	36	2.58	10.75
FM-981	F		300	130.5	2013	DICL	263	368	$ 48,050	2013	49,492	Post	7%	1995	14,643	3,272	$ 4.48	2030	36	2.58	11.55
RM-2402-15-1	F		225	42	2013	DICL	224	313	$ 13,152	2013	13,546	Post	7%	1995	4,008	3,272	$ 1.22	2030	36	2.58	3.16
FM-986	F		300	6	2013	DICL	263	368	$ 2,209	2013	2,275	Post	7%	1995	673	3,272	$ 0.21	2030	36	2.58	0.53
FM-988	F		300	30.5	2013	DICL	263	368	$ 11,230	2013	11,567	Post	7%	1995	3,422	3,272	$ 1.05	2030	36	2.58	2.70
FM-990	F		300	16	2013	DICL	263	368	$ 5,891	2013	6,068	Post	7%	1995	1,795	3,272	$ 0.55	2030	36	2.58	1.42
RM-2402-20-1	F		300	35.5	2013	DICL	263	368	$ 13,071	2013	13,463	Post	7%	1995	3,983	3,272	$ 1.22	2030	36	2.58	3.14

^ Italicised rates indicate cost basis = Trunk Mains, rather than Rising Mains

Existing SPSs (those contributing to captial charge)

Area	STP Catchment	Correpsondin g Capacity of System (sum of % of plant capacity noted)	Year when capacity is taken up, or 2040 (default 30 years)	Capital Charge per ET
A	Wardell (100%)	507	2025	2,607
B	Lennox Head STP (100%) and Ballina RWF (50%)	18,220	2030	288
C	Alstonville STP (15% of STP capacity)	730	2030	716
E	Alstonville STP (85% of STP capacity)	4,135	2030	196
F	Ballina RWF (25% of capacity)	3,272	2030	160
G	Ballina RWF (25% of capacity)	3,272	2030	0

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	Area	Design Flow (L/s) Or Storage (kL) if design head=0	Design Head (m)	Year Commissioned	Capital Cost (2011/12$ = 2010 cost x 1.03)	Pre or Post 1996 asset	Discount Rate	Effective Actual Commissioning Year*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
SP2101	B	110	31	1976	$ 246,327	Pre	3%	1995	239,152	18,220	$ 13.13	2030	36	1.60	21.01
SP2111	B	6.5	5	1985	$ 25,508	Pre	3%	1995	24,765	18,220	$ 1.36	2030	36	1.60	2.18
SP2218 Elkorn (Ferngrove)	B	70	27	2010	$ 460,911	Post	7%	1995	167,055	18,220	$ 9.17	2030	36	2.58	23.67
SP2404	F	12	35	2009	$ 524,505	Post	7%	1995	203,412	3,272	$ 62.17	2030	36	2.58	160.47
SP3002	B	21	13	1981	$ 142,293	Pre	3%	1995	138,148	18,220	$ 7.58	2030	36	1.60	12.14
SP3114	B	13.5	12	0	$ 41,005	Pre	3%	1995	39,811	18,220	$ 2.19	2030	36	1.60	3.50
SP4002	E	2.82	2	1974	$ 245,140	Pre	3%	1995	238,000	4,135	$ 57.55	2030	36	1.60	92.14
SP4102	C	17	40	1975	$ 335,986	Pre	3%	1995	326,200	730	$ 447.00	2030	36	1.60	715.61
SP4106	E	0.8	25	1989	$ 275,422	Pre	3%	1995	267,400	4,135	$ 64.66	2030	36	1.60	103.52
SP5001	A	6	7.5	2005	$ 210,532	Post	7%	1995	107,024	507	$ 211.09	2025	31	2.31	488.02
SP5002	A	31	14.5	2005	$ 323,008	Post	7%	1995	164,201	507	$ 323.87	2025	31	2.31	748.74
SP5005	A	9	9	2005	$ 210,532	Post	7%	1995	107,024	507	$ 211.09	2025	31	2.31	488.02
SP5006	A	43	33.5	2005	$ 380,688	Post	7%	1995	193,522	507	$ 381.70	2025	31	2.31	882.44
SP3107	B	34	49	2010	$ 411,503	Post	7%	1995	149,148	18,220	$ 8.19	2030	36	2.58	21.13
SP3115	B	13.5	12	2010	$ 87,313	Post	7%	1995	31,646	18,220	$ 1.74	2030	36	2.58	4.48
Pumps requiring emergency storage:															
SP3001	B	127	0	2010	$ 835,940	Post	7%	1995	302,983	18,220	$ 16.63	2030	36	2.58	42.92
SP3002	B	89	0	2010	$ 574,381	Post	7%	1995	208,182	18,220	$ 11.43	2030	36	2.58	29.49
SP3101	B	64	0	2010	$ 478,296	Post	7%	1995	173,357	18,220	$ 9.51	2030	36	2.58	24.56
SP3102	B	6	0	2010	$ 108,516	Post	7%	1995	39,331	18,220	$ 2.16	2030	36	2.58	5.57
SP3107	B	34	0	2010	$ 299,379	Post	7%	1995	108,509	18,220	$ 5.96	2030	36	2.58	15.37
SP3110	B	273	0	2010	$ 1,595,689	Post	7%	1995	578,351	18,220	$ 31.74	2030	36	2.58	81.93

Capital Works - Future Sewage Pump Stations (those contributing to capital charge)

Area	STP Catchment	Correpsonding Capacity of System (sum of % of plant capacity noted)	Year when capacity is taken up, or 2040 (default 30 years)	Capital Charge per ET
A	Wardell (100%)	507	2025	0
B	Lennox Head STP (100%) and Ballina RWF (50%)	18,220	2030	289
C	Alstonville STP (15% of STP capacity)	730	2030	2,963
E	Alstonville STP (85% of STP capacity)	4,135	2030	633
F	Ballina RWF (25% of capacity)	3,272	2030	92
G	Ballina RWF (25% of capacity)	3,272	2030	0

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	Area	Item	DESIGN_Q/Size	DESIGN_H	STREET	COMMENTS	TYPE	PUMP_LAB	Pump Cost ($2011/12 = 2010 cost x1.03)	YEAR	Costing Storage (kL)	Discount Rate	Effective Actual Commissioning Year*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
SP2112	B	Pump	22	14	WESTLANDS DRIVE	Upgrade Capacity	Upgrade	SP2112_2011_Upgrade	95,036	2011	Pump	7%	1995	32,192	18,220	$ 1.77	2030	36	2.58	4.56
SP2201	B	Pump	22	32	NORTH CREEK ROAD (CA	Diversion through to Ballina STP through Ferngrove	Upgrade	SP2201_Existing_Pump Definition	116,486	2030	Pump	7%	1995	10,910	18,220	$ 0.60	2030	36	2.58	See note 1
SP2202	B	Pump	7	20	RACECOURSE ROAD (NO.	Upgrade capacity	Upgrade	SP2202_2011_Upgrade	25,508	2011	Pump	7%	1995	8,641	18,220	$ 0.47	2030	36	2.58	1.22
SP2217	B	Pump	35	19	NORTH CREEK ROAD - N	Diversion back to Ballina STP	Upgrade	SP North Ballina	116,486	2015	Pump	7%	1995	30,102	18,220	$ 1.65	2030	36	2.58	4.26
SP2301	B	Pump	206	37	ANGELS BEACH DRIVE (	Upgrade Capacity	Upgrade	SP2301_2011_Upgrade	741,555	2011	Pump	7%	1995	251,190	18,220	$ 13.79	2030	36	2.58	35.59
SP2317	B	Pump	26	21	SILVER GULL DRIVE (A	Upgrade Capacity	Upgrade	SP2317_2011_Upgrade	116,486	2011	Pump	7%	1995	39,458	18,220	$ 2.17	2030	36	2.58	5.59
SP2401	B	Pump	34	60	Cumbalum Way	Upgrade Capacity	Upgrade	SP2401_2015_Upgrade	216,461	2015	Pump	7%	1995	55,938	18,220	$ 3.07	2030	36	2.58	7.92
SP2402	F	Pump	125	15	PERKINS CLOSE	Upgrade to accomodate Precinct A and Ballina Heights	Upgrade	SP2402_upgrade	216,461	2020	Pump	7%	1995	39,883	3,272	$ 12.19	2030	36	2.58	31.46
SP3001	B	Pump	121	60	BRYON STREET (LENNOX	Upgrade Capacity	Replace	SP3001_2011_Upgrade	2,080,125	2011	Pump	7%	1995	704,610	18,220	$ 38.67	2030	36	2.58	99.82
SP3101	B	Pump	21	52	SKENNARS HEAD ROAD	Upgrade Capacity	Upgrade	SP3101_2015_Upgrade	142,293	2015	Pump	7%	1995	36,771	18,220	$ 2.02	2030	36	2.58	5.21
SP3102	B	Pump	4	35	TARA DOWNS	Upgrade Capacity	Upgrade	SP3102_2015_Upgrade	41,005	2015	Pump	7%	1995	10,597	18,220	$ 0.58	2030	36	2.58	1.50
SP3110	B	Pump	233	55	BOMBORA PLACE	Upgrade Capacity	Upgrade	SP3110_2015_Upgrade	1,006,731	2015	Pump	7%	1995	260,158	18,220	$ 14.28	2030	36	2.58	36.86
SPNB2	B	Pump	25	15	New Development NB2 - NEW 03/03/2011	New NB2 development catchment SPS	New	SPNB2	248,034	2015	Pump	7%	1995	64,097	18,220	$ 3.52	2030	36	2.58	9.08
PS New North Creek	B	Storage	95		North Creek Road	Emergency Storage for new pump station	New	PS New North Creek assumed	645,986	2021	100	7%	1995	111,236	18,220	$ 6.11	2030	36	2.58	15.76
SP Angles Beach	B	Storage	166		New Development	Emergency Storage for new pump station	New	SP Angels Beach_New_Pump	1,037,740	2016	170	7%	1995	250,628	18,220	$ 13.76	2030	36	2.58	35.51
SP2402	F	Storage	32			Additional Emergency Storage Required	Additional		299,379	2015	40	7%	1995	77,365	3,272	$ 23.65	2030	36	2.58	61.03
SPNB2	B	Storage	102		New Development NB2	Emergency Storage for new pump station	New	SPNB2	724,020	2015	110	7%	1995	187,100	18,220	$ 10.27	2030	36	2.58	26.51
PMP-SP-NHS1	C	Pump	65.0	40.0	New Road - WUEA Development	New - Stage 2 for Development	Upgrade	PMP-SP-NHS1_Upgrade 2020	291,336	2020	Pump	7%	1995	53,678	730	$ 73.56	2030	36	2.58	189.86
PMP-SP-NHS1_Interim	C	Pump	25.0	48.0	New Road - WUEA Development	New - Stage 1 for Development	New	PMP-SP-NHS1_2011	2,075,495	2011	Pump	7%	1995	703,042	730	$ 963.40	2030	36	2.58	2486.61
SP4001U	E	Pump	15.0	4.0	Cawley Close	Pump Upgrade	Upgrade	SP4001_Upgrade 2011	25,508	2016	Pump	7%	1995	6,161	4,135	$ 1.49	2030	36	2.58	3.85
SP4004U	E	Pump	29.0	42.0	Granada Pde	Pump Upgrade	Upgrade	SP4004_Upgrade 2011	172,202	2016	Pump	7%	1995	41,589	4,135	$ 10.06	2030	36	2.58	25.96
SP4106U	E	Pump	12.0	15.0	Kayes Lane	Pump Upgrade	Upgrade	SP4106_Upgrade 2011	95,036	2011	Pump	7%	1995	32,192	4,135	$ 7.78	2030	36	2.58	20.09
SP4001	E	Storage	114.0		Cawley Cls (Alst.High School). Dependent on ET all	Upgrade Capacity			773,417	2011	120	7%	1995	261,983	4,135	$ 63.35	2030	36	2.58	163.52
SP4003	E	Storage	38.0		Cedar Crt (Oceanview)	Upgrade Capacity			299,379	2011	40	7%	1995	101,410	4,135	$ 24.52	2030	36	2.58	63.30
SP4004	E	Storage	93.0		Granaga Pde (Panorama)	Upgrade Capacity			645,986	2011	100	7%	1995	218,818	4,135	$ 52.92	2030	36	2.58	136.58
SP4106	E	Storage	162.0		Kays Lane (Russellton)	Upgrade Capacity			1,037,740	2011	170	7%	1995	351,519	4,135	$ 85.01	2030	36	2.58	219.41
SP4102	C	Storage	24.0		Central Park Dve (Sharwood)	Upgrade Capacity			239,432	2011	30	7%	1995	81,104	730	$ 111.14	2030	36	2.58	286.86
SP5006	A	Storage	7.0		Richmond St	Upgrade Capacity			108,516	2030	10	7%	1995	10,164	507	$ 20.05	2025	31	2.31	See note 1

Note 1 - Where assets are planned at or after the full-take up year (defined by year the area's STP reaches capacity), they are excluded from this DSP, following consultation with NOW.

^ The italicised cost for the Interim WUEA PS is based on actual construction costs, with mark-up to 2011/12 cost basis (rather than using reference rates), as is the basis of other pump stations.

Recycled Infrastructure

Area	STP Catchment	Total load on system (ET Count)	Year when capacity is taken up, or 2040 (default 30 years)	Capital Charge per ET
A	Wardell (100%)	507	2,025	0
B	Lennox Head STP (100%) and Ballina RWF (50%)	18,220	2,030	730
C	Alstonville STP (15% of STP capacity)	730	2,030	0
E	Alstonville STP (85% of STP capacity)	4,135	2,030	0
F	Ballina RWF (25% of capacity)	3,272	2,030	829
G	Ballina RWF (25% of capacity)	3,272	2,030	750

Note basis of 'system' is based on the wastewater treatment capacity as the recycled water infrastructure is seen as an improvement on the WW system

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

Pipes

Label	Priced by PWD?	Service area	Area	Length	Material	Diameter	Pipe Base Rate 2003 ($/m)	Construction Difficulty	Row Ref for diameter	Construction Difficulty Rate 2003 ($/m)	Total Rate 2003 ($/m)	Total Rate 2011/2012 ($/m = 2010 rate x1.03)	Total Cost 2011/2012 ($)	Date of Construction	Pre or Post 1996 Asset	Discount Rate	Effective Year of Commissioning (Financial year starting)*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
RWP11	PWD	North Ballina	B	52.94	PVC	200	130	High	5	120	250	758	40152	2012	Post	7%	1995	12,711	18,220	$ 0.70	2030	36	2.58	1.80
RWP13	PWD	North Ballina	B	281.14	PVC	200	130	High	5	120	250	758	213229	2012	Post	7%	1995	67,503	18,220	$ 3.70	2030	36	2.58	9.56
RWP15	PWD	Ballina Island	B	161.26	PVC	200	130	High	5	120	250	758	122307	2012	Post	7%	1995	38,719	18,220	$ 2.13	2030	36	2.58	5.49
RWP25	PWD	Ballina Island, Lennox Head	B	5469.53	PVC	300	210			0	210	758	4148332	2012	Post	7%	1995	1,313,256	18,220	$ 72.08	2030	36	2.58	186.04
RWP27	PWD	Ballina Heights	F	262.11	PVC	350	243			0	243.3333333	758	198796	2015	Post	7%	1995	51,373	3,272	$ 15.70	2030	36	2.58	40.53
RWP29	PWD	Ballina Heights	F	971.21	PVC	200	130			0	130	758	736608	2015	Post	7%	1995	190,354	3,272	$ 58.18	2030	36	2.58	150.17
RWP31	PWD	Ballina Heights	F	352.14	PVC	200	130			0	130	758	267078	2012	Post	7%	1995	84,550	3,272	$ 25.84	2030	36	2.58	66.70
RWP33	PWD	Ballina Heights	F	300.36	PVC	200	130			0	130	758	227806	2012	Post	7%	1995	72,118	3,272	$ 22.04	2030	36	2.58	56.89
RWP37		CURA B	G	3098.96	PVC	250	170			0	170	245	759679	2020	Post	7%	1995	139,970	3,272	$ 42.78	2030	36	2.58	110.42
RWP39		CURA B	G	1737.95	PVC	500	400			0	400	577	1002450	2020	Post	7%	1995	184,701	3,272	$ 56.45	2030	36	2.58	145.71
RWP41	PWD	Ballina Heights	F	179.6	PVC	100	70			0	70	758	136217	2012	Post	7%	1995	43,123	3,272	$ 13.18	2030	36	2.58	34.02
RWP45	PWD	Lennox Head	B	743.4	PVC	250	170	Moderate	6	75	245	203	150580	2012	Post	7%	1995	47,670	18,220	$ 2.62	2030	36	2.58	6.75
RWP47	PWD	Lennox Head	B	240.32	PVC	250	170	Moderate	6	75	245	203	48678	2012	Post	7%	1995	15,410	18,220	$ 0.85	2030	36	2.58	2.18
RWP49	PWD	Lennox Head	B	601.12	PVC	250	170	Moderate	6	75	245	203	121760	2012	Post	7%	1995	38,546	18,220	$ 2.12	2030	36	2.58	5.46
RWP51	PWD	Lennox Head	B	312.42	PVC	250	170	Moderate	6	75	245	203	63282	2012	Post	7%	1995	20,034	18,220	$ 1.10	2030	36	2.58	2.84
RWP53	PWD	Lennox Head	B	138.21	PVC	250	170	Moderate	6	75	245	203	27995	2012	Post	7%	1995	8,863	18,220	$ 0.49	2030	36	2.58	1.26
RWP55		Lennox Head	B	270.75	PVC	250	170	Moderate	6	75	245	353	95653	2020	Post	7%	1995	17,624	18,220	$ 0.97	2030	36	2.58	2.50
RWP57		Lennox Head	B	232.46	PVC	250	170	Moderate	6	75	245	353	82126	2020	Post	7%	1995	15,132	18,220	$ 0.83	2030	36	2.58	2.14
RWP59		Lennox Head	B	543.72	PVC	250	170	Moderate	6	75	245	353	192091	2020	Post	7%	1995	35,393	18,220	$ 1.94	2030	36	2.58	5.01
RWP61		Lennox Head	B	444.12	PVC	200	130	Moderate	5	60	190	274	121680	2020	Post	7%	1995	22,419	18,220	$ 1.23	2030	36	2.58	3.18
RWP63		Lennox Head	B	355.22	PVC	200	130	Moderate	5	60	190	274	97323	2020	Post	7%	1995	17,932	18,220	$ 0.98	2030	36	2.58	2.54
RWP65		Lennox Head	B	708.87	PVC	200	130	Moderate	5	60	190	274	194216	2020	Post	7%	1995	35,784	18,220	$ 1.96	2030	36	2.58	5.07
RWP67		Lennox Head	B	414.9	PVC	200	130	Moderate	5	60	190	274	113674	2020	Post	7%	1995	20,944	18,220	$ 1.15	2030	36	2.58	2.97
RWP69		Lennox Head	B	513.07	PVC	150	105	Moderate	4	45	150	216	110977	2020	Post	7%	1995	20,447	18,220	$ 1.12	2030	36	2.58	2.90
RWP71		Lennox Head	B	601.45	PVC	150	105	Moderate	4	45	150	216	130094	2020	Post	7%	1995	23,970	18,220	$ 1.32	2030	36	2.58	3.40
RWP73		Fig Tree Hill	B	531.14	PVC	150	105			0	105	151	80420	2020	Post	7%	1995	14,817	18,220	$ 0.81	2030	36	2.58	2.10
RWP75		Lennox Head	B	688.55	PVC	200	130	Moderate	5	60	190	274	188649	2020	Post	7%	1995	34,758	18,220	$ 1.91	2030	36	2.58	4.92
RWP77		Lennox Head	B	1061.49	PVC	100	70	Moderate	3	30	100	144	153067	2020	Post	7%	1995	28,202	18,220	$ 1.55	2030	36	2.58	4.00
RWP79		Lennox Head	B	328.18	PVC	200	130	Moderate	5	60	190	274	89915	2020	Post	7%	1995	16,567	18,220	$ 0.91	2030	36	2.58	2.35
RWP81		Lennox Head	B	1149.52	PVC	150	105	Moderate	4	45	150	216	248641	2020	Post	7%	1995	45,812	18,220	$ 2.51	2030	36	2.58	6.49
RWP83	PWD	Lennox Head	B	88.14	PVC	250	170	Moderate	6	75	245	203	17853	2012	Post	7%	1995	5,652	18,220	$ 0.31	2030	36	2.58	0.80
RWP85	PWD	Lennox Head	B	300.61	PVC	150	105	Moderate	4	45	150	203	60890	2012	Post	7%	1995	19,276	18,220	$ 1.06	2030	36	2.58	2.73
RWP87	PWD	Lennox Head	B	308.95	PVC	150	105	Moderate	4	45	150	203	62579	2012	Post	7%	1995	19,811	18,220	$ 1.09	2030	36	2.58	2.81
RWP89	PWD	Lennox Head	B	232.9	PVC	150	105	Moderate	4	45	150	203	47175	2012	Post	7%	1995	14,934	18,220	$ 0.82	2030	36	2.58	2.12
RWP91	PWD	Lennox Head	B	286.74	PVC	150	105	Moderate	4	45	150	203	58081	2012	Post	7%	1995	18,387	18,220	$ 1.01	2030	36	2.58	2.60
RWP93	PWD	Lennox Head	B	445.05	PVC	100	70	Moderate	3	30	100	203	90147	2012	Post	7%	1995	28,538	18,220	$ 1.57	2030	36	2.58	4.04
RWP95	PWD	Skenners Head	B	71.34	PVC	100	70			0	70	203	14450	2012	Post	7%	1995	4,575	18,220	$ 0.25	2030	36	2.58	0.65
RWP97	PWD	Lennox Head	B	823.67	PVC	100	70	Moderate	3	30	100	203	166839	2012	Post	7%	1995	52,817	18,220	$ 2.90	2030	36	2.58	7.48
RWP99	PWD	Lennox Head	B	413.6	PVC	100	70	Moderate	3	30	100	203	83777	2012	Post	7%	1995	26,522	18,220	$ 1.46	2030	36	2.58	3.76
RWP101	PWD	Skenners Head	B	450.49	PVC	100	70			0	70	203	91249	2012	Post	7%	1995	28,887	18,220	$ 1.59	2030	36	2.58	4.09
RWP105	PWD	Lennox Head	B	540.26	PVC	150	105	Moderate	4	45	150	203	109432	2012	Post	7%	1995	34,644	18,220	$ 1.90	2030	36	2.58	4.91
RWP107	PWD	East Ballina	B	654.9	PVC	150	105	Moderate	4	45	150	203	132653	2012	Post	7%	1995	41,995	18,220	$ 2.30	2030	36	2.58	5.95
RWP110		Lennox Head	B	822.46	PVC	200	130	Moderate	5	60	190	274	225338	2012	Post	7%	1995	71,336	18,220	$ 3.92	2030	36	2.58	10.11
RWP112		CURA B	G	133.81	PVC	250	170			0	170	245	32802	2020	Post	7%	1995	6,044	3,272	$ 1.85	2030	36	2.58	4.77
RWP114	PWD	North Ballina	B	68.57	PVC	200	130	High	5	120	250	758	52007	2012	Post	7%	1995	16,464	18,220	$ 0.90	2030	36	2.58	2.33
RWP116	PWD	Lennox Head	B	66.35	PVC	250	170	Moderate	6	75	245	203	13440	2012	Post	7%	1995	4,255	18,220	$ 0.23	2030	36	2.58	0.60
RWP118	PWD	Ballina Heights	F	114.35	PVC	300	210			0	210	758	86728	2015	Post	7%	1995	22,412	3,272	$ 6.85	2030	36	2.58	17.68
RWP120	PWD	Lennox Head	B	795.1	PVC	250	170	Moderate	6	75	245	203	161052	2012	Post	7%	1995	50,985	18,220	$ 2.80	2030	36	2.58	7.22

* Actual Commissioning Year assumed to be paired with Sewerage scheme, as recycled water system seen as improvement to WW system

Reservoirs

Label (ID)	Catchment	Service area	Service area	Capacity (ML)	Capacity (ML)	Reference rate (2003/04$)	Pre/Post 1996	Asset Division between Service areas	Capital Cost (2011/12$)	Year Commissioned	Year of Renewal	Discount rate	Effective Commissioning Year*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take up Period	ROI	Capital Charge ($/ET)
NOTE: Ballina Heights reservoir is listed twice to distribute the asset value between the two areas it services, it is still the same single facility																				
Ballina Heights Reservoir - RWR1		Ballina Island, North Ballina	B	3.5	3.5	External Figure	Post	0.44	1,093,953	2012	2112	7%	1995	346,318	18,220	19.01	2030	36	2.58	49.06
Ballina Heights Reservoir - RWR1		Cura A & Ballina Heights	F	3.5	3.5	External Figure	Post	0.56	1,402,547	2012	2112	7%	1995	444,010	3,272	135.71	2030	36	2.58	350.28
Kings Court Tank - RWR3		Lennox Head	B	0.17	0.2	External Figure	Post	1	720,000	2016	2116	7%	1995	173,889	18,220	9.54	2030	36	2.58	24.63
Ross Lane Reservoir - RWR2		Cura B	G	2.8	3	1636663.756	Post	1	2,073,277	2017	2117	7%	1995	467,966	3,272	143.03	2030	36	2.58	369.18
Lennox Head Reservoir - RWR4		Lennox Head	B	2.7	3	1636663.756	Post	1	2,073,277	2014	2114	7%	1995	573,278	18,220	31.47	2030	36	2.58	81.21

Pumps

Description	Label (ID)	Service area	Service area	Flow	kW	Reference rate (2007/08$)	Pre/Post 1996	Head	Capital Cost (2011/12$)	Year Commissioned	Year of Renewal	Discount rate	Effective Commissioning Year*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	$/ET	Year of Full Take up	Take up Period	ROI	Capital Charge ($/ET)
Cura A Booster Pump	RWRBP2	Cura A & Ballina Heights	F	19.99	10	External Figure	Post	30	194,165	2015	2115	7%	1995	50,176	3,272	15.34	2030	36	2.58	39.58
Ballina Recycled Water Scheme	RWRSP1	North Ballina	B	90	145	777502.6111	Post	103	875,086	2012	2112	7%	1995	277,030	18,220	15.21	2030	36	2.58	39.25
Lennox Head Recycled Water Scheme	RWRBP1	Lennox Head	B	160	240	External Figure	Post	95	952,000	2012	2112	7%	1995	301,379	18,220	16.54	2030	36	2.58	42.70

Label (ID)	Catchment	Service area	Service area	Plant Type	Capacity (ML/d)	Reference rate (2007/08$)	Pre/Post 1996	Asset Division between Service areas	Capital Cost (2011/12$)	actual Commissioned	Year of Renewal	Discount rate	Effective Commissioning Year*	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	$/ET	Year of Full Take up	Take up Period	ROI	Capital Charge ($/ET)
NOTE: Ballina RWP is listed 3 times to distribute the asset value between the three areas it services, it is still the same single facility																				
Ballina RWP		CURA A, Ballina Heights	F			External Figure	Post	0.32	290,983	2012	2082	7%	1995	92,118	3,272	28.16	2030	36	2.58	72.67
Ballina RWP		CURA B	G					0.53	478,646	2012	2082	7%	1995	151,527	3,272	46.31	2030	36	2.58	119.54
Ballina RWP		Ballina Island	B					0.15	140,371	2012	2082	7%	1995	44,438	18,220	2.44	2030	36	2.58	6.30
Lennox Head RWP			B			External Figure	Post	1	3,430,000	2012	2082	7%	1995	1,085,850	18,220	59.60	2030	36	2.58	153.83

* Actual Commissioning Year assumed to be paired with Sewerage scheme, as recycled water system seen as improvement to WW system

Future STW Upgrades

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

Area	Inc. Areas	STP Catchment	Correpsonding Capacity of System (sum of % of plant capacity noted)	Total load on system (ET Count)	Year when capacity is taken up, or 2040 (default 30 years)	Capital Charge per ET - STW FW	
A	Wardell	Wardell (100%)	507	529	2025	$ 755	
B	Ballina Island, EB, WB, NB, Skenners Head, Lennox Head	Lennox Head STP (100%) and Ballina RWF (50%)	18,220	18,140	2030	$ 1,117.51	<-- Area B uses weighted average based on share of population
C	WUEA	Alstonville STP (15% of STP capacity)	730	780	2030	$ 40	supported by Lennox Head vs Ballina RWF
E	Alst. Industr, Alstonville, Wollongbar	Alstonville STP (85% of STP capacity)	4,135	4,122	2030	$ 40	
F	Cura A, Ballina Heights	Ballina RWF (25% of capacity)	3,272	3,162	2030	$ 2,509	
G	Cura B	Ballina RWF (25% of capacity)	3,272	3,146	2030	$ 2,509	

Service area	STP Catchment	Component	Development area	Capital Cost (2011/12$ = 2010 cost x 1.03)	Year of Construction	Discount Rate	Effective Year of Commissioning (Financial year starting)	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
Ballina RWF Catchment Area	*Ballina RWF*	Upgrade - All stages completed simultaneously	B, F and G	$ 37,409,600	2011/2012	7%	1995	$ 12,671,926	13,087	$ 968.28	2030	36	2.58	$ 2,499
	Ballina RWF	Final upgrade, Membrane replacement (as per advice on 31/7/14)	B, F and G	$ 500,000	2029/2030	7%	1995	$ 50,110	13,087	$ 3.83	2030	36	2.58	$ 10
Lennox STW Catchment Area	*Lennox Head STP*	Lennox Head RWF - Ultimate Upgrade	B	$ 4,635,000	2011/12	7%	1995	$ 1,570,035	11,676	$ 134.47	2030	36	2.58	$ 347
					Note the 2010/11 upgrade of Lennox Head RWF is now on the exsting STW table									
Alstonville STP Catchment Area	*Alstonville STP*	Biosolids Management	C & E	$ 288,400	2015/2016	7%	1995	$ 74,528	4,865	$ 15.32	2030	36	2.58	$ 40
Wardell STP Catchment Area	*Wardell STP*	Additional 1750EP IDEA Tank - Stage 1	A	$ 240,334	2019/20	7%	1995	$ 47,381	507	$ 93.45	2030	36	2.58	$ 241
Wardell STP Catchment Area	*Wardell STP*	Additional 1750EP IDEA Tank - Stage 2	A	$ 240,334	2020/21	7%	1995	$ 44,281	507	$ 87.34	2030	36	2.58	$ 225
Wardell STP Catchment Area	*Wardell STP*	Additional 1750EP IDEA Tank - Stage 3	A	$ 240,334	2021/22	7%	1995	$ 41,384	507	$ 81.63	2030	36	2.58	$ 211
Wardell STP Catchment Area	*Wardell STP*	UV Disinfection System Upgrade	A	$ 72,100	2018/19	7%	1995	$ 15,209	507	$ 30.00	2030	36	2.58	$ 77

Existing STWs

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

Area	Inc. Areas	STP Catchment	Correpsonding Capacity of System (sum of % of plant capacity noted)	Total load on system (ET Count)	Year when capacity is taken up, or 2040 (default 30 years)	Capital Charge per ET - STW FW	
A	Wardell	Wardell (100%)	507	529	2025	$ 11,699	
B	Ballina Island, EB, WB, NB, Skenners Head, Lennox Head	Lennox Head STP (100%) and Ballina RWF (50%)	18,220	18,140	2030	$ 2,153	<-- Area B uses weighted average based on share of population supported by Lennox Head vs Ballina RWF
C	WUEA	Alstonville STP (15% of STP capacity)	730	780	2030	$ 4,401	
E	Alst. Industr, Alstonville, Wollongbar	Alstonville STP (85% of STP capacity)	4,135	4,122	2030	$ 4,401	
F	Cura A, Ballina Heights	Ballina RWF (25% of capacity)	3,272	3,162	2030	$ -	<-- No pre-existing asset costs for areas F & G; costs of Ballina RWF included on Future STW page
G	Cura B	Ballina RWF (25% of capacity)	3,272	3,146	2030	$ -	<-- No pre-existing asset costs for areas F & G; costs of Ballina RWF included on Future STW page

Component (Served by)	Development area	Capital Cost (2011/12$ = 2010 cost x 1.03)	Year Commissioned	Discount Rate	Effective Year of Commissioning (Financial year starting)	PV (1995/96) of Capital Cost (2011/2012)	Total Service ET (total at treatment plant)	Capital cost per ET (2011/2012$)	Year of Full Take up (Financial year starting)	Take Up Period	ROI Factor	Capital Charge ($/ET)
Wardell STP	A	$ 2,937,487	1997	7%	1995	$ 2,565,715	507	$ 5,060.58	2025	31	2.31	$ 11,699
Lennox Head STP	B	$ 15,543,243	1982	3%	1995	$ 22,825,776	11,676	$ 1,954.93	2030	36	1.60	$ 3,130
Lennox Head STP 2010/11 upgrade	B	$ 2,678,000	2010	7%	1995	$ 970,630	11,676	$ 83.13	2030	36	2.58	$ 215
Ballina STP	B, F and G	Decommissioned										
Alstonville STP	C and E	$ 9,950,942	1985	3%	1995	$ 13,373,234	4,865	$ 2,748.87	2030	36	1.60	$ 4,401