Shoalhaven City Council

Development Servicing Plans for Sewerage Services

November 2005

Shoalhaven City Council

Proposed Development Servicing Plan for Sewerage Services

November 2005

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Executive Summary

This document covers sewerage developer charges for the following development areas served by Shoalhaven City Council (SCC):

Service Area	Areas Included
Kangaroo Valley	Kangaroo Valley
Berry	Berry
Bomaderry	Cambewarra, Bomaderry
Nowra	Nowra, Nth Nowra, Sth Nowra, West Nowra, Worrigee, Nowra Hill
Shoalhaven Heads	Shoalhaven Heads
Culburra	Culburra Beach, Greenwell Point, Orient Point
Callala	Callala Bay, Callala Beach, Currarong, Myola
Huskisson/Vincentia	Huskisson, Vincentia, Woollamia, Hyams Beach
St Georges Basin	Wrights Beach, Bream Beach, Erowal Bay, Old Erowal Bay, Sancturary Point, St Georges Basin, Basin View, Tomerong, Wandandian
Sussex Inlet	Sussex Inlet, Swanhaven, Cudmirrah, Berrara
Conjola	Berringer Lake, Bendalong, Manyana, Cunjurong Point, Fishermans Paradise, Lake Conjola, Conjola Park
Milton/Ulladulla	Milton, Ulladulla, Narawallee, Mollymook, Mollymook Beach, Kings Point, Burrill Lake, Dolphin Point, Lake Tabourie

This document has been prepared in accordance with the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (December 2002) issued by the former Department of Land and Water Conservation (DLWC) pursuant to section 306 (3) of the *Water Management Act 2000* and Circular LWU 5 issued by the Director General of the Department of Energy, Utilities and Sustainability (DEUS) in October 2004. This document is to be registered with the DEUS.

The timing and expenditures for works serving the area covered by this document and the calculation of developer charges is given in Appendices B, C and D.

Levels of service to be provided to the service areas are summarised in Table 5 in Section 4.5.

After agglomeration there is one development servicing plan (DSP). The developer charges for the DSP covered by this document are shown in Table 1.

Table 1 – Proposed Developer Charges

DSP Area	DSP Name	Proposed Developer Charge (2005/06 $ per ET)
A	Shoalhaven Sewerage Service Area	$6,780

If Council were to phase in this developer charge over 5 years the following would apply as shown in Table 2.

Table 2 - Phasing-in of Developer Charges (2005/06 $)

DSP Area	Proposed Developer Charge (2005/06 $ per ET)					
	Current 2005	From 1/1/2006	From 1/7/2006	1/7/2007	1/7/2008	1/7/2009
Shoalhaven Sewerage Service Area	$2,010	$3,000	$4,000	$5,000	$6,000	$6,780

Council has throughout the City various Special Section 64 infrastructure contributions which directly relate to the recoupment of existing and proposed infrastructure. Therefore should Council phase in the Developer Charges as per Table 2 the following criteria will apply to those lands which exist within the current Special Section 64 project areas (Refer to Appendix E for area plans):

Table 3 – Criteria for Special Section 64 Infrastructure Contribution Areas

Function					Charge to be Applied
Phased in Developer Charge	<	(S64 + SS64's) x CPI	<	Full Developer Charge	(S64 + SS64's) x CPI
Phased in Developer Charge	>	(S64 + SS64's) x CPI	<	Full Developer Charge	Phased in Developer Charge
Phased in Developer Charge	<	(S64 + SS64's) x CPI	>	Full Developer Charge	Full Developer Charge

S64 : Section 64 Contribution
SS64 : Special Section 64 Contribution
CPI : Consumer Price Index
Phased in Developer Charge: Charge specified in Table 2, eg: From 1/1/2006, From 1/7/2006 and 1/7/2007.
Full Developer Charge: Charge specified in Table 2 for 1/7/2009

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years. A shorter review period is permitted if a major change in circumstances occurs. In the period between any reviews, developer charges will be adjusted annually on 1 July (in Council's Annual management Plan) on the basis of the movements in the CPI for Sydney, excluding the impact of GST.

The developer shall be responsible for the full cost of the design and construction of reticulation works within subdivisions and for other works where they are not shown in this Plan.

Further details relating to the assets and to these plans can be found in the Background Documents (Refer Section 6).

Contents

1 Introduction

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

A Development Servicing Plan (DSP) is a document which details the sewerage developer charges to be levied on development areas utilising a Council's sewerage infrastructure. This document contains one DSP which enumerates the sewerage developer charge for the areas served by Shoalhaven City Council (SCC).

This DSP has been prepared in accordance with the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (December 2002) issued by the Minister for Land and Water Conservation (now Minister for Energy and Utilities), pursuant to section 306 (3) of the *Water Management Act 2000* and Circular LWU 5 issued by the Director General of the Department of Energy, Utilities and Sustainability (DEUS) in October 2004.

This DSP supersedes any other requirements related to sewerage developer charges for the areas covered by the DSP. This DSP takes precedence over any of Council's codes or policies where there are any inconsistencies relating to the determination of sewerage developer charges.

2 Administration

DSP Name	Shoalhaven Sewerage Service Area
DSP Area	The areas covered by this DSP are shown in the plans located in Appendix A.
DSP Boundaries	The basis for defining the DSP area boundary is the sewerage areas served by the Kangaroo Valley, Berry, Shoalhaven Heads, Culburra, Callala, Huskisson/Vincentia, St Georges Basin, Sussex Inlet, Conjola and Milton/Ulludulla, Nowra and Bomaderry STPs.
Payment of Developer Charges	The contribution/s will be assessed by Council's Shoalhaven Water Group and will be those applicable at the time of payment where an operational development consent and Development Application Notice have been issued.

3 The Developer Charges Process

3.1 Introduction

Developer charges are up-front charges levied to recover part of the infrastructure costs incurred in servicing new developments or additions/changes to existing developments. Developer charges serve two related functions:

- They provide a source of funding for infrastructure required for new urban development.
- They provide signals regarding the cost of urban development and thus encourage less costly forms and areas of development.

The Developer Charges calculation is based on the net present value (NPV) approach adopted by the Independent Pricing and Regulatory Tribunal (IPART) for the metropolitan water utilities. The fundamental principle of the NPV approach is that the investment in assets for serving a development area is fully recovered from the development. The investment is recovered through up-front charges (i.e. developer charges) and the present value (PV) of that part of annual bills received from the development in excess of operation, maintenance and administration (OMA) costs.

i.e. Developer Charge = Capital Charge (cost of providing the assets) – Reduction Amount (cost recovered through annual bills).

The Capital Charge and Reduction Amount are discussed further in the following sections. The developer charges process is described fully in the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (December 2002) and Circular LWU 5 issued by the Director General of the Department of Energy, Utilities and Sustainability (DEUS) in October 2004.

NSW local water utilities (LWUs) which propose to levy developer charges for water supply and/or sewerage need to prepare development servicing plans (DSPs). The DSP details the calculation of the developer charges and is required to be fair and transparent.
LWUs need to calculate and report developer charges in accordance with section 306 (3) of the *Water Management Act 2000* and the Developer Charges Guidelines, and to register their DSPs with DEUS. DEUS spreadsheets have been used in the calculation of these charges.

Developer charges relating to a particular DSP should be reviewed by the LWU after a period of 5 to 6 years. If the review indicates that the developer charges in the DSP remain valid, the DSP will apply for a further 5 to 6 years after the utility releases a public notice to this effect. However, if it is considered that a new DSP is warranted a new DSP shall be prepared, exhibited and registered.

If a major change occurs in the LWUs circumstances such as the need for significant capital works that had not been included in the DSP, the LWU may carry out a review in less than 5 years, subject to approval by DEUS.

3.2 The Capital Charge

Capital Charge = Capital Cost x Return on Investment (ROI) Factor

The capital cost includes the cost of providing, extending or augmenting assets required, or likely to be required, to provide services to a development area. The capital cost per equivalent tenement (ET) is the value of the relevant assets divided by the capacity of these assets (in ETs).

Typically, the capacity of an asset would not be fully utilised until some time after construction of the asset. The Return on Investment (ROI), also known as a holding charge, is based on the cost of early investment, and recovery of the cost over time. The

ROI factor is dependent on the period for take-up of the asset capacity, and the rate of return required for the asset.

The capital charge is calculated for each service area. Service areas can be:

- An area served by a separate sewage treatment works.
- Separate small towns or villages.
- A new development area of over 500 lots.

Where the capital charges for two or more service areas are within 30%, they are agglomerated into a single DSP. Circular LWU 5 allows local water utilities to further agglomerate their DSP areas, including agglomeration all the areas. Shoalhaven City Council elected to agglomerate all the sewerage areas into a single DSP.

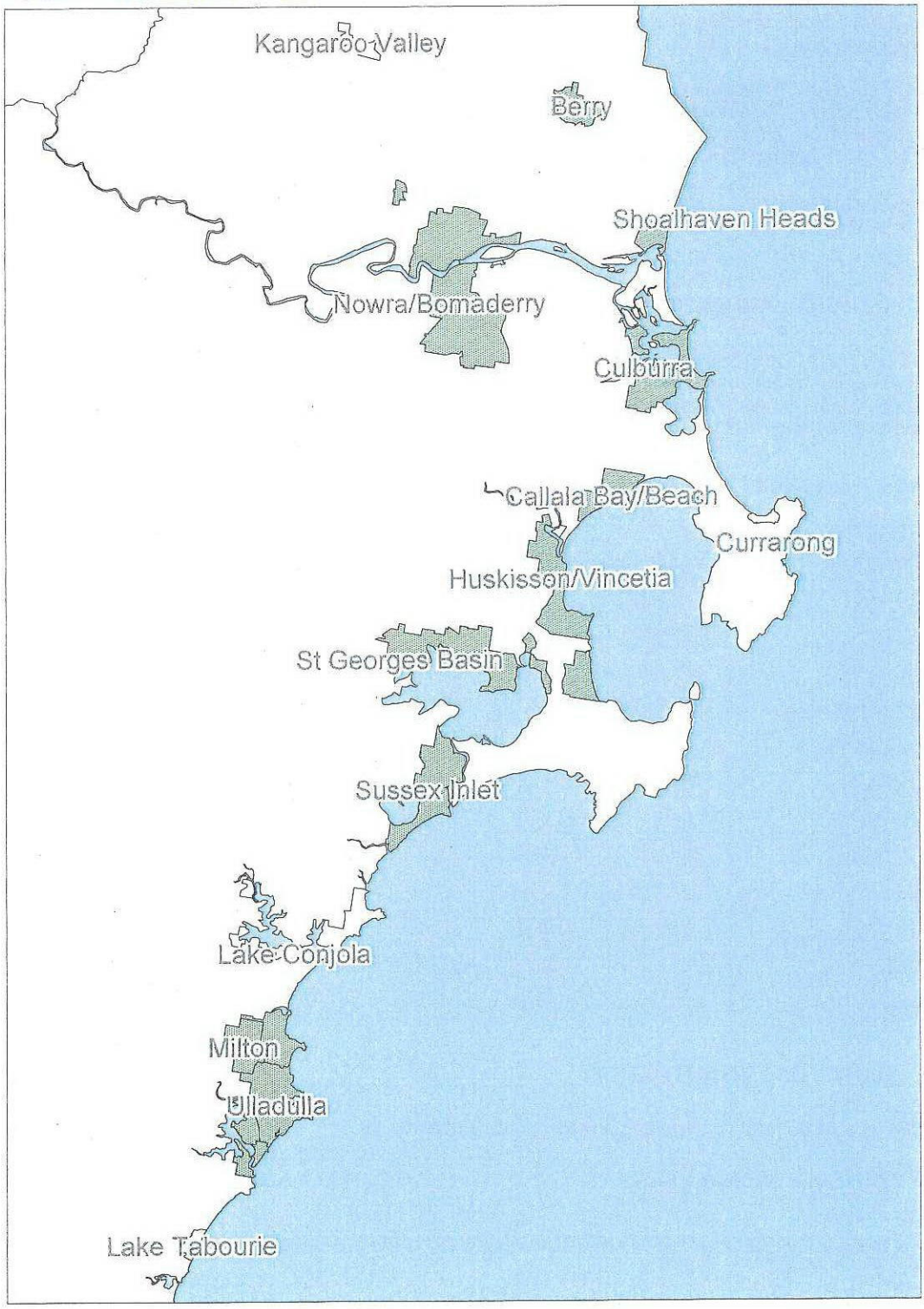
3.3 The Reduction Amount

SCC has adopted the NPV of Annual Charges method for calculation of the Reduction Amount. This method involves calculation of the present value (PV) of the difference between annual rates and charges revenue, and annual operating costs projected for new development over the next 30 years. This is divided by the PV of the new ETs over the planning horizon to give the reduction amount. The method involves 30 year forecasting of income and expenditures relating to new development.

4 Shoalhaven City Sewerage

The SCC sewerage area is shown on Figure 1.

Figure 1 – SCC Sewerage Area



4.1 Existing Sewerage Services

The Shoalhaven City Sewerage System currently consists of the urban catchments of Berry, Nowra, Bomaderry, Shoalhaven Heads, Culburra, Callala, Huskisson/Vincentia, St Georges Basin, Sussex Inlet, Milton/Ulladulla. All these catchments currently operate independently of one another. The new sewerage backlog areas of Kangaroo Valley, Tabourie Lake, Currarong and Conjola Region are being constructed over the next 5 years.

There are currently 10 sewage treatment works within Shoalhaven City, located at Berry, Nowra, Bomaderry, Shoalhaven Heads, Culburra, Callala, Huskisson/Vincentia, St Georges Basin, Sussex Inlet, Milton/Ulladulla. Current sewer augmentation projects will increase this to 12 treatment facilities with the addition of Conjola North and Conjola South.

Shoalhaven City sewerage currently incorporates 193 sewage pumping stations and 1026 kilometres of pipe. All sewerage assets within Shoalhaven City are owned and operated by SCC.

4.2 Growth Projections

Table 4 lists the proposed sewered areas and their populations as equivalent tenements (ET). Population projections are based on expected growth and include allowance for permanent residents, non-residential users and holiday loadings. These projections are from the present year to 2034, which is Council's planning horizon.

Table 4 – Projected ET of Sewered Areas

Service Area	2004	2009	2014	2024	2034
Kangaroo Valley	-	405	427	439	442
Berry	966	1,228	1,395	1,474	1,477
Bomaderry	4,583	4,871	5,369	7,675	9,105
Nowra	11,583	12,865	14,727	17,027	20,524
Huskisson/Vincentia	3,664	4,352	4,890	5,831	5,839
St Georges Basin	6,798	7,876	8,598	9,284	9,292
Sussex Inlet	4,323	4,594	4,861	5,120	5,380
Milton/Ulladulla	9,951	11,575	12,294	13,596	14,717
Shoalhaven Heads	2,435	2,570	2,800	3,062	3,306
Callala	2,155	3,338	3,771	3,776	3,782
Culburra	3,939	4,080	4,262	4,616	4,828
Conjola	-	3,150	3,692	3,975	3,982
Totals	50,396	60,902	67,086	75,876	82,676

4.3 Land Use Information

This DSP should be read in conjunction with Council's LEP.

4.4 Design Parameters

Investigation and design of sewerage system components is based on the following design manuals (as amended by Council):

- Manual of Practice: Sewer Design (1987).
- Manual of Practice: Sewage Pumping Station Design (1986).

- WSAA Sewerage Code of Australia (WSA02-2002).

4.5 Levels of Service

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

Table 5 – Levels of Service

Item	Description	Adopted Design Criteria	
Design Flow			
1	Average Dry Weather Flow (ADWF)	210 L/d/EP	
2	EP/ET	Coastal areas	3.2 [1]
		Inland areas	2.5 [2]
	Peak Wet Weather Flow (PWWF)	Berry Nowra/Bomaderry St Georges Basin Sussex Inlet Milton/Ulladulla Huskisson/Vincentia	1,020 – 1,520 Litres per day per EP
Pump Stations			
4	Design Flow	Capacity of duty and standby pumps able to deliver peak wet weather flow of upstream system/s based on flows only.	
Rising Main Design			
5	Design Flow	Capacity to be able to carry peak wet weather flow of pumping station at velocity of 2.5m/s Augmented rising mains to deliver to nearest 300mm or above gravity main where capacity exists, otherwise to nearest SPS where capacity exists, otherwise to TWKs.	
6	Pipe materials	DICL Cl 9, MPVC Cl 12, uPVC SII Cl 12	
Gravity System Design			
7	Maximum Anticipated Design Flow	All pipe sizing of gravity system extensions to be designed assuming a velocity of 1m/s with capacity exceeding maximum anticipated design flow.	
Emergency Storage			
8		Minimum 4hrs ADWF for inland areas (Berry and Nowra/Bomaderry) Minimum 8hrs ADWF for coastal areas	

1: Design occupancy in coastal areas is made of 2 permanent residents @ 1 EP per resident and 2 visitors @ 0.6 EP per visitor.
2: 2.5 was used for the following coastal areas: Saint Georges Basin and Milton/Ulladulla

4.6 System Capacity

SCC plans to augment its sewerage systems to cater for future growth. The system capacities are shown in the following table and are compared to existing and future populations (refer Section 4.2). System capacity is based on the following:

- Treatment works – design capacity (ET) with EP/ET conversion rate of 2.5 EP/ET for inland areas and 3.2 EP/ET for coastal areas unless noted otherwise.
- Transfer system – projected number of tenements in 2034 (refer Table 6)

The service areas used to calculate the developer charges are based on the future STP catchments.

Table 6 – Sewerage Systems Capacities

	Transfer System Capacity (ET)		Sewerage Treatment Plant Capacity (ET)	
Service Area	2004	2034	2004	2034
Kangaroo Valley	0	442	0	560
Berry	966	1,477	800	1,400
Bomaderry	4,583	9,105	5,000	8,200
Nowra	11,583	20,524	8,400	18,000
Huskisson/Vincentia	3,664	5,839	4,375	6,250
St Georges Basin	6,798	9,292	6,400	8,800
Sussex Inlet	4,323	5,380	2,500	5,625
Milton/Ulladulla	9,951	14,717	11,200	15,200
Shoalhaven Heads	2,435	3,306	1,250	3,125
Callala	2,155	3,782	1,875	3,750
Culburra	3,939	4,828	3,438	4,688
Conjola	0	3,982	0	3,438
Totals	50,397	82,674	45,238	79,035

Note: Figures extracted from Shoalhaven Water's "Headworks Capacity, Capability and Capital Works Calculations, 2005".

4.7 Capital Works

Capital works of $366 M (2005/06 $) will be required over the next 30 years to provide sewerage services to the city.

4.8 Timing of Works and Expenditure

The timing and expenditure for works serving SCC are shown in the capital works program, refer Appendix B.

5 Calculation of Developer Charges

5.1 Capital Charge

The capital charge was calculated separately for each of the service areas, based on the existing and future assets providing the services in those catchments. The capital charge for each area is calculated in Appendix C and summarised in Table 7.

Table 7 - Initial Capital Charges

Capital Charge Area	Capital Charge per ET (2005/06 $)
Conjola	$16,030
Kangaroo Valley	$13,997
Callala	$12,040
Berry	$9,699
Huskisson/Vincentia	$8,697
Culburra	$8,669
Sussex Inlet	$7,816
Shoalhaven Heads	$7,721
Bomaderry	$6,856
St Georges Basin	$6,404
Milton/Ulladulla	$6,338
Nowra	$5,605

5.2 Agglomeration of DSP Areas

The capital charges were then grouped into DSP areas of within 30% of the highest capital charge. The process of the agglomeration is shown in Table 8.

The weighted average capital charge is calculated on the proportion of growth in each DSP area shown in Table 8. The weighted average capital charge is used to calculate the reduction amount for the whole shire.

Table 8 - Agglomeration of Capital Charges

Area	Location	Capital Charge	DSP Area A	DSP Area B	DSP Area C	Prop'n of Growth %	DSP Capital Charge	Weighted Average Capital Charge
		2005$ per ET	% of highest	% of highest	% of highest			
A	Conjola	$16,030	100%			8%	$14,106	$1,211
	Kangaroo Valley	$13,997	87%			0%		$55
	Callala	$12,040	75%			7%		$844
B	Berry	$9,699	61%	100%		4%	$8,244	$432
	Huskisson/Vincentia	$8,697	54%	90%		10%		$832
	Culburra	$8,669	54%	89%		3%		$236
	Sussex Inlet	$7,816	49%	81%		5%		$387
	Shoalhaven Heads	$7,721	48%	80%		3%		$218
	Bomaderry	$6,856	43%	71%		6%		$415
C	St Georges Basin	$6,404	40%	66%	100%	15%	$6,012	$988
	Milton/Ulladulla	$6,338	40%	65%	99%	13%		$850
	Nowra	$5,605	35%	58%	88%	26%		$1,437
Weighted Average Capital Charge						100%		**$7,905**

Note: "Prop'n of Growth %" figures based on Table C14: Growth in Service Areas

The outcomes of the agglomeration process are:

- Conjola and Kangaroo Valley have similar charges and are grouped into DSP Area A.
- Callala and Berry have similar charges and are grouped into DSP Area B.
- Huskisson/ Vincentia, Culburra, Sussex Inlet, Shoalhaven Heads, St Georges Basin and Bomaderry and have similar charges and are grouped into DSP Area C.
- And Milton/Ulladulla and Nowra become DSP Area D.

5.3 Reduction Amount

Council has adopted the NPV of Annual Charges method to calculate the Reduction Amount. The Reduction Amount is calculated for the whole of SCC sewerage.

The reduction amount for SCC developer charges was calculated as **$1,125** per ET (refer Appendix D).

5.4 Developer Charges

The calculated developer charges for the DSP areas are shown in Table 9. These developer charges reflect the cost of assets for serving new development.

Table 9 - Developer Charges (2005/06 $)

DSP Area	DSP Name	Capital Charge	Reduction Amount	Developer Charge	% Growth
A	Conjola, Kangaroo Valley, Callala	$14,106	$1,125	$12,981	15%
B	Berry, Huskisson/Vincentia, Sussex Inlet, Shoalhaven Heads, Culburra, Bomaderry	$8,244	$1,125	$7,119	31%
C	St Georges Basin, Milton/Ulludulla, Nowra	$6,012	$1,125	$4,887	54%
Weighted Average Developer Charge				**$6,780**	100%

5.5 Reviewing/Updating of Calculated Developer Charges

As required by the guidelines (section 2.5), the developer charge relating to this DSP will be reviewed by SCC after a period of 5 to 6 years. If the review indicates that the developer charge in the DSP remains valid, this DSP will apply for a further 5 to 6 years after the Council releases a public notice to this effect. However, if it is considered that a new DSP is warranted, a new DSP shall be prepared, exhibited and registered.

If a major change occurs in the LWU's circumstances such as the need for significant capital works that had not been included in these DSPs, Council may carry out a review in less than 5 years, subject to approval by DEUS. If the review results in a new DSP, the new DSP will be exhibited and registered in accordance with the requirements of the guidelines.

In the period between any reviews, the developer charge 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.

5.6 Proposed Developer Charges

Council could agglomerate the developer charges for areas A, B, C and D into one DSP Area. These charges could be agglomerated on the basis of growth in Kangaroo Valley, Berry, Shoalhaven Heads, Culburra, Callala, Huskisson/Vincentia, St Georges Basin, Sussex Inlet, Conjola, Milton/Ulludulla and Nowra/Bomaderry with the resulting developer charge as shown in Table 10. No cross-subsidy will apply to existing customers.

Table 10 – Proposed Developer Charges (2005/06 $)

DSP Area	DSP Name	Calculated Developer Charge (2005/06 $ per ET)	Proposed Developer Charge (2005/06 $ per ET)
A	Conjola, Kangaroo Valley, Callala	$12,981	$6,780
	Berry, Huskisson/Vincentia, Sussex Inlet, Shoalhaven Heads, Culburra, Bomaderry	$7,119	$6,780
	St Georges Basin, Milton/Ulludulla, Nowra	$4,887	$6,780

If Council were to phase-in this developer charge over 5 years, the following would apply as shown in Table 11. These developer charges are in 2005/06 dollars and will need to be adjusted on 1 July each year on the basis of movements in the Construction CPI for Sydney, in the preceding 12 months to December, excluding the impact of GST.

Table 11 – Phasing-in of Proposed Developer Charges (2005/06 $)

DSP Area	Proposed Developer Charge (2005/06 $ per ET)					
	Current 2005	From 1/1/2006	From 1/7/2006	1/07/2007	1/07/2008	1/07/2009
Shoalhaven Sewerage Service Area	$2,010	$3,000	$4,000	$5,000	$6,000	$6,780

5.7 Reticulation Works

Developers are responsible for the full cost of the design and construction of sewerage reticulation works within developments including subdivisions. The design and construction of the works shall be in accordance with Council's development specifications for wastewater services.

5.8 "Out of Sequence" Development

This DSP has been based on growth prediction and where it will occur in the first of five years and beyond for a 30 year period. The Capital Works Plan has been developed to service this growth and has been reflected in the Financial Management Plan (adopted by the Council as the Annual Management Plan) that has ensured consistency and security in revenue and fees and charges (including developer charges). Development that occurs "out of sequence" (not aligned with the Annual Management Plan) can have significant impact on the financial plan therefore:

- For development within the first ten years of the DSP the developer can either delay the development or finance the works with repayment by Council as per agreement (between Council and the developer) and in accordance with the Development Servicing Plan and Annual Management Plan.
- Outside the first ten-years of the DSP the developer can either delay the development or finance the works without any repayment by Council.

In each case above, the developer financing will be by special agreement with Council.

5.9 Existing Approved Developments

Where development application have been determined and consent granted and the developer has paid the Section 64 Contribution prior to the implementation of this DSP and the development is required to construct infrastructure (which may be listed in the DSP) then the developer shall be required to construct the infrastructure at their full cost without refund.

5.10 Disclaimer

This DSP has been prepared with the best available information at the time of its preparation and any errors or omissions (if any) are unintended. The proposed growth as shown in this plan is indicative only.

Any assumptions or projections made by person/s using this document do so at their own discretion and risk.

6 Reference Documents

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

JWP (2005), 30 years Future Water Supply and Sewerage Infrastructure Plans

Shoalhaven City Council (2005), Population Projections for Urban Areas in the Shoalhaven

Shoalhaven City Council (2005), Headworks Capacity, Capability and Capital Works Calculations

7 Glossary

ADWF	Average Dry Weather Flow
AWWF	Average Wet Weather Flow
BOD	Biochemical oxygen demand. Used as a measure of the 'strength' of sewage.
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.
DEUS	Department of Energy, Utilities and Sustainability
Developer Charge	A charge levied on developers to recover all or 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	Former Department of Land and Water Conservation
EP	Equivalent Persons
ET	Equivalent Tenement
IPART	Independent Pricing and Regulatory Tribunal
kL/d	Kilolitres per day
LEP	Local Environmental Plan
LWU	Local Water Utility
MEERA	Modern Equivalent Engineering Replacement Asset
ML/d	Megalitres per day
NHMRC	National Health and Medical Research Council
NPV	Net Present Value
Post 1996 Asset	An Asset that was commissioned by a local 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 local 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 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.
SS	Suspended solids, or the concentration of particles in sewage. Used as a measure of the 'strength' of sewage.

PWWF	Peak Wet Weather Flow
SPS	Sewage Pumping Station
STP	Sewage Treatment Plant

Appendix A

DSP Areas

Sewerage Systems:
Berry
Bomaderry
Nowra
Shoalhaven Heads
Culburra
Callala
Huskisson/Vincentia
St Georges Basin
Sussex Inlet
Milton/Ulladulla

Backlog Sewerage Areas, to be constructed in next 5 years (not illustrated):
Kangaroo Valley (subject to assessment and funding)
Conjola region
Tabourie Lake
Currarong

The DSP areas contain all land currently zoned 2, 3 & 4 as defined under Councils LEP. The DSP also applies to approved developments in areas zoned 5 and 6.

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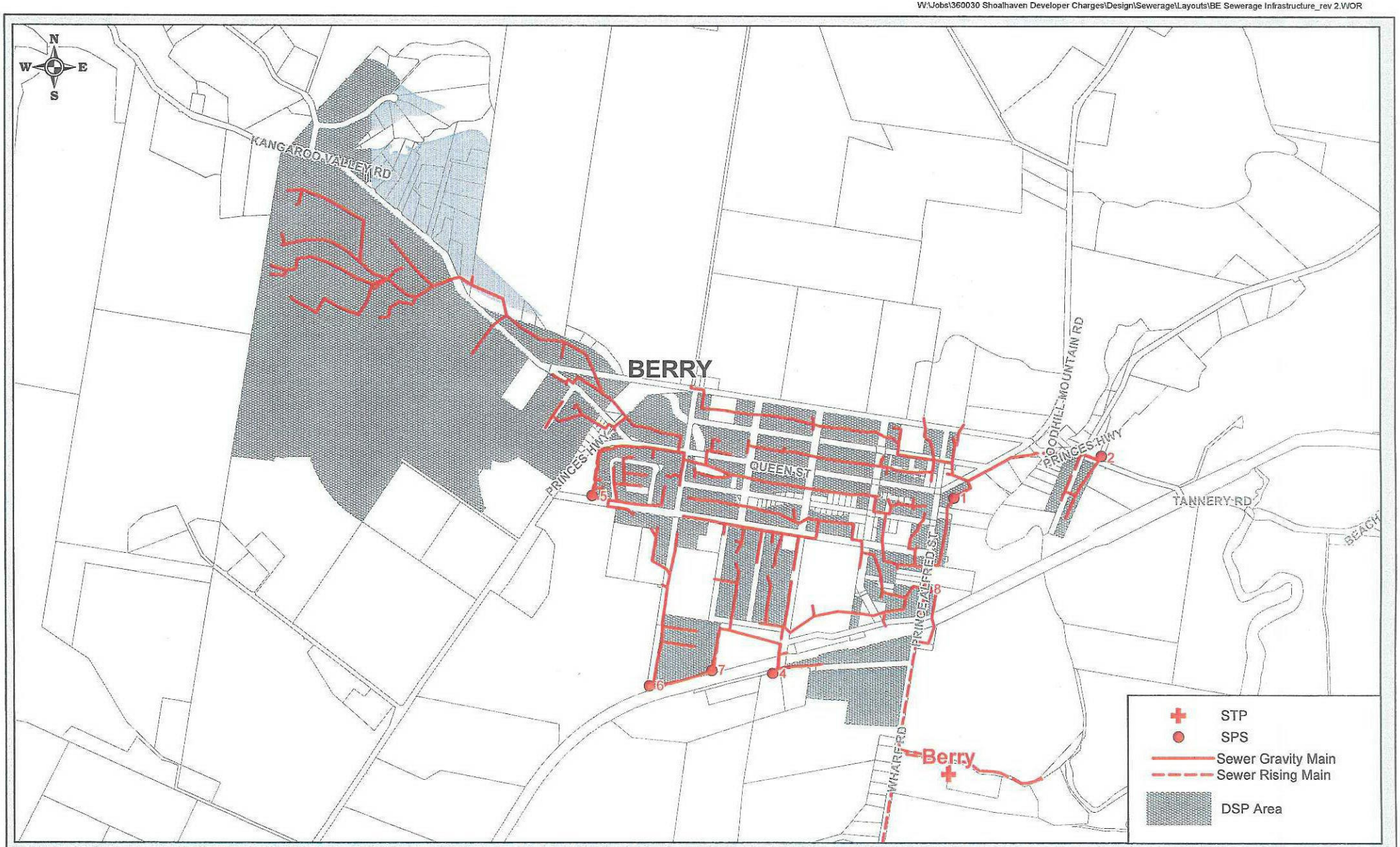

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Shoalhaven Water

Berry Sewerage System

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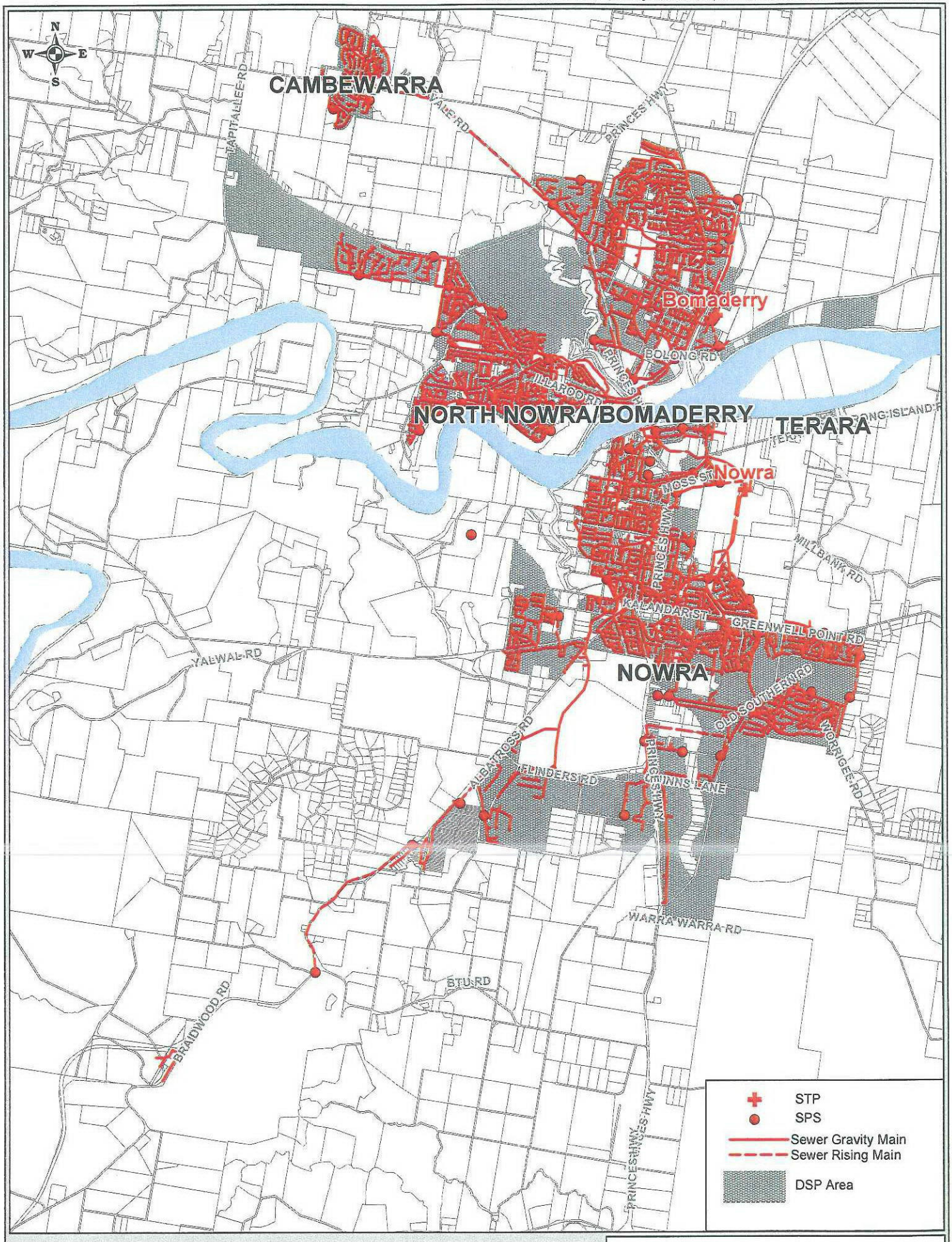

JWP

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Shoalhaven Water

Nowra/Bomaderry Sewerage System

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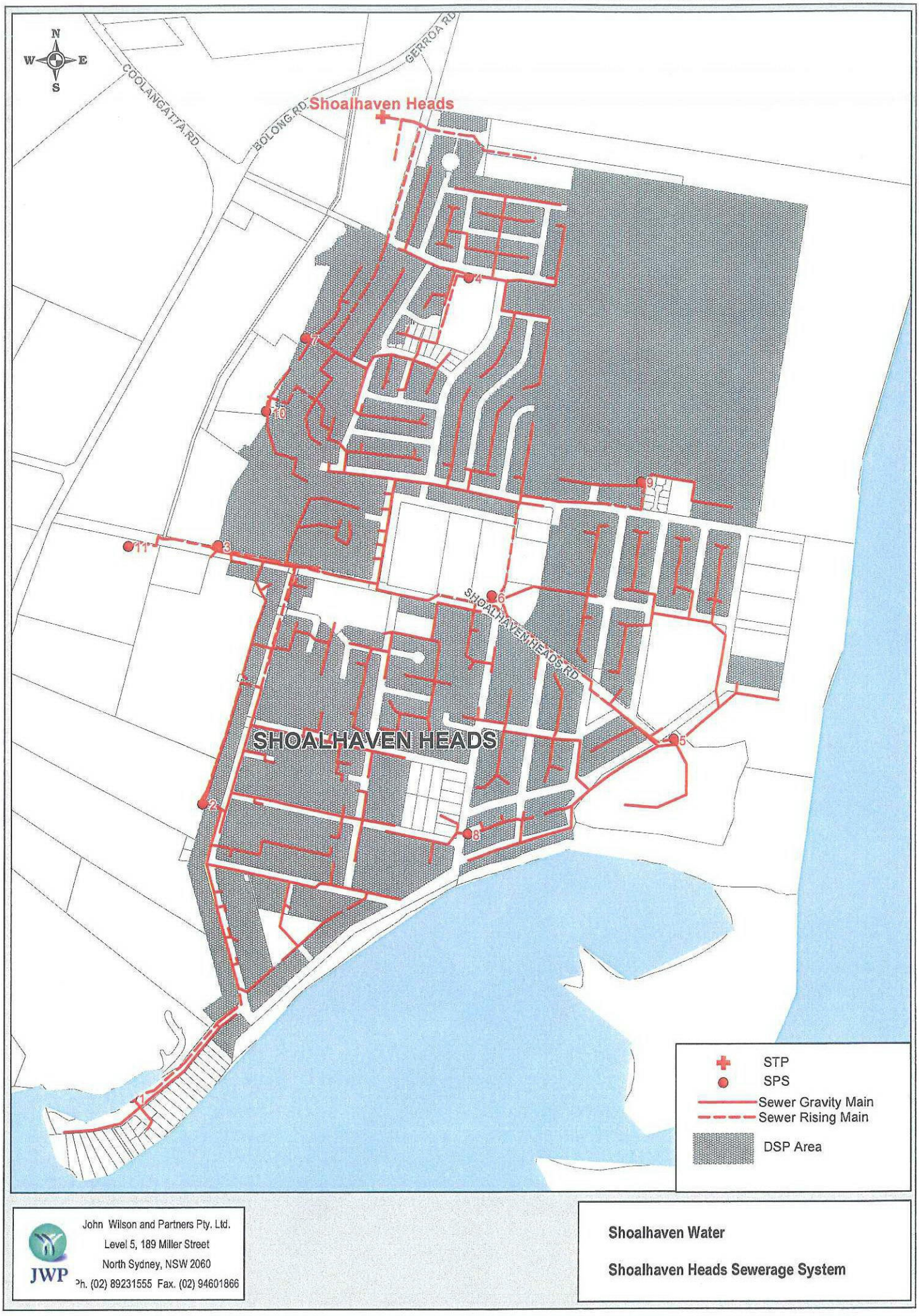

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Shoalhaven Water

Shoalhaven Heads Sewerage System

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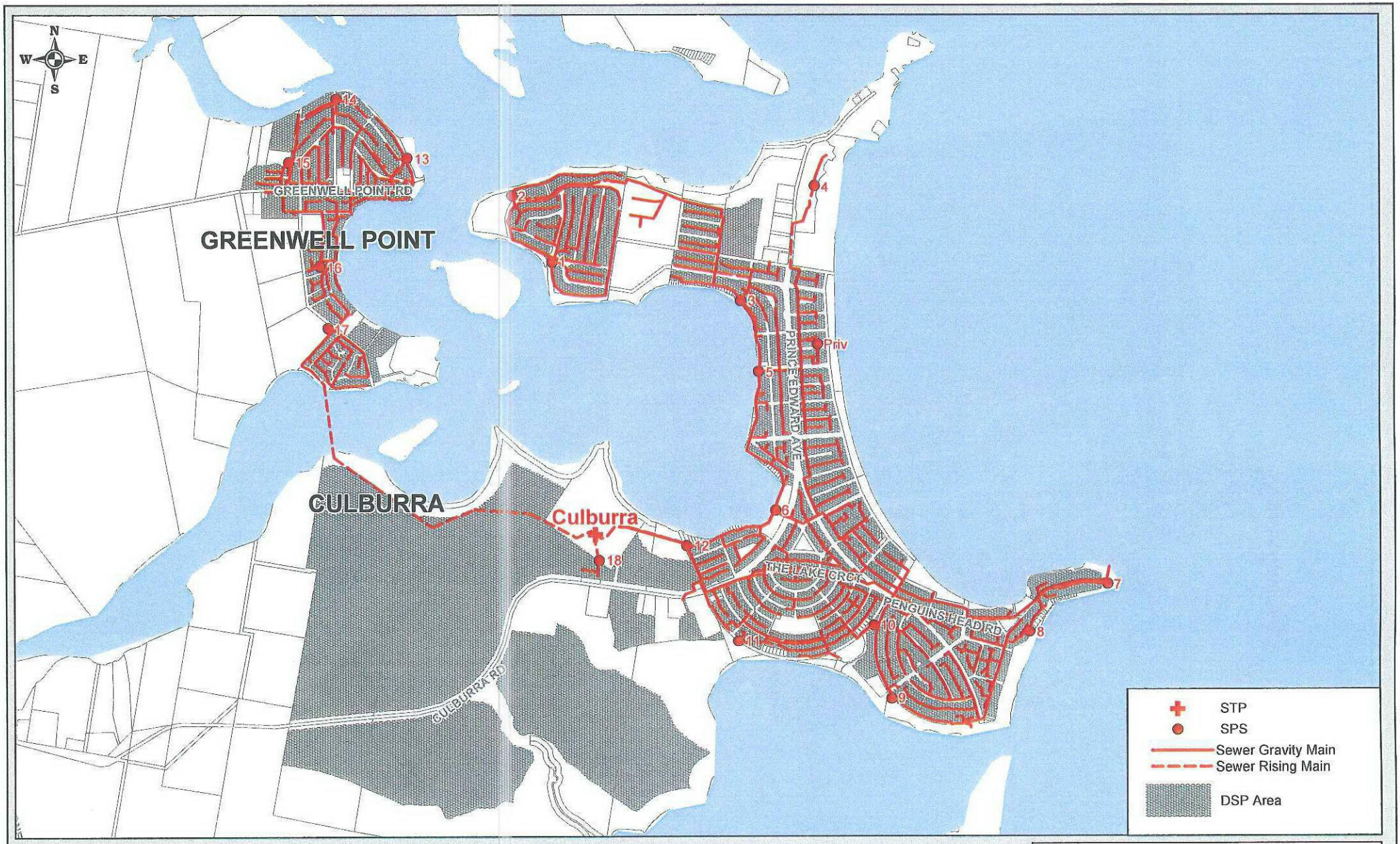

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Shoalhaven Water

Culburra Sewerage System

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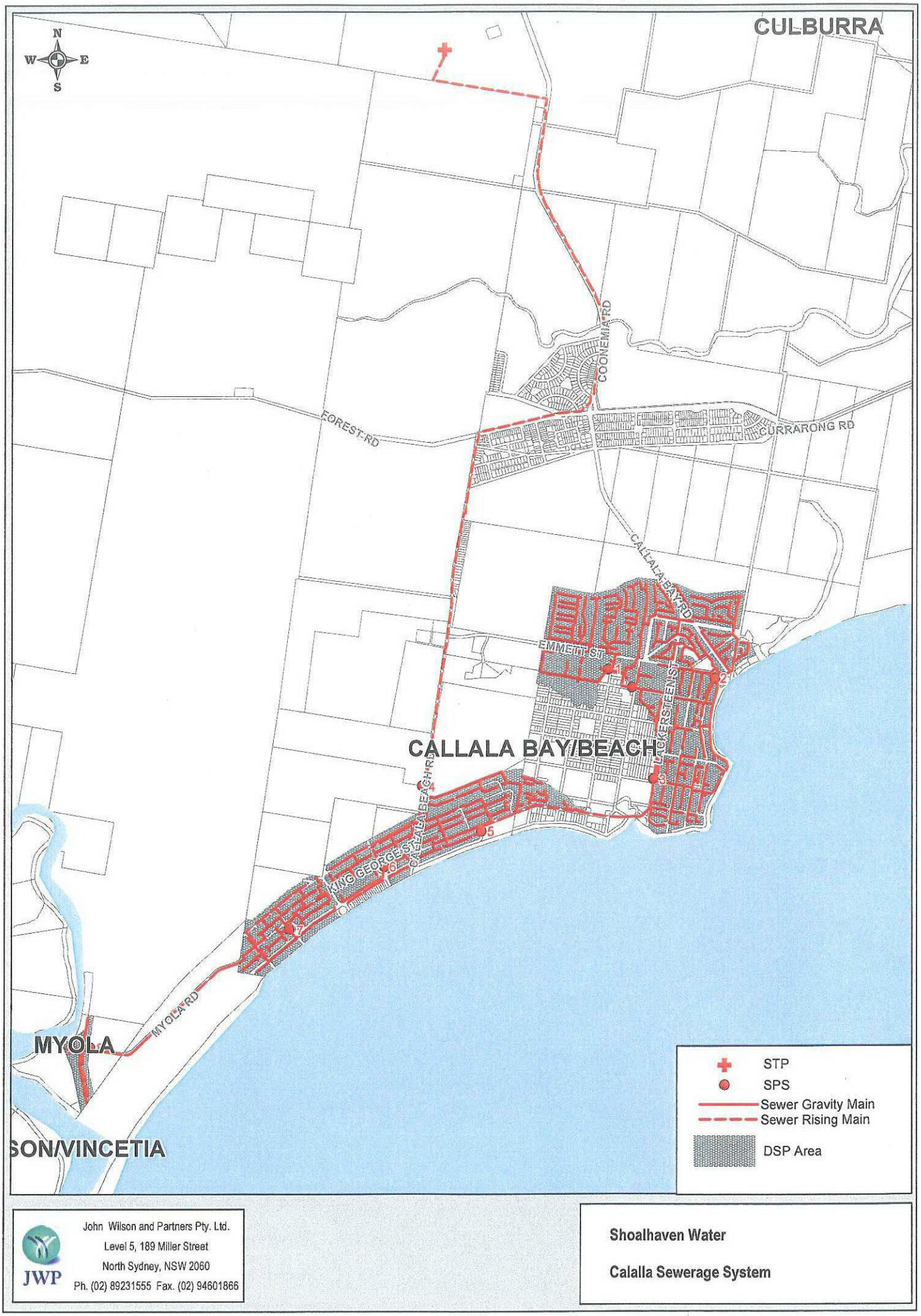

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Shoalhaven Water

Calalla Sewerage System

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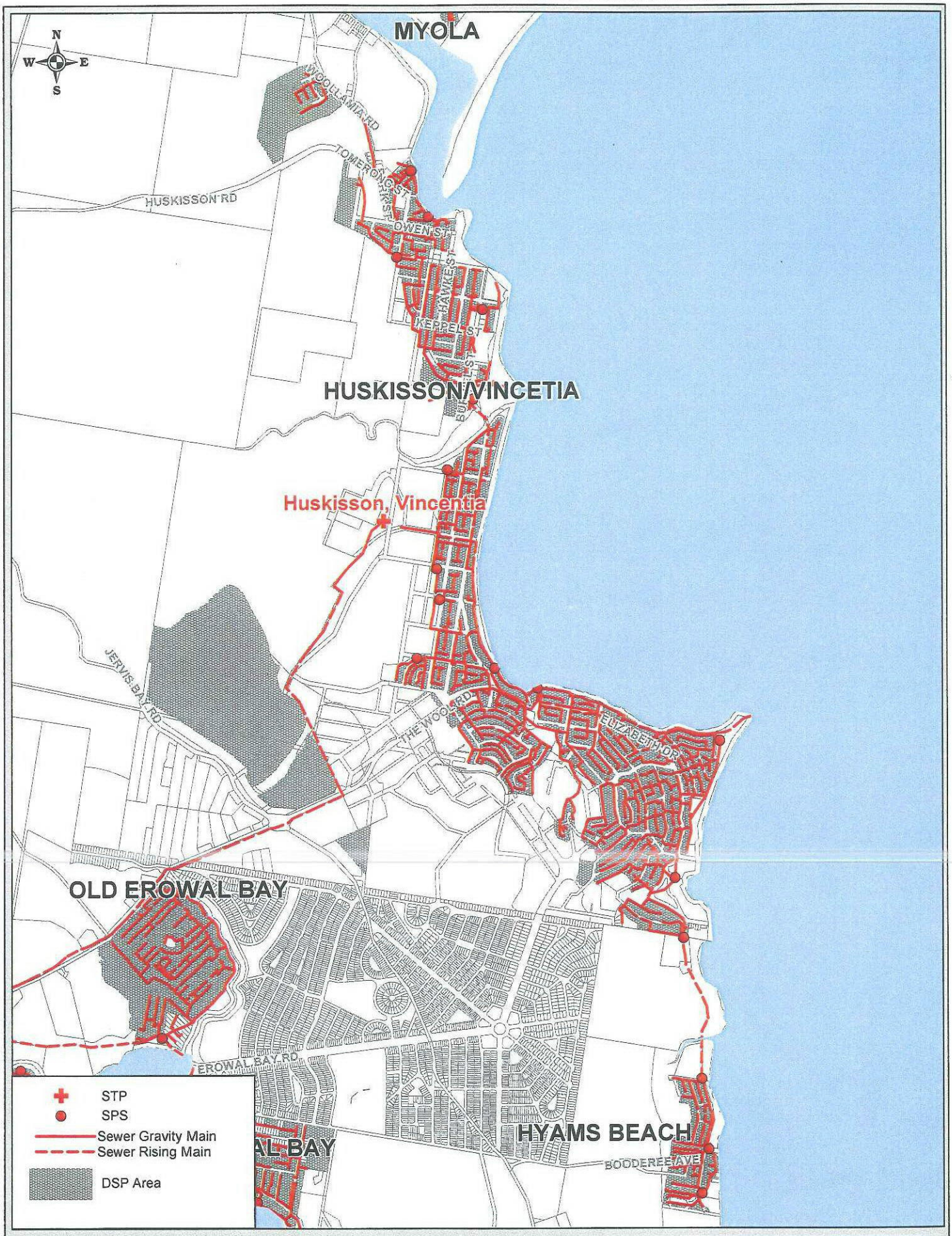

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Shoalhaven Water

Huskisson/Vincentia Sewerage System

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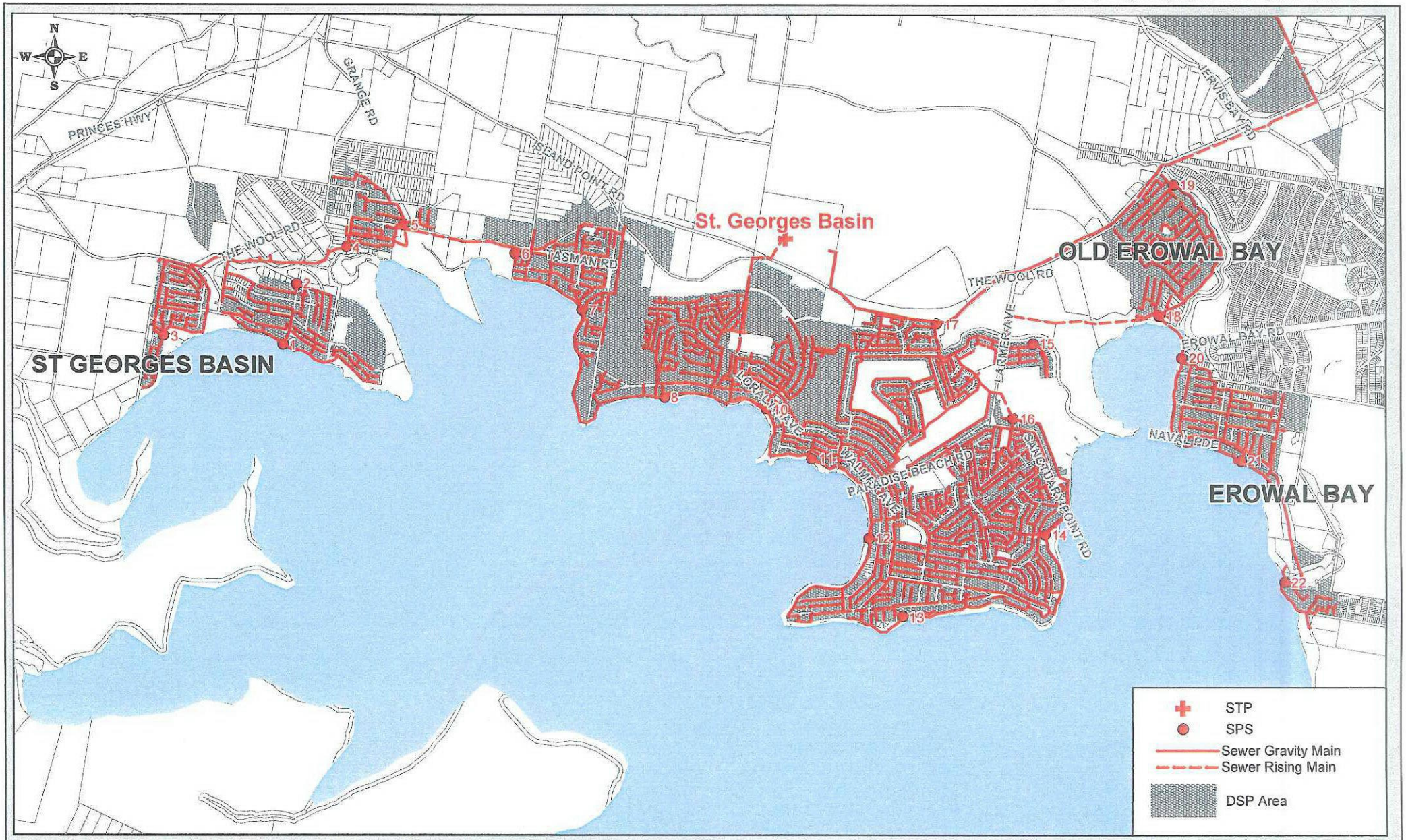

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Shoalhaven Water

St Georges Basin Sewerage System

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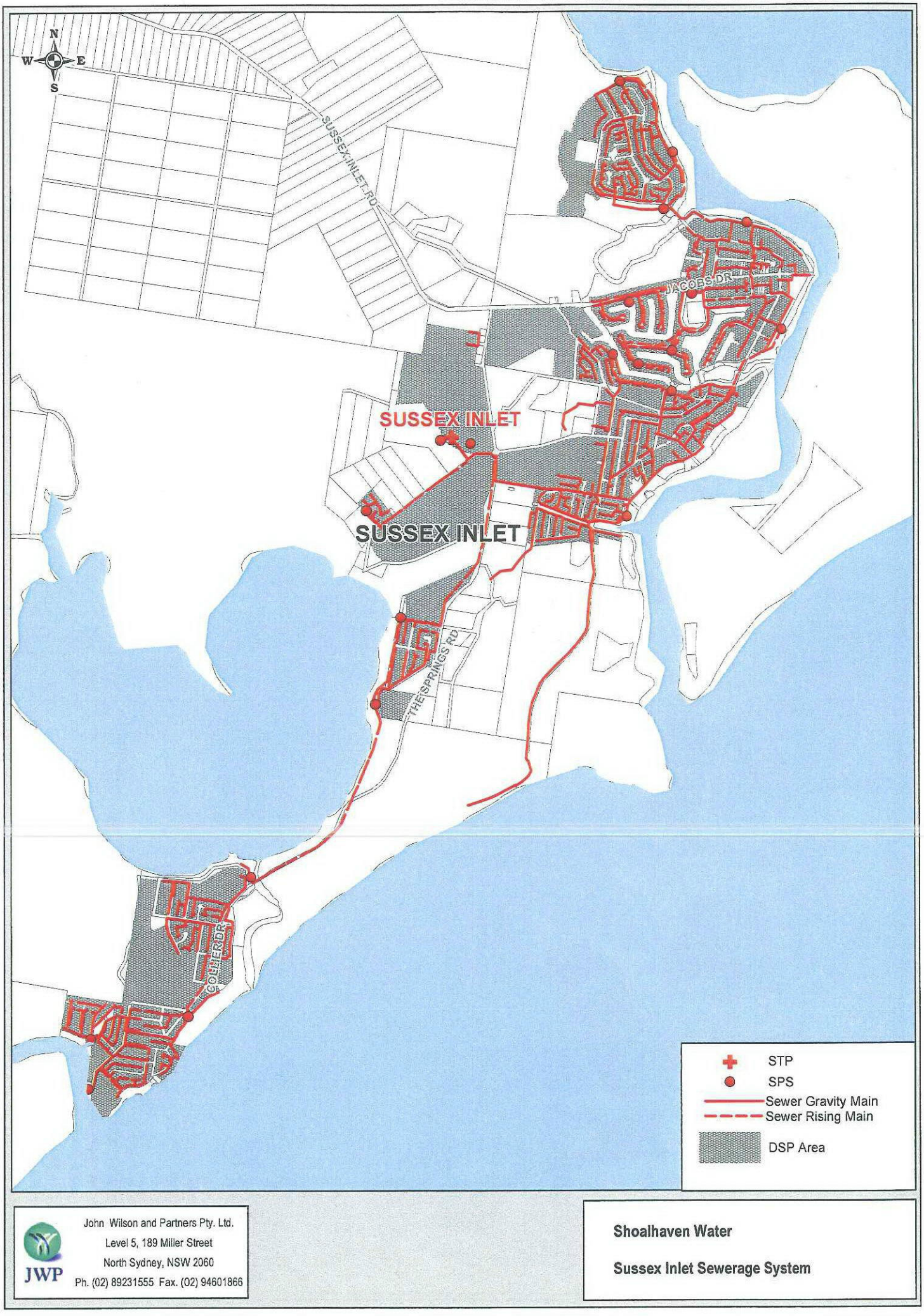

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Shoalhaven Water

Sussex Inlet Sewerage System

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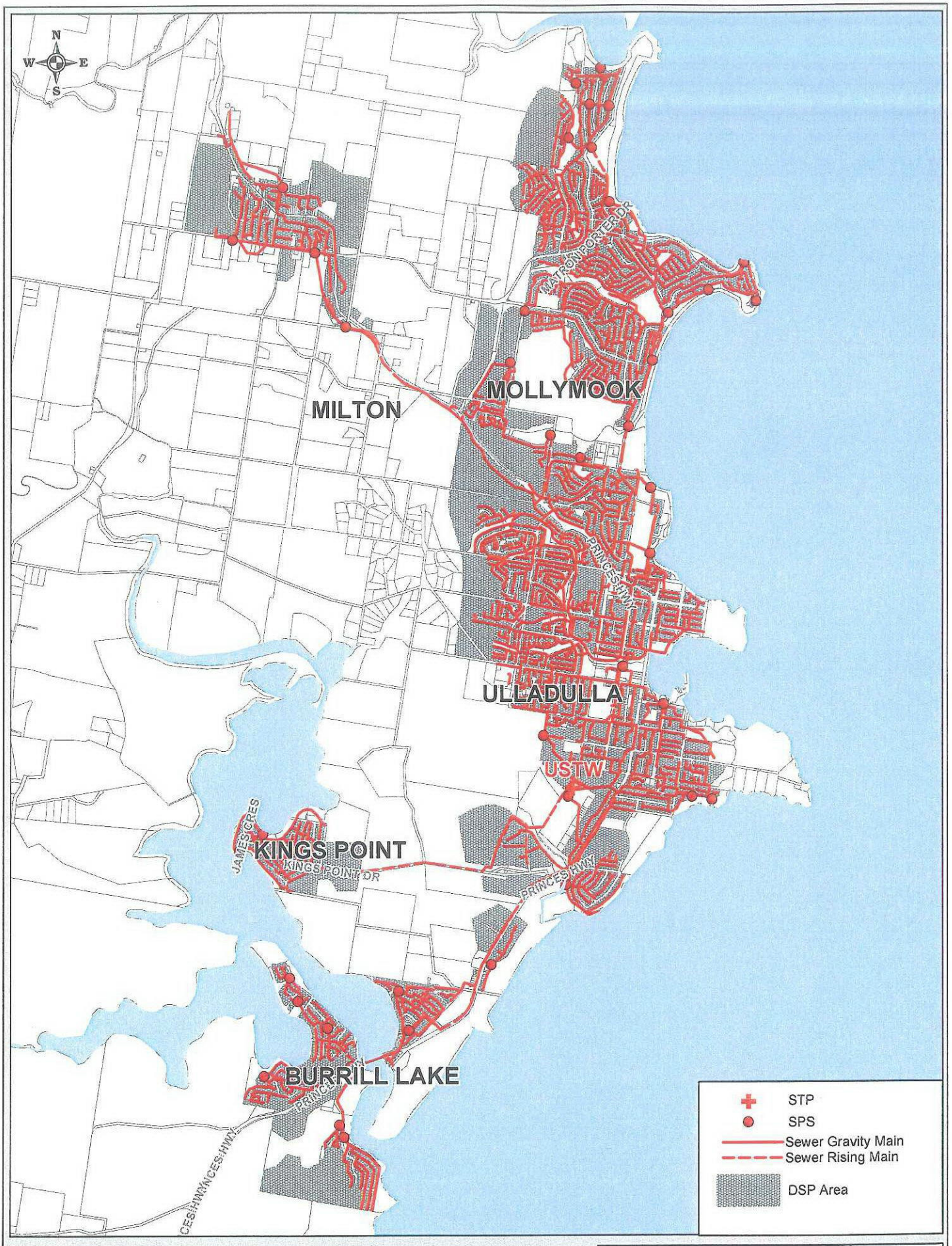

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Shoalhaven Water

Milton/Uladulla Sewerage System

Appendix B

Capital Works Program

Shoalhaven City Council 17-Aug-05
CAPITAL WORKS PROGRAM ($'000) 2005
Sewerage
All values are in year 2005/06 $'000

Project	Type of works: Improved LOS	New System Assets	Renewals		1 2005/06	2 2006/07	3 2007/08	4 2008/09	5 2009/10	6 2010/11	7 2011/12	8 2012/13	9 2013/14	10 2014/15	11 2015/16	12 2016/17	13 2017/18	14 2018/19	15 2019/20	16 2020/21	17 2021/22	18 2022/23	19 2023/24	20 2024/25	21 2025/26	22 2026/27	23 2027/28	24 2028/29	25 2029/30	26 2030/31	27 2031/32	28 2032/33	29 2033/34	30 2034/35
KANGAROO VALLEY																																	
Subsidised Schemes																																	
KANGAROO VALLEY (1400ep)	90%	10%		11,910	350	770	6,000	4,400	390																								
BERRY																																	
Subsidised Schemes																																	
BERRY - Stage 1 (3500ep)	50%	50%		2,200	1,400	400	400																										
BERRY - Stage 2 Pump Stn Upgrade	20%	80%		800		400	400																										
New Works																																	
Berry SPS No. 5 (Mark Radium Park)	16%	84%		800	800																												
SHOALHAVEN HEADS																																	
Treatment works																																	
SHOALHAVEN HEADS (6000ep)	56%	44%		5,258	400	858	4,000																										
New Works																		400															
Shoalhaven Heads SPS in Nth East cnr of Growth area		100%		400																													
Studies and Investigations																	15																
SHOALHAVEN HEADS	50%	50%		15																													
BOMADERRY																																	
Subsidised Schemes																																	
REMS - 1B (Bomaderry Component)	60%	40%		2,400							2,400																						
Treatment works																																	
BOMADERRY (Inlet Upgrade 20500ep)	50%	50%		2,000					2,000																								
BOMADERRY (8000ep)		100%		5,090											1,240	3,850																	
Renewals																																	
BOMADERRY TRICKLING FILTERS (4000ep)			100%	2,800					2,800																								
New Works																																	
SPS-B-F1 + RM + GM		100%		2,050										1,854			49			49			49			49							
SPS-B-F3 + RM + GM		100%		1,512														1,512															
SPS-B-F4 + RM + GM		100%		1,587												1,342			49				49		49			49				
SPS-B-F5 + RM + GM		100%		1,877										1,877																			
SPS-B-F7 + RM + GM		100%		959																					763		49		49		49		49
SPS-B-F8 + RM + GM		100%		418																418													
SPS-B-F9 + RM + GM		100%		320																			320										
SPS-B-F10 + RM + GM		100%		396																396													
Bomaderry- Gravity Mains (GM's) - Mulgan Creek Lines		100%		1,287					1,287																								
Augmentation of Edwards Ave PS (Wet Weather Storage)	Bomaderry 300	100%		200							200																						
Cambewarra RM FROM sps 23 to Bomaderry Retic.		100%		762	714				48																								
Augment SPS 8 - New Pumps, SCA + WW storage		100%		251				251																									
Augment SPS 25 - New Pumps		100%		20			20																										
SPS + RM @ Mortons Cnr Bomaderry		100%		351		83	268																										
Studies and Investigations																																	
BOMADERRY	50%	50%		115									40		20		25		20			10											
NOWRA																																	
Subsidised Schemes																																	
NOWRA (12000ep) (part of REMS 1B project)		100%		5,075					5,005			70																					
NOWRA (33000ep) (part of REMS 1B project)	64%	36%		10,745				2,100	5,425	3,150	70																						
REMS - 1B (Nowra Component)		100%		6,780				900	4,470	1,350	30	30																					
Treatment works																																	
NOWRA (12000ep)		100%		8,560													2,060	6,500															
Renewals																																	
NOWRA STP INLET WORKS (12000ep)			100%	2,200						2,200																							
NOWRA STP REPLACE TRICKLING FILTERS (12000ep)			100%	6,200											6,200																		
NOWRA SURCHARGE MAIN RECONFIGURATION	52%	48%		2,000		200			1,800																								
New Works																																	
Browns Rd, Sth Nowra - SPS 19+RM+GM's		100%		50				50																									
Duplication of Surcharge Main 300 dia - Hillcrest Ave to Nowra STP (3.3		100%		820				400	420																								
Worrigee SPS N-F2 + RM		100%		877						828					49																		
Mundamia SPS N-F4 + RM + GM		100%		789												740				49													
Cabbage Tree Lane SPS N-F1 + RM + GM		100%		3,198											2,510				82			82	442		82							
Sth Nowra Industrial Est - SPS N-F5 + RM		100%		745																			745										
Sth Nowra Residential - SPS A + RM + GM		100%		346										346																			
Sth Nowra Residential - SPS B + RM + GM		100%		443									443																				
Sth Nowra Residential - SPS C + RM + GM		100%		465				465																									
Sth Nowra Residential - SPS D + RM + GM		100%		325																										325			
Sth Nowra Residential - SPS E + RM + GM		100%		339																						339							
Sth Nowra Residential - SPS 18 + RM + GM		100%		339									339																				
Augment SPS 21 (Nth Nowra) - New SPS		100%		303		72	231																										
Augment SPS 20 (Nth Nowra) - New SPS + RM		100%		399		95	304																										
Augment SPS 16 (Nth Nowra) - New Pumps + WW Storage		100%		59				59																									
Augment SPS 12 (Nth Nowra) - New Pumps + SCA + WW Storage		100%		89		89																											
Augment SPS 9 - New Pumps + WW Storage		100%		59			59																										
Augment SPS 13 - New Pumps		100%		20		20																											
Augment SPS 14 - New Pumps + SCA		100%		50			50																										
Augment SPS 15 - New Pumps		100%		20		20																											
Augment SPS 16 - New SPS + RM		100%		612			139	473																									
Augment SPS 21 - New SPS + RM		100%		370		86	284																										
Augment SPS 24 - 3rd Pump + RM + WW Storage		100%		279			49	230																									
Augment SPS 26 (Uni) - New Pumps		100%		20		20																											
Studies and Investigations																																	
NOWRA	50%	50%		145			20		25					50	25								25										
CULBURRA																																	
Treatment works																																	
CULBURRA (4000ep)	10%	90%		3,388								818	2,570																				
New Works																																	
Expansion Area - SPS A + RM		100%		420					420																								
Expansion Area - SPS B + RM		100%		370										370																			
Expansion Area - SPS C + RM		100%		364																364													
Expansion Area - SPS D + RM		100%		295																						295							
Studies and Investigations																																	
CULBURRA	50%	50%		30				30																									
CALLALA																																	
Subsidised Schemes																																	
CURRARONG (Connect into Callala)	90%	10%		6,163	600	2,000	2,780	550	233																								
CURRARONG (Reticulation)	100%			3,220		2,220	1,000																										
Treatment works																																	
CALLALA (6000ep)	46%	54%		5,258					1,278	3,980																							
New Works																																	
Expansion Area - SPS A + RM		100%		543					543																								
Expansion Area - SPS B + RM		100%		279				279																									
Studies and Investigations																																	
CALLALA	50%	50%		20			20																										
HUSKISSON & VINCENTIA																																	
Subsidised Schemes																																	
WOOLAMIA (Connect into Vincentia)	80%	20%		1,750			250	900	600																								
Treatment works																																	
VINCENTIA (6000ep)		100%		5,258																1,278	3,980											
New Works																																	
Expansion Area - SPS F1 + RM		100%		1,523												1,425				49			49									
Expansion Area - SPS F2 + RM		100%		1,022		694															328											
Expansion Area - SPS F3 + RM		100%		327														327														
Expansion Area - SPS F4 + RM		100%		523						523																							
Studies and Investigations																																	
HUSKISSON/VINCENTIA	50%	50%		30		30																											
ST GEORGES BASIN																																	

Shoalhaven City Council 17-Aug-05
CAPITAL WORKS PROGRAM ($'000) 2005
Sewerage
All values are in year 2005/06 $'000

Project	Type of works: Improved LOS	New System Assets	Renewals		1 2005/06	2 2006/07	3 2007/08	4 2008/09	5 2009/10	6 2010/11	7 2011/12	8 2012/13	9 2013/14	10 2014/15	11 2015/16	12 2016/17	13 2017/18	14 2018/19	15 2019/20	16 2020/21	17 2021/22	18 2022/23	19 2023/24	20 2024/25	21 2025/26	22 2026/27	23 2027/28	24 2028/29	25 2029/30	26 2030/31	27 2031/32	28 2032/33	29 2033/34	30 2034/35
Subsidised Schemes																																	
REMS - 1A (St Geo Basin upgrade)	73%	27%		2,932	1,250	1,550	132																										
TOMERONG (Connect into St Geo Basin)	50%	50%		1,350					250	1,000	100																						
WANDANDIAN (Connect into St Geo Basin)	50%	50%		1,300										250	250	800																	
Treatment works																																	
St GEORGES BASIN (6000ep)	19%	81%		5,112								1,239	3,873																				
New Works																																	
The Wool Rd - SPS + RM + GM		100%		632										632																			
The Wool Rd - GM		100%		29						29																							
Augment - SPS 6 - New SPS + RM		100%		400		94	306																										
Augment - SPS 10 - New Pumps + WW Storage		100%		70		70																											
Augment - SPS 8 - New Pumps + WW Storage		100%		100			100																										
Augment - SPS 20 - New Pumps + WW Storage		100%		50		50																											
Augment - SPS 21 - New Pumps + WW Storage		100%		70			70																										
Augment - SPS 17 - Upgrade Pumps + SCA		100%		200				200																									
Studies and Investigations																																	
SAINT GEORGES BASIN	50%	50%		10									10																				
SUSSEX INLET																																	
Subsidised Schemes																																	
SUSSEX INLET Reclaimed Water Mgt	20%	80%		1,650				150	1,500																								
Treatment works																																	
SUSSEX INLET (6000ep)	60%	40%		6,070					1,470	4,600																							
SUSSEX INLET (4000ep)		100%		3,387																				821	2,566								
New Works																																	
Jacobs Dr - SPS + RM		100%		469		469																											
Thomson St (North) - SPS + RM		100%		326										326																			
Flood Ave, Industrial Estate - SPS + RM		100%		410						410																							
Thomson St (South) - GM		100%		33											33																		
Badgee Expansion Area - GM		100%		534																					534								
Studies and Investigations																																	
SUSSEX INLET	50%	50%		20	20																												
CONJOLA REGION																																	
Subsidised Schemes																																	
CONJOLA REGIONAL (11000ep)	80%	20%		34,464	10,000	21,124	2,400	940																									
CONJOLA REGIONAL (Reticulation)	100%			12,876	6,000	6,876																											
MILTON & ULLADULLA																																	
Subsidised Schemes																																	
ULLADULLA STAGE 1A (28000ep)	20%	80%		7,095	3,470	2,760	865																										
ULLADULLA STAGE 1B - Pump Stn Upgrade	20%	80%		7,040	200	1,120	2,720	1,900	1,100																								
ULLADULLA Reclaimed Water Mgt	20%	80%		8,480		190	250	690	2,060	2,290	3,000																						
LAKE TABOURIE (Connect into Ulladulla)	90%	10%		7,462	1,030	5,302	730	400																									
LAKE TABOURIE (Reticulation)	100%			2,498		2,498																											
Treatment works																																	
MILTON/ULLADULLA (10000ep)		100%		7,442																					1,804	5,638							
New Works																																	
Gordon & Graham St, Milton Stage 1 - SPS + RM		100%		448			448																										
Gordon & Graham St, Milton Stage 2 - GM		100%		96									96																				
Croobyar Rd, Milton Stage 1 - SPS M2 + RM + GM		100%		500	500																												
Croobyar Rd, Milton Stage 2 - GM (150 dia x 390m)		100%		269			269																										
Croobyar Rd, Milton Stage 2 - RM (200 dia x 770m)		100%		141							141																						
Croobyar Rd, Milton Stage 3 - GM		100%		34		34																											
Narrawallee - SPS + RM + GM		100%		293					293																								
Decommission PS Z8 - Garside Road + GM Extension		100%		38							38																						
King Point Rezoned - SPS-K3 + RM		100%		314												314																	
King Point Rezoned - GM Augmentation		100%		52																		52											
Dolphin Point SPS - D2 + RM		100%		306	306																												
Trunk Gravity Mains from Milton - Ulladulla SPS U1		100%		1,577							1,577																						
Studies and Investigations																																	
MILTON/ULLADULLA	50%	50%		65						50					15																		
Renewals/Replacements (General)																																	
RELINE SEWERS (Milton/Ulladulla System)			100%	1,500			500	500	500																								
RELINE SEWERS (Northern Systems)			100%	5,500	2,100	1,600	600	600	600																								
Northern Headworks			100%	41,508	454	567	219	179	139	550	650	750	850	950	1,050	1,150	1,250	1,350	1,450	1,550	1,650	1,750	1,900	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Southern Headworks + Distribution System			100%	11,365	85	50	50	50	50	300	315	330	345	360	375	390	405	420	435	450	465	490	500	500	500	500	500	500	500	500	500	500	500	500
Northern Distribution Systems			100%	8,850	380	40	40	40	40	150	170	190	210	230	250	270	290	310	330	350	370	390	400	400	400	400	400	400	400	400	400	400	400	400
New Works (General)																																	
Developer Servicing Plan		100%		422	137	10	10	10	50	5	5	5	5	25	5	5	5	5	25	5	5	5	5	25	5	5	5	5	25	5	5	5	5	5
Northern Headworks		100%		14,991	693	700	520	448	130	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Southern Headworks + Distribution System		100%		600	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Northern Distribution Systems		100%		2,030	580	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Major Maintenance (General)																																	
Northern Headworks			100%	10,496	504	466	461	170	145	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350
Southern Headworks + Distribution System			100%	1,594	144	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Northern Distribution Systems			100%	3,080	180	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
REMS Stg 2 (Storage and Ocean Extension)		100%		20,200										6,200	7,000	7,000																	
			Total	363,986	32,317	53,847	27,184	17,584	35,291	22,485	10,584	6,697	6,838	14,540	20,092	18,356	5,169	11,567	3,706	6,061	7,969	3,715	5,188	9,826	10,967	4,758	4,124	4,124	4,226	4,400	4,173	4,075	4,124	4,075
	Improved LOS			101,150	18,491	38,583	15,082	8,194	8,988	7,590	2,217	492	761	150	155	400	20		10			5	13											
	Other New System Assets (grow			171,818	9,980	12,391	10,082	7,701	21,879	11,195	6,732	4,435	4,172	12,350	11,562	15,646	2,704	8,987	981	3,211	4,984	580	1,876	6,326	7,467	1,258	624	624	726	900	673	575	624	575
	Renewals			95,093	3,847	2,873	2,020	1,689	4,424	3,700	1,635	1,770	1,905	2,040	8,375	2,310	2,445	2,580	2,715	2,850	2,985	3,130	3,300	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
			Total	368,061																													

Note: Reticulation costs have been estimated at $5,000 per existing lot

Appendix C

Capital Charge Calculations

Plans of Existing Infrastructure Used in Calculation of Capital Charge

Table C1: Sewerage Population Projections (ET)

Council: Shoalhaven City Council

Service Area	2004	Backlog	2009	2014	2024	2034
Kangaroo Valley	-	384	405	427	439	442
Berry	966		1,228	1,395	1,474	1,477
Bomaderry	4,583		4,871	5,369	7,675	9,105
Nowra	11,583		12,865	14,727	17,027	20,524
Huskisson/Vincentia	3,664	170	4,352	4,890	5,831	5,839
St Georges Basin	6,798	206	7,876	8,598	9,284	9,292
Sussex Inlet	4,323		4,594	4,861	5,120	5,380
Milton/Ulladulla	9,951	890	11,575	12,294	13,596	14,717
Shoalhaven Heads	2,435		2,570	2,800	3,062	3,306
Callala	2,155	813	3,338	3,771	3,776	3,782
Culburra	3,939		4,080	4,262	4,616	4,828
Conjola	-	2,770	3,150	3,692	3,975	3,982
Totals	**50,396**	**5,233**	**60,902**	**67,086**	**75,876**	**82,676**

Projected Growth for Current Year + 5 years		
Service Area	**2005**	**2010**
Kangaroo Valley	388	410
Berry	1,018	1,262
Bomaderry	4,641	4,970
Nowra	11,839	13,237
Huskisson/Vincentia	3,938	4,460
St Georges Basin	7,178	8,020
Sussex Inlet	4,377	4,647
Milton/Ulladulla	10,987	11,719
Shoalhaven Heads	2,462	2,616
Callala	3,042	3,424
Culburra	3,967	4,116
Conjola	2,846	3,259
Totals	**56,683**	**62,139**

Table C2: Capital Charge Calculation
Shoalhaven City Council

Service Area	Berry Sewerage	
Capital Charge	$9,699	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	1,477
Treatment Plant Capacity (ET)	1,400

Asset	Catch-ment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
19570	2	RM	100	B	$1	2005	$1	1978	1996	$1			$1	2024	28	3%	1.45	$1
19573	2	RM	100	B	$1	2005	$1	1978	1996	$1			$1	2024	28	3%	1.45	$1
1736	5	RM	100	C	$3	2005	$3	1978	1996	$3			$2	2024	28	3%	1.45	$3
1821	1	RM	150	A	$6	2005	$6	1978	1996	$6			$4	2024	28	3%	1.45	$6
1788	1	Retic	225	AA	$5	2005	$5	1978	1996	$5			$3	2024	28	3%	1.45	$5
1801	1	Retic	225	AA	$14	2005	$14	1978	1996	$14			$9	2024	28	3%	1.45	$13
1803	1	Retic	225	AA	$1	2005	$1	1978	1996	$1			$1	2024	28	3%	1.45	$1
1743	2	RM	100	B	$7	2005	$7	1978	1996	$7			$5	2024	28	3%	1.45	$7
1745	2	RM	100	B	$7	2005	$7	1978	1996	$7			$5	2024	28	3%	1.45	$7
1747	2	RM	100	B	$1	2005	$1	1978	1996	$1			$1	2024	28	3%	1.45	$1
19567	2	RM	100	B	$5	2005	$5	1978	1996	$5			$3	2024	28	3%	1.45	$5
19572	2	RM	100	B	$6	2005	$6	1978	1996	$6			$4	2024	28	3%	1.45	$6
1732	5	RM	100	C	$5	2005	$5	1978	1996	$5			$3	2024	28	3%	1.45	$4
1733	5	RM	100	C	$2	2005	$2	1978	1996	$2			$1	2024	28	3%	1.45	$2
1739	5	RM	100	C	$9	2005	$9	1978	1996	$9			$6	2024	28	3%	1.45	$9
1797	5	RM	100	C	$18	2005	$18	1978	1996	$18			$12	2024	28	3%	1.45	$18
1898	8	Retic	375	CA	$1	2005	$1	1978	1996	$1			$1	2024	28	3%	1.45	$1
1899	8	Retic	375	CA	$3	2005	$3	1978	1996	$3			$2	2024	28	3%	1.45	$3
575	8	Retic	300	CP	$13	2005	$13	1978	1996	$13			$9	2024	28	3%	1.45	$13
1774	8	Retic	300	CP	$13	2005	$13	1978	1996	$13			$9	2024	28	3%	1.45	$13
1781	8	Retic	300	CP	$25	2005	$25	1978	1996	$25			$17	2024	28	3%	1.45	$24
1783	8	Retic	300	CP	$15	2005	$15	1978	1996	$15			$10	2024	28	3%	1.45	$15
1789	8	Retic	300	CP	$17	2005	$17	1978	1996	$17			$11	2024	28	3%	1.45	$16
1793	8	Retic	300	CP	$22	2005	$22	1978	1996	$22			$15	2024	28	3%	1.45	$22
1794	8	Retic	300	CP	$24	2005	$24	1978	1996	$24			$16	2024	28	3%	1.45	$24
1796	8	Retic	300	CP	$11	2005	$11	1978	1996	$11			$7	2024	28	3%	1.45	$11
1798	8	Retic	300	CP	$12	2005	$12	1978	1996	$12			$8	2024	28	3%	1.45	$12
1827	8	Retic	300	CP	$14	2005	$14	1978	1996	$14			$10	2024	28	3%	1.45	$14
1828	8	Retic	300	CP	$12	2005	$12	1978	1996	$12			$8	2024	28	3%	1.45	$12
1862	8	Retic	300	CP	$25	2005	$25	1978	1996	$25			$17	2024	28	3%	1.45	$25
1876	8	Retic	300	CP	$20	2005	$20	1978	1996	$20			$13	2024	28	3%	1.45	$19
1881	8	Retic	300	CP	$14	2005	$14	1978	1996	$14			$9	2024	28	3%	1.45	$14
1883	8	Retic	300	CP	$16	2005	$16	1978	1996	$16			$11	2024	28	3%	1.45	$15
19298	8	Retic	300	CP	$21	2005	$21	1978	1996	$21			$14	2024	28	3%	1.45	$21
19299	8	Retic	300	CP	$3	2005	$3	1978	1996	$3			$2	2024	28	3%	1.45	$3
19301	8	Retic	300	CP	$23	2005	$23	1978	1996	$23			$16	2024	28	3%	1.45	$23
568	8	Retic	375	CP	$26	2005	$26	1978	1996	$26			$17	2024	28	3%	1.45	$25
1845	8	Retic	225	CQ	$11	2005	$11	1978	1996	$11			$7	2024	28	3%	1.45	$11
1866	8	Retic	225	CQ	$17	2005	$17	1978	1996	$17			$11	2024	28	3%	1.45	$17
1867	8	Retic	225	CQ	$13	2005	$13	1978	1996	$13			$9	2024	28	3%	1.45	$13
1884	8	Retic	225	CQ	$7	2005	$7	1978	1996	$7			$5	2024	28	3%	1.45	$7
1886	8	Retic	225	CQ	$2	2005	$2	1978	1996	$2			$2	2024	28	3%	1.45	$2
19297	8	Retic	300	CV	$6	2005	$6	1978	1996	$6			$4	2024	28	3%	1.45	$6
19292	8	Retic	225	CW	$17	2005	$17	1978	1996	$17			$12	2024	28	3%	1.45	$17
1928	4	RM	100	D	$1	2005	$1	1978	1996	$1			$1	2024	28	3%	1.45	$1
1939	4	RM	100	D	$11	2005	$11	1978	1996	$11			$7	2024	28	3%	1.45	$10
1945	4	RM	100	D	$6	2005	$6	1978	1996	$6			$4	2024	28	3%	1.45	$5
1950	4	RM	100	D	$2	2005	$2	1978	1996	$2			$2	2024	28	3%	1.45	$2
1951	4	RM	100	D	$0	2005	$0	1978	1996	$0			$0	2024	28	3%	1.45	$0
1901	8	RM	300	G	$2	2005	$2	1978	1996	$2			$2	2024	28	3%	1.45	$2
1960	8	RM	300	G	$127	2005	$127	1978	1996	$127			$86	2024	28	3%	1.45	$125
1963	8	RM	300	G	$42	2005	$42	1978	1996	$42			$29	2024	28	3%	1.45	$42
1968	8	RM	300	G	$11	2005	$11	1978	1996	$11			$7	2024	28	3%	1.45	$10
1971	8	RM	300	G	$1	2005	$1	1978	1996	$1			$1	2024	28	3%	1.45	$1
1972	8	RM	300	G	$0	2005	$0	1978	1996	$0			$0	2024	28	3%	1.45	$0
1697	8	Retic	225	CV	$11	2005	$11	1978	1996	$11			$7	2024	28	3%	1.45	$11
1705	8	Retic	225	CV	$17	2005	$17	1978	1996	$17			$12	2024	28	3%	1.45	$17
1710	8	Retic	225	CV	$10	2005	$10	1978	1996	$10			$7	2024	28	3%	1.45	$10
1737	8	Retic	225	CW	$6	2005	$6	1978	1996	$6			$4	2024	28	3%	1.45	$6
19102	8	Retic	225	CV	$11	2005	$11	1978	1996	$11			$7	2024	28	3%	1.45	$11
19103	8	Retic	225	CV	$14	2005	$14	1978	1996	$14			$9	2024	28	3%	1.45	$14
19294	8	Retic	225	CV	$11	2005	$11	1978	1996	$11			$7	2024	28	3%	1.45	$11
20610	8	Retic	225	CV	$13	2005	$13	1978	1996	$13			$9	2024	28	3%	1.45	$13
1930	7	RM	50	E	$4	2005	$4	1984	1996	$4			$3	2024	28	3%	1.45	$4
1947	7	RM	50	E	$16	2005	$16	1984	1996	$16			$11	2024	28	3%	1.45	$16
1948	7	RM	50	E	$1	2005	$1	1984	1996	$1			$1	2024	28	3%	1.45	$1
600	6	RM	50	F	$1	2005	$1	1984	1996	$1			$1	2024	28	3%	1.45	$1
1954	6	RM	50	F	$2	2005	$2	1984	1996	$2			$2	2024	28	3%	1.45	$2
1955	6	RM	50	F	$3	2005	$3	1984	1996	$3			$2	2024	28	3%	1.45	$3
1958	6	RM	50	F	$10	2005	$10	1984	1996	$10			$7	2024	28	3%	1.45	$10
1959	6	RM	50	F	$0	2005	$0	1984	1996	$0			$0	2024	28	3%	1.45	$0
Existing Assets (post-1996)																		
None																		
Future Assets																		
None																		
Total Transfer System					**$832**					**$832**		1,477	**$563**					**816**
PUMPS																		
Existing Assets (pre-1996)																		
SPS 1					$197	2005	$197	1976	1996	$197			$133	2024	28	3%	1.45	$193
SPS 2					$175	2005	$175	1976	1996	$175			$119	2024	28	3%	1.45	$172
SPS 4					$175	2005	$175	1976	1996	$175			$119	2024	28	3%	1.45	$172
SPS 5					$183	2005	$183	1976	1996	$183			$124	2024	28	3%	1.45	$180
SPS 6					$175	2005	$175	1976	1996	$175			$119	2024	28	3%	1.45	$172
SPS 7					$175	2005	$175	1976	1996	$175			$119	2024	28	3%	1.45	$172
SPS 8					$258	2005	$258	1976	1996	$258			$174	2024	28	3%	1.45	$253
Existing Assets (post-1996)																		
None																		
Future Assets																		
Berry SPS No. 5 (Mark Radium Park)					$800	2005	$800	2005	2005	$800			$542	2024	19	7%	1.72	$931
Total Pumps					**$2,138**					**$2,138**		1,477	**$1,448**					**2,243**
TREATMENT																		
Existing Assets (pre-1996)																		
Berry					$2,420	2005	$2,420	1978	1996	$2,420			$1,729	2024	28	3%	1.45	$2,504
Existing Assets (post-1996)																		
None																		
Future Assets																		
None																		
Total Treatment					**$2,420**					**$2,420**		1,400	**$1,729**					**2,504**
SUBSIDISED SCHEMES																		
Future Assets																		
BERRY - Stage 1 (3500ep)					$1,400	2005	$1,400	2005	2005	$1,400			$1,000	2024	19	7%	1.72	$1,718
BERRY - Stage 1 (3500ep)					$400	2005	$400	2006	2006	$374			$267	2024	18	7%	1.67	$447
BERRY - Stage 1 (3500ep)					$400	2005	$400	2007	2007	$349			$250	2024	17	7%	1.63	$406
BERRY - Stage 2 Pump Stn Upgrade					$400	2005	$400	2006	2006	$374			$253	2024	18	7%	1.67	$423
BERRY - Stage 2 Pump Stn Upgrade					$400	2005	$400	2007	2007	$349			$237	2024	17	7%	1.63	$386
Total					**$3,000**					**$2,846**		1,400	**$2,006**					**3,379**

Table C3: Capital Charge Calculation
Shoalhaven City Council

Service Area	Bomaderry Sewerage	
Capital Charge	$6,856	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	9,105
Treatment Plant Capacity (ET)	8,200

Asset	Catch-ment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
273	6	Retic	225	6A	$9	2005	$9	1970	1996	$9			$1	2034	30	3%	1.49	$1
4952	6	Retic	225	6A	$1	2005	$1	1970	1996	$1			$0	2034	30	3%	1.49	$0
4975	6	Retic	225	6A	$8	2005	$8	1970	1996	$8			$1	2034	30	3%	1.49	$1
5005	6	Retic	225	6A	$8	2005	$8	1970	1996	$8			$1	2034	30	3%	1.49	$1
5007	6	Retic	225	6A	$6	2005	$6	1970	1996	$6			$1	2034	30	3%	1.49	$1
5014	6	Retic	300	6A	$12	2005	$12	1970	1996	$12			$1	2034	30	3%	1.49	$2
5019	6	Retic	300	6A	$13	2005	$13	1970	1996	$13			$1	2034	30	3%	1.49	$2
5021	6	Retic	300	6A	$13	2005	$13	1970	1996	$13			$1	2034	30	3%	1.49	$2
5024	6	Retic	300	6A	$7	2005	$7	1970	1996	$7			$1	2034	30	3%	1.49	$1
5026	6	Retic	300	6A	$7	2005	$7	1970	1996	$7			$1	2034	30	3%	1.49	$1
5027	6	Retic	300	6A	$6	2005	$6	1970	1996	$6			$1	2034	30	3%	1.49	$1
5069	6	Retic	225	6C	$9	2005	$9	1970	1996	$9			$1	2034	30	3%	1.49	$1
5070	6	Retic	225	6C	$15	2005	$15	1970	1996	$15			$2	2034	30	3%	1.49	$2
4660	4	Retic	300	4CD	$6	2005	$6	1970	1996	$6			$1	2034	30	3%	1.49	$1
4701	4	Retic	300	4CD	$19	2005	$19	1970	1996	$19			$2	2034	30	3%	1.49	$3
4719	4	Retic	300	4CD	$10	2005	$10	1970	1996	$10			$1	2034	30	3%	1.49	$2
4752	4	Retic	300	4CD	$19	2005	$19	1970	1996	$19			$2	2034	30	3%	1.49	$3
4783	4	Retic	300	4CD	$13	2005	$13	1970	1996	$13			$1	2034	30	3%	1.49	$2
4801	4	Retic	300	4CD	$8	2005	$8	1970	1996	$8			$1	2034	30	3%	1.49	$1
4818	4	Retic	300	4CD	$13	2005	$13	1970	1996	$13			$1	2034	30	3%	1.49	$2
4824	4	Retic	300	4CD	$8	2005	$8	1970	1996	$8			$1	2034	30	3%	1.49	$1
4768	5	RM	100	5	$3	2005	$3	1970	1996	$3			$0	2034	30	3%	1.49	$0
4781	5	RM	100	5	$3	2005	$3	1970	1996	$3			$0	2034	30	3%	1.49	$0
4791	5	RM	100	5	$4	2005	$4	1970	1996	$4			$0	2034	30	3%	1.49	$1
21807	5	RM	300	5	$18	2005	$18	1970	1996	$18			$2	2034	30	3%	1.49	$3
4303	10	RM	100	10	$0	2005	$0	1970	1996	$0			$0	2034	30	3%	1.49	$0
4304	10	RM	100	10	$14	2005	$14	1970	1996	$14			$2	2034	30	3%	1.49	$2
4305	10	RM	100	10	$1	2005	$1	1970	1996	$1			$0	2034	30	3%	1.49	$0
4316	10	RM	100	10	$0	2005	$0	1970	1996	$0			$0	2034	30	3%	1.49	$0
4329	10	RM	100	10	$2	2005	$2	1970	1996	$2			$0	2034	30	3%	1.49	$0
4797	5	Retic	225	5EE	$2	2005	$2	1970	1996	$2			$0	2034	30	3%	1.49	$0
2922	3	Retic	225	3D	$12	2005	$12	1971	1996	$12			$1	2034	30	3%	1.49	$2
3005	3	Retic	225	3D	$20	2005	$20	1971	1996	$20			$2	2034	30	3%	1.49	$3
2962	3	Retic	225	3F	$12	2005	$12	1972	1996	$12			$1	2034	30	3%	1.49	$2
2978	3	Retic	225	3F	$16	2005	$16	1972	1996	$16			$2	2034	30	3%	1.49	$3
2987	3	Retic	225	3F	$16	2005	$16	1972	1996	$16			$2	2034	30	3%	1.49	$3
20238	2	RM	100	2	$3	2005	$3	1975	1996	$3			$0	2034	30	3%	1.49	$0
20239	2	RM	100	2	$2	2005	$2	1975	1996	$2			$0	2034	30	3%	1.49	$0
137	3	Retic	225	3A	$9	2005	$9	1979	1996	$9			$1	2034	30	3%	1.49	$1
138	3	Retic	225	3A	$1	2005	$1	1979	1996	$1			$0	2034	30	3%	1.49	$0
2725	3	Retic	225	3A	$12	2005	$12	1979	1996	$12			$1	2034	30	3%	1.49	$2
2763	3	Retic	225	3A	$15	2005	$15	1979	1996	$15			$2	2034	30	3%	1.49	$2
2779	3	Retic	225	3A	$12	2005	$12	1979	1996	$12			$1	2034	30	3%	1.49	$2
2806	3	Retic	225	3A	$7	2005	$7	1979	1996	$7			$1	2034	30	3%	1.49	$1
2812	3	Retic	225	3A	$2	2005	$2	1979	1996	$2			$0	2034	30	3%	1.49	$0
2832	3	Retic	225	3A	$6	2005	$6	1979	1996	$6			$1	2034	30	3%	1.49	$1
2866	3	Retic	225	3A	$14	2005	$14	1979	1996	$14			$2	2034	30	3%	1.49	$2
2898	3	Retic	225	3A	$16	2005	$16	1979	1996	$16			$2	2034	30	3%	1.49	$3
2923	3	Retic	225	3A	$13	2005	$13	1979	1996	$13			$1	2034	30	3%	1.49	$2
2926	3	Retic	225	3A	$9	2005	$9	1979	1996	$9			$1	2034	30	3%	1.49	$1
2931	3	Retic	225	3A	$9	2005	$9	1979	1996	$9			$1	2034	30	3%	1.49	$2
2937	3	Retic	225	3A	$17	2005	$17	1979	1996	$17			$2	2034	30	3%	1.49	$3
2948	3	Retic	225	3A	$7	2005	$7	1979	1996	$7			$1	2034	30	3%	1.49	$1
2964	3	Retic	225	3A	$11	2005	$11	1979	1996	$11			$1	2034	30	3%	1.49	$2
2985	3	Retic	225	3A	$12	2005	$12	1979	1996	$12			$1	2034	30	3%	1.49	$2
3002	3	Retic	225	3A	$14	2005	$14	1979	1996	$14			$2	2034	30	3%	1.49	$2
3006	3	Retic	225	3A	$7	2005	$7	1979	1996	$7			$1	2034	30	3%	1.49	$1
3012	3	Retic	225	3A	$13	2005	$13	1979	1996	$13			$1	2034	30	3%	1.49	$2
3017	3	Retic	225	3A	$12	2005	$12	1979	1996	$12			$1	2034	30	3%	1.49	$2
3019	3	Retic	225	3A	$18	2005	$18	1979	1996	$18			$2	2034	30	3%	1.49	$3
2877	9	RM	100	9	$11	2005	$11	1980	1996	$11			$1	2034	30	3%	1.49	$2
2886	9	RM	100	9	$4	2005	$4	1980	1996	$4			$0	2034	30	3%	1.49	$1
2895	9	RM	100	9	$1	2005	$1	1980	1996	$1			$0	2034	30	3%	1.49	$0
2894	9	RM	100	RM9	$1	2005	$1	1980	1996	$1			$0	2034	30	3%	1.49	$0
2896	9	RM	100	RM9	$1	2005	$1	1980	1996	$1			$0	2034	30	3%	1.49	$0
2161	23	RM	150	23	$30	2005	$30	1980	1996	$30			$3	2034	30	3%	1.49	$5
35	24	RM	100	24	$15	2005	$15	1980	1996	$15			$2	2034	30	3%	1.49	$2
2154	24	RM	100	24	$2	2005	$2	1980	1996	$2			$0	2034	30	3%	1.49	$0
2155	24	RM	100	24	$1	2005	$1	1980	1996	$1			$0	2034	30	3%	1.49	$0
2168	24	RM	100	24	$11	2005	$11	1980	1996	$11			$1	2034	30	3%	1.49	$2
2180	24	RM	100	24	$7	2005	$7	1980	1996	$7			$1	2034	30	3%	1.49	$1
2187	24	RM	100	24	$0	2005	$0	1980	1996	$0			$0	2034	30	3%	1.49	$0
2188	24	RM	100	24	$2	2005	$2	1980	1996	$2			$0	2034	30	3%	1.49	$0
2137	23	RM	150	23	$12	2005	$12	1981	1996	$12			$1	2034	30	3%	1.49	$2
2145	23	RM	150	23	$5	2005	$5	1981	1996	$5			$1	2034	30	3%	1.49	$1
2156	23	RM	150	23	$9	2005	$9	1981	1996	$9			$1	2034	30	3%	1.49	$1
2157	23	RM	150	23	$6	2005	$6	1981	1996	$6			$1	2034	30	3%	1.49	$1
2159	23	RM	150	23	$16	2005	$16	1981	1996	$16			$2	2034	30	3%	1.49	$3
2170	23	RM	150	23	$33	2005	$33	1981	1996	$33			$4	2034	30	3%	1.49	$5
2171	23	RM	150	23	$4	2005	$4	1981	1996	$4			$0	2034	30	3%	1.49	$1
2174	23	RM	150	23	$4	2005	$4	1981	1996	$4			$0	2034	30	3%	1.49	$1
2181	23	RM	150	23	$29	2005	$29	1981	1996	$29			$3	2034	30	3%	1.49	$5
2201	23	RM	150	23	$116	2005	$116	1981	1996	$116			$13	2034	30	3%	1.49	$19
2279	23	RM	150	23	$122	2005	$122	1981	1996	$122			$13	2034	30	3%	1.49	$20
2390	23	RM	150	23	$41	2005	$41	1981	1996	$41			$5	2034	30	3%	1.49	$7
2483	23	RM	150	23	$33	2005	$33	1981	1996	$33			$4	2034	30	3%	1.49	$5
2489	23	RM	150	23	$2	2005	$2	1981	1996	$2			$0	2034	30	3%	1.49	$0
2576	23	RM	150	23	$23	2005	$23	1981	1996	$23			$3	2034	30	3%	1.49	$4
2597	23	RM	150	23	$6	2005	$6	1981	1996	$6			$1	2034	30	3%	1.49	$1
2626	23	RM	150	23	$7	2005	$7	1981	1996	$7			$1	2034	30	3%	1.49	$1
2628	23	RM	150	23	$3	2005	$3	1981	1996	$3			$0	2034	30	3%	1.49	$1
2830	23	RM	150	23	$46	2005	$46	1981	1996	$46			$5	2034	30	3%	1.49	$7
2857	23	RM	150	23	$5	2005	$5	1981	1996	$5			$1	2034	30	3%	1.49	$1
2864	23	RM	150	23	$3	2005	$3	1981	1996	$3			$0	2034	30	3%	1.49	$0
2910	23	RM	150	23	$12	2005	$12	1981	1996	$12			$1	2034	30	3%	1.49	$2
2939	23	RM	150	23	$12	2005	$12	1981	1996	$12			$1	2034	30	3%	1.49	$2
19840	23	RM	150	23	$8	2005	$8	1981	1996	$8			$1	2034	30	3%	1.49	$1
2127	23	RM	150	23	$1	2005	$1	1982	1996	$1			$0	2034	30	3%	1.49	$0
3021	3	Retic	225	3F	$8	2005	$8	1983	1996	$8			$1	2034	30	3%	1.49	$1
3023	3	Retic	225	3F	$7	2005	$7	1983	1996	$7			$1	2034	30	3%	1.49	$1
3027	3	Retic	225	3F	$8	2005	$8	1983	1996	$8			$1	2034	30	3%	1.49	$1
3028	3	Retic	225	3F	$10	2005	$10	1983	1996	$10			$1	2034	30	3%	1.49	$2
3033	3	Retic	225	3F	$10	2005	$10	1983	1996	$10			$1	2034	30	3%	1.49	$2
3039	3	Retic	225	3F	$8	2005	$8	1983	1996	$8			$1	2034	30	3%	1.49	$1
2459	8	RM	250	8	$9	2005	$9	1984	1996	$9			$1	2034	30	3%	1.49	$1
3187	8	RM	250	8	$157	2005	$157	1984	1996	$157			$17	2034	30	3%	1.49	$26
3205	8	RM	250	8	$3	2005	$3	1984	1996	$3			$0	2034	30	3%	1.49	$1
3223	8	RM	250	8	$3	2005	$3	1984	1996	$3			$0	2034	30	3%	1.49	$1
3248	8	RM	250	8	$4	2005	$4	1984	1996	$4			$0	2034	30	3%	1.49	$1
3273	8	RM	250	8	$3	2005	$3	1984	1996	$3			$0	2034	30	3%	1.49	$1
3294	8	RM	250	8	$5	2005	$5	1984	1996	$5			$1	2034	30	3%	1.49	$1
3359	8	RM	250	8	$12	2005	$12	1984	1996	$12			$1	2034	30	3%	1.49	$2
3639	8	RM	250	8	$58	2005	$58	1984	1996	$58			$6	2034	30	3%	1.49	$9
3664	8	RM	250	8	$12	2005	$12	1984	1996	$12			$1	2034	30	3%	1.49	$2
3751	8	RM	250	8	$14	2005	$14	1984	1996	$14			$2	2034	30	3%	1.49	$2
3752	8	RM	250	8	$17	2005	$17	1984	1996	$17			$2	2034	30	3%	1.49	$3
2232	8	Retic	225	8A	$9	2005	$9	1984	1996	$9			$1	2034	30	3%	1.49	$1
2233	8	Retic	225	8A	$5	2005	$5	1984	1996	$5			$1	2034	30	3%	1.49	$1
2234	8	Retic	225	8A	$12	2005	$12	1984	1996	$12			$1	2034	30	3%	1.49	$2
2237	8	Retic	225	8A	$13	2005	$13	1984	1996	$13			$1	2034	30	3%	1.49	$2
2239	8	Retic	225	8A	$18	2005	$18	1984	1996	$18			$2	2034	30	3%	1.49	$3
2241	8	Retic	225	8A	$8	2005	$8	1984	1996	$8			$1	2034	30	3%	1.49	$1
2243	8	Retic	225	8A	$18	2005	$18	1984	1996	$18			$2	2034	30	3%	1.49	$3
2262	8	Retic	225	8A	$17	2005	$17	1984	1996	$17			$2	2034	30	3%	1.49	$3
2307	8	Retic	225	8A	$17	2005	$17	1984	1996	$17			$2	2034	30	3%	1.49	$3
2308	8	Retic	225	8A	$20	2005	$20	1984	1996	$20			$2	2034	30	3%	1.49	$3
2398	8	Retic	225	8A	$18	2005	$18	1984	1996	$18			$2	2034	30	3%	1.49	$3
2412	8	Retic	225	8A	$8	2005	$8	1984	1996	$8			$1	2034	30	3%	1.49	$1
2427	8	Retic	225	8A	$7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$1
2434	8	Retic	300	8A	$24	2005	$24	1984	1996	$24			$3	2034	30	3%	1.49	$4
2443	8	Retic	300	8A	$25	2005	$25	1984	1996	$25			$3	2034	30	3%	1.49	$4
2452	8	Retic	300	8A	$24	2005	$24	1984	1996	$24			$3	2034	30	3%	1.49	$4

Table C3: Capital Charge Calculation	
Shoalhaven City Council	

Service Area	Bomaderry Sewerage	
Capital Charge	$6,856	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	9,105
Treatment Plant Capacity (ET)	8,200

Asset	Catch-ment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
None																		
Future Assets																		
BOMADERRY (Inlet Upgrade 20500ep)					$2,000	2005	$2,000	2009	2009	$1,526			$168	2034	25	7%	2.00	$336
BOMADERRY (8000ep)					$1,240	2005	$1,240	2015	2015	$630			$69	2034	19	7%	1.72	$119
BOMADERRY (8000ep)					$3,850	2005	$3,850	2016	2016	$1,829			$201	2034	18	7%	1.67	$336
Total Treatment					**$21,050**					**$17,945**		8,200	**$2,140**					**$3,321**
SUBSIDISED SCHEMES AND OTHER WORKS																		
REMS - 1B (Bomaderry Component)					$2,400	2005	$2,400	2011	2011	$1,599			$195	2034	23	7%	1.91	$372
Studies and Investigations					$40	2005	$40	2013	2013	$23			$3	2034	21	7%	1.81	$5
Studies and Investigations					$20	2005	$20	2015	2015	$10			$1	2034	19	7%	1.72	$2
Studies and Investigations					$25	2005	$25	2017	2017	$11			$1	2034	17	7%	1.63	$2
Studies and Investigations					$20	2005	$20	2019	2019	$8			$1	2034	15	7%	1.54	$1
Studies and Investigations					$10	2005	$10	2022	2022	$3			$0	2034	12	7%	1.41	$1
Total SUBSIDISED, ETC					**$2,515**					**$1,655**		8,200	**$202**					**$383**
GENERAL WORKS [5]																		
Future Assets																		
Consisting of the following works:																		
Developer Servicing Plan																		
Northern Headworks																		
Southern Headworks + Distribution System																		
Northern Distribution Systems																		
REMS Stg 2 (Storage and Ocean Extension)																		
Total					**$37,668**					**$37,668**		82,522	**$456**					**$ 767**

Notes
1. Capital cost from Council's asset registers and MEERA cost for future works
2. Base year of capital cost varies depending on asset data. Assets constructed prior to 1970 are not included (except headworks)
3. Capital cost adjusted to 2005$ using CPI for Sydney (ABS)
4. Capital cost of future works discounted to 2005$
5. General works are of benefit to the entire Shoalhaven City area and have been apportioned to each Service area.

Table C4: Capital Charge Calculation
Shoalhaven City Council

Service Area	Nowra Sewerage	
Capital Charge	$5,605	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	20,524
Treatment Plant Capacity (ET)	18,000

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2004 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
5325	5	RM	150	5	$14	2005	$14	1970	1996	$14			$1	2034	30	3%	1.49	$1
5363	5	RM	150	5	$16	2005	$16	1970	1996	$16			$1	2034	30	3%	1.49	$1
5369	5	RM	150	5	$3	2005	$3	1970	1996	$3			$0	2034	30	3%	1.49	$0
5378	5	RM	150	5	$4	2005	$4	1970	1996	$4			$0	2034	30	3%	1.49	$0
5573	11	RM	100	11	$2	2005	$2	1970	1996	$2			$0	2034	30	3%	1.49	$0
5574	11	RM	100	11	$0	2005	$0	1970	1996	$0			$0	2034	30	3%	1.49	$0
479	2	Retic	225	2A	$15	2005	$15	1970	1996	$15			$1	2034	30	3%	1.49	$1
6549	2	Retic	225	2A	$4	2005	$4	1970	1996	$4			$0	2034	30	3%	1.49	$0
6611	2	Retic	225	2A	$15	2005	$15	1970	1996	$15			$1	2034	30	3%	1.49	$1
6662	2	Retic	225	2A	$18	2005	$18	1970	1996	$18			$1	2034	30	3%	1.49	$1
6733	2	Retic	225	2A	$15	2005	$15	1970	1996	$15			$1	2034	30	3%	1.49	$1
6798	2	Retic	225	2A	$16	2005	$16	1970	1996	$16			$1	2034	30	3%	1.49	$1
6821	2	Retic	225	2A	$7	2005	$7	1970	1996	$7			$0	2034	30	3%	1.49	$1
6850	2	Retic	225	2A	$7	2005	$7	1970	1996	$7			$0	2034	30	3%	1.49	$1
6910	2	Retic	225	2A	$10	2005	$10	1970	1996	$10			$1	2034	30	3%	1.49	$1
6994	2	Retic	225	2A	$14	2005	$14	1970	1996	$14			$1	2034	30	3%	1.49	$1
7088	2	Retic	225	2A	$13	2005	$13	1970	1996	$13			$1	2034	30	3%	1.49	$1
7113	2	Retic	225	2A	$4	2005	$4	1970	1996	$4			$0	2034	30	3%	1.49	$0
7192	2	Retic	225	2A	$9	2005	$9	1970	1996	$9			$0	2034	30	3%	1.49	$1
7193	2	Retic	225	2A	$4	2005	$4	1970	1996	$4			$0	2034	30	3%	1.49	$0
20087	2	Retic	225	2A	$8	2005	$8	1970	1996	$8			$0	2034	30	3%	1.49	$1
488	2	Retic	225	2B	$11	2005	$11	1970	1996	$11			$1	2034	30	3%	1.49	$1
490	2	Retic	225	2B	$21	2005	$21	1970	1996	$21			$1	2034	30	3%	1.49	$2
6372	2	Retic	225	2B	$20	2005	$20	1970	1996	$20			$1	2034	30	3%	1.49	$1
6447	2	Retic	225	2B	$20	2005	$20	1970	1996	$20			$1	2034	30	3%	1.49	$1
6513	2	Retic	225	2B	$20	2005	$20	1970	1996	$20			$1	2034	30	3%	1.49	$1
6633	2	Retic	225	2B	$14	2005	$14	1970	1996	$14			$1	2034	30	3%	1.49	$1
6657	2	Retic	225	2B	$7	2005	$7	1970	1996	$7			$0	2034	30	3%	1.49	$1
6785	2	Retic	225	2B	$15	2005	$15	1970	1996	$15			$1	2034	30	3%	1.49	$1
6797	2	Retic	225	2B	$11	2005	$11	1970	1996	$11			$1	2034	30	3%	1.49	$1
19026	Surcharge Catchment	Retic	225	6A	$2	2005	$2	1970	1996	$2			$0	2034	30	3%	1.49	$0
19027	Surcharge Catchment	Retic	225	6A	$5	2005	$5	1970	1996	$5			$0	2034	30	3%	1.49	$0
271	Surcharge Catchment	Retic	225	6C	$15	2005	$15	1970	1996	$15			$1	2034	30	3%	1.49	$1
5060	Surcharge Catchment	Retic	225	6C	$11	2005	$11	1970	1996	$11			$1	2034	30	3%	1.49	$1
5076	Surcharge Catchment	Retic	225	6C	$5	2005	$5	1970	1996	$5			$0	2034	30	3%	1.49	$0
5078	Surcharge Catchment	Retic	225	6C	$9	2005	$9	1970	1996	$9			$0	2034	30	3%	1.49	$1
5080	Surcharge Catchment	Retic	225	6C	$8	2005	$8	1970	1996	$8			$0	2034	30	3%	1.49	$1
5083	Surcharge Catchment	Retic	225	6C	$8	2005	$8	1970	1996	$8			$0	2034	30	3%	1.49	$1
5095	Surcharge Catchment	Retic	225	6C	$14	2005	$14	1970	1996	$14			$1	2034	30	3%	1.49	$1
269	Surcharge Catchment	Retic	225	6D	$10	2005	$10	1970	1996	$10			$0	2034	30	3%	1.49	$1
5059	Surcharge Catchment	Retic	225	6D	$16	2005	$16	1970	1996	$16			$1	2034	30	3%	1.49	$1
5067	Surcharge Catchment	Retic	225	6D	$8	2005	$8	1970	1996	$8			$0	2034	30	3%	1.49	$1
5073	Surcharge Catchment	Retic	225	6D	$15	2005	$15	1970	1996	$15			$1	2034	30	3%	1.49	$1
5088	Surcharge Catchment	Retic	225	6D	$8	2005	$8	1970	1996	$8			$0	2034	30	3%	1.49	$1
5100	Surcharge Catchment	Retic	225	6D	$16	2005	$16	1970	1996	$16			$1	2034	30	3%	1.49	$1
5147	11NN	RM	100	11	$2	2005	$2	1971	1996	$2			$0	2034	30	3%	1.49	$0
5155	11NN	RM	100	11	$4	2005	$4	1971	1996	$4			$0	2034	30	3%	1.49	$0
5173	11NN	RM	100	11	$5	2005	$5	1971	1996	$5			$0	2034	30	3%	1.49	$0
5192	11NN	RM	100	11	$2	2005	$2	1971	1996	$2			$0	2034	30	3%	1.49	$0
5193	11NN	RM	100	11	$5	2005	$5	1971	1996	$5			$0	2034	30	3%	1.49	$0
5208	11NN	RM	100	11	$1	2005	$1	1971	1996	$1			$0	2034	30	3%	1.49	$0
4571	12NN	RM	150	12	$18	2005	$18	1972	1996	$18			$1	2034	30	3%	1.49	$1
4583	12NN	RM	150	12	$1	2005	$1	1972	1996	$1			$0	2034	30	3%	1.49	$0
4612	12NN	RM	150	12	$11	2005	$11	1972	1996	$11			$1	2034	30	3%	1.49	$1
4639	12NN	RM	150	12	$12	2005	$12	1972	1996	$12			$1	2034	30	3%	1.49	$1
4643	12NN	RM	150	12	$7	2005	$7	1972	1996	$7			$0	2034	30	3%	1.49	$0
4671	12NN	RM	150	12	$7	2005	$7	1972	1996	$7			$0	2034	30	3%	1.49	$1
4672	12NN	RM	150	12	$2	2005	$2	1972	1996	$2			$0	2034	30	3%	1.49	$0
4584	12NN	Retic	225	12A	$1	2005	$1	1972	1996	$1			$0	2034	30	3%	1.49	$0
6317	13	RM	150	13	$3	2005	$3	1973	1996	$3			$0	2034	30	3%	1.49	$0
6318	13	RM	150	13	$32	2005	$32	1973	1996	$32			$2	2034	30	3%	1.49	$2
218	Surcharge Catchment	Retic	225	12A	$16	2005	$16	1973	1996	$16			$1	2034	30	3%	1.49	$1
4488	Surcharge Catchment	Retic	225	12A	$4	2005	$4	1973	1996	$4			$0	2034	30	3%	1.49	$0
4489	Surcharge Catchment	Retic	225	12A	$11	2005	$11	1973	1996	$11			$1	2034	30	3%	1.49	$1
4493	Surcharge Catchment	Retic	225	12A	$8	2005	$8	1973	1996	$8			$0	2034	30	3%	1.49	$1
4494	Surcharge Catchment	Retic	225	12A	$3	2005	$3	1973	1996	$3			$0	2034	30	3%	1.49	$0
4496	Surcharge Catchment	Retic	225	12A	$15	2005	$15	1973	1996	$15			$1	2034	30	3%	1.49	$1
4502	Surcharge Catchment	Retic	225	12A	$17	2005	$17	1973	1996	$17			$1	2034	30	3%	1.49	$1
4504	Surcharge Catchment	Retic	225	12A	$16	2005	$16	1973	1996	$16			$1	2034	30	3%	1.49	$1
4518	12NN	Retic	225	12A	$20	2005	$20	1973	1996	$20			$1	2034	30	3%	1.49	$1
4519	Surcharge Catchment	Retic	225	12A	$19	2005	$19	1973	1996	$19			$1	2034	30	3%	1.49	$1
6189	2	Retic	225	2D	$15	2005	$15	1973	1996	$15			$1	2034	30	3%	1.49	$1
6190	2	Retic	225	2D	$7	2005	$7	1973	1996	$7			$0	2034	30	3%	1.49	$1
6182	2	Retic	225	2DA	$11	2005	$11	1973	1996	$11			$1	2034	30	3%	1.49	$1
6261	2	Retic	225	2DA	$17	2005	$17	1973	1996	$17			$1	2034	30	3%	1.49	$1
6303	2	Retic	225	2DA	$15	2005	$15	1973	1996	$15			$1	2034	30	3%	1.49	$1
4943	15NN	Retic	300	15A	$9	2005	$9	1973	1996	$9			$0	2034	30	3%	1.49	$1
4949	15NN	Retic	300	15A	$9	2005	$9	1973	1996	$9			$0	2034	30	3%	1.49	$1
4957	15NN	Retic	300	15A	$17	2005	$17	1973	1996	$17			$1	2034	30	3%	1.49	$1
4959	15NN	Retic	300	15A	$11	2005	$11	1973	1996	$11			$1	2034	30	3%	1.49	$1
4967	15NN	Retic	300	15A	$3	2005	$3	1973	1996	$3			$0	2034	30	3%	1.49	$0
4976	15NN	Retic	300	15A	$3	2005	$3	1973	1996	$3			$0	2034	30	3%	1.49	$0
4977	15NN	Retic	300	15A	$14	2005	$14	1973	1996	$14			$1	2034	30	3%	1.49	$1
4983	15NN	Retic	300	15A	$10	2005	$10	1973	1996	$10			$1	2034	30	3%	1.49	$1
4987	15NN	Retic	300	15A	$3	2005	$3	1973	1996	$3			$0	2034	30	3%	1.49	$0
4990	15NN	Retic	300	15A	$12	2005	$12	1973	1996	$12			$1	2034	30	3%	1.49	$1
5090	15NN	Retic	300	15A	$20	2005	$20	1973	1996	$20			$1	2034	30	3%	1.49	$1
5105	15NN	Retic	300	15A	$12	2005	$12	1973	1996	$12			$1	2034	30	3%	1.49	$1
5111	15NN	Retic	300	15A	$7	2005	$7	1973	1996	$7			$0	2034	30	3%	1.49	$0
5114	15NN	Retic	300	15A	$2	2005	$2	1973	1996	$2			$0	2034	30	3%	1.49	$0
5115	15NN	Retic	300	15A	$1	2005	$1	1973	1996	$1			$0	2034	30	3%	1.49	$0
5126	15NN	Retic	300	15A	$1	2005	$1	1973	1996	$1			$0	2034	30	3%	1.49	$0
19504	15NN	Retic	300	15A	$6	2005	$6	1973	1996	$6			$0	2034	30	3%	1.49	$0
19505	15NN	Retic	300	15A	$5	2005	$5	1973	1996	$5			$0	2034	30	3%	1.49	$0
19508	15NN	Retic	300	15A	$8	2005	$8	1973	1996	$8			$0	2034	30	3%	1.49	$1
208	15NN	Retic	225	15L	$14	2005	$14	1973	1996	$14			$1	2034	30	3%	1.49	$1
4962	15NN	Retic	225	15L	$7	2005	$7	1973	1996	$7			$0	2034	30	3%	1.49	$0
201	15NN	Retic	225	15M	$13	2005	$13	1973	1996	$13			$1	2034	30	3%	1.49	$1
4909	15NN	Retic	225	15M	$11	2005	$11	1973	1996	$11			$1	2034	30	3%	1.49	$1
4916	15NN	Retic	225	15M	$6	2005	$6	1973	1996	$6			$0	2034	30	3%	1.49	$0
4930	15NN	Retic	225	15M	$15	2005	$15	1973	1996	$15			$1	2034	30	3%	1.49	$1
4940	15NN	Retic	225	15M	$7	2005	$7	1973	1996	$7			$0	2034	30	3%	1.49	$1
246	15NN	RM	100	17A	$20	2005	$20	1974	1996	$20			$1	2034	30	3%	1.49	$1
5098	15NN	RM	100	17A	$12	2005	$12	1974	1996	$12			$1	2034	30	3%	1.49	$1
5113	15NN	RM	100	17A	$13	2005	$13	1974	1996	$13			$1	2034	30	3%	1.49	$1
5128	15NN	RM	100	17A	$5	2005	$5	1974	1996	$5			$0	2034	30	3%	1.49	$0
5152	15NN	RM	100	17A	$1	2005	$1	1974	1996	$1			$0	2034	30	3%	1.49	$0
5158	15NN	RM	100	17A	$1	2005	$1	1974	1996	$1			$0	2034	30	3%	1.49	$0
5165	15NN	RM	100	17A	$1	2005	$1	1974	1996	$1			$0	2034	30	3%	1.49	$0
5168	15NN	RM	100	17A	$1	2005	$1	1974	1996	$1			$0	2034	30	3%	1.49	$0
198	15NN	Retic	225	17A	$1	2005	$1	1974	1996	$1			$0	2034	30	3%	1.49	$0
5077	15NN	Retic	225	17A	$8	2005	$8	1974	1996	$8			$0	2034	30	3%	1.49	$1
4020	Surcharge Catchment	Retic	225	12F	$15	2005	$15	1975	1996	$15			$1	2034	30	3%	1.49	$1
4111	Surcharge Catchment	Retic	225	12F	$14	2005	$14	1975	1996	$14			$1	2034	30	3%	1.49	$1
4165	Surcharge Catchment	Retic	225	12F	$13	2005	$13	1975	1996	$13			$1	2034	30	3%	1.49	$1

Table C4: Capital Charge Calculation
Shoalhaven City Council

Service Area	Nowra Sewerage	
Capital Charge	$5,605	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	20,524
Treatment Plant Capacity (ET)	16,000

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2004 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
19138	21NN	RM	150	21	$28	2005	$28	1982	1996	$28			$1	2034	30	3%	1.49	$2
19141	21NN	RM	150	21	$24	2005	$24	1982	1996	$24			$1	2034	30	3%	1.49	$2
19146	21NN	RM	150	21	$21	2005	$21	1982	1996	$21			$1	2034	30	3%	1.49	$1
19152	20NN	Retic	225	20A	$1	2005	$1	1982	1996	$1			$0	2034	30	3%	1.49	$0
19143	20NN	Retic	225	20D	$10	2005	$10	1982	1996	$10			$0	2034	30	3%	1.49	$1
19149	20NN	Retic	225	20D	$5	2005	$5	1982	1996	$5			$0	2034	30	3%	1.49	$0
3115	21NN	Retic	225	21A	$1	2005	$1	1982	1996	$1			$0	2034	30	3%	1.49	$0
3124	21NN	Retic	225	21A	$18	2005	$18	1982	1996	$18			$1	2034	30	3%	1.49	$1
3133	21NN	Retic	225	21A	$17	2005	$17	1982	1996	$17			$1	2034	30	3%	1.49	$1
3150	21NN	Retic	225	21A	$9	2005	$9	1982	1996	$9			$0	2034	30	3%	1.49	$1
3159	21NN	Retic	225	21A	$4	2005	$4	1982	1996	$4			$0	2034	30	3%	1.49	$0
3193	21NN	Retic	225	21A	$5	2005	$5	1982	1996	$5			$0	2034	30	3%	1.49	$0
5215	16NN	RM	100	16	$0	2005	$0	1983	1996	$0			$0	2034	30	3%	1.49	$0
5228	16NN	RM	100	16	$7	2005	$7	1983	1996	$7			$0	2034	30	3%	1.49	$1
5236	16NN	RM	100	16	$6	2005	$6	1983	1996	$6			$0	2034	30	3%	1.49	$0
5249	16NN	RM	150	16	$9	2005	$9	1983	1996	$9			$0	2034	30	3%	1.49	$1
5264	16NN	RM	150	16	$10	2005	$10	1983	1996	$10			$0	2034	30	3%	1.49	$1
5314	16NN	RM	150	16	$1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
18960	16NN	RM	150	16	$6	2005	$6	1983	1996	$6			$0	2034	30	3%	1.49	$0
18961	16NN	RM	150	16	$5	2005	$5	1983	1996	$5			$0	2034	30	3%	1.49	$0
6693	20	RM	100	20	$2	2005	$2	1984	1996	$2			$0	2034	30	3%	1.49	$0
6694	20	RM	100	20	$10	2005	$10	1984	1996	$10			$0	2034	30	3%	1.49	$1
6704	20	RM	100	20	$2	2005	$2	1984	1996	$2			$0	2034	30	3%	1.49	$0
6719	20	RM	100	20	$3	2005	$3	1984	1996	$3			$0	2034	30	3%	1.49	$0
6737	20	RM	100	20	$5	2005	$5	1984	1996	$5			$0	2034	30	3%	1.49	$0
6774	20	RM	100	20	$3	2005	$3	1984	1996	$3			$0	2034	30	3%	1.49	$0
6873	20	RM	100	20	$7	2005	$7	1984	1996	$7			$0	2034	30	3%	1.49	$0
6875	20	RM	100	20	$0	2005	$0	1984	1996	$0			$0	2034	30	3%	1.49	$0
6756	20	RM	150	20	$9	2005	$9	1984	1996	$9			$0	2034	30	3%	1.49	$1
6817	20	RM	150	20	$6	2005	$6	1984	1996	$6			$0	2034	30	3%	1.49	$0
6880	20	Retic	300	20AA	$1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
543	20	Retic	225	20AB	$17	2005	$17	1984	1996	$17			$1	2034	30	3%	1.49	$1
7291	20	Retic	225	20AB	$15	2005	$15	1984	1996	$15			$1	2034	30	3%	1.49	$1
545	20	Retic	300	20AB	$10	2005	$10	1984	1996	$10			$0	2034	30	3%	1.49	$1
547	20	Retic	300	20AB	$8	2005	$8	1984	1996	$8			$0	2034	30	3%	1.49	$1
6969	20	Retic	300	20AB	$17	2005	$17	1984	1996	$17			$1	2034	30	3%	1.49	$1
7028	20	Retic	300	20AB	$12	2005	$12	1984	1996	$12			$1	2034	30	3%	1.49	$1
7150	20	Retic	300	20AB	$8	2005	$8	1984	1996	$8			$0	2034	30	3%	1.49	$1
7151	20	Retic	300	20AB	$7	2005	$7	1984	1996	$7			$0	2034	30	3%	1.49	$0
7227	20	Retic	300	20AB	$10	2005	$10	1984	1996	$10			$0	2034	30	3%	1.49	$1
7228	20	Retic	300	20AB	$8	2005	$8	1984	1996	$8			$0	2034	30	3%	1.49	$1
7290	20	Retic	300	20AB	$3	2005	$3	1984	1996	$3			$0	2034	30	3%	1.49	$0
7503	20	Retic	225	20ABG	$17	2005	$17	1984	1996	$17			$1	2034	30	3%	1.49	$1
602	17	RM	225	17	$7	2005	$7	1988	1996	$7			$0	2034	30	3%	1.49	$1
7603	17	RM	225	17	$4	2005	$4	1988	1996	$4			$0	2034	30	3%	1.49	$0
7625	17	RM	225	17	$9	2005	$9	1988	1996	$9			$0	2034	30	3%	1.49	$1
7655	17	RM	225	17	$15	2005	$15	1988	1996	$15			$1	2034	30	3%	1.49	$1
7678	17	RM	225	17	$11	2005	$11	1988	1996	$11			$1	2034	30	3%	1.49	$1
7725	17	RM	225	17	$3	2005	$3	1988	1996	$3			$0	2034	30	3%	1.49	$0
7727	17	RM	225	17	$28	2005	$28	1988	1996	$28			$1	2034	30	3%	1.49	$2
7738	17	RM	225	17	$32	2005	$32	1988	1996	$32			$2	2034	30	3%	1.49	$2
7752	17	RM	225	17	$50	2005	$50	1988	1996	$50			$2	2034	30	3%	1.49	$4
7775	17	RM	225	17	$21	2005	$21	1988	1996	$21			$1	2034	30	3%	1.49	$2
7780	17	RM	225	17	$26	2005	$26	1988	1996	$26			$1	2034	30	3%	1.49	$2
7782	17	RM	225	17	$5	2005	$5	1988	1996	$5			$0	2034	30	3%	1.49	$0
7794	17	RM	225	17	$121	2005	$121	1988	1996	$121			$6	2034	30	3%	1.49	$9
7806	17	RM	225	17	$14	2005	$14	1988	1996	$14			$1	2034	30	3%	1.49	$1
5103	Surcharge Catchment	Raw	300	SUR	$4	2005	$4	1988	1996	$4			$0	2034	30	3%	1.49	$0
5306	Surcharge Catchment	Raw	300	SUR	$82	2005	$82	1988	1996	$82			$4	2034	30	3%	1.49	$6
7595	Surcharge 1	Retic	225	SUR 1	$1	2005	$1	1988	1996	$1			$0	2034	30	3%	1.49	$0
5602	Surcharge 1	Raw	300	SUR 1	$5	2005	$5	1988	1996	$5			$0	2034	30	3%	1.49	$0
5695	Surcharge 1	Raw	300	SUR 1	$58	2005	$58	1988	1996	$58			$3	2034	30	3%	1.49	$4
5715	Surcharge 1	Raw	300	SUR 1	$13	2005	$13	1988	1996	$13			$1	2034	30	3%	1.49	$1
5847	Surcharge 1	Raw	300	SUR 1	$60	2005	$60	1988	1996	$60			$3	2034	30	3%	1.49	$4
5872	Surcharge 1	Raw	300	SUR 1	$12	2005	$12	1988	1996	$12			$1	2034	30	3%	1.49	$1
5957	Surcharge 1	Raw	300	SUR 1	$34	2005	$34	1988	1996	$34			$2	2034	30	3%	1.49	$2
5958	Surcharge 1	Raw	300	SUR 1	$18	2005	$18	1988	1996	$18			$1	2034	30	3%	1.49	$1
6077	Surcharge 1	Raw	300	SUR 1	$40	2005	$40	1988	1996	$40			$2	2034	30	3%	1.49	$3
6126	Surcharge 1	Raw	300	SUR 1	$25	2005	$25	1988	1996	$25			$1	2034	30	3%	1.49	$2
6238	Surcharge 1	Raw	300	SUR 1	$43	2005	$43	1988	1996	$43			$2	2034	30	3%	1.49	$3
6253	Surcharge 1	Raw	300	SUR 1	$5	2005	$5	1988	1996	$5			$0	2034	30	3%	1.49	$0
6276	Surcharge 1	Raw	300	SUR 1	$10	2005	$10	1988	1996	$10			$0	2034	30	3%	1.49	$1
6325	Surcharge 1	Raw	300	SUR 1	$18	2005	$18	1988	1996	$18			$1	2034	30	3%	1.49	$1
6365	Surcharge 1	Raw	300	SUR 1	$12	2005	$12	1988	1996	$12			$1	2034	30	3%	1.49	$1
6417	Surcharge 1	Raw	300	SUR 1	$19	2005	$19	1988	1996	$19			$1	2034	30	3%	1.49	$1
6570	Surcharge 1	Raw	300	SUR 1	$36	2005	$36	1988	1996	$36			$2	2034	30	3%	1.49	$3
6659	Surcharge 1	Raw	300	SUR 1	$29	2005	$29	1988	1996	$29			$1	2034	30	3%	1.49	$2
6676	Surcharge 1	Raw	300	SUR 1	$4	2005	$4	1988	1996	$4			$0	2034	30	3%	1.49	$0
6723	Surcharge 1	Raw	300	SUR 1	$9	2005	$9	1988	1996	$9			$0	2034	30	3%	1.49	$1
6728	Surcharge 1	Raw	300	SUR 1	$1	2005	$1	1988	1996	$1			$0	2034	30	3%	1.49	$0
6730	Surcharge 1	Raw	300	SUR 1	$1	2005	$1	1988	1996	$1			$0	2034	30	3%	1.49	$0
6812	Surcharge 1	Raw	300	SUR 1	$19	2005	$19	1988	1996	$19			$1	2034	30	3%	1.49	$1
6877	Surcharge 1	Raw	300	SUR 1	$14	2005	$14	1988	1996	$14			$1	2034	30	3%	1.49	$1
6931	Surcharge 1	Raw	300	SUR 1	$10	2005	$10	1988	1996	$10			$0	2034	30	3%	1.49	$1
7020	Surcharge 1	Raw	300	SUR 1	$14	2005	$14	1988	1996	$14			$1	2034	30	3%	1.49	$1
7141	Surcharge 1	Raw	300	SUR 1	$17	2005	$17	1988	1996	$17			$1	2034	30	3%	1.49	$1
7246	Surcharge 1	Raw	300	SUR 1	$21	2005	$21	1988	1996	$21			$1	2034	30	3%	1.49	$1
7400	Surcharge 1	Raw	300	SUR 1	$24	2005	$24	1988	1996	$24			$1	2034	30	3%	1.49	$2
7462	Surcharge 1	Raw	300	SUR 1	$21	2005	$21	1988	1996	$21			$1	2034	30	3%	1.49	$2
7504	Surcharge 1	Raw	300	SUR 1	$15	2005	$15	1988	1996	$15			$1	2034	30	3%	1.49	$1
7525	Surcharge 1	Raw	300	SUR 1	$19	2005	$19	1988	1996	$19			$1	2034	30	3%	1.49	$1
7528	Surcharge 1	Raw	300	SUR 1	$14	2005	$14	1988	1996	$14			$1	2034	30	3%	1.49	$1
7538	Surcharge 1	Raw	300	SUR 1	$27	2005	$27	1988	1996	$27			$1	2034	30	3%	1.49	$2
18984	Surcharge 1	Raw	300	SUR 1	$4	2005	$4	1988	1996	$4			$0	2034	30	3%	1.49	$0
18985	Surcharge 1	Raw	300	SUR 1	$4	2005	$4	1988	1996	$4			$0	2034	30	3%	1.49	$0
23519	Surcharge 1	Raw	300	SUR 1	$3	2005	$3	1988	1996	$3			$0	2034	30	3%	1.49	$0
23521	Surcharge 1	Raw	300	SUR 1	$4	2005	$4	1988	1996	$4			$0	2034	30	3%	1.49	$0
23523	Surcharge 1	Raw	300	SUR 1	$6	2005	$6	1988	1996	$6			$0	2034	30	3%	1.49	$0
23525	Surcharge 1	Raw	300	SUR 1	$4	2005	$4	1988	1996	$4			$0	2034	30	3%	1.49	$0
23527	Surcharge 1	Raw	300	SUR 1	$2	2005	$2	1988	1996	$2			$0	2034	30	3%	1.49	$0
23529	Surcharge 1	Raw	300	SUR 1	$1	2005	$1	1988	1996	$1			$0	2034	30	3%	1.49	$0
23531	Surcharge 1	Raw	300	SUR 1	$12	2005	$12	1988	1996	$12			$1	2034	30	3%	1.49	$1
23533	Surcharge 1	Raw	300	SUR 1	$1	2005	$1	1988	1996	$1			$0	2034	30	3%	1.49	$0
23534	Surcharge 1	Raw	300	SUR 1	$9	2005	$9	1988	1996	$9			$0	2034	30	3%	1.49	$1
23535	Surcharge 1	Raw	300	SUR 1	$6	2005	$6	1988	1996	$6			$0	2034	30	3%	1.49	$0
23536	Surcharge 1	Raw	300	SUR 1	$5	2005	$5	1988	1996	$5			$0	2034	30	3%	1.49	$0
302	Surcharge Catchment	Raw	300	SUR 2	$5	2005	$5	1988	1996	$5			$0	2034	30	3%	1.49	$0
303	Surcharge Catchment	Raw	300	SUR 2	$5	2005	$5	1988	1996	$5			$0	2034	30	3%	1.49	$0
5302	Surcharge Catchment	Raw	300	SUR 2	$2	2005	$2	1988	1996	$2			$0	2034	30	3%	1.49	$0
5343	Surcharge Catchment	Raw	300	SUR 2	$20	2005	$20	1988	1996	$20			$1	2034	30	3%	1.49	$1
5350	Surcharge Catchment	Raw	300	SUR 2	$20	2005	$20	1988	1996	$20			$1	2034	30	3%	1.49	$1
5352	Surcharge Catchment	Raw	300	SUR 2	$7	2005	$7	1988	1996	$7			$0	2034	30	3%	1.49	$1
5383	Surcharge Catchment	Raw	300	SUR 2	$15	2005	$15	1988	1996	$15			$1	2034	30	3%	1.49	$1
5386	Surcharge Catchment	Raw	300	SUR 2	$7	2005	$7	1988	1996	$7			$0	2034	30	3%	1.49	$1
5387	Surcharge Catchment	Raw	300	SUR 2	$11	2005	$11	1988	1996	$11			$1	2034	30	3%	1.49	$1
5397	Surcharge Catchment	Raw	300	SUR 2	$13	2005	$13	1988	1996	$13			$1	2034	30	3%	1.49	$1
5415	Surcharge Catchment	Raw	300	SUR 2	$31	2005	$31	1988	1996	$31			$2	2034	30	3%	1.49	$2
5416	Surcharge Catchment	Raw	300	SUR 2	$55	2005	$55	1988	1996	$55			$3	2034	30	3%	1.49	$4
5429	Surcharge Catchment	Raw	300	SUR 2	$8	2005	$8	1988	1996	$8			$0	2034	30	3%	1.49	$1
5434	Surcharge Catchment	Raw	300	SUR 2	$6	2005	$6	1988	1996	$6			$0	2034	30	3%	1.49	$0
5436	Surcharge Catchment	Raw	300	SUR 2	$23	2005	$23	1988	1996	$23			$1	2034	30	3%	1.49	$2
5437	Surcharge Catchment	Raw	300	SUR 2	$33	2005	$33	1988	1996	$33			$2	2034	30	3%	1.49	$2
5438	Surcharge Catchment	Raw	300	SUR 2	$4	2005	$4	1988	1996	$4			$0	2034	30	3%	1.49	$0
5449	Surcharge Catchment	Raw	300	SUR 2	$18	2005	$18	1988	1996	$18			$1	2034	30	3%	1.49	$1
5454	Surcharge Catchment	Raw	300	SUR 2	$14	2005	$14	1988	1996	$14			$1	2034	30	3%	1.49	$1

Table C4: Capital Charge Calculation
Shoalhaven City Council

Service Area	Nowra Sewerage	
Capital Charge	$5,605	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	20,524
Treatment Plant Capacity (ET)	18,000

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2004 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
6684	22	RM	200	22	$0	2005	$0	1989	1996	$0			$0	2034	30	3%	1.49	$0
6685	22	RM	200	22	$0	2005	$0	1989	1996	$0			$0	2034	30	3%	1.49	$0
6692	22	RM	200	22	$9	2005	$9	1989	1996	$9			$0	2034	30	3%	1.49	$1
6710	22	RM	200	22	$20	2005	$20	1989	1996	$20			$1	2034	30	3%	1.49	$1
6736	22	RM	200	22	$23	2005	$23	1989	1996	$23			$1	2034	30	3%	1.49	$2
6747	22	RM	200	22	$14	2005	$14	1989	1996	$14			$1	2034	30	3%	1.49	$1
6752	22	RM	200	22	$7	2005	$7	1989	1996	$7			$0	2034	30	3%	1.49	$1
6766	22	RM	200	22	$19	2005	$19	1989	1996	$19			$1	2034	30	3%	1.49	$1
6847	22	RM	200	22	$5	2005	$5	1989	1996	$5			$0	2034	30	3%	1.49	$0
6870	22	RM	200	22	$3	2005	$3	1989	1996	$3			$0	2034	30	3%	1.49	$0
6872	22	RM	200	22	$1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
21434	22	RM	300	22	$2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$0
5116	18NN	RM	100	18	$4	2005	$4	1989	1996	$4			$0	2034	30	3%	1.49	$0
5119	18NN	RM	100	18	$1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
5129	18NN	RM	100	18	$2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$0
5137	18NN	RM	100	18	$2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$0
5179	18NN	RM	100	18	$10	2005	$10	1989	1996	$10			$0	2034	30	3%	1.49	$1
5182	18NN	RM	100	18	$1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
5044	15NN	RM	225	17B	$17	2005	$17	1989	1996	$17			$1	2034	30	3%	1.49	$1
5054	15NN	RM	225	17B	$1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
5153	15NN	RM	225	17B	$16	2005	$16	1989	1996	$16			$1	2034	30	3%	1.49	$1
491	2	Retic	225	2BA	$16	2005	$16	1990	1996	$16			$1	2034	30	3%	1.49	$1
6339	2	Retic	225	2BA	$18	2005	$18	1990	1996	$18			$1	2034	30	3%	1.49	$1
6387	2	Retic	225	2BA	$14	2005	$14	1990	1996	$14			$1	2034	30	3%	1.49	$1
6500	2	Retic	225	2BA	$14	2005	$14	1990	1996	$14			$1	2034	30	3%	1.49	$1
6554	2	Retic	225	2BA	$16	2005	$16	1990	1996	$16			$1	2034	30	3%	1.49	$1
6579	2	Retic	225	2BA	$8	2005	$8	1990	1996	$8			$0	2034	30	3%	1.49	$1
6587	2	Retic	225	2BA	$1	2005	$1	1990	1996	$1			$0	2034	30	3%	1.49	$0
6414	3	Retic	225	3AP	$6	2005	$6	1990	1996	$6			$0	2034	30	3%	1.49	$0
5231	19NN	RM	100	19	$1	2005	$1	1990	1996	$1			$0	2034	30	3%	1.49	$0
5233	19NN	RM	100	19	$3	2005	$3	1990	1996	$3			$0	2034	30	3%	1.49	$0
5237	19NN	RM	100	19	$3	2005	$3	1990	1996	$3			$0	2034	30	3%	1.49	$0
5242	19NN	RM	100	19	$2	2005	$2	1990	1996	$2			$0	2034	30	3%	1.49	$0
5247	19NN	RM	100	19	$2	2005	$2	1990	1996	$2			$0	2034	30	3%	1.49	$0
5256	19NN	RM	100	19	$2	2005	$2	1990	1996	$2			$0	2034	30	3%	1.49	$0
5262	19NN	RM	100	19	$2	2005	$2	1990	1996	$2			$0	2034	30	3%	1.49	$0
5273	19NN	RM	100	19	$2	2005	$2	1990	1996	$2			$0	2034	30	3%	1.49	$0
5286	19NN	RM	100	19	$2	2005	$2	1990	1996	$2			$0	2034	30	3%	1.49	$0
5296	19NN	RM	100	19	$2	2005	$2	1990	1996	$2			$0	2034	30	3%	1.49	$0
5299	19NN	RM	100	19	$0	2005	$0	1990	1996	$0			$0	2034	30	3%	1.49	$0
5300	19NN	RM	100	19	$0	2005	$0	1990	1996	$0			$0	2034	30	3%	1.49	$0
8215	23	RM	100	23	$22	2005	$22	1991	1996	$22			$1	2034	30	3%	1.49	$2
8260	23	RM	100	23	$11	2005	$11	1991	1996	$11			$1	2034	30	3%	1.49	$1
8296	23	RM	100	23	$6	2005	$6	1991	1996	$6			$0	2034	30	3%	1.49	$0
8375	23	RM	100	23	$16	2005	$16	1991	1996	$16			$1	2034	30	3%	1.49	$1
8380	23	RM	100	23	$1	2005	$1	1991	1996	$1			$0	2034	30	3%	1.49	$0
601	24	RM	225	24	$10	2005	$10	1991	1996	$10			$1	2034	30	3%	1.49	$1
7375	24	RM	225	24	$12	2005	$12	1991	1996	$12			$1	2034	30	3%	1.49	$1
7397	24	RM	225	24	$7	2005	$7	1991	1996	$7			$0	2034	30	3%	1.49	$0
7404	24	RM	225	24	$7	2005	$7	1991	1996	$7			$0	2034	30	3%	1.49	$0
7405	24	RM	225	24	$8	2005	$8	1991	1996	$8			$0	2034	30	3%	1.49	$1
7412	24	RM	225	24	$12	2005	$12	1991	1996	$12			$1	2034	30	3%	1.49	$1
7416	24	RM	225	24	$10	2005	$10	1991	1996	$10			$0	2034	30	3%	1.49	$1
7427	24	RM	225	24	$7	2005	$7	1991	1996	$7			$0	2034	30	3%	1.49	$1
7428	24	RM	225	24	$9	2005	$9	1991	1996	$9			$0	2034	30	3%	1.49	$1
7435	24	RM	225	24	$7	2005	$7	1991	1996	$7			$0	2034	30	3%	1.49	$1
7444	24	RM	225	24	$7	2005	$7	1991	1996	$7			$0	2034	30	3%	1.49	$1
7450	24	RM	225	24	$13	2005	$13	1991	1996	$13			$1	2034	30	3%	1.49	$1
7461	24	RM	225	24	$13	2005	$13	1991	1996	$13			$1	2034	30	3%	1.49	$1
7466	24	RM	225	24	$10	2005	$10	1991	1996	$10			$0	2034	30	3%	1.49	$1
7471	24	RM	225	24	$11	2005	$11	1991	1996	$11			$1	2034	30	3%	1.49	$1
7478	24	RM	225	24	$1	2005	$1	1991	1996	$1			$0	2034	30	3%	1.49	$0
7520	24	RM	225	24	$17	2005	$17	1991	1996	$17			$1	2034	30	3%	1.49	$1
7544	24	RM	225	24	$47	2005	$47	1991	1996	$47			$2	2034	30	3%	1.49	$3
7546	24	RM	225	24	$3	2005	$3	1991	1996	$3			$0	2034	30	3%	1.49	$0
7550	24	RM	225	24	$6	2005	$6	1991	1996	$6			$0	2034	30	3%	1.49	$0
7563	24	RM	225	24	$6	2005	$6	1991	1996	$6			$0	2034	30	3%	1.49	$0
7567	24	RM	225	24	$1	2005	$1	1991	1996	$1			$0	2034	30	3%	1.49	$0
7623	24	Retic	300	24A	$15	2005	$15	1991	1996	$15			$1	2034	30	3%	1.49	$1
7571	24	Retic	375	24A	$2	2005	$2	1991	1996	$2			$0	2034	30	3%	1.49	$0
7573	24	Retic	375	24A	$2	2005	$2	1991	1996	$2			$0	2034	30	3%	1.49	$0
23327	24	Retic	375	24A	$14	2005	$14	1991	1996	$14			$1	2034	30	3%	1.49	$1
23328	24	Retic	375	24A	$15	2005	$15	1991	1996	$15			$1	2034	30	3%	1.49	$1
230	Surcharge Catchment	Retic	225	12F	$4	2005	$4	1992	1996	$4			$0	2034	30	3%	1.49	$0
256	Surcharge Catchment	Retic	225	12F	$9	2005	$9	1992	1996	$9			$0	2034	30	3%	1.49	$1
4382	Surcharge Catchment	Retic	225	12F	$3	2005	$3	1992	1996	$3			$0	2034	30	3%	1.49	$0
4396	Surcharge Catchment	Retic	225	12F	$8	2005	$8	1992	1996	$8			$0	2034	30	3%	1.49	$1
4436	Surcharge Catchment	Retic	225	12F	$11	2005	$11	1992	1996	$11			$1	2034	30	3%	1.49	$1
4448	Surcharge Catchment	Retic	225	12F	$11	2005	$11	1992	1996	$11			$1	2034	30	3%	1.49	$1
4461	Surcharge Catchment	Retic	225	12F	$16	2005	$16	1992	1996	$16			$1	2034	30	3%	1.49	$1
4471	Surcharge Catchment	Retic	225	12F	$16	2005	$16	1992	1996	$16			$1	2034	30	3%	1.49	$1
8122	Unconnected	Retic	300	19A	$21	2005	$21	1993	1996	$21			$1	2034	30	3%	1.49	$2
8155	Unconnected	Retic	300	19A	$12	2005	$12	1993	1996	$12			$1	2034	30	3%	1.49	$1
8159	Unconnected	Retic	300	19A	$8	2005	$8	1993	1996	$8			$0	2034	30	3%	1.49	$1
8178	Unconnected	Retic	300	19A	$12	2005	$12	1993	1996	$12			$1	2034	30	3%	1.49	$1
4180	28NN	RM	100	28	$0	2005	$0	1994	1996	$0			$0	2034	30	3%	1.49	$0
4197	28NN	RM	100	28	$2	2005	$2	1994	1996	$2			$0	2034	30	3%	1.49	$0
4233	28NN	RM	100	28	$19	2005	$19	1994	1996	$19			$1	2034	30	3%	1.49	$1
4249	28NN	RM	100	28	$2	2005	$2	1994	1996	$2			$0	2034	30	3%	1.49	$0
4342	28NN	RM	100	28	$11	2005	$11	1994	1996	$11			$1	2034	30	3%	1.49	$1
4358	28NN	RM	100	28	$11	2005	$11	1994	1996	$11			$1	2034	30	3%	1.49	$1
4410	28NN	RM	100	28	$8	2005	$8	1994	1996	$8			$0	2034	30	3%	1.49	$1
4412	28NN	RM	100	28	$1	2005	$1	1994	1996	$1			$0	2034	30	3%	1.49	$0
4416	28NN	RM	100	28	$1	2005	$1	1994	1996	$1			$0	2034	30	3%	1.49	$0
Existing Assets (post-1996)																		
8542	14	RM	100	14	$1	2005	$1	1996	1996	$1			$0	2034	30	7%	2.26	$0
8544	14	RM	100	14	$1	2005	$1	1996	1996	$1			$0	2034	30	7%	2.26	$0
3141	21NN	Retic	225	21A	$4	2005	$4	1998	1998	$4			$0	2034	30	7%	2.26	$0
3154	21NN	Retic	225	21A	$4	2005	$4	1998	1998	$4			$0	2034	30	7%	2.26	$0
3156	21NN	Retic	225	21A	$3	2005	$3	1998	1998	$3			$0	2034	30	7%	2.26	$0
8546	14	Retic	300	14C	$5	2005	$5	1999	1999	$5			$0	2034	30	7%	2.26	$1
20480	Av Tech Pk	RM	150	Av Tech Pk	$30	2005	$30	1999	1999	$30			$1	2034	30	7%	2.26	$3
20481	Av Tech Pk	RM	150	Av Tech Pk	$7	2005	$7	1999	1999	$7			$0	2034	30	7%	2.26	$1
20486	Av Tech Pk	RM	150	Av Tech Pk	$32	2005	$32	1999	1999	$32			$2	2034	30	7%	2.26	$4
20489	Av Tech Pk	RM	150	Av Tech Pk	$12	2005	$12	1999	1999	$12			$1	2034	30	7%	2.26	$1
20492	Av Tech Pk	RM	150	Av Tech Pk	$10	2005	$10	1999	1999	$10			$0	2034	30	7%	2.26	$1
20500	Av Tech Pk	RM	150	Av Tech Pk	$35	2005	$35	1999	1999	$35			$2	2034	30	7%	2.26	$4
20502	Av Tech Pk	RM	150	Av Tech Pk	$104	2005	$104	1999	1999	$104			$5	2034	30	7%	2.26	$11
20508	Av Tech Pk	RM	150	Av Tech Pk	$61	2005	$61	1999	1999	$61			$3	2034	30	7%	2.26	$7
20482	Av Tech Pk	RM	300	Av Tech Pk	$14	2005	$14	1999	1999	$14			$1	2034	30	7%	2.26	$2
20497	Av Tech Pk	RM	300	Av Tech Pk	$6	2005	$6	1999	1999	$6			$0	2034	30	7%	2.26	$1
18990	12	RM	100	RM12	$0	2005	$0	2000	2000	$0			$0	2034	30	7%	2.26	$0
18991	12	RM	100	RM12	$1	2005	$1	2000	2000	$1			$0	2034	30	7%	2.26	$0
23255	12	RM	100	RM12	$0	2005	$0	2000	2000	$0			$0	2034	30	7%	2.26	$0
23256	14	RM	100	RM12	$0	2005	$0	2000	2000	$0			$0	2034	30	7%	2.26	$0
21435	22	RM	200	22	$7	2005	$7	2000	2000	$7			$0	2034	30	7%	2.26	$1
21436	22	RM	200	22	$4	2005	$4	2000	2000	$4			$0	2034	30	7%	2.26	$0
21440	22	RM	200	22	$7	2005	$7	2000	2000	$7			$0	2034	30	7%	2.26	$1
21442	22	RM	200	22	$9	2005	$9	2000	2000	$9			$0	2034	30	7%	2.26	$1
21444	22	RM	200	22	$2	2005	$2	2000	2000	$2			$0	2034	30	7%	2.26	$0
21446	22	RM	200	22	$6	2005	$6	2000	2000	$6			$0	2034	30	7%	2.26	$1
21448	22	RM	200	22	$3	2005	$3	2000	2000	$3			$0	2034	30	7%	2.26	$0
21450	22	RM	200	22	$1	2005	$1	2000	2000	$1			$0	2034	30	7%	2.26	$0
21449	22	RM	300	22	$22	2005	$22	2000	2000	$22			$1	2034	30	7%	2.26	$2
20490	Av Tech Pk	RM	150	Av Tech Pk	$12	2005	$12	2002	2002	$12			$1	2034	30	7%	2.26	$1
20491	Av Tech Pk	RM	150	Av Tech Pk	$5	2005	$5	2002	2002	$5			$0	2034	30	7%	2.26	$1
20495	Av Tech Pk	RM	150	Av Tech Pk	$26	2005	$26	2002	2002	$26			$1	2034	30	7%	2.26	$3
20496	Av Tech Pk	RM	150	Av Tech Pk	$6	2005	$6	2002	2002	$6			$0	2034	30	7%	2.26	$1
20503	Av Tech Pk	RM	150	Av Tech Pk	$7	2005	$7	2002	2002	$7			$0	2034	30	7%	2.26	$1
20493	Av Tech Pk	RM	150	Av Tech Pk	$4	2005	$4	2002	2002	$4			$0	2034	30	7%	2.26	$0
20504	Av Tech Pk	RM	150	Av Tech Pk	$4	2005	$4	2002	2002	$4			$0	2034	30	7%	2.26	$0
20506	Av Tech Pk	RM	150	Av Tech Pk	$2	2005	$2	2002	2002	$2			$0	2034	30	7%	2.26	$0
21058	24	RM	300	24	$53	2005	$53	2003	2003	$53			$3	2034	30	7%	2.26	$6
20535	1	Retic	225	1A	$6	2005	$6	2003	2003	$6			$0	2034	30	7%	2.26	$1
20536	1	Retic	225	1A	$9	2005	$9	2003	2003	$9			$0	2034	30	7%	2.26	$1
20537	1	Retic	225	1A	$13	2005	$13	2003	2003	$13			$1	2034	30	7%	2.26	$1
20538	1	Retic	225	1A	$7	2005	$7	2003	2003	$7			$0	2034	30	7%	2.26	$1
21056	24	RM	300	24	$27	2005	$27	2003	2003	$27			$1	2034	30	7%	2.26	$3

Table C4: Capital Charge Calculation
Shoalhaven City Council

Service Area	Nowra Sewerage	
Capital Charge	$5,605	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	20,524
Treatment Plant Capacity (ET)	18,000

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2004 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
GENERAL WORKS [5]																		
Future Assets																		
Consisting of the following works:																		
Developer Servicing Plan																		
Northern Headworks																		
Southern Headworks + Distribution System																		
Northern Distribution Systems																		
REMS Stg 2 (Storage and Ocean Extension)																		
Total					$37,668					$37,668		82,522	$456					$ 757

Notes
1. Capital cost from Council's asset registers and MEERA cost for future works
2. Base year of capital cost varies depending on asset data. Assets constructed prior to 1970 are not included (except headworks)
3. Capital cost adjusted to 2005$ using CPI for Sydney (ABS)
4. Capital cost of future works discounted to 2005$
5. General works are of benefit to the entire Shoalhaven City area and have been apportioned to each Service area.

Table C5: Capital Charge Calculation
Shoalhaven City Council

Service Area	Shoalhaven Heads Sewerage	
Capital Charge	$7,721	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	3,306
Treatment Plant Capacity (ET)	3,125

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
3000	7	Retic	225	C	8	2005	$8	1983	1996	$8			$2	2034	30	3%	1.49	$4
655	7	Retic	225	A	14	2005	$14	1983	1996	$14			$4	2034	30	3%	1.49	$6
3596	7	Retic	225	A	3	2005	$3	1983	1996	$3			$1	2034	30	3%	1.49	$1
3608	7	Retic	225	A	12	2005	$12	1983	1996	$12			$4	2034	30	3%	1.49	$5
605	7	Retic	300	A	9	2005	$9	1983	1996	$9			$3	2034	30	3%	1.49	$4
606	7	Retic	300	A	10	2005	$10	1983	1996	$10			$3	2034	30	3%	1.49	$5
632	7	Retic	300	A	16	2005	$16	1983	1996	$16			$5	2034	30	3%	1.49	$7
633	7	Retic	300	A	9	2005	$9	1983	1996	$9			$3	2034	30	3%	1.49	$4
3426	7	Retic	300	A	10	2005	$10	1983	1996	$10			$3	2034	30	3%	1.49	$4
3427	7	Retic	300	A	15	2005	$15	1983	1996	$15			$4	2034	30	3%	1.49	$7
607	7	Retic	450	A	13	2005	$13	1983	1996	$13			$4	2034	30	3%	1.49	$6
3030	7	Retic	450	A	25	2005	$25	1983	1996	$25			$7	2034	30	3%	1.49	$11
3046	7	Retic	450	A	17	2005	$17	1983	1996	$17			$5	2034	30	3%	1.49	$7
3098	7	Retic	450	A	28	2005	$28	1983	1996	$28			$8	2034	30	3%	1.49	$12
3132	7	Retic	450	A	13	2005	$13	1983	1996	$13			$4	2034	30	3%	1.49	$6
3183	7	Retic	450	A	17	2005	$17	1983	1996	$17			$5	2034	30	3%	1.49	$8
3224	7	Retic	450	A	9	2005	$9	1983	1996	$9			$3	2034	30	3%	1.49	$4
3235	7	Retic	450	A	13	2005	$13	1983	1996	$13			$4	2034	30	3%	1.49	$6
3265	7	Retic	450	A	12	2005	$12	1983	1996	$12			$4	2034	30	3%	1.49	$6
3318	7	Retic	450	A	23	2005	$23	1983	1996	$23			$7	2034	30	3%	1.49	$10
3325	7	Retic	450	A	23	2005	$23	1983	1996	$23			$7	2034	30	3%	1.49	$10
3332	7	Retic	450	A	32	2005	$32	1983	1996	$32			$10	2034	30	3%	1.49	$14
2946	7	Retic	450	C	2	2005	$2	1983	1996	$2			$1	2034	30	3%	1.49	$1
2953	7	Retic	450	C	7	2005	$7	1983	1996	$7			$2	2034	30	3%	1.49	$3
2980	7	Retic	450	C	29	2005	$29	1983	1996	$29			$9	2034	30	3%	1.49	$13
3386	7	Retic	225	KC	11	2005	$11	1983	1996	$11			$3	2034	30	3%	1.49	$5
2518	Exfiltration Main	RM	250	RM	5	2005	$5	1983	1996	$5			$2	2034	30	3%	1.49	$2
2527	Exfiltration Main	RM	250	RM	3	2005	$3	1983	1996	$3			$1	2034	30	3%	1.49	$2
2529	Exfiltration Main	RM	250	RM	0	2005	$0	1983	1996	$0			$0	2034	30	3%	1.49	$0
2530	Exfiltration Main	RM	250	RM	0	2005	$0	1983	1996	$0			$0	2034	30	3%	1.49	$0
2533	Exfiltration Main	RM	250	RM	0	2005	$0	1983	1996	$0			$0	2034	30	3%	1.49	$0
2548	Exfiltration Main	RM	250	RM	4	2005	$4	1983	1996	$4			$1	2034	30	3%	1.49	$2
2560	Exfiltration Main	RM	250	RM	17	2005	$17	1983	1996	$17			$5	2034	30	3%	1.49	$8
2561	Exfiltration Main	RM	250	RM	3	2005	$3	1983	1996	$3			$1	2034	30	3%	1.49	$1
2577	Exfiltration Main	RM	250	RM	8	2005	$8	1983	1996	$8			$2	2034	30	3%	1.49	$4
2589	Exfiltration Main	RM	250	RM	17	2005	$17	1983	1996	$17			$5	2034	30	3%	1.49	$8
2594	Exfiltration Main	RM	250	RM	7	2005	$7	1983	1996	$7			$2	2034	30	3%	1.49	$3
2595	Exfiltration Main	RM	250	RM	19	2005	$19	1983	1996	$19			$6	2034	30	3%	1.49	$8
4601	1	RM	100	RM1	5	2005	$5	1983	1996	$5			$1	2034	30	3%	1.49	$2
4635	1	RM	100	RM1	8	2005	$8	1983	1996	$8			$3	2034	30	3%	1.49	$4
4694	1	RM	100	RM1	14	2005	$14	1983	1996	$14			$4	2034	30	3%	1.49	$6
4749	1	RM	100	RM1	11	2005	$11	1983	1996	$11			$3	2034	30	3%	1.49	$5
4762	1	RM	100	RM1	6	2005	$6	1983	1996	$6			$2	2034	30	3%	1.49	$3
665	2	RM	200	RM2	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
3546	2	RM	200	RM2	15	2005	$15	1983	1996	$15			$5	2034	30	3%	1.49	$7
3547	2	RM	200	RM2	50	2005	$50	1983	1996	$50			$15	2034	30	3%	1.49	$22
3846	2	RM	200	RM2	8	2005	$8	1983	1996	$8			$2	2034	30	3%	1.49	$4
3867	2	RM	200	RM2	6	2005	$6	1983	1996	$6			$2	2034	30	3%	1.49	$3
3947	2	RM	200	RM2	13	2005	$13	1983	1996	$13			$4	2034	30	3%	1.49	$6
4032	2	RM	200	RM2	13	2005	$13	1983	1996	$13			$4	2034	30	3%	1.49	$6
4075	2	RM	200	RM2	11	2005	$11	1983	1996	$11			$3	2034	30	3%	1.49	$5
4095	2	RM	200	RM2	4	2005	$4	1983	1996	$4			$1	2034	30	3%	1.49	$2
4099	2	RM	200	RM2	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
4101	2	RM	200	RM2	0	2005	$0	1983	1996	$0			$0	2034	30	3%	1.49	$0
3503	3	RM	100	RM3	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$1
3508	3	RM	100	RM3	0	2005	$0	1983	1996	$0			$0	2034	30	3%	1.49	$0
3512	3	RM	100	RM3	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
3534	3	RM	100	RM3	16	2005	$16	1983	1996	$16			$5	2034	30	3%	1.49	$7
3541	3	RM	100	RM3	4	2005	$4	1983	1996	$4			$1	2034	30	3%	1.49	$2
3545	3	RM	100	RM3	2	2005	$2	1983	1996	$2			$1	2034	30	3%	1.49	$1
3570	3	RM	100	RM3	11	2005	$11	1983	1996	$11			$3	2034	30	3%	1.49	$5
3572	3	RM	100	RM3	0	2005	$0	1983	1996	$0			$0	2034	30	3%	1.49	$0
626	4	RM	100	RM4	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
2849	4	RM	100	RM4	3	2005	$3	1983	1996	$3			$1	2034	30	3%	1.49	$2
2892	4	RM	100	RM4	8	2005	$8	1983	1996	$8			$3	2034	30	3%	1.49	$4
2915	4	RM	100	RM4	3	2005	$3	1983	1996	$3			$1	2034	30	3%	1.49	$1
2963	4	RM	100	RM4	7	2005	$7	1983	1996	$7			$2	2034	30	3%	1.49	$3
3625	5	RM	200	RM5	5	2005	$5	1983	1996	$5			$1	2034	30	3%	1.49	$2
3642	5	RM	200	RM5	23	2005	$23	1983	1996	$23			$7	2034	30	3%	1.49	$10
3647	5	RM	200	RM5	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$1
3651	5	RM	200	RM5	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
3721	5	RM	200	RM5	18	2005	$18	1983	1996	$18			$5	2034	30	3%	1.49	$8
3725	5	RM	200	RM5	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$1
3836	5	RM	200	RM5	26	2005	$26	1983	1996	$26			$8	2034	30	3%	1.49	$12
3837	5	RM	200	RM5	0	2005	$0	1983	1996	$0			$0	2034	30	3%	1.49	$0
3850	5	RM	200	RM5	3	2005	$3	1983	1996	$3			$1	2034	30	3%	1.49	$1
3856	5	RM	200	RM5	28	2005	$28	1983	1996	$28			$8	2034	30	3%	1.49	$12
3960	5	RM	200	RM5	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
3968	5	RM	200	RM5	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
3975	5	RM	200	RM5	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$1
3979	5	RM	200	RM5	6	2005	$6	1983	1996	$6			$2	2034	30	3%	1.49	$3
3980	5	RM	200	RM5	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$1
3987	5	RM	200	RM5	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$1
3988	5	RM	200	RM5	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
3414	6	RM	100	RM6	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
3587	6	RM	100	RM6	22	2005	$22	1983	1996	$22			$7	2034	30	3%	1.49	$10
3610	6	RM	100	RM6	3	2005	$3	1983	1996	$3			$1	2034	30	3%	1.49	$2
3615	6	RM	100	RM6	2	2005	$2	1983	1996	$2			$1	2034	30	3%	1.49	$1
628	7	RM	300	RM7	10	2005	$10	1983	1996	$10			$3	2034	30	3%	1.49	$5
2521	7	RM	300	RM7	17	2005	$17	1983	1996	$17			$5	2034	30	3%	1.49	$8
2532	7	RM	300	RM7	5	2005	$5	1983	1996	$5			$1	2034	30	3%	1.49	$2
2836	7	RM	300	RM7	11	2005	$11	1983	1996	$11			$3	2034	30	3%	1.49	$5
2867	7	RM	300	RM7	12	2005	$12	1983	1996	$12			$4	2034	30	3%	1.49	$6
2927	7	RM	300	RM7	25	2005	$25	1983	1996	$25			$7	2034	30	3%	1.49	$11
2957	7	RM	300	RM7	4	2005	$4	1983	1996	$4			$1	2034	30	3%	1.49	$2
2974	7	RM	300	RM7	10	2005	$10	1983	1996	$10			$3	2034	30	3%	1.49	$4
23728	7	RM	300	RM7	5	2005	$5	1983	1996	$5			$1	2034	30	3%	1.49	$2
23731	7	RM	300	RM7	64	2005	$64	1983	1996	$64			$19	2034	30	3%	1.49	$29
666	8	RM	100	RM8	0	2005	$0	1983	1996	$0			$0	2034	30	3%	1.49	$0
667	8	RM	100	RM8	0	2005	$0	1983	1996	$0			$0	2034	30	3%	1.49	$0
4178	8	RM	100	RM8	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
4181	8	RM	100	RM8	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
627	9	RM	150	RM9	9	2005	$9	1983	1996	$9			$3	2034	30	3%	1.49	$4
3344	9	RM	150	RM9	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$1
3388	9	RM	150	RM9	3	2005	$3	1983	1996	$3			$1	2034	30	3%	1.49	$1
3397	9	RM	150	RM9	2	2005	$2	1983	1996	$2			$1	2034	30	3%	1.49	$1
3399	9	RM	150	RM9	4	2005	$4	1983	1996	$4			$1	2034	30	3%	1.49	$2
3400	9	RM	150	RM9	2	2005	$2	1983	1996	$2			$1	2034	30	3%	1.49	$1
3401	9	RM	150	RM9	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
3402	9	RM	150	RM9	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
3403	9	RM	150	RM9	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$0
3406	9	RM	150	RM9	2	2005	$2	1983	1996	$2			$1	2034	30	3%	1.49	$1
3407	9	RM	150	RM9	2	2005	$2	1983	1996	$2			$1	2034	30	3%	1.49	$1
3408	9	RM	150	RM9	3	2005	$3	1983	1996	$3			$1	2034	30	3%	1.49	$1
3409	9	RM	150	RM9	1	2005	$1	1983	1996	$1			$0	2034	30	3%	1.49	$1
3434	9	RM	150	RM9	12	2005	$12	1983	1996	$12			$4	2034	30	3%	1.49	$5
619	7	Retic	225	S	16	2005	$16	1983	1996	$16			$5	2034	30	3%	1.49	$7

Table C6: Capital Charge Calculation
Shoalhaven City Council

Service Area	Culburra Sewerage	
Capital Charge	$8,669	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	4,828
Treatment Plant Capacity (ET)	4,688

Asset	Catch-ment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
854	Outfall		375	OM1	83	2005	$83	1984	1996	$83			$17	2034	30	3%	1.49	$26
8809	Outfall		375	OM1	108	2005	$108	1984	1996	$108			$22	2034	30	3%	1.49	$33
8820	Outfall		375	OM1	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
8825	Outfall		375	OM1	7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$2
8879	Outfall		375	OM1	45	2005	$45	1984	1996	$45			$9	2034	30	3%	1.49	$14
8894	Outfall		375	OM1	7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$2
8904	Outfall		375	OM1	27	2005	$27	1984	1996	$27			$6	2034	30	3%	1.49	$8
8953	Outfall		375	OM1	64	2005	$64	1984	1996	$64			$13	2034	30	3%	1.49	$20
8866	Outfall		375	OM1	50	2005	$50	1984	1996	$50			$10	2034	30	3%	1.49	$15
8872	Outfall		375	OM1	40	2005	$40	1984	1996	$40			$8	2034	30	3%	1.49	$12
8896	Outfall		375	OM1	35	2005	$35	1984	1996	$35			$7	2034	30	3%	1.49	$11
8897	Outfall		375	OM1	50	2005	$50	1984	1996	$50			$10	2034	30	3%	1.49	$15
19648	2	Retic	225	BB	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4
8093	2	Retic	225	BC	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$2
8140	2	Retic	225	BC	11	2005	$11	1984	1996	$11			$2	2034	30	3%	1.49	$4
8152	2	Retic	225	BC	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
8170	2	Retic	225	BC	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$2
7949	3	Retic	225	CA	6	2005	$6	1984	1996	$6			$1	2034	30	3%	1.49	$2
7972	3	Retic	225	CA	19	2005	$19	1984	1996	$19			$4	2034	30	3%	1.49	$6
8001	3	Retic	225	CA	19	2005	$19	1984	1996	$19			$4	2034	30	3%	1.49	$6
8019	3	Retic	225	CA	17	2005	$17	1984	1996	$17			$3	2034	30	3%	1.49	$5
8034	3	Retic	225	CA	15	2005	$15	1984	1996	$15			$3	2034	30	3%	1.49	$5
8057	3	Retic	225	CA	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4
8061	3	Retic	225	CA	13	2005	$13	1984	1996	$13			$3	2034	30	3%	1.49	$4
8077	3	Retic	225	CA	16	2005	$16	1984	1996	$16			$3	2034	30	3%	1.49	$5
8092	3	Retic	225	CA	18	2005	$18	1984	1996	$18			$4	2034	30	3%	1.49	$5
715	3	Retic	300	CA	23	2005	$23	1984	1996	$23			$5	2034	30	3%	1.49	$7
8135	3	Retic	300	CA	12	2005	$12	1984	1996	$12			$2	2034	30	3%	1.49	$4
8136	3	Retic	300	CA	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
8192	3	Retic	300	CA	29	2005	$29	1984	1996	$29			$6	2034	30	3%	1.49	$9
8231	3	Retic	300	CA	12	2005	$12	1984	1996	$12			$3	2034	30	3%	1.49	$4
8232	3	Retic	300	CA	26	2005	$26	1984	1996	$26			$5	2034	30	3%	1.49	$8
8291	3	Retic	300	CA	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4
8292	3	Retic	300	CA	17	2005	$17	1984	1996	$17			$4	2034	30	3%	1.49	$5
8374	3	Retic	300	CA	22	2005	$22	1984	1996	$22			$5	2034	30	3%	1.49	$7
8388	3	Retic	300	CA	15	2005	$15	1984	1996	$15			$3	2034	30	3%	1.49	$5
8423	3	Retic	300	CA	22	2005	$22	1984	1996	$22			$5	2034	30	3%	1.49	$7
8426	3	Retic	300	CA	2	2005	$2	1984	1996	$2			$0	2034	30	3%	1.49	$1
706	5	Retic	225	EA	11	2005	$11	1984	1996	$11			$2	2034	30	3%	1.49	$3
8588	5	Retic	225	EA	18	2005	$18	1984	1996	$18			$4	2034	30	3%	1.49	$6
8590	5	Retic	225	EA	12	2005	$12	1984	1996	$12			$3	2034	30	3%	1.49	$4
8591	5	Retic	225	EA	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4
8593	5	Retic	225	EA	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
8529	5	Retic	300	EB	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4
8561	5	Retic	300	EB	26	2005	$26	1984	1996	$26			$5	2034	30	3%	1.49	$8
8562	5	Retic	300	EB	22	2005	$22	1984	1996	$22			$5	2034	30	3%	1.49	$7
8678	6	Retic	375	FA	30	2005	$30	1984	1996	$30			$6	2034	30	3%	1.49	$9
8690	6	Retic	375	FA	31	2005	$31	1984	1996	$31			$6	2034	30	3%	1.49	$10
8698	6	Retic	375	FA	33	2005	$33	1984	1996	$33			$7	2034	30	3%	1.49	$10
8702	6	Retic	375	FA	20	2005	$20	1984	1996	$20			$4	2034	30	3%	1.49	$6
8704	6	Retic	375	FA	7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$2
8706	6	Retic	375	FA	6	2005	$6	1984	1996	$6			$1	2034	30	3%	1.49	$2
8713	6	Retic	375	FA	28	2005	$28	1984	1996	$28			$6	2034	30	3%	1.49	$9
8725	6	Retic	375	FA	31	2005	$31	1984	1996	$31			$6	2034	30	3%	1.49	$10
8732	6	Retic	375	FA	33	2005	$33	1984	1996	$33			$7	2034	30	3%	1.49	$10
8743	6	Retic	375	FA	29	2005	$29	1984	1996	$29			$6	2034	30	3%	1.49	$9
8744	6	Retic	375	FA	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
820	6	Retic	225	FB	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$2
8748	6	Retic	225	FB	2	2005	$2	1984	1996	$2			$0	2034	30	3%	1.49	$1
8752	6	Retic	225	FB	16	2005	$16	1984	1996	$16			$3	2034	30	3%	1.49	$5
8759	6	Retic	225	FB	6	2005	$6	1984	1996	$6			$1	2034	30	3%	1.49	$2
8760	6	Retic	225	FB	16	2005	$16	1984	1996	$16			$3	2034	30	3%	1.49	$5
8762	6	Retic	225	FB	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
8767	6	Retic	225	FB	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
8788	6	Retic	225	FL	17	2005	$17	1984	1996	$17			$3	2034	30	3%	1.49	$5
9204	9	Retic	225	JA	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
9218	9	Retic	225	JA	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4
9240	9	Retic	225	JA	19	2005	$19	1984	1996	$19			$4	2034	30	3%	1.49	$6
9241	9	Retic	225	JA	3	2005	$3	1984	1996	$3			$1	2034	30	3%	1.49	$1
9245	9	Retic	225	JA	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
9253	9	Retic	225	JA	15	2005	$15	1984	1996	$15			$3	2034	30	3%	1.49	$5
9257	9	Retic	225	JA	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4
9258	9	Retic	225	JA	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$3
9267	9	Retic	225	JA	10	2005	$10	1984	1996	$10			$2	2034	30	3%	1.49	$3
9268	9	Retic	225	JA	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$2
9271	9	Retic	225	JA	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
9272	9	Retic	225	JA	15	2005	$15	1984	1996	$15			$3	2034	30	3%	1.49	$5
9273	9	Retic	225	JA	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$3
9275	9	Retic	225	JA	7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$2
9277	9	Retic	225	JA	10	2005	$10	1984	1996	$10			$2	2034	30	3%	1.49	$3
9278	9	Retic	225	JA	10	2005	$10	1984	1996	$10			$2	2034	30	3%	1.49	$3
9279	9	Retic	225	JA	6	2005	$6	1984	1996	$6			$1	2034	30	3%	1.49	$2
9280	9	Retic	225	JA	20	2005	$20	1984	1996	$20			$4	2034	30	3%	1.49	$6
9281	9	Retic	225	JA	3	2005	$3	1984	1996	$3			$1	2034	30	3%	1.49	$1
9282	9	Retic	225	JA	16	2005	$16	1984	1996	$16			$3	2034	30	3%	1.49	$5
19387	9	Retic	225	JA	13	2005	$13	1984	1996	$13			$3	2034	30	3%	1.49	$4
9065	10	Retic	225	KA	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$2
817	10	Retic	300	KA	7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$2
818	10	Retic	300	KA	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
9171	10	Retic	225	KN	19	2005	$19	1984	1996	$19			$4	2034	30	3%	1.49	$6
9108	10	Retic	300	KN	19	2005	$19	1984	1996	$19			$4	2034	30	3%	1.49	$6
824	12	Retic	375	NA	29	2005	$29	1984	1996	$29			$6	2034	30	3%	1.49	$9
825	12	Retic	375	NA	34	2005	$34	1984	1996	$34			$7	2034	30	3%	1.49	$11
826	12	Retic	375	NA	11	2005	$11	1984	1996	$11			$2	2034	30	3%	1.49	$3
827	12	Retic	375	NA	23	2005	$23	1984	1996	$23			$5	2034	30	3%	1.49	$7
828	12	Retic	375	NA	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
8836	12	Retic	375	NA	31	2005	$31	1984	1996	$31			$7	2034	30	3%	1.49	$10
8837	12	Retic	375	NA	16	2005	$16	1984	1996	$16			$3	2034	30	3%	1.49	$5
8956	12	Retic	375	NA	29	2005	$29	1984	1996	$29			$6	2034	30	3%	1.49	$9
9001	12	Retic	375	NA	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
9030	12	Retic	375	NA	30	2005	$30	1984	1996	$30			$6	2034	30	3%	1.49	$9
9049	12	Retic	375	NA	19	2005	$19	1984	1996	$19			$4	2034	30	3%	1.49	$6
9055	12	Retic	375	NA	15	2005	$15	1984	1996	$15			$3	2034	30	3%	1.49	$5
9059	12	Retic	375	NA	20	2005	$20	1984	1996	$20			$4	2034	30	3%	1.49	$6
9062	12	Retic	375	NA	18	2005	$18	1984	1996	$18			$4	2034	30	3%	1.49	$6
9069	12	Retic	375	NA	16	2005	$16	1984	1996	$16			$3	2034	30	3%	1.49	$5
9092	12	Retic	375	NA	24	2005	$24	1984	1996	$24			$5	2034	30	3%	1.49	$7
18999	12	Retic	375	NA	2	2005	$2	1984	1996	$2			$1	2034	30	3%	1.49	$1
19000	12	Retic	375	NA	5	2005	$5	1984	1996	$5			$1	2034	30	3%	1.49	$2
8802	12	Retic	450	NB	32	2005	$32	1984	1996	$32			$7	2034	30	3%	1.49	$10
8813	12	Retic	450	NB	33	2005	$33	1984	1996	$33			$7	2034	30	3%	1.49	$10
8819	12	Retic	450	NB	36	2005	$36	1984	1996	$36			$7	2034	30	3%	1.49	$11
8792	12	Retic	450	NC	34	2005	$34	1984	1996	$34			$7	2034	30	3%	1.49	$10
7891	15	Retic	225	QA	7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$2
7892	15	Retic	225	QA	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
7811	15	Retic	225	QE	13	2005	$13	1984	1996	$13			$3	2034	30	3%	1.49	$4
7815	15	Retic	225	QE	2	2005	$2	1984	1996	$2			$0	2034	30	3%	1.49	$1
7836	15	Retic	225	QE	13	2005	$13	1984	1996	$13			$3	2034	30	3%	1.49	$4
7837	15	Retic	225	QE	11	2005	$11	1984	1996	$11			$2	2034	30	3%	1.49	$3
7886	15	Retic	225	QE	11	2005	$11	1984	1996	$11			$2	2034	30	3%	1.49	$3
677	16	Retic	225	RA	15	2005	$15	1984	1996	$15			$3	2034	30	3%	1.49	$5
8031	16	Retic	225	RA	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
8050	16	Retic	225	RA	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
8095	16	Retic	225	RA	13	2005	$13	1984	1996	$13			$3	2034	30	3%	1.49	$4
8097	16	Retic	225	RA	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4
8098	16	Retic	225	RA	12	2005	$12	1984	1996	$12			$2	2034	30	3%	1.49	$4
8100	16	Retic	225	RA	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
8157	16	Retic	225	RA	15	2005	$15	1984	1996	$15			$3	2034	30	3%	1.49	$5
8193	16	Retic	225	RA	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4

Table C6: Capital Charge Calculation
Shoalhaven City Council

Service Area	Culburra Sewerage	
Capital Charge	$8,669	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	4,828
Treatment Plant Capacity (ET)	4,688

Asset	Catch-ment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
8508	3	RM	200	RM3	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
8049	4	RM	65	RM4	12	2005	$12	1984	1996	$12			$2	2034	30	3%	1.49	$4
8063	4	RM	65	RM4	3	2005	$3	1984	1996	$3			$1	2034	30	3%	1.49	$1
8080	4	RM	65	RM4	2	2005	$2	1984	1996	$2			$0	2034	30	3%	1.49	$1
8089	4	RM	65	RM4	2	2005	$2	1984	1996	$2			$0	2034	30	3%	1.49	$1
8121	4	RM	65	RM4	5	2005	$5	1984	1996	$5			$1	2034	30	3%	1.49	$1
8154	4	RM	65	RM4	5	2005	$5	1984	1996	$5			$1	2034	30	3%	1.49	$1
8162	4	RM	65	RM4	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$3
8217	4	RM	65	RM4	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4
8306	4	RM	65	RM4	18	2005	$18	1984	1996	$18			$4	2034	30	3%	1.49	$5
8312	4	RM	65	RM4	7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$2
8317	4	RM	65	RM4	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
8595	5	RM	300	RM5	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
8622	5	RM	300	RM5	22	2005	$22	1984	1996	$22			$5	2034	30	3%	1.49	$7
8633	5	RM	300	RM5	13	2005	$13	1984	1996	$13			$3	2034	30	3%	1.49	$4
8638	5	RM	300	RM5	7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$2
8640	5	RM	300	RM5	3	2005	$3	1984	1996	$3			$1	2034	30	3%	1.49	$1
8654	5	RM	300	RM5	11	2005	$11	1984	1996	$11			$2	2034	30	3%	1.49	$4
8657	5	RM	300	RM5	3	2005	$3	1984	1996	$3			$1	2034	30	3%	1.49	$1
8659	5	RM	300	RM5	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
8666	5	RM	300	RM5	12	2005	$12	1984	1996	$12			$3	2034	30	3%	1.49	$4
8745	6	RM	300	RM6	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
8749	6	RM	300	RM6	2	2005	$2	1984	1996	$2			$0	2034	30	3%	1.49	$1
8766	6	RM	300	RM6	16	2005	$19	1984	1996	$19			$4	2034	30	3%	1.49	$6
8771	6	RM	300	RM6	12	2005	$12	1984	1996	$12			$3	2034	30	3%	1.49	$4
8776	6	RM	300	RM6	12	2005	$12	1984	1996	$12			$2	2034	30	3%	1.49	$4
8777	6	RM	300	RM6	11	2005	$11	1984	1996	$11			$2	2034	30	3%	1.49	$3
8780	6	RM	300	RM6	7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$2
8782	6	RM	300	RM6	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
8784	6	RM	300	RM6	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
8786	6	RM	300	RM6	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
8787	6	RM	300	RM6	4	2005	$4	1984	1996	$4			$1	2034	30	3%	1.49	$1
8916	7	RM	100	RM7	10	2005	$10	1984	1996	$10			$2	2034	30	3%	1.49	$3
8919	7	RM	100	RM7	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
8921	7	RM	100	RM7	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
8928	7	RM	100	RM7	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$3
8935	7	RM	100	RM7	6	2005	$6	1984	1996	$6			$1	2034	30	3%	1.49	$2
8946	7	RM	100	RM7	12	2005	$12	1984	1996	$12			$2	2034	30	3%	1.49	$4
8951	7	RM	100	RM7	3	2005	$3	1984	1996	$3			$1	2034	30	3%	1.49	$1
8959	7	RM	100	RM7	2	2005	$2	1984	1996	$2			$0	2034	30	3%	1.49	$1
9081	8	RM	100	RM8	2	2005	$2	1984	1996	$2			$0	2034	30	3%	1.49	$1
9082	8	RM	100	RM8	0	2005	$0	1984	1996	$0			$0	2034	30	3%	1.49	$0
9091	8	RM	100	RM8	3	2005	$3	1984	1996	$3			$1	2034	30	3%	1.49	$1
23386	11	RM	100	RM8	11	2005	$11	1984	1996	$11			$2	2034	30	3%	1.49	$3
23387	11	RM	100	RM8	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
9202	9	RM	150	RM9	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
9214	9	RM	150	RM9	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
9228	9	RM	150	RM9	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
9231	9	RM	150	RM9	7	2005	$7	1984	1996	$7			$1	2034	30	3%	1.49	$2
9244	9	RM	150	RM9	1	2005	$1	1984	1996	$1			$0	2034	30	3%	1.49	$0
8265	16	Retic	225	RN	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$2
8270	16	Retic	225	RN	11	2005	$11	1984	1996	$11			$2	2034	30	3%	1.49	$4
666	17	Retic	375	SA	14	2005	$14	1984	1996	$14			$3	2034	30	3%	1.49	$4
8437	17	Retic	375	SA	27	2005	$27	1984	1996	$27			$6	2034	30	3%	1.49	$8
19269	17	Retic	375	SA	8	2005	$8	1984	1996	$8			$2	2034	30	3%	1.49	$3
19270	17	Retic	375	SA	17	2005	$17	1984	1996	$17			$4	2034	30	3%	1.49	$5
19272	17	Retic	375	SA	15	2005	$15	1984	1996	$15			$3	2034	30	3%	1.49	$5
19274	17	Retic	375	SA	17	2005	$17	1984	1996	$17			$3	2034	30	3%	1.49	$5
8488	17	Retic	375	SD	9	2005	$9	1984	1996	$9			$2	2034	30	3%	1.49	$3
8491	17	Retic	375	SD	6	2005	$6	1984	1996	$6			$1	2034	30	3%	1.49	$2
Existing Assets (post-1996)																		
None																		
Total Transfer System					**$3,876**					**$3,876**		4,828	**$803**					**$1,193**
PUMPS																		
Existing Assets (pre-1996)																		
SPS 1					$201	2005	$201	1984	1996	$201			$42	2034	30	3%	1.49	$62
SPS 2					$226	2005	$226	1982	1996	$226			$47	2034	30	3%	1.49	$69
SPS 3					$277	2005	$277	1982	1996	$277			$57	2034	30	3%	1.49	$85
SPS 4					$201	2005	$201	1984	1996	$201			$42	2034	30	3%	1.49	$62
SPS 5					$345	2005	$345	1982	1996	$345			$71	2034	30	3%	1.49	$106
SPS 6					$425	2005	$425	1982	1996	$425			$88	2034	30	3%	1.49	$131
SPS 7					$175	2005	$175	1982	1996	$175			$36	2034	30	3%	1.49	$54
SPS 8					$175	2005	$175	1982	1996	$175			$36	2034	30	3%	1.49	$54
SPS 9					$227	2005	$227	1982	1996	$227			$47	2034	30	3%	1.49	$70
SPS 10					$325	2005	$325	1982	1996	$325			$67	2034	30	3%	1.49	$100
SPS 11					$175	2005	$175	1982	1996	$175			$36	2034	30	3%	1.49	$54
SPS 12					$517	2005	$517	1982	1996	$517			$107	2034	30	3%	1.49	$159
SPS 13					$190	2005	$190	1982	1996	$190			$39	2034	30	3%	1.49	$58
SPS 14					$186	2005	$186	1982	1996	$186			$39	2034	30	3%	1.49	$57
SPS 15					$224	2005	$224	1982	1996	$224			$46	2034	30	3%	1.49	$69
SPS 16					$325	2005	$325	1982	1996	$325			$67	2034	30	3%	1.49	$100
SPS 17					$325	2005	$325	1982	1996	$325			$67	2034	30	3%	1.49	$100
SPS 18					$175	2005	$175	1986	1996	$175			$36	2034	30	3%	1.49	$54
Existing Assets (post-1996)																		
None																		
Total Pumps					**$4,695**					**$4,695**		4,828	**$972**					**$1,445**
Pumps and Mains																		
Future Assets																		
Expansion Area - SPS A + RM					$420	2005	$420	2009	2009	$320			$68	2034	25	7%	2.00	$137
Expansion Area - SPS B + RM					$370	2005	$370	2014	2014	$201			$43	2034	20	7%	1.76	$76
Expansion Area - SPS C + RM					$364	2005	$364	2020	2020	$132			$28	2034	14	7%	1.50	$42
Expansion Area - SPS D + RM					$295	2005	$295	2026	2026	$71			$15	2034	8	7%	1.25	$19
Total Pumps and Mains					**$1,449**	**$8,020**				**$725**		4,828	**$155**					**$274**
TREATMENT																		
Existing Assets (pre-1996)																		
Culburra					$13,040	2005	$13,040	1982	1996	$13,040			$2,782	2034	30	3%	1.49	$4,133
Existing Assets (post-1996)																		
None																		
Future Assets																		
CULBURRA (4000ep)					$818	2005	$818	2011	2011	$545			$116	2034	23	7%	1.91	$222
CULBURRA (4000ep)					$2,570	2005	$2,570	2012	2012	$1,600			$341	2034	22	7%	1.86	$635
Studies and Investigations					$30	2005	$30	2008	2008	$24			$5	2034	26	7%	2.05	$11
Total Treatment					**$16,458**					**$15,210**		4,688	**$3,244**					**$5,000**
GENERAL WORKS[5]																		
Future Assets																		
Consisting of the following works:																		
Developer Servicing Plan																		
Northern Headworks																		
Southern Headworks + Distribution System																		
Northern Distribution Systems																		
REMS Stg 2 (Storage and Ocean Extension)																		
Total					**$37,668**					**$37,668**		82,522	**$456**					**$ 757**

Notes
1. Capital cost from Council's asset registers and MEERA cost for future works
2. Base year of capital cost varies depending on asset data. Assets constructed prior to 1970 are not included (except headworks)
3. Capital cost adjusted to 2005$ using CPI for Sydney (ABS)

Table C7: Capital Charge Calculation
Shoalhaven City Council

Service Area	Callala Sewerage	
Capital Charge	$12,040	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	3,782
Treatment Plant Capacity (ET)	3,750

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commissioned	Effective year commissioned	Present value 2004 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
9489	1	Retic	225	L	$14	2005	$14	1991	1996	$14			$4	2024	28	3%	1.45	$5
9492	1	Retic	225	L	$14	2005	$14	1991	1996	$14			$4	2024	28	3%	1.45	$5
19096	1	Retic	225	L	$14	2005	$14	1991	1996	$14			$4	2024	28	3%	1.45	$5
9542	1	Retic	600	VV	$65	2005	$65	1991	1996	$65			$17	2024	28	3%	1.45	$25
9499	1	Retic	600	W	$18	2005	$18	1991	1996	$18			$5	2024	28	3%	1.45	$7
765	1	Retic	600	WW	$27	2005	$27	1991	1996	$27			$7	2024	28	3%	1.45	$10
9531	1	Retic	600	WW	$5	2005	$5	1991	1996	$5			$1	2024	28	3%	1.45	$2
9533	1	Retic	600	WW	$35	2005	$35	1991	1996	$35			$9	2024	28	3%	1.45	$14
9534	1	Retic	600	WW	$23	2005	$23	1991	1996	$23			$6	2024	28	3%	1.45	$9
9515	2	Retic	450	AA	$13	2005	$13	1994	1996	$13			$4	2024	28	3%	1.45	$5
9523	2	Retic	450	AA	$14	2005	$14	1994	1996	$14			$4	2024	28	3%	1.45	$5
9524	2	Retic	450	AA	$26	2005	$26	1994	1996	$26			$7	2024	28	3%	1.45	$10
9548	2	Retic	450	AA	$9	2005	$9	1994	1996	$9			$2	2024	28	3%	1.45	$3
9550	2	Retic	450	AA	$14	2005	$14	1994	1996	$14			$4	2024	28	3%	1.45	$5
9553	2	Retic	450	AA	$4	2005	$4	1994	1996	$4			$1	2024	28	3%	1.45	$2
775	2	Retic	225	AD	$3	2005	$3	1994	1996	$3			$1	2024	28	3%	1.45	$1
776	2	Retic	225	AD	$14	2005	$14	1994	1996	$14			$4	2024	28	3%	1.45	$5
9447	2	Retic	225	AD	$11	2005	$11	1994	1996	$11			$3	2024	28	3%	1.45	$4
9486	2	Retic	225	AD	$17	2005	$17	1994	1996	$17			$5	2024	28	3%	1.45	$7
9511	2	Retic	225	AD	$18	2005	$18	1994	1996	$18			$5	2024	28	3%	1.45	$7
9536	2	Retic	225	AD	$14	2005	$14	1994	1996	$14			$4	2024	28	3%	1.45	$5
9549	2	Retic	225	AD	$16	2005	$16	1994	1996	$16			$4	2024	28	3%	1.45	$6
9680	3	RM	150	CA	$1	2005	$1	1994	1996	$1			$0	2024	28	3%	1.45	$0
785	3	Retic	300	CA	$6	2005	$6	1994	1996	$6			$2	2024	28	3%	1.45	$2
9572	3	Retic	300	CA	$12	2005	$12	1994	1996	$12			$3	2024	28	3%	1.45	$5
9590	3	Retic	300	CA	$20	2005	$20	1994	1996	$20			$5	2024	28	3%	1.45	$8
9600	3	Retic	300	CA	$20	2005	$20	1994	1996	$20			$5	2024	28	3%	1.45	$8
9603	3	Retic	300	CA	$15	2005	$15	1994	1996	$15			$4	2024	28	3%	1.45	$6
9610	3	Retic	300	CA	$14	2005	$14	1994	1996	$14			$4	2024	28	3%	1.45	$5
9613	3	Retic	300	CA	$9	2005	$9	1994	1996	$9			$2	2024	28	3%	1.45	$3
9629	3	Retic	300	CA	$18	2005	$18	1994	1996	$18			$5	2024	28	3%	1.45	$7
9631	3	Retic	300	CA	$13	2005	$13	1994	1996	$13			$3	2024	28	3%	1.45	$5
786	3	Retic	375	CA	$9	2005	$9	1994	1996	$9			$2	2024	28	3%	1.45	$3
9639	3	Retic	375	CA	$26	2005	$26	1994	1996	$26			$7	2024	28	3%	1.45	$10
9647	3	Retic	375	CA	$28	2005	$28	1994	1996	$28			$7	2024	28	3%	1.45	$11
9660	3	Retic	375	CA	$34	2005	$34	1994	1996	$34			$9	2024	28	3%	1.45	$13
9676	3	Retic	375	CA	$31	2005	$31	1994	1996	$31			$8	2024	28	3%	1.45	$12
9679	3	Retic	450	CA	$4	2005	$4	1994	1996	$4			$1	2024	28	3%	1.45	$1
796	3	Retic	225	CB	$18	2005	$18	1994	1996	$18			$5	2024	28	3%	1.45	$7
9687	3	Retic	225	CB	$6	2005	$6	1994	1996	$6			$2	2024	28	3%	1.45	$2
9690	3	Retic	225	CB	$13	2005	$13	1994	1996	$13			$4	2024	28	3%	1.45	$5
9587	3	Retic	300	CE	$19	2005	$19	1994	1996	$19			$5	2024	28	3%	1.45	$7
9582	3	Retic	300	CE	$13	2005	$13	1994	1996	$13			$3	2024	28	3%	1.45	$5
9599	3	Retic	300	CE	$18	2005	$18	1994	1996	$18			$5	2024	28	3%	1.45	$7
9607	3	Retic	300	CE	$21	2005	$21	1994	1996	$21			$6	2024	28	3%	1.45	$8
9616	3	Retic	300	CE	$15	2005	$15	1994	1996	$15			$4	2024	28	3%	1.45	$6
9621	3	Retic	300	CE	$8	2005	$8	1994	1996	$8			$2	2024	28	3%	1.45	$3
9630	3	Retic	300	CE	$11	2005	$11	1994	1996	$11			$3	2024	28	3%	1.45	$4
9633	3	Retic	300	CE	$2	2005	$2	1994	1996	$2			$1	2024	28	3%	1.45	$1
19685	4	Retic	450	DA	$39	2005	$39	1994	1996	$39			$10	2024	28	3%	1.45	$15
19688	4	Retic	450	DA	$48	2005	$48	1994	1996	$48			$13	2024	28	3%	1.45	$18
20941	4	Retic	450	DA	$13	2005	$13	1994	1996	$13			$3	2024	28	3%	1.45	$5
20942	4	Retic	450	DA	$18	2005	$18	1994	1996	$18			$5	2024	28	3%	1.45	$7
20945	4	Retic	450	DA	$26	2005	$26	1994	1996	$26			$7	2024	28	3%	1.45	$10
20947	4	Retic	450	DA	$35	2005	$35	1994	1996	$35			$9	2024	28	3%	1.45	$13
19676	4	Retic	525	DA	$44	2005	$44	1994	1996	$44			$12	2024	28	3%	1.45	$17
19683	4	Retic	525	DA	$47	2005	$47	1994	1996	$47			$13	2024	28	3%	1.45	$18
19684	4	Retic	525	DA	$51	2005	$51	1994	1996	$51			$13	2024	28	3%	1.45	$20
19686	4	Retic	525	DA	$24	2005	$24	1994	1996	$24			$6	2024	28	3%	1.45	$9
19695	4	Retic	525	DA	$37	2005	$37	1994	1996	$37			$10	2024	28	3%	1.45	$14
19698	4	Retic	525	DA	$53	2005	$53	1994	1996	$53			$14	2024	28	3%	1.45	$20
19702	4	Retic	525	DA	$34	2005	$34	1994	1996	$34			$9	2024	28	3%	1.45	$13
19711	4	Retic	525	DA	$44	2005	$44	1994	1996	$44			$12	2024	28	3%	1.45	$17
19690	4	Retic	565	DA	$6	2005	$6	1994	1996	$6			$2	2024	28	3%	1.45	$2
19692	4	Retic	565	DA	$2	2005	$2	1994	1996	$2			$1	2024	28	3%	1.45	$1
19706	4	Retic	565	DA	$47	2005	$47	1994	1996	$47			$12	2024	28	3%	1.45	$18
19707	4	Retic	565	DA	$11	2005	$11	1994	1996	$11			$3	2024	28	3%	1.45	$4
19720	4	Retic	300	DB	$15	2005	$15	1994	1996	$15			$4	2024	28	3%	1.45	$6
19727	4	Retic	300	DB	$9	2005	$9	1994	1996	$9			$2	2024	28	3%	1.45	$3
9822	6	Retic	225	FA	$12	2005	$12	1994	1996	$12			$3	2024	28	3%	1.45	$5
9828	6	Retic	225	FA	$2	2005	$2	1994	1996	$2			$0	2024	28	3%	1.45	$1
747	6	Retic	300	FA	$27	2005	$27	1994	1996	$27			$7	2024	28	3%	1.45	$10
748	6	Retic	300	FA	$5	2005	$5	1994	1996	$5			$1	2024	28	3%	1.45	$2
9804	6	Retic	300	FA	$14	2005	$14	1994	1996	$14			$4	2024	28	3%	1.45	$6
9806	6	Retic	300	FA	$3	2005	$3	1994	1996	$3			$1	2024	28	3%	1.45	$1
9810	6	Retic	300	FA	$25	2005	$25	1994	1996	$25			$7	2024	28	3%	1.45	$10
745	7	Retic	225	GA	$18	2005	$18	1994	1996	$18			$5	2024	28	3%	1.45	$7
9900	7	Retic	225	GA	$14	2005	$14	1994	1996	$14			$4	2024	28	3%	1.45	$5
9905	7	Retic	225	GA	$13	2005	$13	1994	1996	$13			$3	2024	28	3%	1.45	$5
9908	7	Retic	225	GA	$16	2005	$16	1994	1996	$16			$4	2024	28	3%	1.45	$6
9909	7	Retic	225	GA	$15	2005	$15	1994	1996	$15			$4	2024	28	3%	1.45	$6
9910	7	Retic	225	GA	$14	2005	$14	1994	1996	$14			$4	2024	28	3%	1.45	$5
9911	7	Retic	225	GA	$12	2005	$12	1994	1996	$12			$3	2024	28	3%	1.45	$5
9912	7	Retic	225	GA	$6	2005	$6	1994	1996	$6			$2	2024	28	3%	1.45	$2
9917	7	Retic	225	GA	$11	2005	$11	1994	1996	$11			$3	2024	28	3%	1.45	$4
9920	7	Retic	225	GA	$5	2005	$5	1994	1996	$5			$1	2024	28	3%	1.45	$2
9632	3	Retic	300	XY	$4	2005	$4	1994	1996	$4			$1	2024	28	3%	1.45	$1
9946	8	Retic	225	HA	$1	2005	$1	1995	1996	$1			$0	2024	28	3%	1.45	$0
9948	8	Retic	225	HA	$0	2005	$0	1995	1996	$0			$0	2024	28	3%	1.45	$0
9737	3	RM	300	RED RAW	$13	2005	$13	1995	1996	$13			$3	2024	28	3%	1.45	$5
803	1	RM	200	RM1	$17	2005	$17	1995	1996	$17			$5	2024	28	3%	1.45	$7
9529	1	RM	200	RM1	$2	2005	$2	1995	1996	$2			$1	2024	28	3%	1.45	$1
9530	1	RM	200	RM1	$0	2005	$0	1995	1996	$0			$0	2024	28	3%	1.45	$0
9539	1	RM	200	RM1	$3	2005	$3	1995	1996	$3			$1	2024	28	3%	1.45	$1
9543	1	RM	200	RM1	$14	2005	$14	1995	1996	$14			$4	2024	28	3%	1.45	$6
9564	1	RM	200	RM1	$16	2005	$16	1995	1996	$16			$4	2024	28	3%	1.45	$6
9565	1	RM	200	RM1	$1	2005	$1	1995	1996	$1			$0	2024	28	3%	1.45	$0
9556	2	RM	200	RM2	$2	2005	$2	1995	1996	$2			$1	2024	28	3%	1.45	$1
9566	2	RM	200	RM2	$10	2005	$10	1995	1996	$10			$3	2024	28	3%	1.45	$4
9574	2	RM	200	RM2	$6	2005	$6	1995	1996	$6			$2	2024	28	3%	1.45	$2
9577	2	RM	200	RM2	$3	2005	$3	1995	1996	$3			$1	2024	28	3%	1.45	$1
9584	2	RM	200	RM2	$5	2005	$5	1995	1996	$5			$1	2024	28	3%	1.45	$2
9588	2	RM	200	RM2	$2	2005	$2	1995	1996	$2			$1	2024	28	3%	1.45	$1
9589	2	RM	200	RM2	$5	2005	$5	1995	1996	$5			$1	2024	28	3%	1.45	$2
9591	2	RM	200	RM2	$6	2005	$6	1995	1996	$6			$2	2024	28	3%	1.45	$2
9593	2	RM	200	RM2	$1	2005	$1	1995	1996	$1			$0	2024	28	3%	1.45	$0
9595	2	RM	200	RM2	$19	2005	$19	1995	1996	$19			$5	2024	28	3%	1.45	$7
801	3	RM	300	RM3	$4	2005	$4	1995	1996	$4			$1	2024	28	3%	1.45	$2
802	3	RM	300	RM3	$29	2005	$29	1995	1996	$29			$8	2024	28	3%	1.45	$11
9684	3	RM	300	RM3	$2	2005	$2	1995	1996	$2			$0	2024	28	3%	1.45	$1
9686	3	RM	300	RM3	$2	2005	$2	1995	1996	$2			$1	2024	28	3%	1.45	$1
9689	3	RM	300	RM3	$2	2005	$2	1995	1996	$2			$1	2024	28	3%	1.45	$1
9705	3	RM	300	RM3	$19	2005	$19	1995	1996	$19			$5	2024	28	3%	1.45	$7
9719	3	RM	300	RM3	$23	2005	$23	1995	1996	$23			$6	2024	28	3%	1.45	$9
9723	3	RM	300	RM3	$4	2005	$4	1995	1996	$4			$1	2024	28	3%	1.45	$2
9729	3	RM	300	RM3	$11	2005	$11	1995	1996	$11			$3	2024	28	3%	1.45	$4
9734	3	RM	300	RM3	$6	2005	$6	1995	1996	$6			$2	2024	28	3%	1.45	$2
9736	3	RM	300	RM3	$117	2005	$117	1995	1996	$117			$31	2024	28	3%	1.45	$45
9738	3	RM	300	RM3	$21	2005	$21	1995	1996	$21			$6	2024	28	3%	1.45	$8
19682	3	RM	300	RM3	$4	2005	$4	1995	1996	$4			$1	2024	28	3%	1.45	$1
19737	3	RM	300	RM3	$33	2005	$33	1995	1996	$33			$9	2024	28	3%	1.45	$13
19772	5	RM	100	RM5	$1	2005	$1	1995	1996	$1			$0	2024	28	3%	1.45	$0
19735	5	RM	150	RM5	$1	2005	$1	1995	1996	$1			$0	2024	28	3%	1.45	$0
19740	5	RM	150	RM5	$3	2005	$3	1995	1996	$3			$1	2024	28	3%	1.45	$1
19746	5	RM	200	RM5	$12	2005	$12	1995	1996	$12			$3	2024	28	3%	1.45	$5
19759	5	RM	200	RM5	$28	2005	$28	1995	1996	$28			$7	2024	28	3%	1.45	$11
19771	5	RM	200	RM5	$7	2005	$7	1995	1996	$7			$2	2024	28	3%	1.45	$3
9801	6	RM	100	RM6	$1	2005	$1	1995	1996	$1			$0	2024	28	3%	1.45	$0

Table C8: Capital Charge Calculation
Shoalhaven City Council

Service Area	Huskisson/Vincentia Sewerage	
Capital Charge	$6,697	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	5,838
Treatment Plant Capacity (ET)	6,250

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
None																		
Existing Assets (post-1996)																		
10078	2	RM	150	2a1	0	2005	$0	1975	1996	$0			$0	2024	28	3%	1.45	$0
870	5	Retic	225	5A	12	2005	$12	1975	1996	$12			$2	2024	28	3%	1.45	$3
10059	5	Retic	225	5A	16	2005	$16	1975	1996	$16			$3	2024	28	3%	1.45	$4
10062	5	Retic	225	5A	9	2005	$9	1975	1996	$9			$2	2024	28	3%	1.45	$2
10063	5	Retic	225	5A	16	2005	$16	1975	1996	$16			$3	2024	28	3%	1.45	$4
10068	5	Retic	225	5A	11	2005	$11	1975	1996	$11			$2	2024	28	3%	1.45	$3
10069	5	Retic	225	5A	3	2005	$3	1975	1996	$3			$1	2024	28	3%	1.45	$1
10079	5	Retic	225	5A	8	2005	$8	1975	1996	$8			$1	2024	28	3%	1.45	$2
10081	5	Retic	225	5A	6	2005	$6	1975	1996	$6			$1	2024	28	3%	1.45	$1
10093	5	Retic	225	5A	10	2005	$10	1975	1996	$10			$2	2024	28	3%	1.45	$3
10103	5	Retic	225	5A	13	2005	$13	1975	1996	$13			$2	2024	28	3%	1.45	$3
10105	5	Retic	225	5A	5	2005	$5	1975	1996	$5			$1	2024	28	3%	1.45	$1
10115	5	Retic	225	5A	9	2005	$9	1975	1996	$9			$2	2024	28	3%	1.45	$2
10120	5	Retic	225	5A	13	2005	$13	1975	1996	$13			$2	2024	28	3%	1.45	$3
10126	5	Retic	225	5A	12	2005	$12	1975	1996	$12			$2	2024	28	3%	1.45	$3
10128	5	Retic	225	5A	8	2005	$8	1975	1996	$8			$1	2024	28	3%	1.45	$2
10137	5	Retic	225	5A	11	2005	$11	1975	1996	$11			$2	2024	28	3%	1.45	$3
10141	5	Retic	225	5A	10	2005	$10	1975	1996	$10			$2	2024	28	3%	1.45	$2
10150	5	Retic	225	5A	18	2005	$18	1975	1996	$18			$3	2024	28	3%	1.45	$4
10153	5	Retic	225	5A	13	2005	$13	1975	1996	$13			$2	2024	28	3%	1.45	$3
10156	5	Retic	225	5A	4	2005	$4	1975	1996	$4			$1	2024	28	3%	1.45	$1
10159	5	Retic	225	5A	10	2005	$10	1975	1996	$10			$2	2024	28	3%	1.45	$3
10160	5	Retic	225	5A	7	2005	$7	1975	1996	$7			$1	2024	28	3%	1.45	$2
10174	5	Retic	225	5A	18	2005	$18	1975	1996	$18			$3	2024	28	3%	1.45	$5
10188	5	Retic	225	5A	15	2005	$15	1975	1996	$15			$3	2024	28	3%	1.45	$4
10189	5	Retic	225	5A	18	2005	$18	1975	1996	$18			$3	2024	28	3%	1.45	$5
10216	5	Retic	225	5A	19	2005	$19	1975	1996	$19			$3	2024	28	3%	1.45	$5
10223	5	Retic	225	5A	12	2005	$12	1975	1996	$12			$2	2024	28	3%	1.45	$3
885	5	Retic	300	5A	19	2005	$19	1975	1996	$19			$3	2024	28	3%	1.45	$5
10231	5	Retic	300	5A	15	2005	$15	1975	1996	$15			$3	2024	28	3%	1.45	$4
10236	5	Retic	300	5A	13	2005	$13	1975	1996	$13			$2	2024	28	3%	1.45	$3
10238	5	Retic	300	5A	13	2005	$13	1975	1996	$13			$2	2024	28	3%	1.45	$3
10245	5	Retic	300	5A	12	2005	$12	1975	1996	$12			$2	2024	28	3%	1.45	$3
10248	5	Retic	300	5A	24	2005	$24	1975	1996	$24			$4	2024	28	3%	1.45	$6
10257	5	Retic	300	5A	22	2005	$22	1975	1996	$22			$4	2024	28	3%	1.45	$6
10261	5	Retic	300	5A	12	2005	$12	1975	1996	$12			$2	2024	28	3%	1.45	$3
10263	5	Retic	300	5A	13	2005	$13	1975	1996	$13			$2	2024	28	3%	1.45	$3
10265	5	Retic	300	5A	14	2005	$14	1975	1996	$14			$2	2024	28	3%	1.45	$4
10266	5	Retic	300	5A	20	2005	$20	1975	1996	$20			$3	2024	28	3%	1.45	$5
10272	5	Retic	300	5A	16	2005	$16	1975	1996	$16			$3	2024	28	3%	1.45	$4
10273	5	Retic	300	5A	7	2005	$7	1975	1996	$7			$1	2024	28	3%	1.45	$2
10277	5	Retic	300	5A	7	2005	$7	1975	1996	$7			$1	2024	28	3%	1.45	$2
10208	5	Retic	225	5A5	17	2005	$17	1975	1996	$17			$3	2024	28	3%	1.45	$4
10210	5	Retic	225	5A5	12	2005	$12	1975	1996	$12			$2	2024	28	3%	1.45	$3
10211	5	Retic	225	5A5	11	2005	$11	1975	1996	$11			$2	2024	28	3%	1.45	$3
10212	5	Retic	225	5A5	16	2005	$16	1975	1996	$16			$3	2024	28	3%	1.45	$4
10107	5	Retic	225	5A9	14	2005	$14	1975	1996	$14			$2	2024	28	3%	1.45	$3
10111	5	Retic	225	5A9	15	2005	$15	1975	1996	$15			$3	2024	28	3%	1.45	$4
10114	5	Retic	225	5A9	3	2005	$3	1975	1996	$3			$0	2024	28	3%	1.45	$1
10117	5	Retic	225	5A9	11	2005	$11	1975	1996	$11			$2	2024	28	3%	1.45	$3
10309	7	Retic	300	7A12	23	2005	$23	1975	1996	$23			$4	2024	28	3%	1.45	$6
889	7	Retic	300	7A2	9	2005	$9	1975	1996	$9			$2	2024	28	3%	1.45	$2
892	7	Retic	300	7A2	20	2005	$20	1975	1996	$20			$3	2024	28	3%	1.45	$5
893	7	Retic	300	7A2	20	2005	$20	1975	1996	$20			$3	2024	28	3%	1.45	$5
10291	7	Retic	300	7A2	15	2005	$15	1975	1996	$15			$3	2024	28	3%	1.45	$4
10293	7	Retic	300	7A2	8	2005	$8	1975	1996	$8			$1	2024	28	3%	1.45	$2
10295	7	Retic	300	7A2	8	2005	$8	1975	1996	$8			$1	2024	28	3%	1.45	$2
10299	7	Retic	300	7A2	10	2005	$10	1975	1996	$10			$2	2024	28	3%	1.45	$3
10318	7	Retic	300	7A2	11	2005	$11	1975	1996	$11			$2	2024	28	3%	1.45	$3
10325	7	Retic	300	7A2	24	2005	$24	1975	1996	$24			$4	2024	28	3%	1.45	$6
10332	7	Retic	300	7A2	20	2005	$20	1975	1996	$20			$3	2024	28	3%	1.45	$5
10338	7	Retic	300	7A2	15	2005	$15	1975	1996	$15			$3	2024	28	3%	1.45	$4
10339	7	Retic	300	7A2	20	2005	$20	1975	1996	$20			$3	2024	28	3%	1.45	$5
10343	7	Retic	300	7A2	13	2005	$13	1975	1996	$13			$2	2024	28	3%	1.45	$3
10344	7	Retic	300	7A2	23	2005	$23	1975	1996	$23			$4	2024	28	3%	1.45	$6
10347	7	Retic	300	7A2	9	2005	$9	1975	1996	$9			$2	2024	28	3%	1.45	$2
10356	7	Retic	300	7A2	19	2005	$19	1975	1996	$19			$3	2024	28	3%	1.45	$5
10361	7	Retic	300	7A2	10	2005	$10	1975	1996	$10			$2	2024	28	3%	1.45	$3
10321	7	Retic	225	7A2D	12	2005	$12	1975	1996	$12			$2	2024	28	3%	1.45	$3
10328	7	Retic	225	7A2D	13	2005	$13	1975	1996	$13			$2	2024	28	3%	1.45	$3
10333	7	Retic	225	7A2D	14	2005	$14	1975	1996	$14			$2	2024	28	3%	1.45	$4
10337	7	Retic	225	7A2D	8	2005	$8	1975	1996	$8			$1	2024	28	3%	1.45	$2
899	7	Retic	225	7B	9	2005	$9	1975	1996	$9			$2	2024	28	3%	1.45	$2
10398	7	Retic	225	7B	4	2005	$4	1975	1996	$4			$1	2024	28	3%	1.45	$1
10399	7	Retic	225	7B	9	2005	$9	1975	1996	$9			$2	2024	28	3%	1.45	$2
10406	7	Retic	225	7B	16	2005	$16	1975	1996	$16			$3	2024	28	3%	1.45	$4
10412	7	Retic	225	7B	13	2005	$13	1975	1996	$13			$2	2024	28	3%	1.45	$3
10413	7	Retic	225	7B	13	2005	$13	1975	1996	$13			$2	2024	28	3%	1.45	$3
10414	7	Retic	225	7B	5	2005	$5	1975	1996	$5			$1	2024	28	3%	1.45	$1
10091	2	RM	100	RM2	8	2005	$8	1975	1996	$8			$1	2024	28	3%	1.45	$2
10116	2	RM	100	RM2	15	2005	$15	1975	1996	$15			$3	2024	28	3%	1.45	$4
10136	3	RM	100	RM3	3	2005	$3	1975	1996	$3			$0	2024	28	3%	1.45	$1
10138	3	RM	100	RM3	1	2005	$1	1975	1996	$1			$0	2024	28	3%	1.45	$0
10139	3	RM	100	RM3	1	2005	$1	1975	1996	$1			$0	2024	28	3%	1.45	$0
10142	3	RM	100	RM3	5	2005	$5	1975	1996	$5			$1	2024	28	3%	1.45	$1
10144	3	RM	100	RM3	11	2005	$11	1975	1996	$11			$2	2024	28	3%	1.45	$3
890	4	RM	100	RM4	2	2005	$2	1975	1996	$2			$0	2024	28	3%	1.45	$0
891	4	RM	100	RM4	16	2005	$16	1975	1996	$16			$3	2024	28	3%	1.45	$4
10198	4	RM	100	RM4	10	2005	$10	1975	1996	$10			$2	2024	28	3%	1.45	$2
10217	4	RM	100	RM4	17	2005	$17	1975	1996	$17			$3	2024	28	3%	1.45	$4
10301	6	RM	100	RM6	3	2005	$3	1975	1996	$3			$1	2024	28	3%	1.45	$1
10307	6	RM	100	RM6	14	2005	$14	1975	1996	$14			$2	2024	28	3%	1.45	$3
10313	6	RM	100	RM6	5	2005	$5	1975	1996	$5			$1	2024	28	3%	1.45	$1
23257	6	RM	100	RM6	0	2005	$0	1975	1996	$0			$0	2024	28	3%	1.45	$0
10419	8	RM	100	RM8	1	2005	$1	1975	1996	$1			$0	2024	28	3%	1.45	$0
10420	8	RM	100	RM8	4	2005	$4	1975	1996	$4			$1	2024	28	3%	1.45	$1
907	7	Retic	450	7A	14	2005	$14	1976	1996	$14			$2	2024	28	3%	1.45	$4
10364	7	Retic	450	7A	21	2005	$21	1976	1996	$21			$4	2024	28	3%	1.45	$5
10365	7	Retic	450	7A	20	2005	$20	1976	1996	$20			$4	2024	28	3%	1.45	$5
10366	7	Retic	450	7A	34	2005	$34	1976	1996	$34			$6	2024	28	3%	1.45	$8
10367	7	Retic	450	7A	26	2005	$26	1976	1996	$26			$5	2024	28	3%	1.45	$7
10368	7	Retic	450	7A	8	2005	$8	1976	1996	$8			$1	2024	28	3%	1.45	$2
10373	7	Retic	450	7A	26	2005	$26	1976	1996	$26			$5	2024	28	3%	1.45	$7
10380	7	Retic	450	7A	30	2005	$30	1976	1996	$30			$5	2024	28	3%	1.45	$7
10381	7	Retic	450	7A	36	2005	$36	1976	1996	$36			$6	2024	28	3%	1.45	$9
10388	7	Retic	450	7A	17	2005	$17	1976	1996	$17			$3	2024	28	3%	1.45	$4
10393	7	Retic	450	7A	17	2005	$17	1976	1996	$17			$3	2024	28	3%	1.45	$4
10394	7	Retic	450	7A	36	2005	$36	1976	1996	$36			$6	2024	28	3%	1.45	$9
10396	7	Retic	450	7A	22	2005	$22	1976	1996	$22			$4	2024	28	3%	1.45	$5
10405	7	Retic	450	7A	30	2005	$30	1976	1996	$30			$5	2024	28	3%	1.45	$7
10411	7	Retic	450	7A	34	2005	$34	1976	1996	$34			$6	2024	28	3%	1.45	$8
10424	7	Retic	450	7A	42	2005	$42	1976	1996	$42			$7	2024	28	3%	1.45	$10
10429	7	Retic	450	7A	21	2005	$21	1976	1996	$21			$4	2024	28	3%	1.45	$5
10435	7	Retic	450	7A	43	2005	$43	1976	1996	$43			$7	2024	28	3%	1.45	$11
10444	7	Retic	450	7A	39	2005	$39	1976	1996	$39			$7	2024	28	3%	1.45	$10
10446	7	Retic	450	7A	25	2005	$25	1976	1996	$25			$4	2024	28	3%	1.45	$6
10451	7	Retic	450	7A	19	2005	$19	1976	1996	$19			$3	2024	28	3%	1.45	$5
10457	7	Retic	450	7A	20	2005	$20	1976	1996	$20			$3	2024	28	3%	1.45	$5
10461	7	Retic	450	7A	11	2005	$11	1976	1996	$11			$2	2024	28	3%	1.45	$3
10466	7	Retic	450	7A	17	2005	$17	1976	1996	$17			$3	2024	28	3%	1.45	$4
10470	7	Retic	450	7A	21	2005	$21	1976	1996	$21			$4	2024	28	3%	1.45	$5
10475	7	Retic	450	7A	9	2005	$9	1976	1996	$9			$2	2024	28	3%	1.45	$2
10497	7	Retic	450	7A	21	2005	$21	1976	1996	$21			$4	2024	28	3%	1.45	$5
10505	7	Retic	450	7A	14	2005	$14	1976	1996	$14			$2	2024	28	3%	1.45	$4
10509	7	Retic	450	7A	25	2005	$25	1976	1996	$25			$4	2024	28	3%	1.45	$6
10518	7	Retic	450	7A	34	2005	$34	1976	1996	$34			$6	2024	28	3%	1.45	$8
10525	7	Retic	450	7A	21	2005	$21	1976	1996	$21			$4	2024	28	3%	1.45	$5

Table C8: Capital Charge Calculation	
Shoalhaven City Council	

Service Area	Huskisson/Vincentia Sewerage	
Capital Charge	$8,697	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	5,838
Treatment Plant Capacity (ET)	6,250

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
19013	Old Ocean Release	RM	225	EOM	21	2005	$21	1976	1996	$21			$4	2024	28	3%	1.45	$5
19014	Old Ocean Release	RM	225	EOM	9	2005	$9	1976	1996	$9			$1	2024	28	3%	1.45	$2
19015	Old Ocean Release	RM	225	EOM	3	2005	$3	1976	1996	$3			$1	2024	28	3%	1.45	$1
19016	Old Ocean Release	RM	225	EOM	1	2005	$1	1976	1996	$1			$0	2024	28	3%	1.45	$0
19017	Old Ocean Release	RM	225	EOM	8	2005	$8	1976	1996	$8			$1	2024	28	3%	1.45	$2
19018	Old Ocean Release	RM	225	EOM	8	2005	$8	1976	1996	$8			$1	2024	28	3%	1.45	$2
21793	Old Ocean Release	RM	225	EOM	19	2005	$19	1976	1996	$19			$3	2024	28	3%	1.45	$5
21792	Old Ocean Release	RM	300	EOM	23	2005	$23	1976	1996	$23			$4	2024	28	3%	1.45	$6
10681	Old Ocean Release	RM	225	EOM	10	2005	$10	1976	1996	$10			$2	2024	28	3%	1.45	$2
10629	10	Retic	375	BA	29	2005	$29	1984	1996	$29			$5	2024	28	3%	1.45	$7
10644	10	Retic	375	BA	22	2005	$22	1984	1996	$22			$4	2024	28	3%	1.45	$5
10649	10	Retic	375	BA	11	2005	$11	1984	1996	$11			$2	2024	28	3%	1.45	$3
10662	10	Retic	375	BA	14	2005	$14	1984	1996	$14			$2	2024	28	3%	1.45	$4
10672	10	Retic	375	BA	8	2005	$8	1984	1996	$8			$1	2024	28	3%	1.45	$2
10692	10	Retic	375	BA	19	2005	$19	1984	1996	$19			$3	2024	28	3%	1.45	$5
10710	10	Retic	375	BA	34	2005	$34	1984	1996	$34			$6	2024	28	3%	1.45	$8
10723	10	Retic	375	BA	7	2005	$7	1984	1996	$7			$1	2024	28	3%	1.45	$2
10749	10	Retic	375	BA	31	2005	$31	1984	1996	$31			$5	2024	28	3%	1.45	$8
10767	10	Retic	375	BA	22	2005	$22	1984	1996	$22			$4	2024	28	3%	1.45	$5
10555	10	Retic	450	BA	19	2005	$19	1984	1996	$19			$3	2024	28	3%	1.45	$5
10561	10	Retic	450	BA	35	2005	$35	1984	1996	$35			$6	2024	28	3%	1.45	$9
10568	10	Retic	450	BA	36	2005	$36	1984	1996	$36			$6	2024	28	3%	1.45	$9
10573	10	Retic	450	BA	21	2005	$21	1984	1996	$21			$4	2024	28	3%	1.45	$5
10582	10	Retic	450	BA	13	2005	$13	1984	1996	$13			$2	2024	28	3%	1.45	$3
10586	10	Retic	450	BA	30	2005	$30	1984	1996	$30			$5	2024	28	3%	1.45	$7
10597	10	Retic	450	BA	29	2005	$29	1984	1996	$29			$5	2024	28	3%	1.45	$7
10613	10	Retic	450	BA	33	2005	$33	1984	1996	$33			$6	2024	28	3%	1.45	$8
10599	10	RM	300	RM10	20	2005	$20	1984	1996	$20			$3	2024	28	3%	1.45	$5
10009	1A	RM	100	RM1	1	2005	$1	1984	1996	$1			$0	2024	28	3%	1.45	$0
10010	1A	RM	100	RM1	1	2005	$1	1984	1996	$1			$0	2024	28	3%	1.45	$0
10011	1A	RM	100	RM1	1	2005	$1	1984	1996	$1			$0	2024	28	3%	1.45	$0
10012	1A	RM	100	RM1	3	2005	$3	1984	1996	$3			$1	2024	28	3%	1.45	$1
10013	1A	RM	100	RM1	5	2005	$5	1984	1996	$5			$1	2024	28	3%	1.45	$1
10014	1A	RM	100	RM1	3	2005	$3	1984	1996	$3			$1	2024	28	3%	1.45	$1
10015	1A	RM	100	RM1	2	2005	$2	1984	1996	$2			$0	2024	28	3%	1.45	$1
10016	1A	RM	100	RM1	2	2005	$2	1984	1996	$2			$0	2024	28	3%	1.45	$0
10017	1A	RM	100	RM1	5	2005	$5	1984	1996	$5			$1	2024	28	3%	1.45	$1
10018	1A	RM	100	RM1	4	2005	$4	1984	1996	$4			$1	2024	28	3%	1.45	$1
10019	1A	RM	100	RM1	3	2005	$3	1984	1996	$3			$0	2024	28	3%	1.45	$1
10020	1A	RM	100	RM1	3	2005	$3	1984	1996	$3			$0	2024	28	3%	1.45	$1
10021	1A	RM	100	RM1	1	2005	$1	1984	1996	$1			$0	2024	28	3%	1.45	$0
10022	1A	RM	100	RM1	1	2005	$1	1984	1996	$1			$0	2024	28	3%	1.45	$0
10023	1A	RM	100	RM1	1	2005	$1	1984	1996	$1			$0	2024	28	3%	1.45	$0
10024	1A	RM	100	RM1	1	2005	$1	1984	1996	$1			$0	2024	28	3%	1.45	$0
10025	1A	RM	100	RM1	3	2005	$3	1984	1996	$3			$0	2024	28	3%	1.45	$1
10028	1A	RM	100	RM1	3	2005	$3	1984	1996	$3			$1	2024	28	3%	1.45	$1
9979	1A	RM	100	RM1A	1	2005	$1	1984	1996	$1			$0	2024	28	3%	1.45	$0
9980	1A	RM	100	RM1A	2	2005	$2	1984	1996	$2			$0	2024	28	3%	1.45	$0
9983	1A	RM	100	RM1A	3	2005	$3	1984	1996	$3			$1	2024	28	3%	1.45	$1
9987	1A	RM	100	RM1A	6	2005	$6	1984	1996	$6			$1	2024	28	3%	1.45	$1
9989	1A	RM	100	RM1A	5	2005	$5	1984	1996	$5			$1	2024	28	3%	1.45	$1
9991	1A	RM	100	RM1A	2	2005	$2	1984	1996	$2			$0	2024	28	3%	1.45	$0
9997	1A	RM	100	RM1A	11	2005	$11	1984	1996	$11			$2	2024	28	3%	1.45	$3
9999	1A	RM	100	RM1A	4	2005	$4	1984	1996	$4			$1	2024	28	3%	1.45	$1
10001	1A	RM	100	RM1A	5	2005	$5	1984	1996	$5			$1	2024	28	3%	1.45	$1
10004	1A	RM	100	RM1A	4	2005	$4	1984	1996	$4			$1	2024	28	3%	1.45	$1
10005	1A	RM	100	RM1A	2	2005	$2	1984	1996	$2			$0	2024	28	3%	1.45	$1
10006	1A	RM	100	RM1A	2	2005	$2	1984	1996	$2			$0	2024	28	3%	1.45	$1
10007	1A	RM	100	RM1A	1	2005	$1	1984	1996	$1			$0	2024	28	3%	1.45	$0
10008	1A	RM	100	RM1A	2	2005	$2	1984	1996	$2			$0	2024	28	3%	1.45	$0
10041	1A	RM	100	RM1A	8	2005	$8	1984	1996	$8			$1	2024	28	3%	1.45	$2
10051	1A	RM	100	RM1A	12	2005	$12	1984	1996	$12			$2	2024	28	3%	1.45	$3
975	11	Retic	300	DA	22	2005	$22	1986	1996	$22			$4	2024	28	3%	1.45	$6
976	11	Retic	300	DA	3	2005	$3	1986	1996	$3			$0	2024	28	3%	1.45	$1
10827	11	Retic	300	DA	20	2005	$20	1986	1996	$20			$3	2024	28	3%	1.45	$5
10869	11	Retic	300	DA	18	2005	$18	1986	1996	$18			$3	2024	28	3%	1.45	$5
10909	11	Retic	300	DA	14	2005	$14	1986	1996	$14			$2	2024	28	3%	1.45	$3
10933	11	Retic	300	DA	16	2005	$16	1986	1996	$16			$3	2024	28	3%	1.45	$4
10953	11	Retic	300	DA	15	2005	$15	1986	1996	$15			$3	2024	28	3%	1.45	$4
10998	11	Retic	300	DA	27	2005	$27	1986	1996	$27			$5	2024	28	3%	1.45	$7
11007	11	Retic	300	DA	6	2005	$6	1986	1996	$6			$1	2024	28	3%	1.45	$2
11034	11	Retic	300	DA	23	2005	$23	1986	1996	$23			$4	2024	28	3%	1.45	$6
11078	11	Retic	300	DA	13	2005	$13	1986	1996	$13			$2	2024	28	3%	1.45	$3
11103	11	Retic	300	DA	16	2005	$16	1986	1996	$16			$3	2024	28	3%	1.45	$4
11109	11	Retic	300	DA	14	2005	$14	1986	1996	$14			$2	2024	28	3%	1.45	$4
11110	11	Retic	300	DA	6	2005	$6	1986	1996	$6			$1	2024	28	3%	1.45	$2
11143	11	Retic	300	DA	18	2005	$18	1986	1996	$18			$3	2024	28	3%	1.45	$5
11159	11	Retic	300	DA	15	2005	$15	1986	1996	$15			$3	2024	28	3%	1.45	$4
11160	11	Retic	300	DA	1	2005	$1	1986	1996	$1			$0	2024	28	3%	1.45	$0
11168	11	Retic	300	DA	11	2005	$11	1986	1996	$11			$2	2024	28	3%	1.45	$3
956	11	Retic	225	DU	12	2005	$12	1986	1996	$12			$2	2024	28	3%	1.45	$3
10979	11	Retic	225	DU	13	2005	$13	1986	1996	$13			$2	2024	28	3%	1.45	$3
11001	11	Retic	225	DU	15	2005	$15	1986	1996	$15			$3	2024	28	3%	1.45	$4
11002	11	Retic	225	DU	12	2005	$12	1986	1996	$12			$2	2024	28	3%	1.45	$3
11008	11	Retic	225	DU	16	2005	$16	1986	1996	$16			$3	2024	28	3%	1.45	$4
957	11	Retic	225	DUI	10	2005	$10	1986	1996	$10			$2	2024	28	3%	1.45	$2
952	11	Retic	225	DW	14	2005	$14	1986	1996	$14			$2	2024	28	3%	1.45	$4
11014	11	Retic	225	DW	8	2005	$8	1986	1996	$8			$1	2024	28	3%	1.45	$2
11032	11	Retic	225	DW	9	2005	$9	1986	1996	$9			$1	2024	28	3%	1.45	$2
11277	12	Retic	225	HA	16	2005	$16	1986	1996	$16			$3	2024	28	3%	1.45	$4
11286	12	Retic	225	HA	14	2005	$14	1986	1996	$14			$2	2024	28	3%	1.45	$3
11294	12	Retic	225	HA	11	2005	$11	1986	1996	$11			$2	2024	28	3%	1.45	$3
11307	12	Retic	225	HA	11	2005	$11	1986	1996	$11			$2	2024	28	3%	1.45	$3
11222	12	Retic	300	HA	1	2005	$1	1986	1996	$1			$0	2024	28	3%	1.45	$0
11224	12	Retic	300	HA	1	2005	$1	1986	1996	$1			$0	2024	28	3%	1.45	$0
11230	12	Retic	300	HA	6	2005	$6	1986	1996	$6			$1	2024	28	3%	1.45	$2
11247	12	Retic	300	HA	25	2005	$25	1986	1996	$25			$4	2024	28	3%	1.45	$6
11258	12	Retic	300	HA	24	2005	$24	1986	1996	$24			$4	2024	28	3%	1.45	$6
11260	12	Retic	300	HA	6	2005	$6	1986	1996	$6			$1	2024	28	3%	1.45	$2
11269	12	Retic	300	HA	12	2005	$12	1986	1996	$12			$2	2024	28	3%	1.45	$3
12155	14	Retic	225	KA	7	2005	$7	1986	1996	$7			$1	2024	28	3%	1.45	$2
12255	14	Retic	225	KA	18	2005	$18	1986	1996	$18			$3	2024	28	3%	1.45	$4
12296	14	Retic	225	KA	7	2005	$7	1986	1996	$7			$1	2024	28	3%	1.45	$2
12342	14	Retic	225	KA	10	2005	$10	1986	1996	$10			$2	2024	28	3%	1.45	$2
12391	14	Retic	225	KA	8	2005	$8	1986	1996	$8			$1	2024	28	3%	1.45	$2
980	11	RM	300	RM11	20	2005	$20	1986	1996	$20			$3	2024	28	3%	1.45	$5
981	11	RM	300	RM11	17	2005	$17	1986	1996	$17			$3	2024	28	3%	1.45	$4
10721	11	RM	300	RM11	18	2005	$18	1986	1996	$18			$3	2024	28	3%	1.45	$4
10737	11	RM	300	RM11	41	2005	$41	1986	1996	$41			$7	2024	28	3%	1.45	$10
10738	11	RM	300	RM11	20	2005	$20	1986	1996	$20			$3	2024	28	3%	1.45	$5
10769	11	RM	300	RM11	15	2005	$15	1986	1996	$15			$3	2024	28	3%	1.45	$4
10782	11	RM	300	RM11	5	2005	$5	1986	1996	$5			$1	2024	28	3%	1.45	$1
11179	12	RM	150	RM12	6	2005	$6	1986	1996	$6			$1	2024	28	3%	1.45	$2
11189	12	RM	150	RM12	5	2005	$5	1986	1996	$5			$1	2024	28	3%	1.45	$1
11212	12	RM	150	RM12	9	2005	$9	1986	1996	$9			$1	2024	28	3%	1.45	$2
11221	12	RM	150	RM12	8	2005	$8	1986	1996	$8			$1	2024	28	3%	1.45	$2
11316	13	RM	100	RM13	4	2005	$4	1986	1996	$4			$1	2024	28	3%	1.45	$1
11325	13	RM	100	RM13	4	2005	$4	1986	1996	$4			$1	2024	28	3%	1.45	$1
11355	13	RM	100	RM13	11	2005	$11	1986	1996	$11			$2	2024	28	3%	1.45	$3
11317	14	RM	150	RM14	5	2005	$5	1986	1996	$5			$1	2024	28	3%	1.45	$1
11326	14	RM	150	RM14	5	2005	$5	1986	1996	$5			$1	2024	28	3%	1.45	$1
11375	14	RM	150	RM14	18	2005	$18	1986	1996	$18			$3	2024	28	3%	1.45	$4
11445	14	RM	150	RM14	18	2005	$18	1986	1996	$18			$3	2024	28	3%	1.45	$5

Table C9: Capital Charge Calculation
Shoalhaven City Council

Service Area	St Georges Basin Sewerage	
Capital Charge	$6,404	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	9,291
Treatment Plant Capacity (ET)	8,800

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1998)																		
11940	3	RM	150	3	56	2005	$56	1991	1996	$56			$6	2024	28	3%	1.45	$9
11968	3	RM	150	3	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
12078	1	Retic	225	AB	14	2005	$14	1991	1996	$14			$2	2024	28	3%	1.45	$2
12079	1	Retic	225	AB	8	2005	$8	1991	1996	$8			$1	2024	28	3%	1.45	$1
12108	1	Retic	225	AB	10	2005	$10	1991	1996	$10			$1	2024	28	3%	1.45	$2
12109	1	Retic	225	AB	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
12146	1	Retic	225	AB	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
991	3	Retic	225	BA	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
11966	3	Retic	225	BA	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
11967	3	Retic	225	BA	6	2005	$6	1991	1996	$6			$1	2024	28	3%	1.45	$1
11975	3	Retic	225	BA	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
11919	3	Retic	225	BC	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
11920	3	Retic	225	BC	5	2005	$5	1991	1996	$5			$1	2024	28	3%	1.45	$1
11991	3	Retic	225	BI	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
11992	3	Retic	225	BI	20	2005	$20	1991	1996	$20			$2	2024	28	3%	1.45	$3
987	4	Retic	300	CA	24	2005	$24	1991	1996	$24			$3	2024	28	3%	1.45	$4
11541	4	Retic	300	CA	18	2005	$18	1991	1996	$18			$2	2024	28	3%	1.45	$3
11547	4	Retic	300	CA	21	2005	$21	1991	1996	$21			$2	2024	28	3%	1.45	$3
11568	4	Retic	300	CA	24	2005	$24	1991	1996	$24			$3	2024	28	3%	1.45	$4
11569	4	Retic	300	CA	24	2005	$24	1991	1996	$24			$3	2024	28	3%	1.45	$4
11579	4	Retic	300	CA	23	2005	$23	1991	1996	$23			$2	2024	28	3%	1.45	$4
11580	4	Retic	300	CA	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
11587	4	Retic	300	CA	5	2005	$5	1991	1996	$5			$1	2024	28	3%	1.45	$1
11596	4	Retic	300	CA	22	2005	$22	1991	1996	$22			$2	2024	28	3%	1.45	$3
988	4	Retic	375	CA	33	2005	$33	1991	1996	$33			$4	2024	28	3%	1.45	$5
989	4	Retic	375	CA	33	2005	$33	1991	1996	$33			$4	2024	28	3%	1.45	$5
990	4	Retic	375	CA	33	2005	$33	1991	1996	$33			$4	2024	28	3%	1.45	$5
11556	4	Retic	375	CA	28	2005	$28	1991	1996	$28			$3	2024	28	3%	1.45	$4
11573	4	Retic	375	CA	33	2005	$33	1991	1996	$33			$4	2024	28	3%	1.45	$5
11574	4	Retic	375	CA	32	2005	$32	1991	1996	$32			$3	2024	28	3%	1.45	$5
11577	4	Retic	375	CA	33	2005	$33	1991	1996	$33			$4	2024	28	3%	1.45	$5
11581	4	Retic	225	CD	8	2005	$9	1991	1996	$9			$1	2024	28	3%	1.45	$1
11626	4	Retic	225	CD	15	2005	$15	1991	1996	$15			$2	2024	28	3%	1.45	$2
11639	4	Retic	225	CD	14	2005	$14	1991	1996	$14			$1	2024	28	3%	1.45	$2
11650	4	Retic	225	CD	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
11666	4	Retic	225	CD	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
19947	4	Retic	225	CD	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
19954	4	Retic	225	CD	16	2005	$16	1991	1996	$16			$2	2024	28	3%	1.45	$3
19959	4	Retic	225	CD	10	2005	$10	1991	1996	$10			$1	2024	28	3%	1.45	$2
19961	4	Retic	225	CD	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
19963	4	Retic	225	CD	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
19965	4	Retic	225	CD	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
19967	4	Retic	225	CD	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
19968	4	Retic	225	CD	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
19970	4	Retic	225	CD	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
19975	4	Retic	225	CD	5	2005	$5	1991	1996	$5			$1	2024	28	3%	1.45	$1
11559	4	Retic	300	CE	5	2005	$5	1991	1996	$5			$1	2024	28	3%	1.45	$1
11563	4	Retic	300	CE	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
11578	4	Retic	300	CE	27	2005	$27	1991	1996	$27			$3	2024	28	3%	1.45	$4
11591	4	Retic	300	CE	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
11597	4	Retic	300	CE	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
11600	4	Retic	300	CE	15	2005	$15	1991	1996	$15			$2	2024	28	3%	1.45	$2
11631	4	Retic	300	CE	14	2005	$14	1991	1996	$14			$2	2024	28	3%	1.45	$2
11657	4	Retic	300	CE	11	2005	$11	1991	1996	$11			$1	2024	28	3%	1.45	$2
11693	4	Retic	300	CE	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
19001	8	RM	375	RM8	16	2005	$16	1991	1996	$16			$2	2024	28	3%	1.45	$2
19008	8	RM	375	RM8	16	2005	$16	1991	1996	$16			$2	2024	28	3%	1.45	$2
20014	8	RM	375	RM8	24	2005	$24	1991	1996	$24			$3	2024	28	3%	1.45	$4
12035	1	RM	125	1	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
19979	1	RM	125	1	2	2005	$2	1991	1996	$2			$0	2024	28	3%	1.45	$0
19995	1	RM	125	1	15	2005	$15	1991	1996	$15			$2	2024	28	3%	1.45	$2
20007	1	RM	125	1	9	2005	$9	1991	1996	$9			$1	2024	28	3%	1.45	$1
20013	1	RM	125	1	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
11695	3	RM	150	3	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
11958	3	RM	150	3	10	2005	$10	1991	1996	$10			$1	2024	28	3%	1.45	$2
13256	14	RM	200	200	15	2005	$15	1991	1996	$15			$2	2024	28	3%	1.45	$2
12498	10	Retic	225	A	5	2005	$5	1991	1996	$5			$1	2024	28	3%	1.45	$1
12499	10	Retic	225	A	3	2005	$3	1991	1996	$3			$0	2024	28	3%	1.45	$0
1002	1	Retic	225	AA	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
13118	21	Retic	225	AB	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
13154	21	Retic	225	AB	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
13161	21	Retic	225	AB	21	2005	$21	1991	1996	$21			$2	2024	28	3%	1.45	$3
13166	21	Retic	225	AB	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
13186	21	Retic	225	AB	8	2005	$8	1991	1996	$8			$1	2024	28	3%	1.45	$1
1029	10	Retic	225	B	11	2005	$11	1991	1996	$11			$1	2024	28	3%	1.45	$2
12580	10	Retic	225	B	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
1085	20	Retic	225	BA	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
12237	20	Retic	225	BA	15	2005	$15	1991	1996	$15			$2	2024	28	3%	1.45	$2
12244	20	Retic	225	BA	8	2005	$8	1991	1996	$8			$1	2024	28	3%	1.45	$1
12266	20	Retic	225	BA	6	2005	$6	1991	1996	$6			$1	2024	28	3%	1.45	$1
12287	20	Retic	225	BA	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
12322	20	Retic	225	BA	9	2005	$9	1991	1996	$9			$1	2024	28	3%	1.45	$1
12382	20	Retic	225	BA	11	2005	$11	1991	1996	$11			$1	2024	28	3%	1.45	$2
12393	20	Retic	225	BA	10	2005	$10	1991	1996	$10			$1	2024	28	3%	1.45	$1
12460	20	Retic	225	BA	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
12484	20	Retic	225	BA	9	2005	$9	1991	1996	$9			$1	2024	28	3%	1.45	$1
12189	20	Retic	300	BA	3	2005	$3	1991	1996	$3			$0	2024	28	3%	1.45	$1
12219	20	Retic	300	BA	7	2005	$7	1991	1996	$7			$1	2024	28	3%	1.45	$1
1079	20	Retic	300	BB	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
12269	20	Retic	300	BB	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
12368	20	Retic	300	BB	26	2005	$26	1991	1996	$26			$3	2024	28	3%	1.45	$4
12432	20	Retic	300	BB	16	2005	$16	1991	1996	$16			$2	2024	28	3%	1.45	$2
12444	20	Retic	300	BB	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
12513	20	Retic	300	BB	19	2005	$19	1991	1996	$19			$2	2024	28	3%	1.45	$3
12578	20	Retic	300	BB	14	2005	$14	1991	1996	$14			$1	2024	28	3%	1.45	$2
12612	20	Retic	300	BB	10	2005	$10	1991	1996	$10			$1	2024	28	3%	1.45	$2
12655	20	Retic	300	BB	16	2005	$16	1991	1996	$16			$2	2024	28	3%	1.45	$2
12717	20	Retic	300	BB	21	2005	$21	1991	1996	$21			$2	2024	28	3%	1.45	$3
12771	20	Retic	300	BB	18	2005	$18	1991	1996	$18			$2	2024	28	3%	1.45	$3
12854	20	Retic	300	BB	23	2005	$23	1991	1996	$23			$3	2024	28	3%	1.45	$4
12878	20	Retic	300	BB	11	2005	$11	1991	1996	$11			$1	2024	28	3%	1.45	$2
12882	20	Retic	300	BB	9	2005	$9	1991	1996	$9			$1	2024	28	3%	1.45	$1
12895	20	Retic	300	BB	7	2005	$7	1991	1996	$7			$1	2024	28	3%	1.45	$1
1078	20	Retic	300	BL	10	2005	$10	1991	1996	$10			$1	2024	28	3%	1.45	$1
12860	20	Retic	300	BL	25	2005	$25	1991	1996	$25			$3	2024	28	3%	1.45	$4
20048	7	Retic	375	EA	2	2005	$2	1991	1996	$2			$0	2024	28	3%	1.45	$0
20049	7	Retic	375	EA	2	2005	$2	1991	1996	$2			$0	2024	28	3%	1.45	$0
11702	7	Retic	375	EC	22	2005	$22	1991	1996	$22			$2	2024	28	3%	1.45	$3
11736	7	Retic	375	EC	35	2005	$35	1991	1996	$35			$4	2024	28	3%	1.45	$5
11759	7	Retic	375	EC	29	2005	$29	1991	1996	$29			$3	2024	28	3%	1.45	$5
11775	7	Retic	375	EC	25	2005	$25	1991	1996	$25			$3	2024	28	3%	1.45	$4
20039	7	Retic	375	EC	18	2005	$18	1991	1996	$18			$2	2024	28	3%	1.45	$3
1009	7	Retic	375	EQ	23	2005	$23	1991	1996	$23			$2	2024	28	3%	1.45	$4
11666	7	Retic	375	EQ	21	2005	$21	1991	1996	$21			$2	2024	28	3%	1.45	$3
11685	7	Retic	375	EQ	29	2005	$29	1991	1996	$29			$3	2024	28	3%	1.45	$5
1012	8	Retic	450	FA	27	2005	$27	1991	1996	$27			$3	2024	28	3%	1.45	$4
1021	8	Retic	450	FA	35	2005	$35	1991	1996	$35			$4	2024	28	3%	1.45	$5
12354	8	Retic	450	FA	28	2005	$28	1991	1996	$28			$3	2024	28	3%	1.45	$4
12386	8	Retic	450	FA	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
12481	8	Retic	450	FA	43	2005	$43	1991	1996	$43			$5	2024	28	3%	1.45	$7
12534	8	Retic	450	FA	19	2005	$19	1991	1996	$19			$2	2024	28	3%	1.45	$3
12545	8	Retic	450	FA	25	2005	$25	1991	1996	$25			$3	2024	28	3%	1.45	$4
12556	8	Retic	450	FA	36	2005	$36	1991	1996	$36			$4	2024	28	3%	1.45	$6
12561	8	Retic	450	FA	39	2005	$39	1991	1996	$39			$4	2024	28	3%	1.45	$6
12567	8	Retic	450	FA	20	2005	$20	1991	1996	$20			$2	2024	28	3%	1.45	$3
12575	8	Retic	450	FA	16	2005	$16	1991	1996	$16			$2	2024	28	3%	1.45	$3
12587	8	Retic	450	FA	42	2005	$42	1991	1996	$42			$4	2024	28	3%	1.45	$6
12603	8	Retic	450	FA	29	2005	$29	1991	1996	$29			$3	2024	28	3%	1.45	$4
12616	8	Retic	450	FA	20	2005	$20	1991	1996	$20			$2	2024	28	3%	1.45	$3
12619	8	Retic	450	FA	28	2005	$28	1991	1996	$28			$3	2024	28	3%	1.45	$4
12650	8	Retic	450	FA	22	2005	$22	1991	1996	$22			$2	2024	28	3%	1.45	$3
12685	8	Retic	450	FA	39	2005	$39	1991	1996	$39			$4	2024	28	3%	1.45	$6

Table C9: Capital Charge Calculation
Shoalhaven City Council

Service Area	St Georges Basin Sewerage	
Capital Charge	$6,404	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	9,291
Treatment Plant Capacity (ET)	8,800

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
11902	17	Retic	225	MB	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
11945	17	Retic	225	MB	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
11985	17	Retic	225	MB	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
12012	17	Retic	225	MB	14	2005	$14	1991	1996	$14			$2	2024	28	3%	1.45	$2
11974	17	Retic	450	MH	11	2005	$11	1991	1996	$11			$1	2024	28	3%	1.45	$2
11987	17	Retic	450	MH	26	2005	$26	1991	1996	$26			$3	2024	28	3%	1.45	$4
11988	17	Retic	450	MH	27	2005	$27	1991	1996	$27			$3	2024	28	3%	1.45	$4
12004	17	Retic	450	MH	31	2005	$31	1991	1996	$31			$3	2024	28	3%	1.45	$5
12005	17	Retic	450	MH	27	2005	$27	1991	1996	$27			$3	2024	28	3%	1.45	$4
12009	17	Retic	450	MH	15	2005	$15	1991	1996	$15			$2	2024	28	3%	1.45	$2
12046	17	Retic	450	MH	15	2005	$15	1991	1996	$15			$2	2024	28	3%	1.45	$2
12089	17	Retic	450	MH	18	2005	$18	1991	1996	$18			$2	2024	28	3%	1.45	$3
12090	17	Retic	450	MH	27	2005	$27	1991	1996	$27			$3	2024	28	3%	1.45	$4
12131	17	Retic	450	MH	27	2005	$27	1991	1996	$27			$3	2024	28	3%	1.45	$4
12205	17	Retic	450	MH	42	2005	$42	1991	1996	$42			$5	2024	28	3%	1.45	$7
1058	17	Retic	450	ML	6	2005	$6	1991	1996	$6			$1	2024	28	3%	1.45	$1
1059	17	Retic	450	ML	36	2005	$36	1991	1996	$36			$4	2024	28	3%	1.45	$6
1104	17	Retic	450	ML	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
12479	17	Retic	450	ML	33	2005	$33	1991	1996	$33			$3	2024	28	3%	1.45	$5
12579	17	Retic	450	ML	23	2005	$23	1991	1996	$23			$2	2024	28	3%	1.45	$4
12615	17	Retic	450	ML	29	2005	$29	1991	1996	$29			$3	2024	28	3%	1.45	$4
12628	17	Retic	450	ML	33	2005	$33	1991	1996	$33			$4	2024	28	3%	1.45	$5
12645	17	Retic	450	ML	11	2005	$11	1991	1996	$11			$1	2024	28	3%	1.45	$2
12711	17	Retic	450	ML	55	2005	$55	1991	1996	$55			$6	2024	28	3%	1.45	$9
12751	17	Retic	450	ML	36	2005	$36	1991	1996	$36			$4	2024	28	3%	1.45	$6
12803	17	Retic	450	ML	32	2005	$32	1991	1996	$32			$3	2024	28	3%	1.45	$5
12813	17	Retic	450	ML	26	2005	$26	1991	1996	$26			$3	2024	28	3%	1.45	$4
12881	17	Retic	450	ML	45	2005	$45	1991	1996	$45			$5	2024	28	3%	1.45	$7
12899	17	Retic	450	ML	15	2005	$15	1991	1996	$15			$2	2024	28	3%	1.45	$2
19443	17	Retic	450	ML	20	2005	$20	1991	1996	$20			$2	2024	28	3%	1.45	$3
934	18	Retic	225	NA	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
11450	18	Retic	225	NA	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
11480	18	Retic	225	NA	9	2005	$9	1991	1996	$9			$1	2024	28	3%	1.45	$1
11538	18	Retic	225	NA	6	2005	$6	1991	1996	$6			$1	2024	28	3%	1.45	$1
11598	18	Retic	225	NA	20	2005	$20	1991	1996	$20			$2	2024	28	3%	1.45	$3
11624	18	Retic	225	NA	10	2005	$10	1991	1996	$10			$1	2024	28	3%	1.45	$2
11654	18	Retic	225	NA	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
11687	18	Retic	225	NA	15	2005	$15	1991	1996	$15			$2	2024	28	3%	1.45	$2
11722	18	Retic	225	NA	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
11755	18	Retic	225	NA	18	2005	$18	1991	1996	$18			$2	2024	28	3%	1.45	$3
11765	18	Retic	225	NA	5	2005	$5	1991	1996	$5			$1	2024	28	3%	1.45	$1
11778	18	Retic	300	NA	19	2005	$19	1991	1996	$19			$2	2024	28	3%	1.45	$3
11793	18	Retic	300	NA	23	2005	$23	1991	1996	$23			$3	2024	28	3%	1.45	$4
11803	18	Retic	300	NA	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
11804	18	Retic	300	NA	14	2005	$14	1991	1996	$14			$2	2024	28	3%	1.45	$2
11824	18	Retic	300	NA	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
11825	18	Retic	300	NA	3	2005	$3	1991	1996	$3			$0	2024	28	3%	1.45	$0
11831	18	Retic	300	NA	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
11394	18	Retic	225	NF	14	2005	$14	1991	1996	$14			$2	2024	28	3%	1.45	$2
11405	18	Retic	225	NF	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
12500	10	RM	150	RM10	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
12577	10	RM	150	RM10	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
12583	10	RM	150	RM10	5	2005	$5	1991	1996	$5			$1	2024	28	3%	1.45	$1
12601	10	RM	150	RM10	14	2005	$14	1991	1996	$14			$1	2024	28	3%	1.45	$2
12602	10	RM	150	RM10	5	2005	$5	1991	1996	$5			$1	2024	28	3%	1.45	$1
12631	10	RM	150	RM10	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
12632	10	RM	150	RM10	6	2005	$6	1991	1996	$6			$1	2024	28	3%	1.45	$1
12649	10	RM	150	RM10	2	2005	$2	1991	1996	$2			$0	2024	28	3%	1.45	$0
13040	11	RM	40	RM11	2	2005	$2	1991	1996	$2			$0	2024	28	3%	1.45	$0
13059	11	RM	40	RM11	3	2005	$3	1991	1996	$3			$0	2024	28	3%	1.45	$0
13063	11	RM	40	RM11	0	2005	$0	1991	1996	$0			$0	2024	28	3%	1.45	$0
13003	12	RM	300	RM12	8	2005	$8	1991	1996	$8			$1	2024	28	3%	1.45	$1
13009	12	RM	300	RM12	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
13062	12	RM	300	RM12	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
13137	12	RM	300	RM12	27	2005	$27	1991	1996	$27			$3	2024	28	3%	1.45	$4
13167	12	RM	300	RM12	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
13224	12	RM	300	RM12	41	2005	$41	1991	1996	$41			$4	2024	28	3%	1.45	$6
13241	12	RM	300	RM12	8	2005	$8	1991	1996	$8			$1	2024	28	3%	1.45	$1
13255	12	RM	300	RM12	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
13305	12	RM	300	RM12	22	2005	$22	1991	1996	$22			$2	2024	28	3%	1.45	$3
13332	12	RM	300	RM12	10	2005	$10	1991	1996	$10			$1	2024	28	3%	1.45	$2
13416	12	RM	300	RM12	29	2005	$29	1991	1996	$29			$3	2024	28	3%	1.45	$5
13472	12	RM	300	RM12	26	2005	$26	1991	1996	$26			$3	2024	28	3%	1.45	$4
13479	12	RM	300	RM12	2	2005	$2	1991	1996	$2			$0	2024	28	3%	1.45	$0
13487	12	RM	300	RM12	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
13491	12	RM	300	RM12	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
13492	12	RM	300	RM12	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
19444	12	RM	300	RM12	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
19445	12	RM	300	RM12	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
13845	13	RM	150	RM13	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
13846	13	RM	150	RM13	14	2005	$14	1991	1996	$14			$2	2024	28	3%	1.45	$2
13861	13	RM	150	RM13	45	2005	$45	1991	1996	$45			$5	2024	28	3%	1.45	$7
13882	13	RM	150	RM13	7	2005	$7	1991	1996	$7			$1	2024	28	3%	1.45	$1
13884	13	RM	150	RM13	43	2005	$43	1991	1996	$43			$5	2024	28	3%	1.45	$7
13888	13	RM	150	RM13	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
13890	13	RM	150	RM13	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
13900	13	RM	150	RM13	3	2005	$3	1991	1996	$3			$0	2024	28	3%	1.45	$0
1071	14	RM	100	RM14	0	2005	$0	1991	1996	$0			$0	2024	28	3%	1.45	$0
13183	14	RM	100	RM14	0	2005	$0	1991	1996	$0			$0	2024	28	3%	1.45	$0
13208	14	RM	100	RM14	0	2005	$0	1991	1996	$0			$0	2024	28	3%	1.45	$0
13190	14	RM	200	RM14	2	2005	$2	1991	1996	$2			$0	2024	28	3%	1.45	$0
13207	14	RM	200	RM14	12	2005	$12	1991	1996	$12			$1	2024	28	3%	1.45	$2
13310	14	RM	200	RM14	16	2005	$16	1991	1996	$16			$2	2024	28	3%	1.45	$3
13340	14	RM	200	RM14	8	2005	$8	1991	1996	$8			$1	2024	28	3%	1.45	$1
13363	14	RM	200	RM14	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
13381	14	RM	200	RM14	7	2005	$7	1991	1996	$7			$1	2024	28	3%	1.45	$1
13426	14	RM	200	RM14	20	2005	$20	1991	1996	$20			$2	2024	28	3%	1.45	$3
13430	14	RM	200	RM14	2	2005	$2	1991	1996	$2			$0	2024	28	3%	1.45	$0
13440	14	RM	200	RM14	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
13449	14	RM	200	RM14	5	2005	$5	1991	1996	$5			$0	2024	28	3%	1.45	$1
13451	14	RM	200	RM14	2	2005	$2	1991	1996	$2			$0	2024	28	3%	1.45	$0
13467	14	RM	200	RM14	6	2005	$6	1991	1996	$6			$1	2024	28	3%	1.45	$1
13468	14	RM	200	RM14	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
12025	15	RM	100	RM15	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
12052	15	RM	100	RM15	2	2005	$2	1991	1996	$2			$0	2024	28	3%	1.45	$0
12071	15	RM	100	RM15	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
12080	15	RM	100	RM15	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
12081	15	RM	100	RM15	23	2005	$23	1991	1996	$23			$3	2024	28	3%	1.45	$4
12503	16	RM	300	RM16	13	2005	$13	1991	1996	$13			$1	2024	28	3%	1.45	$2
12511	16	RM	300	RM16	9	2005	$9	1991	1996	$9			$1	2024	28	3%	1.45	$1
12707	16	RM	300	RM16	52	2005	$52	1991	1996	$52			$6	2024	28	3%	1.45	$8
12710	16	RM	300	RM16	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
1070	17	RM	525	RM17	9	2005	$9	1991	1996	$9			$1	2024	28	3%	1.45	$1
11637	17	RM	525	RM17	76	2005	$76	1991	1996	$76			$8	2024	28	3%	1.45	$12
11705	17	RM	525	RM17	43	2005	$43	1991	1996	$43			$5	2024	28	3%	1.45	$7
11724	17	RM	525	RM17	36	2005	$36	1991	1996	$36			$4	2024	28	3%	1.45	$6
11788	17	RM	525	RM17	75	2005	$75	1991	1996	$75			$8	2024	28	3%	1.45	$12
11806	17	RM	525	RM17	74	2005	$74	1991	1996	$74			$8	2024	28	3%	1.45	$12
11819	17	RM	525	RM17	47	2005	$47	1991	1996	$47			$5	2024	28	3%	1.45	$7
11840	17	RM	525	RM17	41	2005	$41	1991	1996	$41			$4	2024	28	3%	1.45	$6
11847	17	RM	525	RM17	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
11856	17	RM	525	RM17	20	2005	$20	1991	1996	$20			$2	2024	28	3%	1.45	$3
11858	17	RM	525	RM17	10	2005	$10	1991	1996	$10			$1	2024	28	3%	1.45	$2
11863	17	RM	525	RM17	24	2005	$24	1991	1996	$24			$3	2024	28	3%	1.45	$4
11874	17	RM	525	RM17	49	2005	$49	1991	1996	$49			$5	2024	28	3%	1.45	$8
11891	17	RM	525	RM17	3	2005	$3	1991	1996	$3			$0	2024	28	3%	1.45	$0
1068	18	RM	300	RM18	91	2005	$91	1991	1996	$91			$10	2024	28	3%	1.45	$14
1069	18	RM	300	RM18	21	2005	$21	1991	1996	$21			$2	2024	28	3%	1.45	$3
11823	18	RM	300	RM18	8	2005	$8	1991	1996	$8			$1	2024	28	3%	1.45	$1
11826	18	RM	300	RM18	55	2005	$55	1991	1996	$55			$6	2024	28	3%	1.45	$9
11827	18	RM	300	RM18	90	2005	$90	1991	1996	$90			$10	2024	28	3%	1.45	$14
11828	18	RM	300	RM18	1	2005	$1	1991	1996	$1			$0	2024	28	3%	1.45	$0
11836	18	RM	300	RM18	17	2005	$17	1991	1996	$17			$2	2024	28	3%	1.45	$3
11845	18	RM	300	RM18	4	2005	$4	1991	1996	$4			$0	2024	28	3%	1.45	$1
11849	18	RM	300	RM18	5	2005	$5	1991	1996	$5			$1	2024	28	3%	1.45	$1

Table C9: Capital Charge Calculation
Shoalhaven City Council

Service Area	St Georges Basin Sewerage	
Capital Charge	$6,404	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	9,291
Treatment Plant Capacity (ET)	8,800

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
21266	5	RM	100	RM5	2	2005	$2	2002	2002	$2			$0	2024	22	7%	1.86	$0
21267	5	RM	100	RM5	3	2005	$3	2002	2002	$3			$0	2024	22	7%	1.86	$1
21268	5	RM	100	RM5	3	2005	$3	2002	2002	$3			$0	2024	22	7%	1.86	$1
21269	5	RM	100	RM5	2	2005	$2	2002	2002	$2			$0	2024	22	7%	1.86	$0
21270	5	RM	100	RM5	4	2005	$4	2002	2002	$4			$0	2024	22	7%	1.86	$1
21271	5	RM	100	RM5	0	2005	$0	2002	2002	$0			$0	2024	22	7%	1.86	$0
Total Transfer System					**$8,455**					**$8,455**		9,291	**$910**					**$1,319**
PUMPS																		
Existing Assets (pre-1996)																		
SPS 1					$206	2005	$206	1991	1996	$206			$22	2024	28	3%	1.45	$32
SPS 2					$182	2005	$182	1991	1996	$182			$20	2024	28	3%	1.45	$28
SPS 3					$201	2005	$201	1991	1996	$201			$22	2024	28	3%	1.45	$31
SPS 4					$319	2005	$319	1991	1996	$319			$34	2024	28	3%	1.45	$50
SPS 5					$175	2005	$175	1991	1996	$175			$19	2024	28	3%	1.45	$27
SPS 6					$175	2005	$175	1991	1996	$175			$19	2024	28	3%	1.45	$27
SPS 7					$376	2005	$376	1991	1996	$376			$40	2024	28	3%	1.45	$59
SPS 8					$404	2005	$404	1991	1996	$404			$43	2024	28	3%	1.45	$63
SPS 9					$0	2005	$0	1991	1996	$0			$0	2024	28	3%	1.45	$0
SPS 10					$244	2005	$244	1991	1996	$244			$26	2024	28	3%	1.45	$38
SPS 11					$175	2005	$175	1991	1996	$175			$19	2024	28	3%	1.45	$27
SPS 12					$383	2005	$383	1991	1996	$383			$41	2024	28	3%	1.45	$60
SPS 13					$197	2005	$197	1991	1996	$197			$21	2024	28	3%	1.45	$31
SPS 14					$282	2005	$282	1991	1996	$282			$30	2024	28	3%	1.45	$44
SPS 15					$175	2005	$175	1991	1996	$175			$19	2024	28	3%	1.45	$27
SPS 16					$363	2005	$363	1991	1996	$363			$39	2024	28	3%	1.45	$57
SPS 17					$430	2005	$430	1991	1996	$430			$46	2024	28	3%	1.45	$67
SPS 18					$345	2005	$345	1991	1996	$345			$37	2024	28	3%	1.45	$54
SPS 19					$184	2005	$184	1991	1996	$184			$20	2024	28	3%	1.45	$29
SPS 20					$238	2005	$238	1991	1996	$238			$26	2024	28	3%	1.45	$37
SPS 21					$196	2005	$196	1991	1996	$196			$21	2024	28	3%	1.45	$31
SPS 22					$182	2005	$182	1991	1996	$182			$20	2024	28	3%	1.45	$28
Existing Assets (post-1996)																		
SPS 23					$460	2005	$460	2004	2004	$460			$50	2024	20	7%	1.76	$87
Total Pumps					**$5,892**					**$5,892**		9,291	**$634**					**$934**
Pumps and Mains																		
Future Assets																		
The Wool Rd - SPS + RM + GM					$632	2005	$632	2014	2014	$344			$37	2024	10	7%	1.33	$49
The Wool Rd - GM					$29	2005	$29	2010	2010	$21			$2	2024	14	7%	1.50	$3
Augment - SPS 6 - New SPS + RM					$94	2005	$94	2006	2006	$88			$9	2024	18	7%	1.67	$16
Augment - SPS 6 - New SPS + RM					$306	2005	$306	2007	2007	$267			$29	2024	17	7%	1.63	$47
Augment - SPS 10 - New Pumps + WW Storage					$70	2005	$70	2006	2006	$65			$7	2024	18	7%	1.67	$12
Augment - SPS 6 - New Pumps + WW Storage					$100	2005	$100	2007	2007	$87			$9	2024	17	7%	1.63	$15
Augment - SPS 20 - New Pumps + WW Storage					$50	2005	$50	2006	2006	$47			$5	2024	18	7%	1.67	$8
Augment - SPS 21 - New Pumps + WW Storage					$70	2005	$70	2007	2007	$61			$7	2024	17	7%	1.63	$11
Augment - SPS 17 - Upgrade Pumps + SCA					$200	2005	$200	2008	2008	$163			$18	2024	16	7%	1.58	$28
Total Pumps and Mains					**$1,551**					**$1,143**		9,291	**$123**					**$189**
TREATMENT																		
Existing Assets (pre-1996)																		
St Georges Basin					$12,740	2005	$12,740	1991	1996	$12,740			$1,448	2024	28	3%	1.45	$2,097
Existing Assets (post-1996)																		
None																		
Future Assets																		
St GEORGES BASIN (6000ep)					$1,239	2005	$1,239	2012	2012	$772			$86	2024	12	7%	1.41	$124
St GEORGES BASIN (6000ep)					$3,873	2005	$3,873	2013	2013	$2,254			$256	2024	11	7%	1.37	$351
Total Treatment					**$17,852**					**$16,766**		8,800	**$1,792**					**$2,572**
SUBSIDISED SCHEMES AND OTHER WORKS																		
REMS - 1A (St Geo Basin upgrade)					$1,250	2005	$1,250	2005	2005	$1,250			$142	2024	19	7%	1.72	$244
REMS - 1A (St Geo Basin upgrade)					$1,550	2005	$1,550	2006	2006	$1,449			$165	2024	18	7%	1.67	$275
REMS - 1A (St Geo Basin upgrade)					$132	2005	$132	2007	2007	$115			$13	2024	17	7%	1.63	$21
TOMERONG (Connect into St Geo Basin)					$88	2005	$88	2009	2009	$67			$8	2024	15	7%	1.54	$12
TOMERONG (Connect into St Geo Basin)					$350	2005	$350	2010	2010	$250			$28	2024	14	7%	1.50	$42
TOMERONG (Connect into St Geo Basin)					$35	2005	$35	2011	2011	$23			$3	2024	13	7%	1.45	$4
WANDANDIAN (Connect into St Geo Basin)					$88	2005	$88	2014	2014	$48			$5	2024	10	7%	1.33	$7
WANDANDIAN (Connect into St Geo Basin)					$88	2005	$88	2015	2015	$44			$5	2024	9	7%	1.29	$7
WANDANDIAN (Connect into St Geo Basin)					$280	2005	$280	2016	2016	$133			$15	2024	8	7%	1.25	$19
Studies and Investigations					$4	2005	$4	2013	2013	$2			$0	2024	11	7%	1.37	$0
					65%	The portion of reticulation component which has been excluded for backlog works												
Total Subsidised Schemes					**$3,864**					**$3,381**		8,800	**$384**					**$632**
GENERAL WORKS[5]																		
Future Assets																		
Consisting of the following works:																		
Developer Servicing Plan																		
Northern Headworks																		
Southern Headworks + Distribution System																		
Northern Distribution Systems																		
REMS Stg 2 (Storage and Ocean Extension)																		
Total					**$37,668**					**$37,668**		82,522	**$456**					**$767**

Notes
1. Capital cost from Council's asset registers and MEERA cost for future works
2. Base year of capital cost varies depending on asset data. Assets constructed prior to 1970 are not included (except headworks)
3. Capital cost adjusted to 2005$ using CPI for Sydney (ABS)
4. Capital cost of future works discounted to 2005$
5. General works are of benefit to the entire Shoalhaven City area and have been apportioned to each Service area.
6. Tomerong and Wandandian Backlog Capital Costs are less 65% for reticulation

Table C10: Capital Charge Calculation
Shoalhaven City Council

Service Area	Sussex Inlet Sewerage	
Capital Charge	$7,816	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	5,380
Treatment Plant Capacity (ET)	5,625

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
13951	1	RM	150	1	13	2005	$13	1989	1996	$13			$2	2034	30	3%	1.49	$3
13928	1	RM	150	RM1	13	2005	$13	1989	1996	$13			$2	2034	30	3%	1.49	$4
13930	1	RM	150	RM1	8	2005	$8	1989	1996	$8			$1	2034	30	3%	1.49	$2
13943	1	RM	150	RM1	22	2005	$22	1989	1996	$22			$4	2034	30	3%	1.49	$6
13955	1	RM	150	RM1	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
1178	1	Retic	225	IA	1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
13937	1	Retic	225	IA	17	2005	$17	1989	1996	$17			$3	2034	30	3%	1.49	$5
13939	1	Retic	225	ID	7	2005	$7	1989	1996	$7			$1	2034	30	3%	1.49	$2
13941	1	Retic	225	ID	11	2005	$11	1989	1996	$11			$2	2034	30	3%	1.49	$3
1212	10A	RM	80	RM10A	7	2005	$7	1989	1996	$7			$1	2034	30	3%	1.49	$2
14344	10A	RM	80	RM10A	26	2005	$26	1989	1996	$26			$5	2034	30	3%	1.49	$7
14377	10A	RM	80	RM10A	23	2005	$23	1989	1996	$23			$4	2034	30	3%	1.49	$6
14423	10A	RM	80	RM10A	11	2005	$11	1989	1996	$11			$2	2034	30	3%	1.49	$3
14324	10B	RM	80	RM10B	0	2005	$0	1989	1996	$0			$0	2034	30	3%	1.49	$0
14325	10B	RM	80	RM10B	0	2005	$0	1989	1996	$0			$0	2034	30	3%	1.49	$0
14326	10B	RM	80	RM10B	0	2005	$0	1989	1996	$0			$0	2034	30	3%	1.49	$0
14332	10B	RM	80	RM10B	1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
14335	10B	RM	80	RM10B	13	2005	$13	1989	1996	$13			$2	2034	30	3%	1.49	$4
14336	10B	RM	80	RM10B	1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
14343	10B	RM	80	RM10B	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14383	10B	RM	80	RM10B	14	2005	$14	1989	1996	$14			$3	2034	30	3%	1.49	$4
14392	10B	RM	80	RM10B	2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$1
1235	11	Retic	225	AA	7	2005	$7	1989	1996	$7			$1	2034	30	3%	1.49	$2
1236	11	Retic	225	AA	8	2005	$8	1989	1996	$8			$2	2034	30	3%	1.49	$2
14799	11	Retic	225	AA	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
14821	11	Retic	225	AA	12	2005	$12	1989	1996	$12			$2	2034	30	3%	1.49	$3
14829	11	Retic	225	AA	19	2005	$19	1989	1996	$19			$4	2034	30	3%	1.49	$5
14836	11	Retic	225	AA	18	2005	$18	1989	1996	$18			$3	2034	30	3%	1.49	$5
1230	11	Retic	225	AC	15	2005	$15	1989	1996	$15			$3	2034	30	3%	1.49	$4
14737	11	Retic	225	AC	10	2005	$10	1989	1996	$10			$2	2034	30	3%	1.49	$3
14738	11	Retic	225	AC	10	2005	$10	1989	1996	$10			$2	2034	30	3%	1.49	$3
14741	11	Retic	225	AC	9	2005	$9	1989	1996	$9			$2	2034	30	3%	1.49	$3
14745	11	Retic	225	AC	13	2005	$13	1989	1996	$13			$2	2034	30	3%	1.49	$4
14748	11	Retic	225	AC	11	2005	$11	1989	1996	$11			$2	2034	30	3%	1.49	$3
14750	11	Retic	225	AC	8	2005	$8	1989	1996	$8			$2	2034	30	3%	1.49	$2
14626	11	Retic	300	CA	2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$1
14631	11	Retic	300	CA	23	2005	$23	1989	1996	$23			$4	2034	30	3%	1.49	$6
14641	11	Retic	300	CA	15	2005	$15	1989	1996	$15			$3	2034	30	3%	1.49	$4
1223	11	Retic	300	CG	18	2005	$18	1989	1996	$18			$3	2034	30	3%	1.49	$5
14623	11	Retic	300	CG	15	2005	$15	1989	1996	$15			$3	2034	30	3%	1.49	$4
1281	11	RM	375	RM11	18	2005	$18	1989	1996	$18			$3	2034	30	3%	1.49	$5
14665	11	RM	375	RM11	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14666	11	RM	375	RM11	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
14708	11	RM	375	RM11	51	2005	$51	1989	1996	$51			$10	2034	30	3%	1.49	$14
14725	11	RM	375	RM11	97	2005	$97	1989	1996	$97			$18	2034	30	3%	1.49	$27
14726	11	RM	375	RM11	8	2005	$8	1989	1996	$8			$2	2034	30	3%	1.49	$2
14730	11	RM	375	RM11	28	2005	$28	1989	1996	$28			$5	2034	30	3%	1.49	$8
14736	11	RM	375	RM11	45	2005	$45	1989	1996	$45			$8	2034	30	3%	1.49	$12
14739	11	RM	375	RM11	31	2005	$31	1989	1996	$31			$6	2034	30	3%	1.49	$8
14754	11	RM	375	RM11	13	2005	$13	1989	1996	$13			$2	2034	30	3%	1.49	$4
14810	11	RM	375	RM11	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
14815	11	RM	375	RM11	41	2005	$41	1989	1996	$41			$8	2034	30	3%	1.49	$11
14825	11	RM	375	RM11	20	2005	$20	1989	1996	$20			$4	2034	30	3%	1.49	$5
14828	11	RM	375	RM11	7	2005	$7	1989	1996	$7			$1	2034	30	3%	1.49	$2
14833	11	RM	375	RM11	19	2005	$19	1989	1996	$19			$3	2034	30	3%	1.49	$5
14834	11	RM	375	RM11	6	2005	$6	1989	1996	$6			$1	2034	30	3%	1.49	$2
1282	11	RM	450	RM14	18	2005	$18	1989	1996	$18			$3	2034	30	3%	1.49	$5
1283	11	RM	450	RM14	20	2005	$20	1989	1996	$20			$4	2034	30	3%	1.49	$6
14651	11	RM	450	RM14	9	2005	$9	1989	1996	$9			$2	2034	30	3%	1.49	$3
14652	11	RM	450	RM14	12	2005	$12	1989	1996	$12			$2	2034	30	3%	1.49	$3
14657	11	RM	450	RM14	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14661	11	RM	450	RM14	7	2005	$7	1989	1996	$7			$1	2034	30	3%	1.49	$2
14670	11	RM	450	RM14	69	2005	$69	1989	1996	$69			$13	2034	30	3%	1.49	$19
1221	11	Retic	525	CA	47	2005	$47	1989	1996	$47			$9	2034	30	3%	1.49	$13
14674	11	Retic	525	CA	45	2005	$45	1989	1996	$45			$8	2034	30	3%	1.49	$13
14676	11	Retic	525	CC	16	2005	$16	1989	1996	$16			$3	2034	30	3%	1.49	$4
14683	11	Retic	525	CC	50	2005	$50	1989	1996	$50			$9	2034	30	3%	1.49	$14
14692	11	Retic	525	CC	40	2005	$40	1989	1996	$40			$7	2034	30	3%	1.49	$11
14701	11	Retic	525	CC	25	2005	$25	1989	1996	$25			$5	2034	30	3%	1.49	$7
14591	11	Retic	525	CF	42	2005	$42	1989	1996	$42			$8	2034	30	3%	1.49	$12
14596	11	Retic	525	CF	11	2005	$11	1989	1996	$11			$2	2034	30	3%	1.49	$3
1214	11	Retic	525	CL	22	2005	$22	1989	1996	$22			$4	2034	30	3%	1.49	$6
14574	11	Retic	525	CL	50	2005	$50	1989	1996	$50			$9	2034	30	3%	1.49	$14
14587	11	Retic	525	CL	52	2005	$52	1989	1996	$52			$10	2034	30	3%	1.49	$14
14609	11	Retic	525	CL	21	2005	$21	1989	1996	$21			$4	2034	30	3%	1.49	$6
14614	11	Retic	525	CL	8	2005	$8	1989	1996	$8			$2	2034	30	3%	1.49	$2
14627	11	Retic	525	CL	36	2005	$36	1989	1996	$36			$7	2034	30	3%	1.49	$10
14628	11	Retic	525	CL	32	2005	$32	1989	1996	$32			$6	2034	30	3%	1.49	$9
14806	11	Retic	600	AA	7	2005	$7	1989	1996	$7			$1	2034	30	3%	1.49	$2
14717	11	Retic	600	AB	42	2005	$42	1989	1996	$42			$8	2034	30	3%	1.49	$12
14734	11	Retic	600	AB	46	2005	$46	1989	1996	$46			$8	2034	30	3%	1.49	$13
14759	11	Retic	600	AB	52	2005	$52	1989	1996	$52			$10	2034	30	3%	1.49	$14
1231	11	Retic	600	AC	25	2005	$25	1989	1996	$25			$5	2034	30	3%	1.49	$7
1232	11	Retic	600	AC	43	2005	$43	1989	1996	$43			$8	2034	30	3%	1.49	$12
14916	12	RM	100	RM12	25	2005	$25	1989	1996	$25			$5	2034	30	3%	1.49	$7
14917	12	RM	100	RM12	1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
14954	13	RM	150	RM13	5	2005	$5	1989	1996	$5			$1	2034	30	3%	1.49	$1
1256	14	Retic	300	OI	22	2005	$22	1989	1996	$22			$4	2034	30	3%	1.49	$6
15011	14	Retic	300	OI	8	2005	$8	1989	1996	$8			$2	2034	30	3%	1.49	$2
15029	14	Retic	300	OI	15	2005	$15	1989	1996	$15			$3	2034	30	3%	1.49	$4
15038	14	Retic	300	OI	12	2005	$12	1989	1996	$12			$2	2034	30	3%	1.49	$3
15044	14	Retic	300	OI	16	2005	$16	1989	1996	$16			$3	2034	30	3%	1.49	$5
15051	14	Retic	300	OI	17	2005	$17	1989	1996	$17			$3	2034	30	3%	1.49	$5
15061	14	Retic	300	OI	5	2005	$5	1989	1996	$5			$1	2034	30	3%	1.49	$1
15062	14	Retic	300	OI	6	2005	$6	1989	1996	$6			$1	2034	30	3%	1.49	$2
15064	14	Retic	300	OI	16	2005	$16	1989	1996	$16			$3	2034	30	3%	1.49	$4
15065	14	Retic	300	OI	9	2005	$9	1989	1996	$9			$2	2034	30	3%	1.49	$3
15067	14	Retic	300	OO	24	2005	$24	1989	1996	$24			$5	2034	30	3%	1.49	$7
15070	14	Retic	300	OO	21	2005	$21	1989	1996	$21			$4	2034	30	3%	1.49	$6
14667	14	RM	300	RM14	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14689	14	RM	300	RM14	23	2005	$23	1989	1996	$23			$4	2034	30	3%	1.49	$6
14707	14	RM	300	RM14	14	2005	$14	1989	1996	$14			$3	2034	30	3%	1.49	$4
14720	14	RM	300	RM14	8	2005	$8	1989	1996	$8			$1	2034	30	3%	1.49	$2
14758	14	RM	300	RM14	25	2005	$25	1989	1996	$25			$5	2034	30	3%	1.49	$7
14837	14	RM	300	RM14	38	2005	$38	1989	1996	$38			$7	2034	30	3%	1.49	$11
14854	14	RM	300	RM14	11	2005	$11	1989	1996	$11			$2	2034	30	3%	1.49	$3
14860	14	RM	300	RM14	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14879	14	RM	300	RM14	23	2005	$23	1989	1996	$23			$4	2034	30	3%	1.49	$6
14883	14	RM	300	RM14	25	2005	$25	1989	1996	$25			$5	2034	30	3%	1.49	$7
14886	14	RM	300	RM14	19	2005	$19	1989	1996	$19			$4	2034	30	3%	1.49	$5
14888	14	RM	300	RM14	37	2005	$37	1989	1996	$37			$7	2034	30	3%	1.49	$10
14889	14	RM	300	RM14	22	2005	$22	1989	1996	$22			$4	2034	30	3%	1.49	$6
14890	14	RM	300	RM14	8	2005	$8	1989	1996	$8			$2	2034	30	3%	1.49	$2
14891	14	RM	300	RM14	20	2005	$20	1989	1996	$20			$4	2034	30	3%	1.49	$6
14892	14	RM	300	RM14	15	2005	$15	1989	1996	$15			$3	2034	30	3%	1.49	$4
14896	14	RM	300	RM14	2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$0
14898	14	RM	300	RM14	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
14902	14	RM	300	RM14	65	2005	$65	1989	1996	$65			$12	2034	30	3%	1.49	$18
14908	14	RM	300	RM14	23	2005	$23	1989	1996	$23			$4	2034	30	3%	1.49	$6
14920	14	RM	300	RM14	28	2005	$28	1989	1996	$28			$5	2034	30	3%	1.49	$8
14924	14	RM	300	RM14	11	2005	$11	1989	1996	$11			$2	2034	30	3%	1.49	$3
14942	14	RM	300	RM14	37	2005	$37	1989	1996	$37			$7	2034	30	3%	1.49	$10
14945	14	RM	300	RM14	19	2005	$19	1989	1996	$19			$4	2034	30	3%	1.49	$5
14948	14	RM	300	RM14	10	2005	$10	1989	1996	$10			$2	2034	30	3%	1.49	$3
14949	14	RM	300	RM14	5	2005	$5	1989	1996	$5			$1	2034	30	3%	1.49	$1
14950	14	RM	300	RM14	8	2005	$8	1989	1996	$8			$1	2034	30	3%	1.49	$2
14951	14	RM	300	RM14	1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
14955	14	RM	300	RM14	22	2005	$22	1989	1996	$22			$4	2034	30	3%	1.49	$6
14956	14	RM	300	RM14	6	2005	$6	1989	1996	$6			$1	2034	30	3%	1.49	$2

Table C10: Capital Charge Calculation
Shoalhaven City Council

Service Area	Sussex Inlet Sewerage	
Capital Charge	$7,816	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	5,380
Treatment Plant Capacity (ET)	5,625

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
14405	7	RM	300	RM7	1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
14433	7	RM	300	RM7	28	2005	$28	1989	1996	$28			$5	2034	30	3%	1.49	$8
14473	7	RM	300	RM7	23	2005	$23	1989	1996	$23			$4	2034	30	3%	1.49	$6
14474	7	RM	300	RM7	1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
14500	7	RM	300	RM7	23	2005	$23	1989	1996	$23			$4	2034	30	3%	1.49	$6
14515	7	RM	300	RM7	8	2005	$8	1989	1996	$8			$2	2034	30	3%	1.49	$2
14516	7	RM	300	RM7	0	2005	$0	1989	1996	$0			$0	2034	30	3%	1.49	$0
14527	7	RM	300	RM7	7	2005	$7	1989	1996	$7			$1	2034	30	3%	1.49	$2
14533	7	RM	300	RM7	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14541	7	RM	300	RM7	10	2005	$10	1989	1996	$10			$2	2034	30	3%	1.49	$3
14544	7	RM	300	RM7	5	2005	$5	1989	1996	$5			$1	2034	30	3%	1.49	$1
14547	7	RM	300	RM7	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
19799	7	Retic	450	EF	33	2005	$33	1989	1996	$33			$6	2034	30	3%	1.49	$9
14252	7	Retic	450	EG	25	2005	$25	1989	1996	$25			$5	2034	30	3%	1.49	$7
14255	7	Retic	450	EG	29	2005	$29	1989	1996	$29			$5	2034	30	3%	1.49	$8
14286	7	Retic	450	EG	24	2005	$24	1989	1996	$24			$4	2034	30	3%	1.49	$7
19798	7	Retic	450	EG	20	2005	$20	1989	1996	$20			$4	2034	30	3%	1.49	$6
14327	7	Retic	525	EA	17	2005	$17	1989	1996	$17			$3	2034	30	3%	1.49	$5
14333	7	Retic	525	EA	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
1211	7	Retic	525	EF	29	2005	$29	1989	1996	$29			$5	2034	30	3%	1.49	$8
14311	7	Retic	525	EF	14	2005	$14	1989	1996	$14			$3	2034	30	3%	1.49	$4
14416	8	RM	100	RM8	15	2005	$15	1989	1996	$15			$3	2034	30	3%	1.49	$4
14417	8	RM	100	RM8	2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$1
14479	8	RM	100	RM8	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14508	9	RM	150	RM9	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
14517	9	RM	150	RM9	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14536	9	RM	150	RM9	8	2005	$8	1989	1996	$8			$2	2034	30	3%	1.49	$2
14561	9	RM	150	RM9	8	2005	$8	1989	1996	$8			$2	2034	30	3%	1.49	$2
14566	9	RM	150	RM9	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14578	9	RM	150	RM9	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14594	9	RM	150	RM9	9	2005	$9	1989	1996	$9			$2	2034	30	3%	1.49	$2
14595	9	RM	150	RM9	0	2005	$0	1989	1996	$0			$0	2034	30	3%	1.49	$0
1219	9	Retic	225	FA	1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
14510	9	Retic	225	FA	5	2005	$5	1989	1996	$5			$1	2034	30	3%	1.49	$2
14485	9	Retic	225	FC	10	2005	$10	1989	1996	$10			$2	2034	30	3%	1.49	$3
14490	9	Retic	225	FC	21	2005	$21	1989	1996	$21			$4	2034	30	3%	1.49	$6
14493	9	Retic	225	FC	14	2005	$14	1989	1996	$14			$3	2034	30	3%	1.49	$4
14501	9	Retic	225	FC	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14507	9	Retic	225	FC	7	2005	$7	1989	1996	$7			$1	2034	30	3%	1.49	$2
20799	Outfall		150	Outfall	1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
20786	Outfall		200	Outfall	5	2005	$5	1989	1996	$5			$1	2034	30	3%	1.49	$1
20787	Outfall		200	Outfall	16	2005	$16	1989	1996	$16			$3	2034	30	3%	1.49	$4
20788	Outfall		200	Outfall	13	2005	$13	1989	1996	$13			$2	2034	30	3%	1.49	$3
20789	Outfall		200	Outfall	5	2005	$5	1989	1996	$5			$1	2034	30	3%	1.49	$2
20790	Outfall		200	Outfall	2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$1
20791	Outfall		200	Outfall	2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$0
20792	Outfall		200	Outfall	12	2005	$12	1989	1996	$12			$2	2034	30	3%	1.49	$3
20793	Outfall		200	Outfall	7	2005	$7	1989	1996	$7			$1	2034	30	3%	1.49	$2
20794	Outfall		200	Outfall	8	2005	$8	1989	1996	$8			$2	2034	30	3%	1.49	$2
20795	Outfall		200	Outfall	6	2005	$6	1989	1996	$6			$1	2034	30	3%	1.49	$2
20796	Outfall		200	Outfall	2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$1
20797	Outfall		200	Outfall	1	2005	$1	1989	1996	$1			$0	2034	30	3%	1.49	$0
20798	Outfall		200	Outfall	0	2005	$0	1989	1996	$0			$0	2034	30	3%	1.49	$0
20800	Outfall		200	Outfall	0	2005	$0	1989	1996	$0			$0	2034	30	3%	1.49	$0
14624	Outfall		375	Outfall	57	2005	$57	1989	1996	$57			$11	2034	30	3%	1.49	$16
14648	Outfall		375	Outfall	10	2005	$10	1989	1996	$10			$2	2034	30	3%	1.49	$3
14649	Outfall		375	Outfall	8	2005	$8	1989	1996	$8			$1	2034	30	3%	1.49	$2
14650	Outfall		375	Outfall	15	2005	$15	1989	1996	$15			$3	2034	30	3%	1.49	$4
14654	Outfall		375	Outfall	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
14660	Outfall		375	Outfall	6	2005	$6	1989	1996	$6			$1	2034	30	3%	1.49	$2
14663	Outfall		375	Outfall	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
14664	Outfall		375	Outfall	4	2005	$4	1989	1996	$4			$1	2034	30	3%	1.49	$1
14669	Outfall		375	Outfall	17	2005	$17	1989	1996	$17			$3	2034	30	3%	1.49	$5
14706	Outfall		375	Outfall	51	2005	$51	1989	1996	$51			$9	2034	30	3%	1.49	$14
14709	Outfall		375	Outfall	2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$0
14727	Outfall		375	Outfall	101	2005	$101	1989	1996	$101			$19	2034	30	3%	1.49	$28
14728	Outfall		375	Outfall	5	2005	$5	1989	1996	$5			$1	2034	30	3%	1.49	$1
14731	Outfall		375	Outfall	26	2005	$26	1989	1996	$26			$5	2034	30	3%	1.49	$7
14735	Outfall		375	Outfall	8	2005	$8	1989	1996	$8			$1	2034	30	3%	1.49	$2
14777	Outfall		375	Outfall	36	2005	$36	1989	1996	$36			$7	2034	30	3%	1.49	$10
14785	Outfall		375	Outfall	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
14820	Outfall		375	Outfall	59	2005	$59	1989	1996	$59			$11	2034	30	3%	1.49	$16
14831	Outfall		375	Outfall	11	2005	$11	1989	1996	$11			$2	2034	30	3%	1.49	$3
14835	Outfall		375	Outfall	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
14839	Outfall		375	Outfall	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
14847	Outfall		375	Outfall	10	2005	$10	1989	1996	$10			$2	2034	30	3%	1.49	$3
14858	Outfall		375	Outfall	8	2005	$8	1989	1996	$8			$1	2034	30	3%	1.49	$2
14876	Outfall		375	Outfall	21	2005	$21	1989	1996	$21			$4	2034	30	3%	1.49	$6
14877	Outfall		375	Outfall	2	2005	$2	1989	1996	$2			$0	2034	30	3%	1.49	$1
14878	Outfall		375	Outfall	3	2005	$3	1989	1996	$3			$1	2034	30	3%	1.49	$1
20764	Outfall		375	Outfall	56	2005	$56	1989	1996	$56			$10	2034	30	3%	1.49	$15
20765	Outfall		375	Outfall	11	2005	$11	1989	1996	$11			$2	2034	30	3%	1.49	$3
20766	Outfall		375	Outfall	17	2005	$17	1989	1996	$17			$3	2034	30	3%	1.49	$5
20767	Outfall		375	Outfall	25	2005	$25	1989	1996	$25			$5	2034	30	3%	1.49	$7
20768	Outfall		375	Outfall	20	2005	$20	1989	1996	$20			$4	2034	30	3%	1.49	$6
20769	Outfall		375	Outfall	20	2005	$20	1989	1996	$20			$4	2034	30	3%	1.49	$6
20770	Outfall		375	Outfall	19	2005	$19	1989	1996	$19			$3	2034	30	3%	1.49	$5
20771	Outfall		375	Outfall	12	2005	$12	1989	1996	$12			$2	2034	30	3%	1.49	$3
20772	Outfall		375	Outfall	16	2005	$16	1989	1996	$16			$3	2034	30	3%	1.49	$4
20775	Outfall		375	Outfall	24	2005	$24	1989	1996	$24			$4	2034	30	3%	1.49	$7
20776	Outfall		375	Outfall	23	2005	$23	1989	1996	$23			$4	2034	30	3%	1.49	$6
20777	Outfall		375	Outfall	24	2005	$24	1989	1996	$24			$5	2034	30	3%	1.49	$7
20778	Outfall		375	Outfall	22	2005	$22	1989	1996	$22			$4	2034	30	3%	1.49	$6
20779	Outfall		375	Outfall	24	2005	$24	1989	1996	$24			$5	2034	30	3%	1.49	$7
20780	Outfall		375	Outfall	12	2005	$12	1989	1996	$12			$2	2034	30	3%	1.49	$3
20781	Outfall		375	Outfall	20	2005	$20	1989	1996	$20			$4	2034	30	3%	1.49	$6
20782	Outfall		375	Outfall	19	2005	$19	1989	1996	$19			$4	2034	30	3%	1.49	$5
20783	Outfall		375	Outfall	13	2005	$13	1989	1996	$13			$2	2034	30	3%	1.49	$4
20784	Outfall		375	Outfall	17	2005	$17	1989	1996	$17			$3	2034	30	3%	1.49	$5
20785	Outfall		375	Outfall	21	2005	$21	1989	1996	$21			$4	2034	30	3%	1.49	$6
20801	Outfall		375	Outfall	107	2005	$107	1989	1996	$107			$20	2034	30	3%	1.49	$30
13932	1	Retic	225	IA	4	2005	$4	1994	1996	$4			$1	2034	30	3%	1.49	$1
13978	3	Retic	225	HC	12	2005	$12	1994	1996	$12			$2	2034	30	3%	1.49	$3
14671	19	RM	100	RM19	1	2005	$1	1994	1996	$1			$0	2034	30	3%	1.49	$0
14675	19	RM	100	RM19	1	2005	$1	1994	1996	$1			$0	2034	30	3%	1.49	$0
14694	19	RM	100	RM19	17	2005	$17	1994	1996	$17			$3	2034	30	3%	1.49	$5
14710	19	RM	100	RM19	10	2005	$10	1994	1996	$10			$2	2034	30	3%	1.49	$3
14714	19	RM	100	RM19	1	2005	$1	1994	1996	$1			$0	2034	30	3%	1.49	$0
14715	19	RM	100	RM19	3	2005	$3	1994	1996	$3			$0	2034	30	3%	1.49	$1
14753	19	RM	100	RM19	21	2005	$21	1994	1996	$21			$4	2034	30	3%	1.49	$6
14775	19	RM	100	RM19	10	2005	$10	1994	1996	$10			$2	2034	30	3%	1.49	$3
14789	19	RM	100	RM19	2	2005	$2	1994	1996	$2			$0	2034	30	3%	1.49	$0
14795	19	RM	100	RM19	2	2005	$2	1994	1996	$2			$0	2034	30	3%	1.49	$1
14802	19	RM	100	RM19	11	2005	$11	1994	1996	$11			$2	2034	30	3%	1.49	$3
14813	19	RM	100	RM19	6	2005	$6	1994	1996	$6			$1	2034	30	3%	1.49	$2
14819	19	RM	100	RM19	6	2005	$6	1994	1996	$6			$1	2034	30	3%	1.49	$2
14830	19	RM	100	RM19	4	2005	$4	1994	1996	$4			$1	2034	30	3%	1.49	$1
14840	19	RM	100	RM19	7	2005	$7	1994	1996	$7			$1	2034	30	3%	1.49	$2
14841	19	RM	100	RM19	5	2005	$5	1994	1996	$5			$1	2034	30	3%	1.49	$1
Existing Assets (pre-1996)																		
15025	14	Retic	300	OI	22	2005	$22	1997	1997	$22			$4	2034	30	7%	2.26	$9
1202	6	Retic	300	KA	2	2005	$2	2000	2000	$2			$0	2034	30	7%	2.26	$1
1201	6	Retic	300	KL	15	2005	$15	2000	2000	$15			$3	2034	30	7%	2.26	$6
Total Transfer System					**$5,692**					**$5,692**		5,380	**$1,058**					**$1,578**
PUMPS																		
Existing Assets (pre-1996)																		
SPS 1					$213	2005	$213	1990	1996	$213			$40	2034	30	3%	1.49	$59
SPS 2					$324	2005	$324	1990	1996	$324			$60	2034	30	3%	1.49	$90
SPS 3					$294	2005	$294	1990	1996	$294			$55	2034	30	3%	1.49	$81

Table C11: Capital Charge Calculation
Shoalhaven City Council

Service Area	Milton/Ulladulla Sewerage	
Capital Charge	$6,338	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	14,717
Treatment Plant Capacity (ET)	15,200

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
16752	U1	Retic	300	1	11	2005	$11	1970	1996	$11			$1	2034	30	3%	1.49	$1
16777	U1	Retic	300	1	24	2005	$24	1970	1996	$24			$2	2034	30	3%	1.49	$2
1588	B1	RM	250	RMS	13	2005	$13	1976	1996	$13			$1	2034	30	3%	1.49	$1
18493	B1	RM	250	RMS	13	2005	$13	1976	1996	$13			$1	2034	30	3%	1.49	$1
18508	B1	RM	250	RMS	15	2005	$15	1976	1996	$15			$1	2034	30	3%	1.49	$2
18532	B1	RM	250	RMS	46	2005	$46	1976	1996	$46			$3	2034	30	3%	1.49	$5
18539	B1	RM	250	RMS	65	2005	$65	1976	1996	$65			$4	2034	30	3%	1.49	$7
18548	B1	RM	250	RMS	30	2005	$30	1976	1996	$30			$2	2034	30	3%	1.49	$3
18552	B1	RM	250	RMS	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18551	B1	Retic	225	SA	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
18556	B1	Retic	225	SA	12	2005	$12	1976	1996	$12			$1	2034	30	3%	1.49	$1
18569	B1	Retic	225	SA	19	2005	$19	1976	1996	$19			$1	2034	30	3%	1.49	$2
18588	B1	Retic	225	SA	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
18545	B1	Retic	300	SA	19	2005	$19	1976	1996	$19			$1	2034	30	3%	1.49	$2
18550	B1	Retic	300	SA	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
18605	B1	Retic	225	SC	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
18687	B2	RM	100	RMU	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$1
18976	B2	RM	100	RMU	20	2005	$20	1976	1996	$20			$1	2034	30	3%	1.49	$2
18977	B2	RM	100	RSU	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
18616	B3	RM	250	RMT	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
18655	B3	RM	250	RMT	17	2005	$17	1976	1996	$17			$1	2034	30	3%	1.49	$2
18671	B3	RM	250	RMT	10	2005	$10	1976	1996	$10			$1	2034	30	3%	1.49	$1
18686	B3	RM	250	RMT	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
18699	B3	RM	250	RMT	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
18711	B3	RM	250	RMT	17	2005	$17	1976	1996	$17			$1	2034	30	3%	1.49	$2
18714	B3	RM	250	RMT	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
18722	B3	RM	250	RMT	17	2005	$17	1976	1996	$17			$1	2034	30	3%	1.49	$2
18723	B3	RM	250	RMT	16	2005	$16	1976	1996	$16			$1	2034	30	3%	1.49	$2
18726	B3	RM	250	RMT	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
18733	B3	RM	250	RMT	32	2005	$32	1976	1996	$32			$2	2034	30	3%	1.49	$3
18734	B3	RM	250	RMT	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
18735	B3	RM	250	RMT	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18736	B3	RM	250	RMT	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
19337	B3	RM	250	RMT	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
19338	B3	RM	250	RMT	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
19339	B3	RM	250	RMT	13	2005	$13	1976	1996	$13			$1	2034	30	3%	1.49	$1
1599	B3	Retic	300	TA	19	2005	$19	1976	1996	$19			$1	2034	30	3%	1.49	$2
1600	B3	Retic	300	TA	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$0
18743	B3	Retic	300	TA	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
18744	B3	Retic	300	TA	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
18780	B3	Retic	300	TA	25	2005	$25	1976	1996	$25			$2	2034	30	3%	1.49	$3
18783	B3	Retic	300	TA	18	2005	$18	1976	1996	$18			$1	2034	30	3%	1.49	$2
18788	B3	Retic	300	TA	15	2005	$15	1976	1996	$15			$1	2034	30	3%	1.49	$1
18789	B3	Retic	300	TA	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
1602	B3	Retic	225	TK	12	2005	$12	1976	1996	$12			$1	2034	30	3%	1.49	$1
1603	B3	Retic	225	TK	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
18728	B3	Retic	225	TK	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
18739	B3	Retic	225	TK	14	2005	$14	1976	1996	$14			$1	2034	30	3%	1.49	$1
18746	B3	Retic	225	TK	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$0
18748	B3	Retic	225	TK	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
19335	B3	Retic	225	TK	17	2005	$17	1976	1996	$17			$1	2034	30	3%	1.49	$2
1625	B4	RM	200	RMV	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$1
18799	B4	RM	200	RMV	10	2005	$10	1976	1996	$10			$1	2034	30	3%	1.49	$1
18805	B4	RM	200	RMV	12	2005	$12	1976	1996	$12			$1	2034	30	3%	1.49	$1
18808	B4	RM	200	RMV	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
18815	B4	RM	200	RMV	17	2005	$17	1976	1996	$17			$1	2034	30	3%	1.49	$2
18817	B4	RM	200	RMV	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18818	B4	RM	200	RMV	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
1617	B4	Retic	300	VA	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
18819	B4	Retic	300	VA	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
18821	B4	Retic	300	VA	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
18731	B5	RM	150	RMW	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18749	B5	RM	150	RMW	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
18757	B5	RM	150	RMW	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
18765	B5	RM	150	RMW	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
18769	B5	RM	150	RMW	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
18791	B5	RM	150	RMW	20	2005	$20	1976	1996	$20			$1	2034	30	3%	1.49	$2
1624	B8	RM	100	RMZ	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$1
18831	B8	RM	100	RMZ	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$0
18832	B8	RM	100	RMZ	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
18844	B8	RM	100	RMZ	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
18848	B8	RM	100	RMZ	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
18849	B8	RM	100	RMZ	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
18853	B8	RM	100	RMZ	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
18854	B8	RM	100	RMZ	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
1626	D1	RM	100	RMX	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18826	D1	RM	100	RMX	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
18841	D1	RM	100	RMX	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$1
18850	D1	RM	100	RMX	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
18859	D1	RM	100	RMX	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
18878	D1	RM	100	RMX	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
18900	D1	RM	100	RMX	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
18905	D1	RM	100	RMX	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
18908	D1	RM	100	RMX	10	2005	$10	1976	1996	$10			$1	2034	30	3%	1.49	$1
18909	D1	RM	100	RMX	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
18912	D1	RM	100	RMX	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
18913	D1	RM	100	RMX	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18916	D1	RM	100	RMX	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
15485	M1	RM	100	RMA	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
15487	M1	RM	100	RMA	0	2005	$0	1976	1996	$0			$0	2034	30	3%	1.49	$0
15489	M1	RM	100	RMA	0	2005	$0	1976	1996	$0			$0	2034	30	3%	1.49	$0
15518	M1	RM	100	RMA	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
15528	M1	RM	100	RMA	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
15592	M1	RM	100	RMA	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
15602	M1	RM	100	RMA	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
15643	M1	RM	100	RMA	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
15662	M1	RM	100	RMA	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
15666	M1	RM	100	RMA	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
15676	M1	RM	100	RMA	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
1311	M2	RM	150	RMB	0	2005	$0	1976	1996	$0			$0	2034	30	3%	1.49	$0
15841	M2	RM	150	RMB	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
15842	M2	RM	150	RMB	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
15848	M2	RM	150	RMB	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
15854	M2	RM	150	RMB	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
15863	M2	RM	150	RMB	13	2005	$13	1976	1996	$13			$1	2034	30	3%	1.49	$1
15868	M2	RM	150	RMB	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
15876	M2	RM	150	RMB	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
15888	M2	RM	150	RMB	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
15891	M2	RM	150	RMB	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
15905	M2	RM	150	RMB	13	2005	$13	1976	1996	$13			$1	2034	30	3%	1.49	$1
15918	M2	RM	150	RMB	13	2005	$13	1976	1996	$13			$1	2034	30	3%	1.49	$1
15924	M2	RM	150	RMB	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
15930	M2	RM	150	RMB	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
1305	M3	Retic	225	CA	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
1301	M3	Retic	225	CC	15	2005	$15	1976	1996	$15			$1	2034	30	3%	1.49	$2
15952	M3	RM	225	RMC	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
15974	M3	RM	225	RMC	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
15894	M3	RM	225	RMC	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
16071	M3	RM	225	RMC	16	2005	$16	1976	1996	$16			$1	2034	30	3%	1.49	$2
16151	M3	RM	225	RMC	16	2005	$16	1976	1996	$16			$1	2034	30	3%	1.49	$2
16241	M3	RM	225	RMC	16	2005	$16	1976	1996	$16			$1	2034	30	3%	1.49	$2
16256	M3	RM	225	RMC	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
16316	M3	RM	225	RMC	14	2005	$14	1976	1996	$14			$1	2034	30	3%	1.49	$1
16360	M3	RM	225	RMC	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
16367	M3	RM	225	RMC	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$1
16390	M3	RM	225	RMC	15	2005	$15	1976	1996	$15			$1	2034	30	3%	1.49	$2
16406	M4	Retic	225	DA	12	2005	$12	1976	1996	$12			$1	2034	30	3%	1.49	$1
16421	M4	Retic	225	DA	15	2005	$15	1976	1996	$15			$1	2034	30	3%	1.49	$2
16422	M4	Retic	225	DA	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0

Table C11: Capital Charge Calculation
Shoalhaven City Council

Service Area	Milton/Ulladulla Sewerage	
Capital Charge	$6,338	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	14,717
Treatment Plant Capacity (ET)	15,200

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2006 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
1457	U1	Retic	225	NAL	16	2005	$16	1976	1996	$16			$1	2034	30	3%	1.49	$2
17736	U1	Retic	225	NAL	7	2005	$7	1976	1996	$7			$1	2034	30	3%	1.49	$1
17740	U1	Retic	225	NAL	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
17743	U1	Retic	225	NAL	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
17762	U1	Retic	225	NAL	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
17806	U1	Retic	225	NAL	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
17810	U1	Retic	225	NAL	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
17821	U1	Retic	225	NAL	12	2005	$12	1976	1996	$12			$1	2034	30	3%	1.49	$1
17822	U1	Retic	225	NAZ	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
17823	U1	Retic	225	NAZ	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
17725	U1	RM	450	RMN	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
17732	U1	RM	450	RMN	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
17756	U1	RM	450	RMN	19	2005	$19	1976	1996	$19			$1	2034	30	3%	1.49	$2
17777	U1	RM	450	RMN	19	2005	$19	1976	1996	$19			$1	2034	30	3%	1.49	$2
17791	U1	RM	450	RMN	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
17820	U1	RM	450	RMN	32	2005	$32	1976	1996	$32			$2	2034	30	3%	1.49	$3
17864	U1	RM	450	RMN	65	2005	$65	1976	1996	$65			$4	2034	30	3%	1.49	$7
17921	U1	RM	450	RMN	27	2005	$27	1976	1996	$27			$2	2034	30	3%	1.49	$3
17923	U1	RM	450	RMN	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
17932	U1	RM	450	RMN	32	2005	$32	1976	1996	$32			$2	2034	30	3%	1.49	$3
17937	U1	RM	450	RMN	32	2005	$32	1976	1996	$32			$2	2034	30	3%	1.49	$3
17941	U1	RM	450	RMN	10	2005	$10	1976	1996	$10			$1	2034	30	3%	1.49	$1
17965	U1	RM	450	RMN	22	2005	$22	1976	1996	$22			$2	2034	30	3%	1.49	$2
17987	U1	RM	450	RMN	28	2005	$28	1976	1996	$28			$2	2034	30	3%	1.49	$3
17995	U1	RM	450	RMN	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
18011	U1	RM	450	RMN	23	2005	$23	1976	1996	$23			$2	2034	30	3%	1.49	$2
18012	U1	RM	450	RMN	10	2005	$10	1976	1996	$10			$1	2034	30	3%	1.49	$1
18014	U1	RM	450	RMN	10	2005	$10	1976	1996	$10			$1	2034	30	3%	1.49	$1
17854	U3	Retic	225	PA	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
1556	U3	RM	150	RMP	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
17629	U3	RM	150	RMP	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
17830	U3	RM	150	RMP	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
17835	U3	RM	150	RMP	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
17840	U3	RM	150	RMP	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
17843	U3	RM	150	RMP	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
17846	U3	RM	150	U3	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
18152	U5	RM	100	RMQ	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
18154	U5	RM	100	RMQ	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
18155	U5	RM	100	RMQ	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
18163	U5	RM	100	RMQ	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
18165	U5	RM	100	RMQ	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
18166	U5	RM	100	RMQ	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
18168	U5	RM	100	RMQ	20	2005	$20	1976	1996	$20			$1	2034	30	3%	1.49	$2
18169	U5	RM	100	RMQ	0	2005	$0	1976	1996	$0			$0	2034	30	3%	1.49	$0
18978	U5	RM	100	RMQ	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18979	U5	RM	100	RMQ	0	2005	$0	1976	1996	$0			$0	2034	30	3%	1.49	$0
18433	U6	Retic	300	RA	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
18440	U6	Retic	300	RA	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
18454	U6	Retic	300	RA	17	2005	$17	1976	1996	$17			$1	2034	30	3%	1.49	$2
18463	U6	Retic	300	RA	18	2005	$18	1976	1996	$18			$1	2034	30	3%	1.49	$2
18476	U6	Retic	300	RA	25	2005	$25	1976	1996	$25			$2	2034	30	3%	1.49	$2
1558	U6	Retic	400	RA	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18423	U6	Retic	400	RA	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
18426	U6	Retic	400	RA	18	2005	$18	1976	1996	$18			$1	2034	30	3%	1.49	$2
18439	U6	Retic	400	RA	12	2005	$12	1976	1996	$12			$1	2034	30	3%	1.49	$1
18452	U6	Retic	400	RA	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
18472	U6	Retic	400	RA	26	2005	$26	1976	1996	$26			$2	2034	30	3%	1.49	$3
18482	U6	Retic	400	RA	14	2005	$14	1976	1996	$14			$1	2034	30	3%	1.49	$1
1587	U6	RM	300	RMR	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
18142	U6	RM	300	RMR	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18179	U6	RM	300	RMR	21	2005	$21	1976	1996	$21			$1	2034	30	3%	1.49	$2
18213	U6	RM	300	RMR	41	2005	$41	1976	1996	$41			$3	2034	30	3%	1.49	$4
18232	U6	RM	300	RMR	21	2005	$21	1976	1996	$21			$1	2034	30	3%	1.49	$2
18260	U6	RM	300	RMR	21	2005	$21	1976	1996	$21			$1	2034	30	3%	1.49	$2
18302	U6	RM	300	RMR	21	2005	$21	1976	1996	$21			$1	2034	30	3%	1.49	$2
18336	U6	RM	300	RMR	21	2005	$21	1976	1996	$21			$1	2034	30	3%	1.49	$2
18368	U6	RM	300	RMR	21	2005	$21	1976	1996	$21			$1	2034	30	3%	1.49	$2
18417	U6	RM	300	RMR	21	2005	$21	1976	1996	$21			$1	2034	30	3%	1.49	$2
18419	U6	RM	300	RMR	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18424	U6	RM	300	RMR	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$1
18437	U6	RM	300	RMR	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
18451	U6	RM	300	RMR	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
18471	U6	RM	300	RMR	15	2005	$15	1976	1996	$15			$1	2034	30	3%	1.49	$2
18480	U6	RM	300	RMR	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
18481	U6	RM	300	RMR	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
1416	X1	Retic	300	LA	16	2005	$16	1976	1996	$16			$1	2034	30	3%	1.49	$2
1417	X1	Retic	300	LA	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
1418	X1	Retic	300	LA	12	2005	$12	1976	1996	$12			$1	2034	30	3%	1.49	$1
1419	X1	Retic	300	LA	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$0
16757	X1	Retic	300	LA	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
16775	X1	Retic	300	LA	15	2005	$15	1976	1996	$15			$1	2034	30	3%	1.49	$2
16781	X1	Retic	300	LA	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
16782	X1	Retic	300	LA	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
16786	X1	Retic	300	LA	19	2005	$19	1976	1996	$19			$1	2034	30	3%	1.49	$2
16790	X1	Retic	300	LA	13	2005	$13	1976	1996	$13			$1	2034	30	3%	1.49	$1
16793	X1	Retic	300	LA	13	2005	$13	1976	1996	$13			$1	2034	30	3%	1.49	$1
16795	X1	Retic	300	LA	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
16797	X1	Retic	300	LA	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
16808	X1	Retic	300	LA	16	2005	$16	1976	1996	$16			$1	2034	30	3%	1.49	$2
16817	X1	Retic	300	LA	22	2005	$22	1976	1996	$22			$2	2034	30	3%	1.49	$2
16819	X1	Retic	300	LA	19	2005	$19	1976	1996	$19			$1	2034	30	3%	1.49	$2
16821	X1	Retic	300	LA	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
16822	X1	Retic	300	LA	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
16823	X1	Retic	300	LA	16	2005	$16	1976	1996	$16			$1	2034	30	3%	1.49	$2
16828	X1	Retic	300	LA	15	2005	$15	1976	1996	$15			$1	2034	30	3%	1.49	$1
16832	X1	Retic	300	LA	19	2005	$19	1976	1996	$19			$1	2034	30	3%	1.49	$2
16833	X1	Retic	300	LA	14	2005	$14	1976	1996	$14			$1	2034	30	3%	1.49	$1
16837	X1	Retic	300	LA	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
16838	X1	Retic	300	LA	19	2005	$19	1976	1996	$19			$1	2034	30	3%	1.49	$2
16840	X1	Retic	300	LA	7	2005	$7	1976	1996	$7			$0	2034	30	3%	1.49	$1
16841	X1	Retic	300	LA	16	2005	$16	1976	1996	$16			$1	2034	30	3%	1.49	$2
19621	X1	Retic	300	LA	25	2005	$25	1976	1996	$25			$2	2034	30	3%	1.49	$2
19930	X1	Retic	300	LA	13	2005	$13	1976	1996	$13			$1	2034	30	3%	1.49	$1
19931	X1	Retic	300	LA	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
19933	X1	Retic	300	LA	18	2005	$18	1976	1996	$18			$1	2034	30	3%	1.49	$2
16737	X1	Retic	300	LU	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
16750	X1	Retic	300	LU	24	2005	$24	1976	1996	$24			$2	2034	30	3%	1.49	$2
16751	X1	Retic	300	LU	18	2005	$18	1976	1996	$18			$1	2034	30	3%	1.49	$2
16755	X1	Retic	300	LU	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
16759	X1	Retic	300	LU	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
1433	X1	RM	375	RML	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
1434	X1	RM	375	RML	107	2005	$107	1976	1996	$107			$7	2034	30	3%	1.49	$11
16760	X1	RM	375	RML	8	2005	$8	1976	1996	$8			$1	2034	30	3%	1.49	$1
16776	X1	RM	375	RML	14	2005	$14	1976	1996	$14			$1	2034	30	3%	1.49	$1
16783	X1	RM	375	RML	9	2005	$9	1976	1996	$9			$1	2034	30	3%	1.49	$1
16785	X1	RM	375	RML	19	2005	$19	1976	1996	$19			$1	2034	30	3%	1.49	$2
16796	X1	RM	375	RML	11	2005	$11	1976	1996	$11			$1	2034	30	3%	1.49	$1
16802	X1	RM	375	RML	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
16950	X1	RM	375	RML	16	2005	$16	1976	1996	$16			$1	2034	30	3%	1.49	$2
16714	X2	RM	100	RML1	1	2005	$1	1976	1996	$1			$0	2034	30	3%	1.49	$0
16722	X2	RM	100	RML1	5	2005	$5	1976	1996	$5			$0	2034	30	3%	1.49	$1
16730	X2	RM	100	RML1	31	2005	$31	1976	1996	$31			$2	2034	30	3%	1.49	$3
16738	X2	RM	100	RML1	6	2005	$6	1976	1996	$6			$0	2034	30	3%	1.49	$1
16739	X2	RM	100	RML1	2	2005	$2	1976	1996	$2			$0	2034	30	3%	1.49	$0
16741	X2	RM	100	RML1	0	2005	$0	1976	1996	$0			$0	2034	30	3%	1.49	$0
1441	X3	Retic	375	MA	3	2005	$3	1976	1996	$3			$0	2034	30	3%	1.49	$0
17041	X3	Retic	375	ML	20	2005	$20	1976	1996	$20			$1	2034	30	3%	1.49	$2
17046	X3	Retic	375	ML	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0
17078	X3	Retic	375	ML	31	2005	$31	1976	1996	$31			$2	2034	30	3%	1.49	$3
17100	X3	Retic	375	ML	24	2005	$24	1976	1996	$24			$2	2034	30	3%	1.49	$2
17117	X3	Retic	375	ML	17	2005	$17	1976	1996	$17			$1	2034	30	3%	1.49	$2
17125	X3	Retic	375	ML	4	2005	$4	1976	1996	$4			$0	2034	30	3%	1.49	$0

Table C11: Capital Charge Calculation
Shoalhaven City Council

Service Area	Milton/Ulladulla Sewerage	
Capital Charge	$6,338	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	14,717
Treatment Plant Capacity (ET)	15,200

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
19604	U1	Retic	375	MTM	28	2005	$28	1978	1996	$28			$2	2034	30	3%	1.49	$3
19612	U1	Retic	375	MTM	9	2005	$9	1978	1996	$9			$1	2034	30	3%	1.49	$1
17600	U1	Retic	400	NA	25	2005	$25	1978	1996	$25			$2	2034	30	3%	1.49	$2
17687	U1	Retic	525	NA	20	2005	$20	1978	1996	$20			$1	2034	30	3%	1.49	$2
18172	U7	RM	100	RMQI	4	2005	$4	1978	1996	$4			$0	2034	30	3%	1.49	$0
18174	U7	RM	100	RMQI	2	2005	$2	1978	1996	$2			$0	2034	30	3%	1.49	$0
18176	U7	RM	100	RMQI	1	2005	$1	1978	1996	$1			$0	2034	30	3%	1.49	$0
18694	B6	RM	80	RMW2	14	2005	$14	1982	1996	$14			$1	2034	30	3%	1.49	$1
18700	B6	RM	80	RMW2	3	2005	$3	1982	1996	$3			$0	2034	30	3%	1.49	$0
18701	B6	RM	80	RMW2	0	2005	$0	1982	1996	$0			$0	2034	30	3%	1.49	$0
18565	B7	RM	80	RMW1	1	2005	$1	1982	1996	$1			$0	2034	30	3%	1.49	$0
18568	B7	RM	80	RMW1	2	2005	$2	1982	1996	$2			$0	2034	30	3%	1.49	$0
18570	B7	RM	80	RMW1	1	2005	$1	1982	1996	$1			$0	2034	30	3%	1.49	$0
18571	B7	RM	80	RMW1	1	2005	$1	1982	1996	$1			$0	2034	30	3%	1.49	$0
18576	B7	RM	80	RMW1	2	2005	$2	1982	1996	$2			$0	2034	30	3%	1.49	$0
18580	B7	RM	80	RMW1	2	2005	$2	1982	1996	$2			$0	2034	30	3%	1.49	$0
18584	B7	RM	80	RMW1	2	2005	$2	1982	1996	$2			$0	2034	30	3%	1.49	$0
18589	B7	RM	80	RMW1	2	2005	$2	1982	1996	$2			$0	2034	30	3%	1.49	$0
18593	B7	RM	80	RMW1	2	2005	$2	1982	1996	$2			$0	2034	30	3%	1.49	$0
18597	B7	RM	80	RMW1	1	2005	$1	1982	1996	$1			$0	2034	30	3%	1.49	$0
18613	B7	RM	80	RMW1	4	2005	$4	1982	1996	$4			$0	2034	30	3%	1.49	$0
18620	B7	RM	80	RMW1	4	2005	$4	1982	1996	$4			$0	2034	30	3%	1.49	$0
17092	U1	Retic	250	D	21	2005	$21	1982	1996	$21			$1	2034	30	3%	1.49	$2
17080	U1	Retic	250	D	19	2005	$19	1985	1996	$19			$1	2034	30	3%	1.49	$2
17114	U1	Retic	250	D	11	2005	$11	1985	1996	$11			$1	2034	30	3%	1.49	$1
17145	U1	Retic	250	D	11	2005	$11	1985	1996	$11			$1	2034	30	3%	1.49	$1
17174	U1	Retic	250	D	13	2005	$13	1985	1996	$13			$1	2034	30	3%	1.49	$1
17181	U1	Retic	250	D	5	2005	$5	1985	1996	$5			$0	2034	30	3%	1.49	$0
15366	N6	RM	150	N6	16	2005	$16	1986	1996	$16			$1	2034	30	3%	1.49	$2
1377	N6	RM	150	N6	9	2005	$9	1989	1996	$9			$1	2034	30	3%	1.49	$1
18914	D2	Retic	225	A	10	2005	$10	1990	1996	$10			$1	2034	30	3%	1.49	$1
18915	D2	Retic	225	A	17	2005	$17	1990	1996	$17			$1	2034	30	3%	1.49	$2
18925	D2	Retic	225	A	16	2005	$16	1990	1996	$16			$1	2034	30	3%	1.49	$2
18930	D2	Retic	225	A	8	2005	$8	1990	1996	$8			$1	2034	30	3%	1.49	$1
18910	D2	RM	100	RMX1	1	2005	$1	1990	1996	$1			$0	2034	30	3%	1.49	$0
18911	D2	RM	100	RMX1	2	2005	$2	1990	1996	$2			$0	2034	30	3%	1.49	$0
18917	D2	RM	100	RMX1	13	2005	$13	1990	1996	$13			$1	2034	30	3%	1.49	$1
18918	D2	RM	100	RMX1	3	2005	$3	1990	1996	$3			$0	2034	30	3%	1.49	$0
18293	K1	RM	80	K1	5	2005	$5	1990	1996	$5			$0	2034	30	3%	1.49	$1
18329	K1	RM	80	K1	10	2005	$10	1990	1996	$10			$1	2034	30	3%	1.49	$1
18337	K1	RM	80	K1	2	2005	$2	1990	1996	$2			$0	2034	30	3%	1.49	$0
18340	K1	RM	80	K1	0	2005	$0	1990	1996	$0			$0	2034	30	3%	1.49	$0
1591	K2	RM	150	RM2	15	2005	$15	1990	1996	$15			$1	2034	30	3%	1.49	$1
18124	K2	RM	150	RM2	20	2005	$20	1990	1996	$20			$1	2034	30	3%	1.49	$2
18140	K2	RM	150	RM2	19	2005	$19	1990	1996	$19			$1	2034	30	3%	1.49	$2
18160	K2	RM	150	RM2	6	2005	$6	1990	1996	$6			$0	2034	30	3%	1.49	$1
18210	K2	RM	150	RM2	32	2005	$32	1990	1996	$32			$2	2034	30	3%	1.49	$3
18226	K2	RM	150	RM2	20	2005	$20	1990	1996	$20			$1	2034	30	3%	1.49	$2
18240	K2	RM	150	RM2	19	2005	$19	1990	1996	$19			$1	2034	30	3%	1.49	$2
18241	K2	RM	150	RM2	16	2005	$16	1990	1996	$16			$1	2034	30	3%	1.49	$2
18242	K2	RM	150	RM2	4	2005	$4	1990	1996	$4			$0	2034	30	3%	1.49	$0
18243	K2	RM	150	RM2	7	2005	$7	1990	1996	$7			$0	2034	30	3%	1.49	$1
18330	K2	RM	150	RM2	50	2005	$50	1990	1996	$50			$3	2034	30	3%	1.49	$5
18348	K2	RM	150	RM2	6	2005	$6	1990	1996	$6			$0	2034	30	3%	1.49	$1
18362	K2	RM	150	RM2	5	2005	$5	1990	1996	$5			$0	2034	30	3%	1.49	$1
18388	K2	RM	150	RM2	7	2005	$7	1990	1996	$7			$0	2034	30	3%	1.49	$1
18389	K2	RM	150	RM2	6	2005	$6	1990	1996	$6			$0	2034	30	3%	1.49	$1
18391	K2	RM	150	RM2	65	2005	$65	1990	1996	$65			$4	2034	30	3%	1.49	$7
18392	K2	RM	150	RM2	7	2005	$7	1990	1996	$7			$0	2034	30	3%	1.49	$1
18420	K2	RM	150	RM2	7	2005	$7	1990	1996	$7			$0	2034	30	3%	1.49	$1
18434	K2	RM	150	RM2	8	2005	$8	1990	1996	$8			$1	2034	30	3%	1.49	$1
1589	K2	RM	200	RM2	2	2005	$2	1990	1996	$2			$0	2034	30	3%	1.49	$0
1590	K2	RM	200	RM2	36	2005	$36	1990	1996	$36			$2	2034	30	3%	1.49	$4
18270	K2	RM	200	RM2	12	2005	$12	1990	1996	$12			$1	2034	30	3%	1.49	$1
18298	K2	RM	200	RM2	9	2005	$9	1990	1996	$9			$1	2034	30	3%	1.49	$1
18322	K2	RM	200	RM2	13	2005	$13	1990	1996	$13			$1	2034	30	3%	1.49	$1
18363	K2	RM	200	RM2	17	2005	$17	1990	1996	$17			$1	2034	30	3%	1.49	$2
18386	K2	RM	200	RM2	8	2005	$8	1990	1996	$8			$1	2034	30	3%	1.49	$1
18390	K2	RM	200	RM2	8	2005	$8	1990	1996	$8			$1	2034	30	3%	1.49	$1
18400	K2	RM	200	RM2	12	2005	$12	1990	1996	$12			$1	2034	30	3%	1.49	$1
18404	K2	RM	200	RM2	11	2005	$11	1990	1996	$11			$1	2034	30	3%	1.49	$1
18406	K2	RM	200	RM2	1	2005	$1	1990	1996	$1			$0	2034	30	3%	1.49	$0
18409	K2	RM	200	RM2	8	2005	$8	1990	1996	$8			$1	2034	30	3%	1.49	$1
18421	K2	RM	200	RM2	17	2005	$17	1990	1996	$17			$1	2034	30	3%	1.49	$2
18431	K2	RM	200	RM2	32	2005	$32	1990	1996	$32			$2	2034	30	3%	1.49	$3
18432	K2	RM	200	RM2	72	2005	$72	1990	1996	$72			$5	2034	30	3%	1.49	$7
18438	K2	RM	200	RM2	14	2005	$14	1990	1996	$14			$1	2034	30	3%	1.49	$1
18446	K2	RM	200	RM2	33	2005	$33	1990	1996	$33			$2	2034	30	3%	1.49	$3
22162	U1	Retic	225	MTN	6	2005	$6	1992	1996	$6			$0	2034	30	3%	1.49	$1
16897	U1	Retic	225	U1H	7	2005	$7	1992	1996	$7			$0	2034	30	3%	1.49	$1
16902	U1	Retic	225	U1H	11	2005	$11	1992	1996	$11			$1	2034	30	3%	1.49	$1
16912	U1	Retic	225	U1H	9	2005	$9	1992	1996	$9			$1	2034	30	3%	1.49	$1
22159	U1	Retic	225	U1H	1	2005	$1	1992	1996	$1			$0	2034	30	3%	1.49	$0
20172	X4	Retic	225	A	7	2005	$7	1992	1996	$7			$0	2034	30	3%	1.49	$1
20176	X4	Retic	225	A	18	2005	$18	1992	1996	$18			$1	2034	30	3%	1.49	$2
20183	X4	Retic	225	A	9	2005	$9	1992	1996	$9			$1	2034	30	3%	1.49	$1
20184	X4	Retic	225	A	15	2005	$15	1992	1996	$15			$1	2034	30	3%	1.49	$2
19349	Z8	RM	100	RM	0	2005	$0	1992	1996	$0			$0	2034	30	3%	1.49	$0
19391	Z8	RM	100	RM	23	2005	$23	1992	1996	$23			$2	2034	30	3%	1.49	$2
16825	X4	Raw	225	LB	11	2005	$11	1992	1996	$11			$1	2034	30	3%	1.49	$1
16835	X4	Raw	225	LB	5	2005	$5	1992	1996	$5			$0	2034	30	3%	1.49	$1
16842	X4	Raw	225	LB	5	2005	$5	1992	1996	$5			$0	2034	30	3%	1.49	$1
16851	X4	Raw	225	LB	5	2005	$5	1992	1996	$5			$0	2034	30	3%	1.49	$1
16860	X4	Raw	225	LB	3	2005	$3	1992	1996	$3			$0	2034	30	3%	1.49	$0
20098	X4	RM	225	X4	3	2005	$3	1992	1996	$3			$0	2034	30	3%	1.49	$0
20175	X4	RM	225	X4	90	2005	$90	1992	1996	$90			$6	2034	30	3%	1.49	$9
20178	X4	Retic	225	X4B	14	2005	$14	1994	1996	$14			$1	2034	30	3%	1.49	$1
20179	X4	Retic	225	X4B	8	2005	$8	1994	1996	$8			$1	2034	30	3%	1.49	$1
20181	X4	Retic	225	X4B	8	2005	$8	1994	1996	$8			$1	2034	30	3%	1.49	$1
20182	X4	Retic	225	X4B	15	2005	$15	1994	1996	$15			$1	2034	30	3%	1.49	$2
20190	X4	Retic	225	X4B	16	2005	$16	1994	1996	$16			$1	2034	30	3%	1.49	$2
16680	X4	Retic	225	X4C	7	2005	$7	1994	1996	$7			$0	2034	30	3%	1.49	$1
16681	X4	Retic	225	X4C	6	2005	$6	1994	1996	$6			$0	2034	30	3%	1.49	$1
16688	X4	Retic	225	X4C	7	2005	$7	1994	1996	$7			$1	2034	30	3%	1.49	$1
16694	X4	Retic	225	X4C	4	2005	$4	1994	1996	$4			$0	2034	30	3%	1.49	$0
16703	X4	Retic	225	X4C	6	2005	$6	1994	1996	$6			$0	2034	30	3%	1.49	$1
16670	X4	Retic	225	X4CB	9	2005	$9	1994	1996	$9			$1	2034	30	3%	1.49	$1
20177	X4	Retic	225	X4E	14	2005	$14	1994	1996	$14			$1	2034	30	3%	1.49	$1
Existing Assets (post-1996)																		
16641	X4	Retic	225	X4F	13	2005	$13	1996	1996	$13			$1	2034	30	7%	2.26	$2
20102	X4	Retic	225	X4F	13	2005	$13	1996	1996	$13			$1	2034	30	7%	2.26	$2
20120	X4	Retic	225	X4F	8	2005	$8	1996	1996	$8			$1	2034	30	7%	2.26	$1
20170	X4	Retic	225	X4F	11	2005	$11	1996	1996	$11			$1	2034	30	7%	2.26	$2
Total Transfer System					**$8,165**					**$8,165**		**14,717**	**$555**					**$827**

PUMPS																		
Existing Assets (pre-1996)																		
M4					$315	2005	$315	1975	1996	$315			$21	2034	30	3%	1.49	$32
N1					$313	2005	$313	1975	1996	$313			$21	2034	30	3%	1.49	$32
N2					$175	2005	$175	1975	1996	$175			$12	2034	30	3%	1.49	$18
N3					$175	2005	$175	1975	1996	$175			$12	2034	30	3%	1.49	$18
N4					$175	2005	$175	1975	1996	$175			$12	2034	30	3%	1.49	$18
N5					$175	2005	$175	1975	1996	$175			$12	2034	30	3%	1.49	$18

Table C12: Capital Charge Calculation
Shoalhaven City Council

Service Area	Conjola Region Sewerage	
Capital Charge	$16,030	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	3,982
Treatment Plant Capacity (ET)	3,438

Asset	Catch-ment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2004 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
None																		
Existing Assets (post-1996)																		
None																		
Future Assets																		
None																		
Total Transfer System					$0					$0		3,982	$0					$0
PUMPS																		
Existing Assets (pre-1996)																		
None																		
Existing Assets (post-1996)																		
None																		
Future Assets																		
None																		
Total Pumps					$0					$0		3,982	$0					$0
TREATMENT																		
Existing Assets (pre-1996)																		
None																		
Existing Assets (post-1996)																		
None																		
Future Assets																		
CONJOLA REGIONAL (11000ep)					$10,000	2005	$10,000	2005	2005	$9,346			$2,718	2024	20	7%	1.76	$4,796
CONJOLA REGIONAL (11000ep)					$21,124	2005	$21,124	2006	2006	$18,451			$5,367	2024	19	7%	1.72	$9,220
CONJOLA REGIONAL (11000ep)					$2,400	2005	$2,400	2007	2007	$1,959			$570	2024	18	7%	1.67	$953
CONJOLA REGIONAL (11000ep)					$840	2005	$840	2008	2008	$641			$186	2024	17	7%	1.63	$303
Total Treatment					$34,364					$30,396		3,438	$8,841					$15,273
GENERAL WORKS[5]																		
Future Assets																		
Consisting of the following works:																		
Developer Servicing Plan																		
Northern Headworks																		
Southern Headworks + Distribution System																		
Northern Distribution Systems																		
REMS Stg 2 (Storage and Ocean Extension)																		
Total					$37,668					$37,668		82,522	$456					$757

Notes
1. Capital cost from Council's asset registers and MEERA cost for future works
2. Base year of capital cost varies depending on asset data. Assets constructed prior to 1970 are not included (except headworks)
3. Capital cost adjusted to 2005$ using CPI for Sydney (ABS)
4. Capital cost of future works discounted to 2005$
5. General works are of benefit to the entire Shoalhaven City area and have been apportioned to each Service area.
6. Conjola backlog works, "CONJOLA REGIONAL (11000ep)", do not include any reticulation costs.

Table C13: Capital Charge Calculation
Shoalhaven City Council

Service Area	Kangaroo Valley Sewerage	
Capital Charge	$13,997	per ET

Pre 1996 discount rate	3%
Post 1996 discount rate	7%
Transfer System Capacity (ET)	442
Treatment Plant Capacity (ET)	560

Asset	Catchment	sub type	Nom D	Line ID	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commiss-ioned	Effective year commiss-ioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
TRANSFER SYSTEM																		
Existing Assets (pre-1996)																		
None																		
Existing Assets (post-1996)																		
None																		
Future Assets																		
None																		
Total Transfer System					$0					$0		442	$0					$0
PUMPS																		
Existing Assets (pre-1996)																		
None																		
Existing Assets (post-1996)																		
None																		
Future Assets																		
None																		
Total Pumps					$0					$0		442	$0					$0
TREATMENT																		
Existing Assets (pre-1996)																		
None																		
Existing Assets (post-1996)																		
None																		
Future Assets																		
None																		
Total Treatment					$0					$0		560	$0					$0
Subsidised Schemes																		
KANGAROO VALLEY (1400ep)					$158	2005	$158	2005	2005	$158			$281	2024	19	7%	1.72	$483
KANGAROO VALLEY (1400ep)					$347	2005	$347	2006	2006	$324			$576	2024	18	7%	1.67	$967
KANGAROO VALLEY (1400ep)					$2,700	2005	$2,700	2007	2007	$2,358			$4,211	2024	17	7%	1.63	$6,853
KANGAROO VALLEY (1400ep)					$1,980	2005	$1,980	2008	2008	$1,616			$2,886	2024	16	7%	1.58	$4,569
KANGAROO VALLEY (1400ep)					$176	2005	$176	2009	2009	$134			$239	2024	15	7%	1.54	$368
					55%	Percentage of capital costs for reticulation (this portion of cost has been removed)												
Total KV Backlog					$5,360					$4,590		560	$8,196					$13,240
GENERAL WORKS[5]																		
Future Assets																		
Consisting of the following works:																		
Developer Servicing Plan																		
Northern Headworks																		
Southern Headworks + Distribution System																		
Northern Distribution Systems																		
REMS Stg 2 (Storage and Ocean Extension)																		
Total					$37,668					$37,668		82,622	$456					$757

Notes
1. Capital cost from Council's asset registers and MEERA cost for future works
2. Base year of capital cost varies depending on asset data. Assets constructed prior to 1970 are not included (except headworks)
3. Capital cost adjusted to 2005$ using CPI for Sydney (ABS)
4. Capital cost of future works discounted to 2005$
5. General works are of benefit to the entire Shoalhaven City area and have been apportioned to each Service area.
6. Kangaroo Valley's Backlog Capital Costs have been reduced by 55% (to account for the reticulation component)

Table C16: Capital Charge Calculation
General Works - City Wide

Pre 1996 discount rate	3%
Post 1996 discount rate	7%

Asset	Capital cost ($'000)[1]	Year dollars[2]	Capital Cost ($'000, 2005$)[3]	Year commis-sioned	Effective year commis-sioned	Present value 2005 ($'000)[4]	Capacity (ML or ML/d)	Capacity (ETs)	Capital cost ($/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge ($/ET)
GENERAL WORKS														
Future Assets														
Developer Servicing Plan	107	2004	$110	2004	2004	$110			$1	2034	30	7%	2.26	$3
Developer Servicing Plan	137	2004	$140	2005	2005	$140			$2	2034	29	7%	2.21	$4
Developer Servicing Plan	10	2004	$10	2006	2006	$10			$0	2034	28	7%	2.16	$0
Developer Servicing Plan	10	2004	$10	2007	2007	$10			$0	2034	27	7%	2.11	$0
Developer Servicing Plan	10	2004	$10	2008	2008	$10			$0	2034	26	7%	2.05	$0
Developer Servicing Plan	50	2004	$51	2009	2009	$51			$1	2034	25	7%	2.00	$1
Developer Servicing Plan	5	2004	$5	2010	2010	$5			$0	2034	24	7%	1.96	$0
Developer Servicing Plan	5	2004	$5	2011	2011	$5			$0	2034	23	7%	1.91	$0
Developer Servicing Plan	5	2004	$5	2012	2012	$5			$0	2034	22	7%	1.86	$0
Developer Servicing Plan	5	2004	$5	2013	2013	$5			$0	2034	21	7%	1.81	$0
Developer Servicing Plan	25	2004	$26	2014	2014	$26			$0	2034	20	7%	1.76	$1
Developer Servicing Plan	5	2004	$5	2015	2015	$5			$0	2034	19	7%	1.72	$0
Developer Servicing Plan	5	2004	$5	2016	2016	$5			$0	2034	18	7%	1.67	$0
Developer Servicing Plan	5	2004	$5	2017	2017	$5			$0	2034	17	7%	1.63	$0
Developer Servicing Plan	5	2004	$5	2018	2018	$5			$0	2034	16	7%	1.58	$0
Developer Servicing Plan	25	2004	$26	2019	2019	$26			$0	2034	15	7%	1.54	$0
Developer Servicing Plan	5	2004	$5	2020	2020	$5			$0	2034	14	7%	1.50	$0
Developer Servicing Plan	5	2004	$5	2021	2021	$5			$0	2034	13	7%	1.45	$0
Developer Servicing Plan	5	2004	$5	2022	2022	$5			$0	2034	12	7%	1.41	$0
Developer Servicing Plan	5	2004	$5	2023	2023	$5			$0	2034	11	7%	1.37	$0
Developer Servicing Plan	25	2004	$26	2024	2024	$26			$0	2034	10	7%	1.33	$0
Developer Servicing Plan	5	2004	$5	2025	2025	$5			$0	2034	9	7%	1.29	$0
Developer Servicing Plan	5	2004	$5	2026	2026	$5			$0	2034	8	7%	1.25	$0
Developer Servicing Plan	5	2004	$5	2027	2027	$5			$0	2034	7	7%	1.21	$0
Developer Servicing Plan	5	2004	$5	2028	2028	$5			$0	2034	6	7%	1.18	$0
Developer Servicing Plan	25	2004	$26	2029	2029	$26			$0	2034	5	7%	1.14	$0
Developer Servicing Plan	5	2004	$5	2030	2030	$5			$0	2034	4	7%	1.10	$0
Developer Servicing Plan	5	2004	$5	2031	2031	$5			$0	2034	3	7%	1.07	$0
Developer Servicing Plan	5	2004	$5	2032	2032	$5			$0	2034	2	7%	1.03	$0
Developer Servicing Plan	5	2004	$5	2033	2033	$5			$0	2034	1	7%	1.00	$0
Northern Headworks	381	2004	$390	2004	2004	$390			$5	2034	30	7%	2.26	$11
Northern Headworks	693	2004	$710	2005	2005	$710			$9	2034	29	7%	2.21	$19
Northern Headworks	700	2004	$717	2006	2006	$717			$9	2034	28	7%	2.16	$19
Northern Headworks	520	2004	$533	2007	2007	$533			$6	2034	27	7%	2.11	$14
Northern Headworks	448	2004	$459	2008	2008	$459			$6	2034	26	7%	2.05	$11
Northern Headworks	130	2004	$133	2009	2009	$133			$2	2034	25	7%	2.00	$3
Northern Headworks	500	2004	$512	2010	2010	$512			$6	2034	24	7%	1.96	$12
Northern Headworks	500	2004	$512	2011	2011	$512			$6	2034	23	7%	1.91	$12
Northern Headworks	500	2004	$512	2012	2012	$512			$6	2034	22	7%	1.86	$12
Northern Headworks	500	2004	$512	2013	2013	$512			$6	2034	21	7%	1.81	$11
Northern Headworks	500	2004	$512	2014	2014	$512			$6	2034	20	7%	1.76	$11
Northern Headworks	500	2004	$512	2015	2015	$512			$6	2034	19	7%	1.72	$11
Northern Headworks	500	2004	$512	2016	2016	$512			$6	2034	18	7%	1.67	$10
Northern Headworks	500	2004	$512	2017	2017	$512			$6	2034	17	7%	1.63	$10
Northern Headworks	500	2004	$512	2018	2018	$512			$6	2034	16	7%	1.58	$10
Northern Headworks	500	2004	$512	2019	2019	$512			$8	2034	15	7%	1.54	$10
Northern Headworks	500	2004	$512	2020	2020	$512			$6	2034	14	7%	1.50	$9
Northern Headworks	500	2004	$512	2021	2021	$512			$6	2034	13	7%	1.45	$9
Northern Headworks	500	2004	$512	2022	2022	$512			$6	2034	12	7%	1.41	$9
Northern Headworks	500	2004	$512	2023	2023	$512			$6	2034	11	7%	1.37	$9
Northern Headworks	500	2004	$512	2024	2024	$512			$6	2034	10	7%	1.33	$8
Northern Headworks	500	2004	$512	2025	2025	$512			$6	2034	9	7%	1.29	$8
Northern Headworks	500	2004	$512	2026	2026	$512			$6	2034	8	7%	1.25	$8
Northern Headworks	500	2004	$512	2027	2027	$512			$6	2034	7	7%	1.21	$8
Northern Headworks	500	2004	$512	2028	2028	$512			$6	2034	6	7%	1.18	$7
Northern Headworks	500	2004	$512	2029	2029	$512			$6	2034	5	7%	1.14	$7
Northern Headworks	500	2004	$512	2030	2030	$512			$6	2034	4	7%	1.10	$7
Northern Headworks	500	2004	$512	2031	2031	$512			$6	2034	3	7%	1.07	$7
Northern Headworks	500	2004	$512	2032	2032	$512			$6	2034	2	7%	1.03	$6
Northern Headworks	500	2004	$512	2033	2033	$512			$6	2034	1	7%	1.00	$6
Southern Headworks + Distribution System	270	2004	$277	2004	2004	$277			$3	2034	30	7%	2.26	$8
Southern Headworks + Distribution System	20	2004	$20	2005	2005	$20			$0	2034	29	7%	2.21	$1
Southern Headworks + Distribution System	20	2004	$20	2006	2006	$20			$0	2034	28	7%	2.16	$1
Southern Headworks + Distribution System	20	2004	$20	2007	2007	$20			$0	2034	27	7%	2.11	$1
Southern Headworks + Distribution System	20	2004	$20	2008	2008	$20			$0	2034	26	7%	2.05	$1
Southern Headworks + Distribution System	20	2004	$20	2009	2009	$20			$0	2034	25	7%	2.00	$0
Southern Headworks + Distribution System	20	2004	$20	2010	2010	$20			$0	2034	24	7%	1.96	$0
Southern Headworks + Distribution System	20	2004	$20	2011	2011	$20			$0	2034	23	7%	1.91	$0
Southern Headworks + Distribution System	20	2004	$20	2012	2012	$20			$0	2034	22	7%	1.86	$0
Southern Headworks + Distribution System	20	2004	$20	2013	2013	$20			$0	2034	21	7%	1.81	$0
Southern Headworks + Distribution System	20	2004	$20	2014	2014	$20			$0	2034	20	7%	1.76	$0
Southern Headworks + Distribution System	20	2004	$20	2015	2015	$20			$0	2034	19	7%	1.72	$0
Southern Headworks + Distribution System	20	2004	$20	2016	2016	$20			$0	2034	18	7%	1.67	$0
Southern Headworks + Distribution System	20	2004	$20	2017	2017	$20			$0	2034	17	7%	1.63	$0
Southern Headworks + Distribution System	20	2004	$20	2018	2018	$20			$0	2034	16	7%	1.58	$0
Southern Headworks + Distribution System	20	2004	$20	2019	2019	$20			$0	2034	15	7%	1.54	$0
Southern Headworks + Distribution System	20	2004	$20	2020	2020	$20			$0	2034	14	7%	1.50	$0
Southern Headworks + Distribution System	20	2004	$20	2021	2021	$20			$0	2034	13	7%	1.45	$0
Southern Headworks + Distribution System	20	2004	$20	2022	2022	$20			$0	2034	12	7%	1.41	$0
Southern Headworks + Distribution System	20	2004	$20	2023	2023	$20			$0	2034	11	7%	1.37	$0
Southern Headworks + Distribution System	20	2004	$20	2024	2024	$20			$0	2034	10	7%	1.33	$0
Southern Headworks + Distribution System	20	2004	$20	2025	2025	$20			$0	2034	9	7%	1.29	$0
Southern Headworks + Distribution System	20	2004	$20	2026	2026	$20			$0	2034	8	7%	1.25	$0
Southern Headworks + Distribution System	20	2004	$20	2027	2027	$20			$0	2034	7	7%	1.21	$0
Southern Headworks + Distribution System	20	2004	$20	2028	2028	$20			$0	2034	6	7%	1.18	$0
Southern Headworks + Distribution System	20	2004	$20	2029	2029	$20			$0	2034	5	7%	1.14	$0
Southern Headworks + Distribution System	20	2004	$20	2030	2030	$20			$0	2034	4	7%	1.10	$0
Southern Headworks + Distribution System	20	2004	$20	2031	2031	$20			$0	2034	3	7%	1.07	$0
Southern Headworks + Distribution System	20	2004	$20	2032	2032	$20			$0	2034	2	7%	1.03	$0
Southern Headworks + Distribution System	20	2004	$20	2033	2033	$20			$0	2034	1	7%	1.00	$0
Northern Distribution Systems	187	2004	$192	2004	2004	$192			$2	2034	30	7%	2.26	$5
Northern Distribution Systems	580	2004	$594	2005	2005	$594			$7	2034	29	7%	2.21	$16
Northern Distribution Systems	50	2004	$51	2006	2006	$51			$1	2034	28	7%	2.16	$1
Northern Distribution Systems	50	2004	$51	2007	2007	$51			$1	2034	27	7%	2.11	$1
Northern Distribution Systems	50	2004	$51	2008	2008	$51			$1	2034	26	7%	2.05	$1
Northern Distribution Systems	50	2004	$51	2009	2009	$51			$1	2034	25	7%	2.00	$1
Northern Distribution Systems	50	2004	$51	2010	2010	$51			$1	2034	24	7%	1.96	$1
Northern Distribution Systems	50	2004	$51	2011	2011	$51			$1	2034	23	7%	1.91	$1
Northern Distribution Systems	50	2004	$51	2012	2012	$51			$1	2034	22	7%	1.86	$1
Northern Distribution Systems	50	2004	$51	2013	2013	$51			$1	2034	21	7%	1.81	$1
Northern Distribution Systems	50	2004	$51	2014	2014	$51			$1	2034	20	7%	1.76	$1
Northern Distribution Systems	50	2004	$51	2015	2015	$51			$1	2034	19	7%	1.72	$1
Northern Distribution Systems	50	2004	$51	2016	2016	$51			$1	2034	18	7%	1.67	$1
Northern Distribution Systems	50	2004	$51	2017	2017	$51			$1	2034	17	7%	1.63	$1
Northern Distribution Systems	50	2004	$51	2018	2018	$51			$1	2034	16	7%	1.58	$1
Northern Distribution Systems	50	2004	$51	2019	2019	$51			$1	2034	15	7%	1.54	$1
Northern Distribution Systems	50	2004	$51	2020	2020	$51			$1	2034	14	7%	1.50	$1
Northern Distribution Systems	50	2004	$51	2021	2021	$51			$1	2034	13	7%	1.45	$1

Table C14: Growth in Service Areas

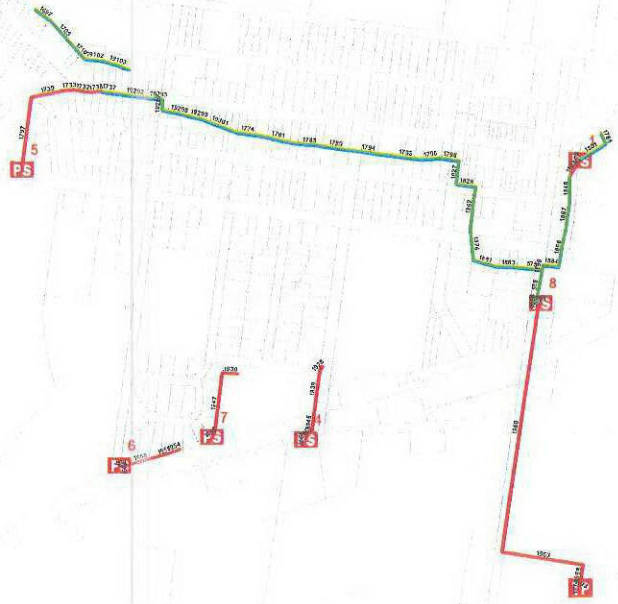
Council: Shoalhaven City Council **Current Year** 2005

Service Area	Projected Population (ET) 2005	2010	5 year Growth p.a.	% p.a.	% of total
Kangaroo Valley	388	410	4.3	1.1%	0%
Berry	1,018	1,262	48.6	4.8%	4%
Bomaderry	4,641	4,970	66.0	1.4%	6%
Nowra	11,839	13,237	279.7	2.4%	26%
Huskisson/Vincentia	3,938	4,460	104.4	2.7%	10%
St Georges Basin	7,178	8,020	168.4	2.3%	15%
Sussex Inlet	4,377	4,647	54.0	1.2%	5%
Milton/Ulladulla	10,987	11,719	146.2	1.3%	13%
Shoalhaven Heads	2,462	2,616	30.8	1.3%	3%
Callala	3,042	3,424	76.5	2.5%	7%
Culburra	3,967	4,116	29.8	0.7%	3%
Conjola	2,846	3,259	82.5	2.9%	8%
Totals	**56,683**	**62,139**	**1,091**	**1.9%**	**100%**

Table C15: Agglomeration of Service Areas

Council: Shoalhaven City Council

Area	Location	2005$ per ET Capital Charge	DSP Area A % of highest	DSP Area B % of highest	DSP Area C % of highest	Proportion of Growth %	DSP Capital Charge	Weighted Average Capital Charge
A	Conjola	$16,030	100%			7.6%	$14,106	$1,211
	Kangaroo Valley	$13,997	87%			0.4%		$55
	Callala	$12,040	75%			7.0%		$844
B	Berry	$9,699	61%	100%		4.5%	$8,244	$432
	Huskisson/Vincentia	$8,697	54%	90%		9.6%		$832
	Culburra	$8,669	54%	89%		2.7%		$236
	Sussex Inlet	$7,816	49%	81%		4.9%		$387
	Shoalhaven Heads	$7,721	48%	80%		2.8%		$218
	Bomaderry	$6,856	43%	71%		6.0%		$415
C	St Georges Basin	$6,404	40%	66%	100%	15.4%	$6,012	$988
	Milton/Ulladulla	$6,338	40%	65%	99%	13.4%		$850
	Nowra	$5,605	35%	58%	88%	25.6%		$1,437
Weighted Average Capital Charge						100%		**$7,905**



Legend

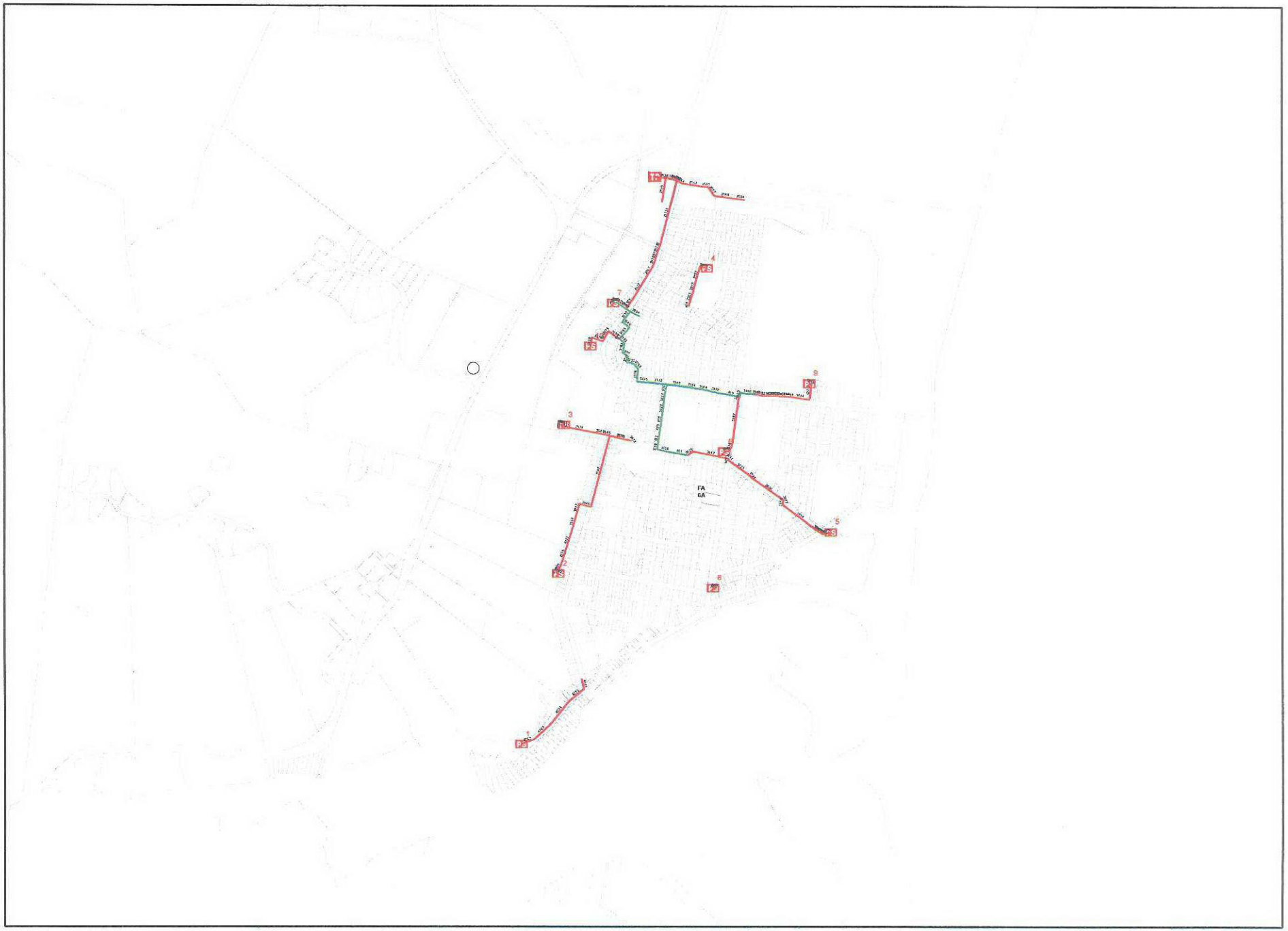
- Gravity Main
- Rising Main
- Surcharge
- Outfall
- PS Pump Station
- TP Treatment Work

N
W E
S

0 0.25 0.5 1 1.5 2 Kilometers

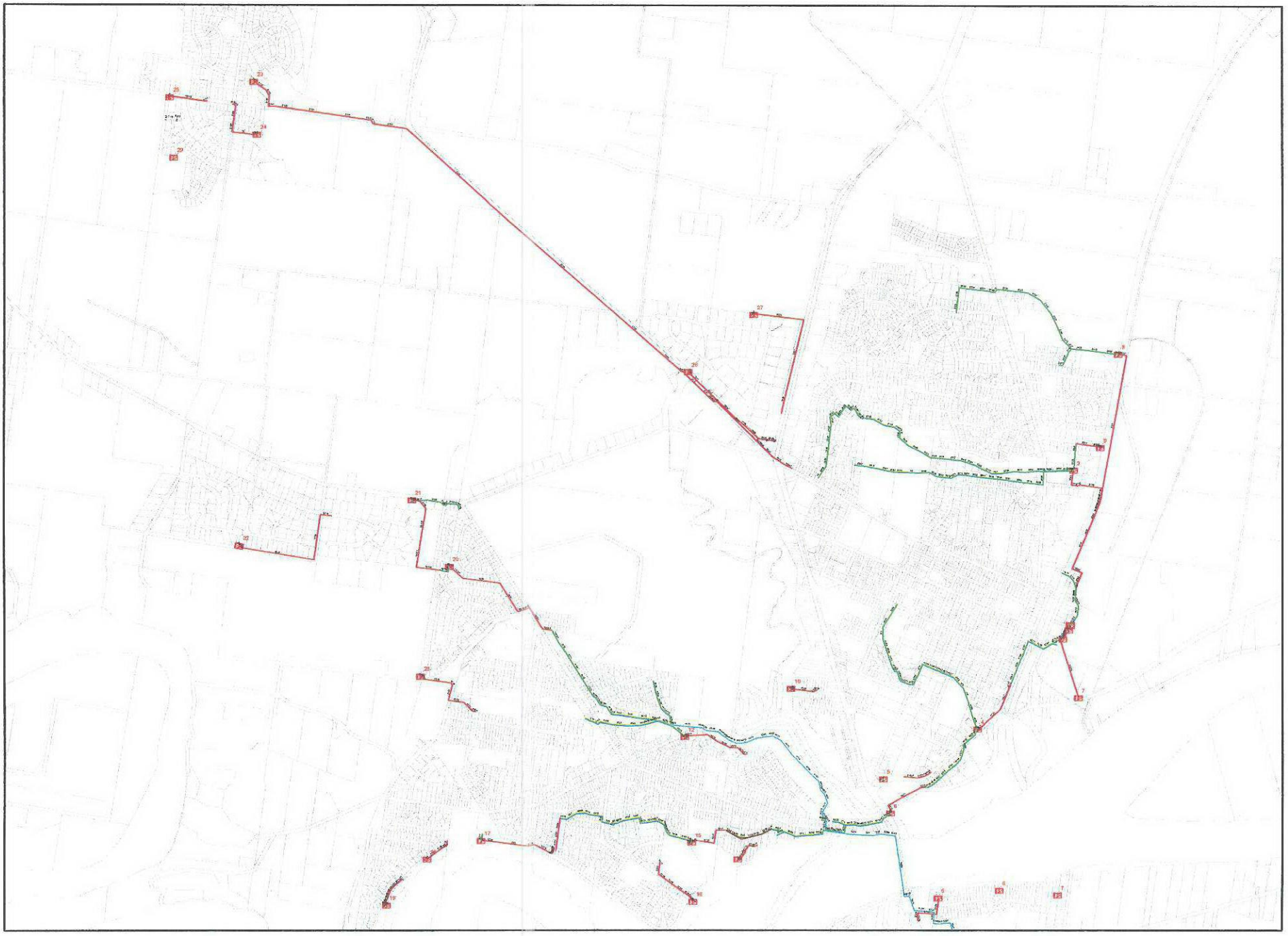
BERRY

5/10/2005



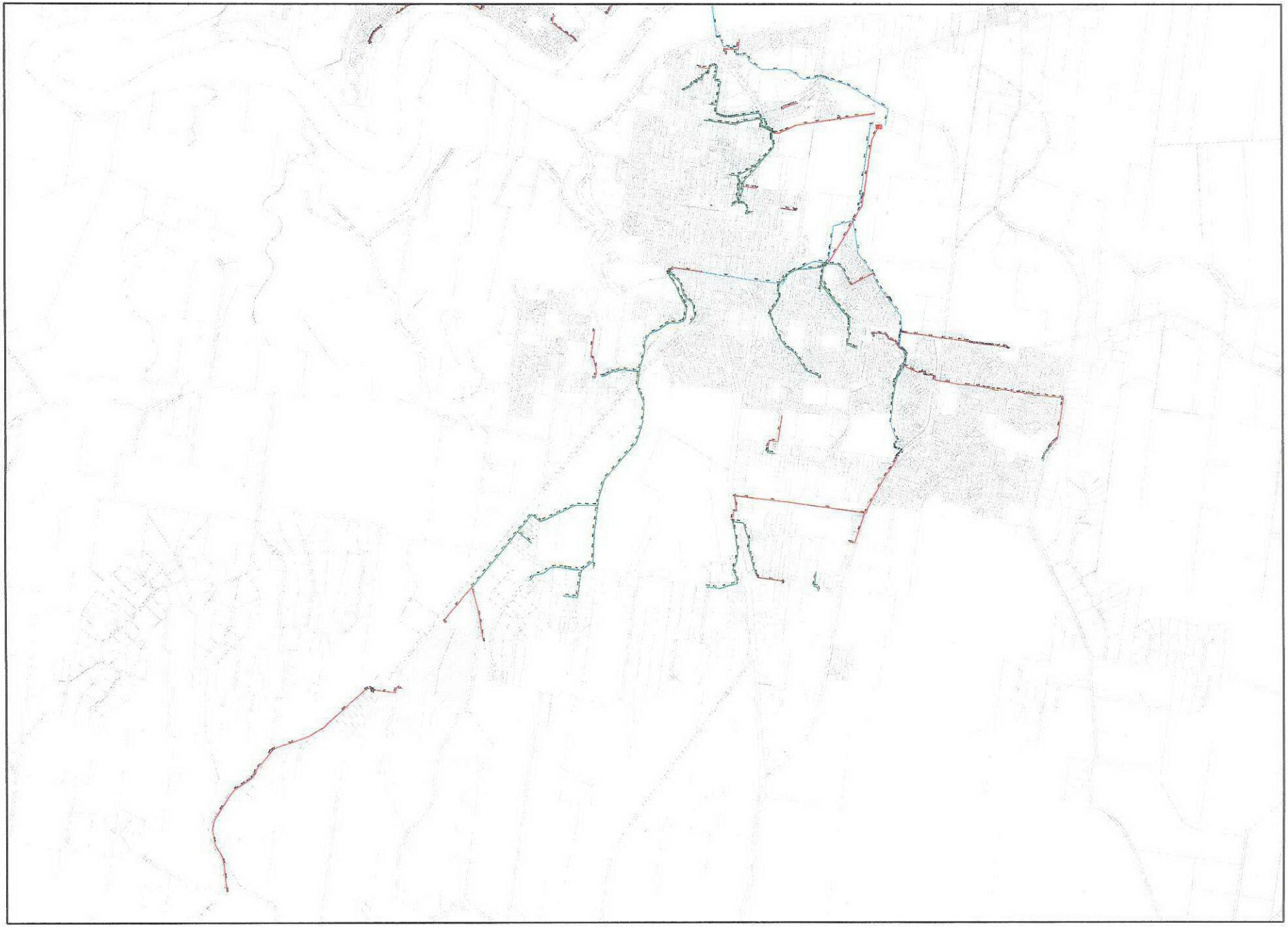
SHOALHAVEN HEADS

5/10/2005



BOMADERRY, NTH NOWRA

5/10/2005



Legend

Gravity Main

Rising Main

Surcharge

Outfall

TP Treatment Work

N

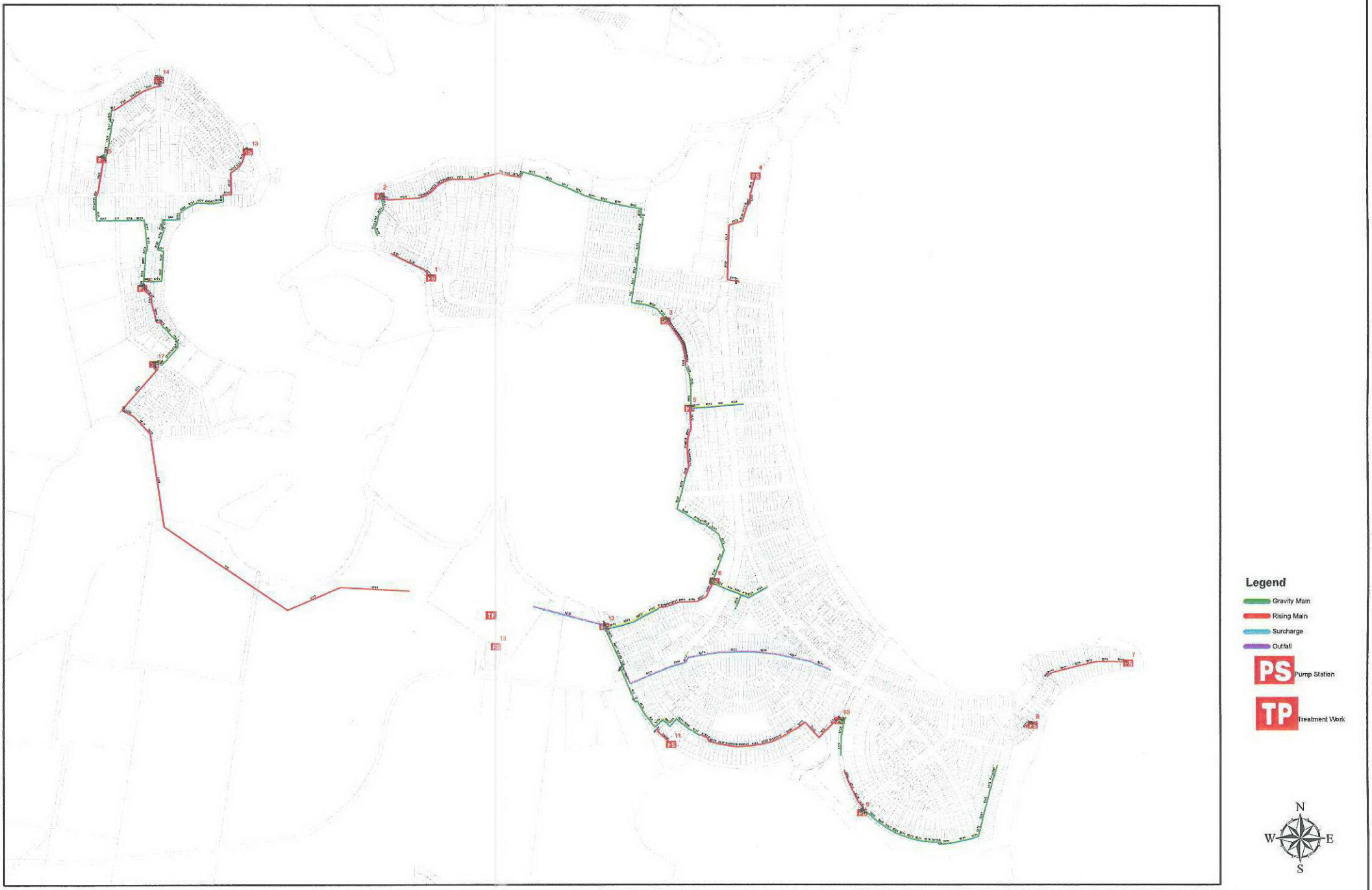
W E

S

0 0.25 0.5 1 1.5 2 Kilometers

NOWRA

5/10/2005



CULBURRA

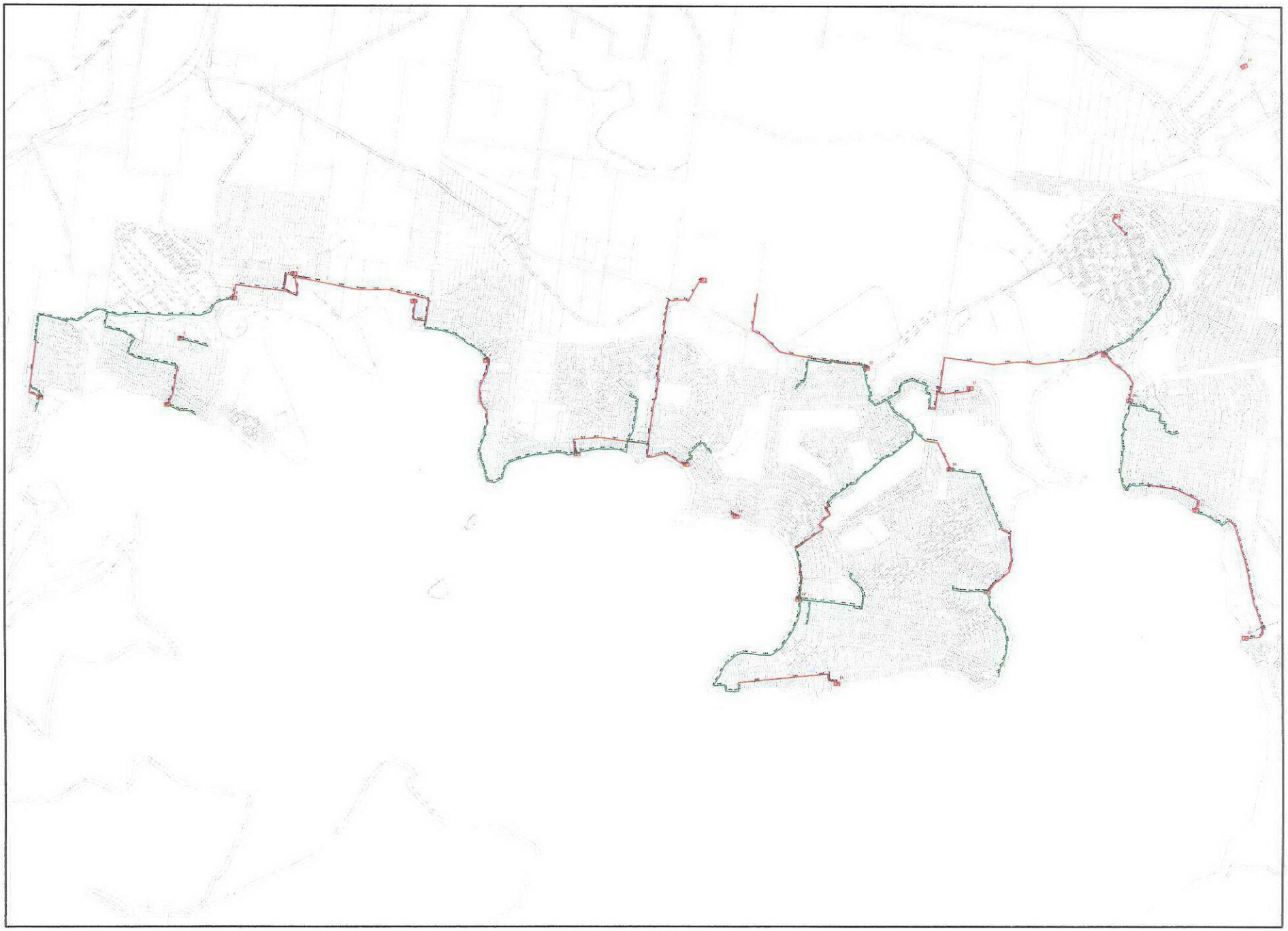
5/10/2005

Callala

12/10/2005

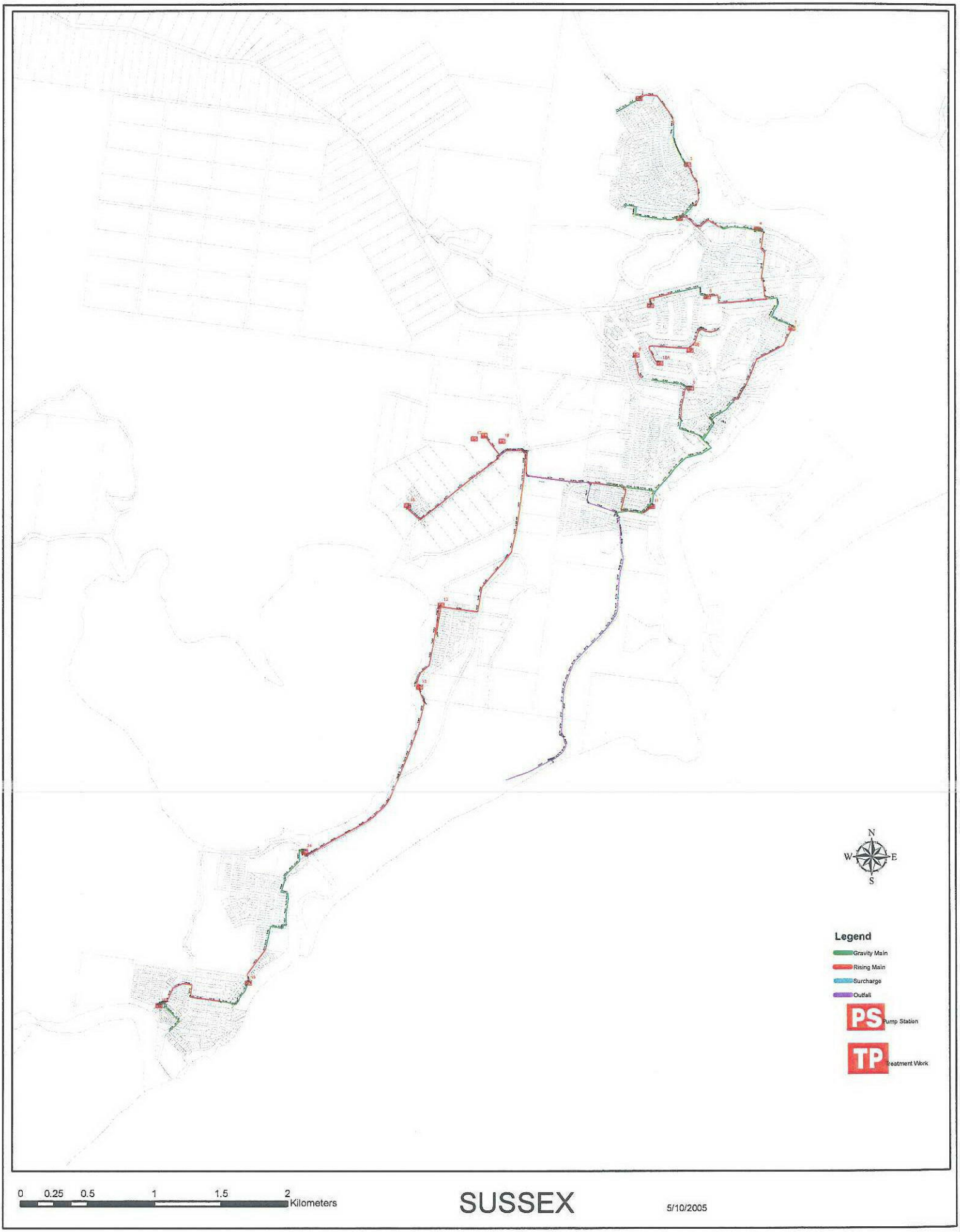
HUSKI

5/10/2005



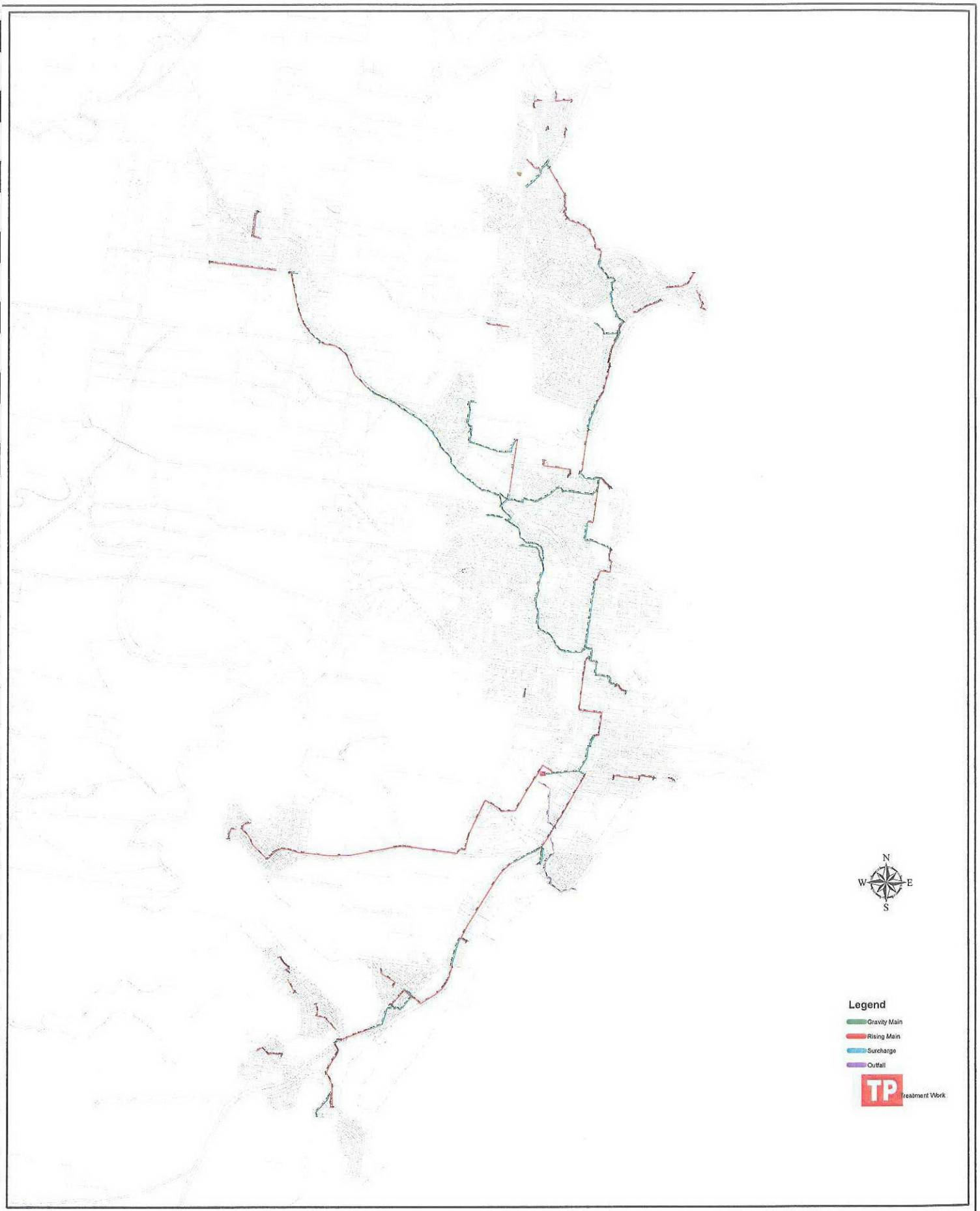
BASIN

5/10/2005



SUSSEX

5/10/2005



ULLADULLA

5/10/2005

Appendix D

Reduction Amount and Developer Charges Calculations

Table X - Calculation of Developer Charges using the NPV of Annual Charges Method
Based on Input Reduction Amounts of $908 /ET (1st iteration)

Shoalhaven Water - Sewerage

Year																		
Year No		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Year		2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Developer Charges																		
Year 1		2005 /06																
Base Year		2005 /06																
Average Capital Charges per ET (2005/06$)		7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Inflation from Base year to Year 1 (%)		0.00%																
Capital Charges (2005/06$)		7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Input Reduction Amounts (2005/06$)		905	905	905	905	905	905	905	905	905	905	905	905	905	905	905	905	905
Developer Charge per ET (2005/06$)		7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005
Developer Charges per assessment - Residential (2005/06$)		7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010
Developer Charges per assessment - Non-Residential (2005/06$)		7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005
Assessments & ETs	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Residential Assessments at year end	38,234	38,934	39,646	42,916	45,008	45,952	46,848	47,878	48,812	49,764	50,734	51,363	52,000	52,645	53,298	53,959	54,628	55,305
Non Residential Assessments at year end	2,017	2,055	2,094	2,134	2,184	2,225	2,270	2,315	2,361	2,408	2,456	2,485	2,515	2,545	2,576	2,607	2,638	2,670
Backlog Assessments at year end		2,055	2,094	2,134	2,184	2,225	2,270	2,315	2,361	2,408	2,456	2,485	2,515	2,545	2,576	2,607	2,638	2,670
Total Assessments at year end	40,251	43,044	43,834	47,184	49,376	50,402	51,388	52,508	53,534	54,580	55,646	56,333	57,030	57,735	58,450	59,173	59,904	60,645
ET per Residential Assessment	1																	
ET per Non Residential Assessment	1																	
Total ETs	40,251	43,044	43,834	47,184	49,370	50,402	51,388	52,508	53,534	54,580	55,646	56,333	57,030	57,735	58,450	59,173	59,904	60,645
New ETs per year (excluding backlog)	-	736	-1,304	1,220	-2	-1,199	-1,284	-1,195	-1,335	-1,362	-1,390	-1,798	-1,818	-1,840	-1,861	-1,884	-1,907	-1,929
Cumulative New ETs (excluding backlog)	-	736	-568	660	658	-541	-1,825	-3,020	-4,355	-5,717	-7,107	-8,905	-10,723	-12,563	-14,424	-16,308	-18,215	-20,144
PV (new ETs excluding backlog) 30 years @ 7% pa	-	-15,496	-17,651	-17,772	-20,600	-22,330	-22,891	-23,400	-24,041	-24,576	-25,120	-25,671	-25,825	-25,969	-26,009	-26,215	-26,315	-26,300
Revenue and Expenditure																		
Rates & Charges Revenue, Trade Waste Charges, Other Sales and Charges, Pensioner Rebate Grant																		
Revenue ($'000) (2005/06$)		21,577	21,964	23,679	24,813	25,346	25,838	26,421	26,930	27,470	28,040	23,059	23,360	23,686	23,984	24,283	24,501	24,922
OMA Expenditure ($'000) (2005/06$)		12,354	12,724	13,246	13,559	13,700	13,834	13,984	14,123	14,260	14,401	14,488	14,578	14,667	14,750	14,849	14,851	15,034
Revenue less OMA Expenditure ($'000)		9,223	9,240	10,433	11,254	11,646	12,004	12,437	12,807	13,210	13,639	8,571	8,782	9,019	9,235	9,434	9,650	9,888
Revenue less OMA Expenditure for new ETs ($'000)		158	-119	146	150	-125	-426	-715	-1,042	-1,384	-1,742	-1,366	-1,651	-1,903	-2,279	-2,600	-2,934	-3,284
PV (Revenue less OMA Expenditure for new ETs) 30 years @ 7% pa ($'000)		-16,620	-20,352	-18,131	-23,514	-25,577	-23,793	-21,480	-19,153	-16,095	-12,571	-8,529	-14,880	-11,895	-8,479	-4,719	-598	4,034
Output (calculated) Reduction Amounts		1,073	1,153	1,020	1,141	1,145	1,039	918	797	655	500	332	575	458	325	180	23	-153
Output with first 5 years averaged		1,106	1,106	1,106	1,106	1,106	1,039	918	797	655	500	332	575	458	325	180	23	-153
% Difference Between the Input and Output		22%																

Year No	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Year	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39
Average Capital Charges per ET (2005/06$)	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Capital Charges (2005/06$)	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Input Reduction Amounts (2005/06$)	905	905	905	905	905	905	905	905	905	905	905	905	905	905	905	905	905
Developer Charge per ET (2005/06$)	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Developer Charges per assessment - Residential (2005/06$)	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,010	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Developer Charges per assessment - Non-Residential (2005/06$)	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,005	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Assessments & ETs	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39
Residential Assessments at year end	55,991	56,685	57,388	57,882	58,380	58,882	59,388	59,899	60,414	60,934	61,458	61,987	62,520	62,520	62,520	62,520	62,520
Non Residential Assessments at year end	2,702	2,734	2,767	2,792	2,817	2,842	2,868	2,894	2,920	2,946	2,973	3,000	3,027	3,027	3,027	3,027	3,027
Backlog Assessments at year end	2,702	2,734	2,767	2,792	2,817	2,842	2,868	2,894	2,920	2,946	2,973	3,000	3,027				
Total Assessments at year end	61,395	62,153	62,922	63,466	64,014	64,566	65,124	65,687	66,254	66,826	67,404	67,987	68,574	65,547	65,547	65,547	65,547
Total ETs	61,395	62,153	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922
New ETs per year (excluding backlog)	-1,952	-1,976	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998
Cumulative New ETs (excluding backlog)	-22,096	-24,072	-26,070	-28,068	-30,066	-32,064	-34,062	-36,060	-38,058	-40,056	-42,054	-44,052	-46,050	-48,048	-50,046	-52,044	-54,042
PV (new ETs excluding backlog) 30 years @ 7% pa	-26,462	-26,507	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529			
Revenue ($'000) (2005/06$)	25,235	25,566	25,875	26,145	17,461	17,633	17,793	17,938	18,100	18,279	18,442	18,621	18,785	18,785	18,785	18,785	18,785
OMA Expenditure ($'000) (2005/06$)	15,128	15,222	15,316	15,383	15,449	15,514	15,582	15,651	15,715	15,784	15,851	15,920	15,988	15,988	15,988	15,988	15,988
Revenue less OMA Expenditure ($'000)	10,107	10,344	10,559	10,762	2,012	2,119	2,211	2,287	2,385	2,495	2,591	2,701	2,797	2,797	2,797	2,797	2,797
Revenue less OMA Expenditure for new ETs ($'000)	-3,637	-4,006	-4,376	-4,801	-961	-1,080	-1,197	-1,311	-1,443	-1,588	-1,732	-1,891	-2,047	-2,136	-2,225	-2,313	-2,402
PV (Revenue less OMA Expenditure for new ETs) 30 years @ 7% pa ($'000)	9,253	14,915	21,237	28,037	36,475	-16,266	-16,145	-16,031	-15,952	-15,605	-15,028	-14,438	-13,568	-12,675			
Output (calculated) Reduction Amounts	-350	-563	-801	-1,057	-1,364	613	609	604	601	588	566	544	511	478			
Output with first 5 years averaged	-350	-563	-801	-1,057	-1,364	613	609	604	601	588	566	544	511	478			

Year No	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Year	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54	2054/55
Average Capital Charges per ET (2005/06$)	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Capital Charges (2005/06$)	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Input Reduction Amounts (2005/06$)	905	905	905	905	905	905	905	905	905	905	905	905	905	905	905	905
Developer Charge per ET (2005/06$)	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Developer Charges per assessment - Residential (2005/06$)	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Developer Charges per assessment - Non-Residential (2005/06$)	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Assessments & ETs	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54	2054/55
Residential Assessments at year end	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520
Non Residential Assessments at year end	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027
Backlog Assessments at year end																
Total Assessments at year end	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547
Total ETs	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922
New ETs per year (excluding backlog)	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998
Cumulative New ETs (excluding backlog)	-56,040	-58,038	-60,036	-62,034	-64,032	-66,030	-68,028	-70,026	-72,024	-74,022	-76,020	-78,018	-80,016	-82,014	-84,012	-86,010
Revenue ($'000) (2005/06$)	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785
OMA Expenditure ($'000) (2005/06$)	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988
Revenue less OMA Expenditure ($'000)	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797
Revenue less OMA Expenditure for new ETs ($'000)	-2,491	-2,580	-2,669	-2,758	-2,846	-2,935	-3,024	-3,113	-3,202	-3,290	-3,379	-3,468	-3,557	-3,646	-3,734	-3,823

Difference Greater Than 2%, Go to Next Iteration

General Notes:

1. Approximately three iterations of the financial planning model are normally required until the Ouput Reduction Amount for the first 5 years is within 2% of the Input Reduction Amount.

Specific Notes:

Table X - Calculation of Developer Charges using the NPV of Annual Charges Method — Shoalhaven Water - Sewerage

Based on Input Reduction Amounts of #### /ET (2nd iteration)

Year	2004/05	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Year No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Year		2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Developer Charges																					
Year 1		2005 /06																			
Base Year		2005 /06																			
Average Capital Charges per ET (2005/06$)		7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Inflation from Base year to Year 1 (%)		0.00%																			
Capital Charge (2005/06$)		7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Input Reduction Amounts (2005/06$)		1,106	1,106	1,106	1,106	1,106	1,039	918	797	655	600	333	578	458	325	180	23	-153	-350	-563	-801
Developer Charge per ET (2005/06$)		6,800	6,800	6,800	6,800	6,800	6,870	6,990	7,110	7,200	7,410	7,560	7,330	7,450	7,590	7,730	7,890	8,080	8,260	8,470	8,710
Developer Charges per assessment - Residential (2005/06$)		6,800	6,800	6,800	6,800	6,800	6,870	6,990	7,110	7,200	7,410	7,560	7,330	7,450	7,590	7,730	7,890	8,080	8,260	8,470	8,710
Developer Charges per assessment - Non-Residential (2005/06$)		6,800	6,800	6,800	6,800	6,800	6,870	6,990	7,110	7,200	7,410	7,560	7,330	7,450	7,590	7,730	7,890	8,080	8,260	8,470	8,710
Assessments & ETs	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Residential Assessments at year end	38,234	38,934	39,646	42,926	45,008	45,952	46,848	47,878	48,812	49,764	50,734	51,363	52,000	52,645	53,298	53,959	54,628	55,305	55,991	56,685	57,388
Non Residential Assessments at year end	2,017	2,055	2,094	2,134	2,184	2,225	2,270	2,315	2,361	2,408	2,456	2,485	2,515	2,545	2,576	2,607	2,638	2,670	2,702	2,734	2,767
Backlog Assessments at year end	-	2,055	2,094	2,134	2,184	2,225	2,270	2,315	2,361	2,408	2,456	2,485	2,515	2,545	2,576	2,607	2,638	2,670	2,702	2,734	2,767
Total Assessments at year end	40,251	40,989	41,740	45,060	47,192	48,177	49,118	50,193	51,173	52,172	53,190	53,848	54,515	55,190	55,874	56,566	57,266	57,975	58,693	59,419	60,155
ET per Residential Assessment		1																			
ET per Non Residential Assessment		1																			
Total ETs	40,251	43,044	43,834	47,194	49,376	50,402	51,386	52,508	53,534	54,580	55,040	56,333	57,030	57,735	58,450	59,173	59,904	60,646	61,395	62,153	62,922
New ETs per year (excluding backlog)	-	738	-1,304	1,226	-2	-1,199	-1,284	-1,195	-1,336	-1,302	-1,300	-1,798	-1,818	-1,840	-1,861	-1,884	-1,907	-1,929	-1,952	-1,976	-1,998
Cumulative New ETs (excluding backlog)	-	738	-566	660	658	-541	-1,825	-3,020	-4,356	-5,717	-7,107	-8,905	-10,723	-12,563	-14,424	-16,308	-18,215	-20,144	-22,096	-24,072	-26,070
PV (new ETs excluding backlog) 30 years @ 7% pa	-	-15,406	-17,051	-17,772	-20,609	-22,130	-22,891	-23,400	-24,041	-24,576	-25,120	-25,671	-25,825	-25,969	-26,099	-26,215	-26,315	-26,398	-26,462	-26,507	-26,529
Revenue and Expenditure																					
Rates & Charges Revenue, Trade Waste Charges, Other Sales and Charges, Pensioner Rebate Grant																					
Revenue ($'000) (2005/06$)		21,577	21,964	23,679	24,813	25,346	25,838	26,421	26,930	27,470	28,040	23,350	23,646	23,967	24,270	24,594	24,897	25,224	25,531	25,892	26,197
OMA Expenditure ($'000) (2005/06$)		12,354	12,724	13,246	13,559	13,700	13,834	13,984	14,123	14,260	14,401	[illegible]	14,579	14,667	14,759	14,849	14,941	15,034	15,128	15,222	15,316
Revenue less OMA Expenditure ($'000)		9,223	9,240	10,433	11,254	11,646	12,004	12,437	12,807	13,210	13,639	8,952	9,068	9,300	9,511	9,745	9,956	10,190	10,403	10,670	10,881
Revenue less OMA Expenditure for new ETs ($'000)		158	-119	148	150	-125	-426	-715	-1,042	-1,384	-1,742	-1,401	-1,705	-2,024	-2,347	-2,650	-3,027	-3,365	-3,744	-4,133	-4,508
PV (Revenue less OMA Expenditure for new ETs) 30 years @ 7% pa ($'000)		-16,969	-20,726	-18,531	-23,042	-26,035	-24,283	-22,005	-19,714	-16,696	-13,214	-9,210	-14,835	-11,858	-8,320	-4,447	-45	4,743	10,129	15,957	22,640
Output (calculated) Reduction Amounts		1,095	1,174	1,043	1,162	1,166	1,061	940	820	679	526	359	578	457	319	170	2	-180	-383	-602	-853.7
Average Calculated Reduction for a 5 yr Period		1,128	1,128	1,128	1,128	1,128	1,061	940	820	679	526	359	578	457	319	170	2	-180	-383	-602	-853.7
% Difference Between the Input and Output		2%																			

Year	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Year	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40
Average Capital Charges per ET (2005/06$)	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Capital Charge (2005/06$)	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Input Reduction Amounts (2005/06$)	-1,057	-1,364	613	609	604	601	588	566	544	511	478	0	0	0	0
Developer Charge per ET (2005/06$)	8,970	9,270	7,300	7,300	7,310	7,310	7,320	7,340	7,360	7,390	7,430	7,910	7,910	7,910	7,910
Developer Charges per assessment - Residential (2005/06$)	8,970	9,270	7,300	7,300	7,310	7,310	7,320	7,340	7,360	7,390	7,430	7,910	7,910	7,910	7,910
Developer Charges per assessment - Non-Residential (2005/06$)	8,970	9,270	7,300	7,300	7,310	7,310	7,320	7,340	7,360	7,390	7,430	7,910	7,910	7,910	7,910
Assessments & ETs	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40
Residential Assessments at year end	57,882	58,380	58,882	59,388	59,889	60,414	60,934	61,458	61,987	62,520	62,520	62,520	62,520	62,520	62,520
Non Residential Assessments at year end	2,792	2,817	2,842	2,868	2,894	2,920	2,946	2,973	3,000	3,027	3,027	3,027	3,027	3,027	3,027
Backlog Assessments at year end	2,792	2,817	2,842	2,868	2,894	2,920	2,946	2,973	3,000	3,027	-	-	-	-	-
Total Assessments at year end	60,674	61,197	61,724	62,256	62,783	63,334	63,880	64,431	64,987	65,547	65,547	65,547	65,547	65,547	65,547
Total ETs	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922
New ETs per year (excluding backlog)	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998
Cumulative New ETs (excluding backlog)	-28,068	-30,066	-32,064	-34,062	-36,060	-38,058	-40,056	-42,054	-44,052	-46,050	-48,048	-50,046	-52,044	-54,042	-56,040
PV (new ETs excluding backlog) 30 years @ 7% pa	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529				
Revenue ($'000) (2005/06$)	26,459	17,461	17,633	17,793	17,938	18,100	18,279	18,442	18,621	18,785	18,785	18,785	18,785	18,785	18,785
OMA Expenditure ($'000) (2005/06$)	15,383	15,449	15,514	15,582	15,651	15,715	15,784	15,851	15,920	15,988	15,988	15,988	15,988	15,988	15,988
Revenue less OMA Expenditure ($'000)	11,076	2,012	2,119	2,211	2,287	2,385	2,495	2,591	2,701	2,797	2,797	2,797	2,797	2,797	2,797
Revenue less OMA Expenditure for new ETs ($'000)	-4,841	-861	-1,080	-1,197	-1,311	-1,443	-1,588	-1,732	-1,891	-2,047	-2,136	-2,225	-2,313	-2,402	-2,491
PV (Revenue less OMA Expenditure for new ETs) 30 years @ 7% pa ($'000)	29,868	36,034	-16,268	-16,145	-16,031	-15,952	-15,605	-15,028	-14,436	-13,568	-12,675				
Output (calculated) Reduction Amounts	-1,118	-1,434	613	609	604	601	588	566	544	511	478				
Average Calculated Reduction for a 5 yr Period	-1,118	-1,434	613	609	604	601	588	566	544	511	478				

Year	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Year	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54	2054/55
Average Capital Charges per ET (2005/06$)	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Capital Charge (2005/06$)	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Input Reduction Amounts (2005/06$)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Developer Charge per ET (2005/06$)	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Developer Charges per assessment - Residential (2005/06$)	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Developer Charges per assessment - Non-Residential (2005/06$)	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Assessments & ETs	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54	2054/55
Residential Assessments at year end	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520
Non Residential Assessments at year end	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027
Backlog Assessments at year end	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Assessments at year end	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547
Total ETs	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922
New ETs per year (excluding backlog)	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998
Cumulative New ETs (excluding backlog)	-58,038	-60,036	-62,034	-64,032	-66,030	-68,028	-70,026	-72,024	-74,022	-76,020	-78,018	-80,016	-82,014	-84,012	-86,010
Revenue ($'000) (2005/06$)	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785
OMA Expenditure ($'000) (2005/06$)	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988
Revenue less OMA Expenditure ($'000)	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797
Revenue less OMA Expenditure for new ETs ($'000)	-2,580	-2,669	-2,758	-2,846	-2,935	-3,024	-3,113	-3,202	-3,290	-3,379	-3,468	-3,557	-3,646	-3,734	-3,823

Difference Less Than 2%, Calculation Complete

Developer Charges for the first 5 years = $6780 in year 2005/06 dollars

General Notes:

1 Approximately three iterations of the financial planning model are normally required until the Ouput Reduction Amount for the first 5 years is within 2% of the Input Reduction Amount

Developer Chs	6,782	6,782	6,782	6,782	6,782	6,849	6,970	7,090	7,231	7,384	7,551	7,332	7,453	7,591	7,740	7,908	8,090	8,293	8,512	8,764

Table X - Calculation of Developer Charges using the NPV of Annual Charges Method — Shoalhaven Water - Sewerage

Based on Input Reduction Amounts of #### /ET (3rd iteration)

Year No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Year		2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Developer Charges																		
Year 1		2005 /06																
Base Year		2005 /06																
Average Capital Charges per ET (2005/06$)		7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Inflation from Base year to Year 1 (%)		0.00%																
Capital Charges (2005/06$)		7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Input Reduction Amounts (2005/06$)		1,128	1,128	1,128	1,128	1,128	1,061	940	820	679	526	359	578	457	319	170	2	-180
Developer Charge per ET (2005/06$)		6,780	6,780	6,780	6,780	6,780	6,850	6,970	7,090	7,230	7,380	7,550	7,330	7,450	7,590	7,740	7,910	8,090
Developer Charges per assessment - Residential (2005/06$)		6,780	6,780	6,780	6,780	6,780	6,850	6,970	7,090	7,230	7,380	7,550	7,330	7,450	7,590	7,740	7,910	8,090
Developer Charges per assessment - Non-Residential (2005/06$)		6,780	6,780	6,780	6,780	6,780	6,850	6,970	7,090	7,230	7,380	7,550	7,330	7,450	7,590	7,740	7,910	8,090
Assessments & ETs	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Residential Assessments at year end	37,434	38,934	39,646	42,926	45,008	45,952	46,848	47,878	48,812	49,764	50,734	51,383	52,000	52,645	53,298	53,959	54,628	55,305
Non Residential Assessments at year end	2,817	2,055	2,094	2,134	2,184	2,225	2,270	2,315	2,361	2,408	2,456	2,475	2,515	2,545	2,576	2,607	2,638	2,670
Backlog Assessments at year end	-	2,055	2,094	2,134	2,184	2,225	2,270	2,315	2,361	2,408	2,456	2,475	2,515	2,545	2,576	2,607	2,638	2,670
Total Assessments at year end	40,251	43,044	43,834	47,194	49,376	50,402	51,388	52,508	53,534	54,580	55,646	56,333	57,030	57,735	58,450	59,173	59,904	60,645
ET per Residential Assessment	1																	
ET per Non Residential Assessment	1																	
Total ETs	40,251	43,044	43,834	47,194	49,376	50,402	51,388	52,508	53,534	54,580	55,646	56,333	57,030	57,735	58,450	59,173	59,904	60,645
New ETs per year (excluding backlog)	-	738	-1,304	1,226	-2	-1,199	-1,284	-1,195	-1,335	-1,362	-1,390	-1,798	-1,818	-1,840	-1,861	-1,884	-1,907	-1,929
Cumulative New ETs (excluding backlog)	-	738	-566	660	658	-541	-1,825	-3,020	-4,355	-5,717	-7,107	-8,905	-10,723	-12,563	-14,424	-16,308	-18,215	-20,144
PV (new ETs excluding backlog) 30 years @ 7% pa	-	-15,496	-17,651	-17,772	-20,609	-22,330	-22,891	-23,400	-24,041	-24,576	-25,120	-25,671	-25,825	-25,969	-26,000	-26,215	-26,315	-26,398
Revenue and Expenditure																		
Rates & Charges Revenue, Trade Waste Charges, Other Sales and Charges, Pensioner Rebate Grant																		
Revenue ($'000) (2005/06$)		21,577	21,864	23,679	24,813	25,346	25,838	26,421	26,950	27,470	28,030	23,350	23,646	23,907	24,270	24,504	24,837	25,224
OMA Expenditure ($'000) (2005/06$)		12,354	12,724	13,246	13,559	13,700	13,834	13,984	14,423	14,260	14,401	14,488	14,578	14,607	14,759	14,849	14,941	15,034
Revenue less OMA Expenditure ($'000)		9,223	9,240	10,433	11,254	11,646	12,004	12,437	12,807	13,210	13,839	8,862	9,068	9,300	9,511	9,745	9,950	10,180
Revenue less OMA Expenditure for new ETs ($'000)		158	-119	148	150	-125	-420	-715	-1,042	-1,384	-1,742	-1,491	-1,705	-2,024	-2,347	-2,686	-3,027	-3,385
PV (Revenue less OMA Expenditure for new ETs) 30 years @ 7% pa ($'000)		-16,968	-20,726	-12,531	-23,942	-26,035	-24,283	-22,005	-19,714	-16,686	-13,214	-8,216	-14,935	-11,858	-8,326	-4,447	-45	4,743
Output (calculated) Reduction Amounts		1,095	1,174	1,043	1,162	1,166	1,061	940	820	679	526	359	578	457	319	170	2	-180
Average Calculated Reduction for a 5 yr Period		1,128	1,128	1,128	1,128	1,128	1,061	940	820	679	526	359	578	457	319	170	2	-180
% Difference Between the Input and Output		0%																

Year No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Year	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39
Average Capital Charges per ET (2005/06$)	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Capital Charges (2005/06$)	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Input Reduction Amounts (2005/06$)	-383	-602	-854	-1,118	-1,434	613	609	604	601	588	566	544	511	478	0	0	0
Developer Charge per ET (2005/06$)	8,290	8,510	8,700	9,030	9,340	7,300	7,300	7,310	7,310	7,320	7,340	7,360	7,390	7,430	7,910	7,910	7,910
Developer Charges per assessment - Residential (2005/06$)	8,290	8,510	8,700	9,030	9,340	7,300	7,300	7,310	7,310	7,320	7,340	7,360	7,390	7,430	7,910	7,910	7,910
Developer Charges per assessment - Non-Residential (2005/06$)	8,290	8,510	8,700	9,030	9,340	7,300	7,300	7,310	7,310	7,320	7,340	7,360	7,390	7,430	7,910	7,910	7,910
Assessments & ETs	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39
Residential Assessments at year end	55,991	56,685	57,388	57,882	58,380	58,882	59,388	59,899	60,414	60,934	61,458	61,987	62,520	62,520	62,520	62,520	62,520
Non Residential Assessments at year end	2,702	2,734	2,767	2,792	2,817	2,842	2,868	2,894	2,920	2,946	2,973	3,000	3,027	3,027	3,027	3,027	3,027
Backlog Assessments at year end	2,702	2,734	2,767	2,792	2,817	2,842	2,868	2,894	2,920	2,946	2,973	3,000	3,027	-	-	-	-
Total Assessments at year end	61,395	62,153	62,922	63,466	64,014	64,566	65,124	65,687	66,254	66,826	67,404	67,987	68,574	65,547	65,547	65,547	65,547
Total ETs	61,395	62,153	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922
New ETs per year (excluding backlog)	-1,952	-1,976	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998
Cumulative New ETs (excluding backlog)	-22,096	-24,072	-26,070	-28,068	-30,066	-32,064	-34,062	-36,060	-38,058	-40,056	-42,054	-44,052	-46,050	-48,048	-50,046	-52,044	-54,042
PV (new ETs excluding backlog) 30 years @ 7% pa	-26,462	-26,507	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529			
Revenue ($'000) (2005/06$)	25,531	25,892	26,197	26,450	17,401	17,633	17,793	17,938	18,100	18,279	18,442	18,621	18,785	18,785	18,785	18,785	18,785
OMA Expenditure ($'000) (2005/06$)	15,129	15,227	15,316	15,383	15,442	15,514	15,582	15,651	15,715	15,784	15,851	15,920	15,988	15,988	15,988	15,988	15,988
Revenue less OMA Expenditure ($'000)	10,403	10,670	10,881	11,076	2,012	2,119	2,211	2,287	2,385	2,495	2,591	2,701	2,797	2,797	2,797	2,797	2,797
Revenue less OMA Expenditure for new ETs ($'000)	-3,744	-4,133	-4,508	-4,941	-881	-1,089	-1,197	-1,311	-1,443	-1,588	-1,732	-1,891	-2,047	-2,136	-2,225	-2,313	-2,402
PV (Revenue less OMA Expenditure for new ETs) 30 years @ 7% pa ($'000)	10,129	15,967	22,849	29,888	30,034	-16,268	-16,145	-16,031	-15,952	-15,605	-15,028	-14,430	-13,588	-12,675			
Output (calculated) Reduction Amounts	-383	-602	-854	-1,118	-1,434	613	609	604	601	588	566	544	511	478			
Average Calculated Reduction for a 5 yr Period	-383	-602	-854	-1,118	-1,434	613	609	604	601	588	566	544	511	478			

Year No.	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Year	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54	2054/55
Average Capital Charges per ET (2005/06$)	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Capital Charges (2005/06$)	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Input Reduction Amounts (2005/06$)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Developer Charge per ET (2005/06$)	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Developer Charges per assessment - Residential (2005/06$)	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Developer Charges per assessment - Non-Residential (2005/06$)	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Assessments & ETs	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54	2054/55
Residential Assessments at year end	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520
Non Residential Assessments at year end	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027
Backlog Assessments at year end	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Assessments at year end	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547
Total ETs	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922
New ETs per year (excluding backlog)	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998
Cumulative New ETs (excluding backlog)	-56,040	-58,038	-60,036	-62,034	-64,032	-66,030	-68,028	-70,026	-72,024	-74,022	-76,020	-78,018	-80,016	-82,014	-84,012	-86,010
Revenue ($'000) (2005/06$)	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785	18,785
OMA Expenditure ($'000) (2005/06$)	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988
Revenue less OMA Expenditure ($'000)	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797	2,797
Revenue less OMA Expenditure for new ETs ($'000)	-2,491	-2,580	-2,669	-2,758	-2,846	-2,936	-3,024	-3,113	-3,202	-3,290	-3,379	-3,468	-3,557	-3,646	-3,734	-3,823

Difference Less Than 2%, Calculation Complete

Developer Charges for the first 5 years = $6780 per ET in year 2005/06 $

General Notes:

1 Approximately three iterations of the financial planning model are normally required until the Ouput Reduction Amount for the first 5 years is within 2% of the Input Reduction Amount

Table X - Calculation of Developer Charges using the NPV of Annual Charges Method **Shoalhaven Water - Sewerage**
Based on Input Reduction Amounts of $1,128 /ET (Fourth Iteration)

Year		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Year	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Developer Charges																					
Year 1		2005 /06																			
Base Year		2005 /06																			
Average Capital Charges per ET (2005/06$)		7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Inflation from Base year to Year 1 (%)		0.00%																			
Capital Charges (2005/06$)		7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Input Reduction Amounts (2005/06$)		1,128	1,128	1,128	1,128	1,128	1,061	940	820	679	526	[illegible]	578	457	319	170	2	-180	-383	-602	-854
Developer Charge per ET (2005/06$)		6,780	6,780	6,780	6,780	6,780	6,850	6,970	7,090	7,230	7,380	7,550	7,330	7,450	7,590	7,740	7,910	8,090	8,290	8,510	8,760
Developer Charges per assessment - Residential (2005/06$)		6,780	6,780	6,780	6,780	6,780	6,850	6,970	7,090	7,230	7,380	7,550	7,330	7,450	7,590	7,740	7,910	8,090	8,290	8,510	8,760
Developer Charges per assessment - Non-Residential (2005/06$)		6,780	6,780	6,780	6,780	6,780	6,850	6,970	7,090	7,230	7,380	7,550	7,330	7,450	7,590	7,740	7,910	8,090	8,290	8,510	8,760
Assessments & ETs	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Residential Assessments at year end	38,234	38,934	39,646	42,926	45,008	45,952	46,848	47,878	48,812	49,764	50,734	51,363	52,000	52,645	53,298	53,959	54,628	55,305	55,991	56,685	57,388
Non Residential Assessments at year end	2,017	2,055	2,094	2,134	2,184	2,225	2,270	2,315	2,361	2,408	2,456	2,485	2,515	2,545	2,576	2,607	2,638	2,670	2,702	2,734	2,767
Backlog Assessments at year end	-	2,055	2,094	2,134	2,184	2,225	2,270	2,315	2,361	2,408	2,456	2,485	2,515	2,545	2,576	2,607	2,638	2,670	2,702	2,734	2,767
Total Assessments at year end	40,251	43,044	43,834	47,194	49,376	50,402	51,388	52,508	53,534	54,580	55,646	56,333	57,030	57,735	58,450	59,173	59,904	60,645	61,395	62,153	62,922
ET per Residential Assessment	1																				
ET per Non Residential Assessment	1																				
Total ETs	40,251	43,044	43,834	47,194	49,376	50,402	51,388	52,508	53,534	54,580	55,646	56,333	57,030	57,735	58,450	59,173	59,904	60,645	61,395	62,153	62,922
New ETs per year (excluding backlog)	-	738	-1,304	1,226	-2	-1,199	-1,284	-1,195	-1,335	-1,362	-1,390	-1,798	-1,818	-1,840	-1,861	-1,884	-1,907	-1,929	-1,952	-1,976	-1,998
Cumulative New ETs (excluding backlog)	-	738	-566	660	658	-541	-1,825	-3,020	-4,355	-5,717	-7,107	-8,905	-10,723	-12,563	-14,424	-16,308	-18,215	-20,144	-22,096	-24,072	-26,070
PV (new ETs excluding backlog) 30 years @ 7% pa	-	-15,486	-17,651	-17,772	-20,609	-22,330	-22,891	-23,400	-24,041	-24,578	-25,120	-25,671	-25,825	-25,969	-26,099	-26,215	-26,315	-26,398	-26,462	-26,507	-26,529
Revenue and Expenditure																					
Rates & Charges Revenue, Trade Waste Charges, Other Sales and Charges, Pensioner Rebate Grant																					
Revenue ($'000) (2005/06$)		21,577	21,964	23,679	24,813	25,346	25,838	26,421	26,930	27,470	28,340	23,350	23,646	23,987	24,270	24,594	24,897	25,224	25,531	25,892	26,197
OMA Expenditure ($'000) (2005/06$)		12,354	12,724	13,246	13,559	13,700	13,834	13,984	14,123	14,260	14,401	14,498	14,578	14,687	14,759	14,849	14,941	15,034	15,128	15,222	15,316
Revenue less OMA Expenditure ($'000)		9,223	9,240	10,433	11,254	11,646	12,004	12,437	12,807	13,210	13,939	8,852	9,068	9,300	9,511	9,745	9,956	10,190	10,403	10,670	10,881
Revenue less OMA Expenditure for new ETs ($'000)		158	-119	149	150	-125	-420	-715	-1,042	-1,384	-1,742	-1,401	-1,705	-2,024	-2,347	-2,695	-3,027	-3,385	-3,744	-4,133	-4,508
PV (Revenue less OMA Expenditure for new ETs) 30 years @ 7% pa ($'000)		-16,509	-18,710	-14,274	-17,202	-16,555	-11,789	-6,200	-284	6,608	14,505	23,213	22,619	31,264	40,836	51,263	62,755	75,213	88,890	103,672	120,038
Output (calculated) Reduction Amounts		1,095	1,060	803	835	741	515	265	12	-273	-577	-904	-876	-1,204	-1,565	-1,955	-2,385	-2,849	-3,359	-3,911	-4,525
Average Calculated Reduction for a 5 yr Period		907	907	907	907	907	515	265	12	-273	-577	-904	-876	-1,204	-1,565	-1,955	-2,385	-2,849	-3,359	-3,911	-4,525
% Difference Between the Input and Output		55%																			

Difference Greater Than 2%, Go to Next Iteration

Year	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Year	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54	2054/55
Average Capital Charges per ET (2005/06$)	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905	7,905
Capital Charges (2005/06$)	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Input Reduction Amounts (2005/06$)	-1,118	-1,434	613	609	604	601	588	566	544	511	478	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Developer Charge per ET (2005/06$)	9,030	9,340	7,300	7,300	7,310	7,310	7,320	7,340	7,370	7,400	7,430	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Developer Charges per assessment - Residential (2005/06$)	9,030	9,340	7,300	7,300	7,310	7,310	7,320	7,340	7,370	7,400	7,430	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Developer Charges per assessment - Non-Residential (2005/06$)	9,030	9,340	7,300	7,300	7,310	7,310	7,320	7,340	7,370	7,400	7,430	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910	7,910
Assessments & ETs	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54	2054/55
Residential Assessments at year end	57,882	58,380	58,882	59,388	59,899	60,414	60,934	61,458	61,987	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520	62,520
Non Residential Assessments at year end	2,792	2,817	2,842	2,868	2,894	2,920	2,946	2,973	3,000	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027	3,027
Backlog Assessments at year end	2,792	2,817	2,842	2,868	2,894	2,920	2,946	2,973	3,000	3,027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Assessments at year end	63,466	64,014	64,566	65,124	65,687	66,254	66,826	67,404	67,987	68,574	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547	65,547
Total ETs	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922	62,922
New ETs per year (excluding backlog)	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998	-1,998
Cumulative New ETs (excluding backlog)	-28,068	-30,066	-32,064	-34,062	-36,060	-38,058	-40,056	-42,054	-44,052	-46,050	-48,048	-50,046	-52,044	-54,042	-56,040	-58,038	-60,036	-62,034	-64,032	-66,030	-68,028	-70,026	-72,024	-74,022	-76,020	-78,018	-80,016	-82,014	-84,012	-86,010
PV (new ETs excluding backlog) 30 years @ 7% pa	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529	-26,529																			
Revenue ($'000) (2005/06$)	26,459	17,481	17,633	17,793	17,938	18,100	18,279	18,442	18,621	18,785																				
OMA Expenditure ($'000) (2005/06$)	15,383	15,469	15,514	15,582	15,651	15,715	15,784	15,851	15,920	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988	15,988
Revenue less OMA Expenditure ($'000)	11,076	2,012	2,119	2,211	2,287	2,385	2,495	2,591	2,701	2,797	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988	-15,988
Revenue less OMA Expenditure for new ETs ($'000)	-4,941	-961	-1,089	-1,197	-1,311	-1,443	-1,588	-1,732	-1,891	-2,047	12,209	12,716	13,224	13,732	14,239	14,747	15,256	15,762	16,270	16,778	17,285	17,793	18,301	18,809	19,316	19,824	20,331	20,839	21,347	21,854
PV (Revenue less OMA Expenditure for new ETs) 30 years @ 7% pa ($'000)	137,475	157,081	114,801	128,054	142,207	157,391	173,085	192,029	211,384	232,435	254,005																			
Output (calculated) Reduction Amounts	-5,182	-5,921	-4,331	-4,827	-5,360	-5,933	-6,558	-7,239	-7,968	-8,762	-9,612																			
Average Calculated Reduction for a 5 yr Period	-5,182	-5,921	-4,331	-4,827	-5,360	-5,933	-6,558	-7,239	-7,968	-8,762	-9,612																			

Notes:
Refer to 1st iteration sheet

Developer Charge 7,003 7,003 7,003 7,003 7,003 7,395 7,645 7,898 8,183 8,487 8,814 8,786 9,114 9,475 9,865 10,295 10,759 11,269 11,821 12,435 13,092 13,831 12,241 12,737 13,270 13,843 14,468 15,149 15,878 16,672 17,522

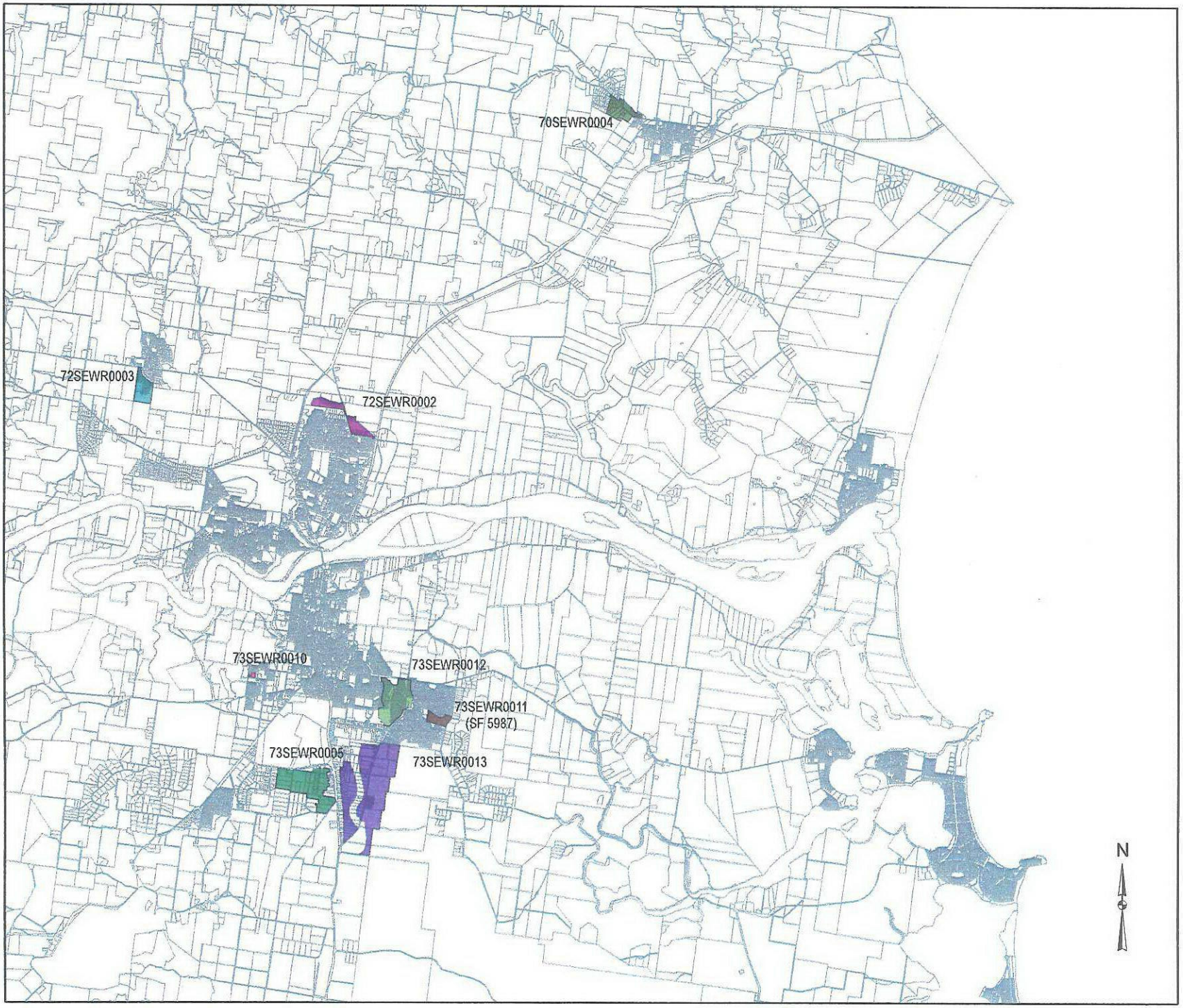
Table D2: Calculated Developer Charges

Council: Shoalhaven City Council

DSP Area	DSP Name	Capital Charge	Reduction Amount	Developer Charge	% Growth
A	Conjola, Kangaroo Valley, Callala	$14,106	$1,125	$12,981	15%
B	Berry, Huskisson/Vincentia, Sussex Inlet, Shoalhaven Heads, Culburra, Bomaderry	$8,244	$1,125	$7,119	31%
C	St Georges Basin, Milton/Ulludulla, Nowra	$6,012	$1,125	$4,887	54%
Weighted Average Developer Charge				**$6,780**	**100%**

Appendix E

Special Section 64 Contribution Areas



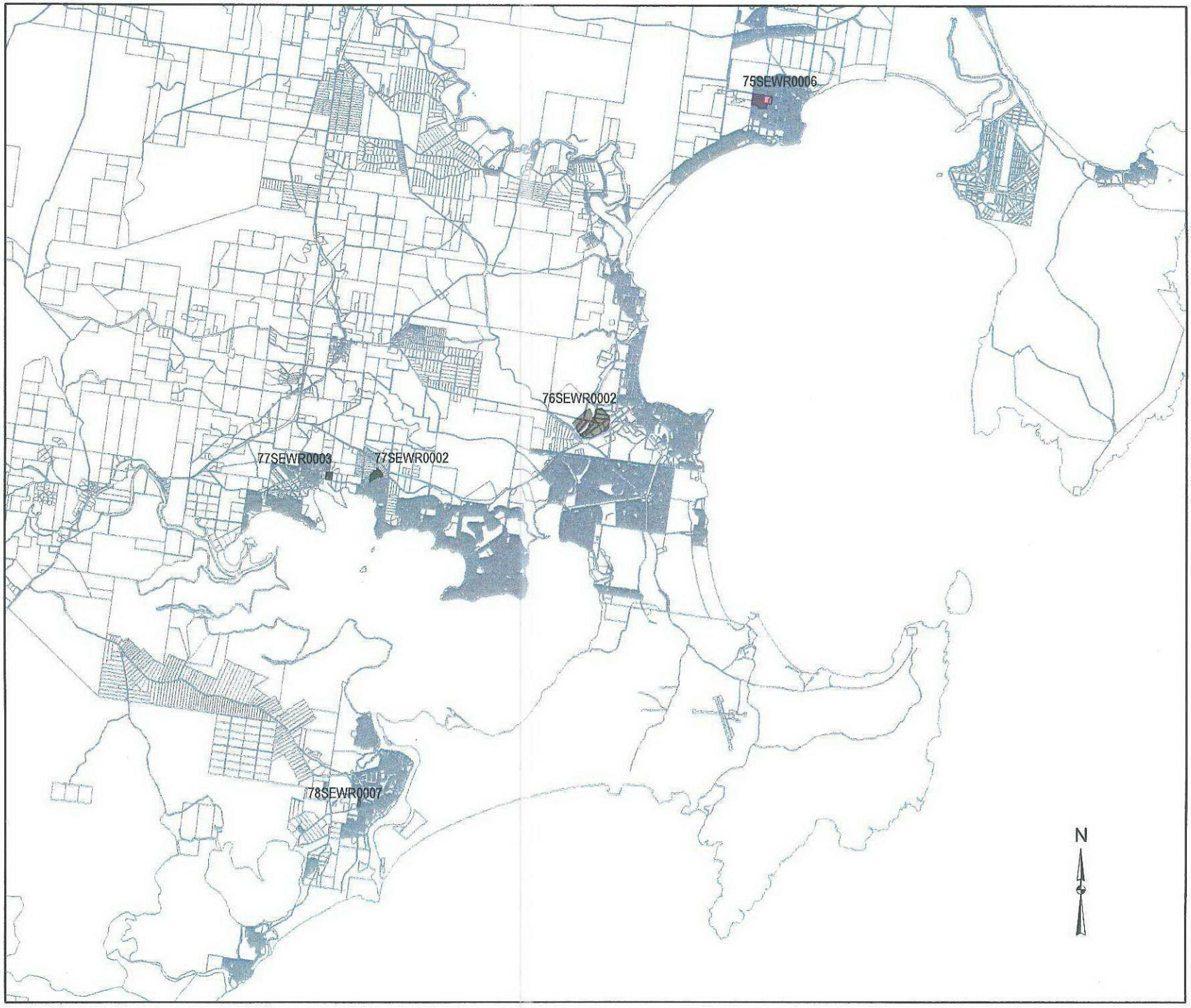
Shoalhaven Water

SPECIAL SECTION 64
(SEWERAGE INFRASTRUCTURE)
AREAS
PLAN 1 OF 3

Legend

Sewer

- 70SEWR0004
- 72SEWR0002
- 72SEWR0003
- 73SEWR0005
- 73SEWR0010
- 73SEWR0011
- 73SEWR0012
- 73SEWR0013
- 75SEWR0006
- 78SEWR0007
- 79SEWR0003
- 79SEWR0008
- 79SEWR0009
- 79SEWR0010
- 79SEWR0011
- 79SEWR1010
- 79SEWR1011



Shoalhaven Water

SPECIAL SECTION 64
(SEWERAGE INFRASTRUCTURE)
AREAS
PLAN 2 OF 3

Legend

Sewer

- 70SEWR0004
- 72SEWR0002
- 72SEWR0003
- 73SEWR0005
- 73SEWR0010
- 75SEWR0006
- 76SEWR0002
- 77SEWR0002
- 77SEWR0003
- 78SEWR0007
- 79SEWR0003
- 79SEWR0008
- 79SEWR0009
- 79SEWR0010
- 79SEWR0011
- 79SEWR1010
- 79SEWR1011

Shoalhaven Water

SPECIAL SECTION 64
(SEWERAGE INFRASTRUCTURE)
AREAS
PLAN 3 OF 3

Legend

Sewer

- 70SEWR0004
- 72SEWR0002
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- 73SEWR0005
- 73SEWR0010
- 75SEWR0006
- 78SEWR0007
- 79SEWR0003
- 79SEWR0008
- 79SEWR0009
- 79SEWR0010
- 79SEWR0011
- 79SEWR1010
- 79SEWR1011

POPULATION PROJECTIONS FOR URBAN AREAS IN THE SHOALHAVEN

Census Applications
Planning Group Shoalhaven City Council
October 2004

TABLE OF CONTENTS

1. Purpose

Projections have been provided to Council by Census Applications for the purpose of preparing a s.65 Contribution Plan. Accordingly, they were required to cover the period 2004 to 2034.

Council specified in its requirements for the work that population projections were required and that these should be converted to dwelling requirements, including the dwelling type requirements of future populations.

This population-based approach has the substantial advantage that consideration is being given to the dwelling requirements of the likely future population. It contrasts with an approach which merely assumes current dwelling production levels will continue and that the resulting dwellings will be taken-up and eventually occupied.

2. Projection Method

Basis of the Dwelling projections then has been the population projections.

The population projections have been prepared using a so-called 'cohort component model' which estimates future population on the basis of three components:

- Numbers of people who are expected to survive in the area for the next 5 years;
- Children expected to be born in the area over the next 5 years;
- Net migration – the net result of inflows and outflows of people into the area.

Regarding survivors, the probability of death amongst men and women according to their age is available from the Australian Bureau of Statistics. Using this information, it is possible to estimate the number of people in each age group who may be expected to survive a further 5 years. For younger age groups this is clearly the vast majority o the population, but for those of 75 and more years of age, the probability of death over this same 5 year period rises substantially.

Survival rates for Shoalhaven City Council area were made available by Council (unpublished ABS data). This data compares very well with the more common approach of using State-wide averages when making population projections.

Council has also obtained local information from the Australian Bureau of Statistics on birth rates, ie, the number of children born to women in the area over the last few years according to age of the mother. This allows an estimate of the number of infants born to local women to be made each year of the projection period, based on the number of local women in each relevant age group.

Constant survival rates and birth rates have been assumed throughout the projection period. Now there has been a trend of increasing survival rates (people living longer)

and declining birth rates (fewer births per female) over the last 50 years, however the estimation of future rates was not seen as necessary for two reasons:

- Firstly, in outcome, increasing survival rates tend to balance declining birth rates; fewer births are balanced by fewer deaths each year. The result is a slightly older population than would otherwise occur, but population numbers are not greatly affected by the changes, compared with the uncertainties which apply to net migration.
- Over the last few years the rates of change for both survival and birth rates are slowing considerably, probably reflecting factors such as diminishing returns to improved health care.

Net migration is the end result of inflows and outflows of people to the area. The quantum is calculated between 1996 and 2001 using anticipated births plus anticipated deaths amongst the local population in each age group at 1996, to predict the 2001 population; the difference between the predicted population and the actual census count reflects net migration.

For most areas, net migration has been assumed constant throughout the projection period. This is a level of migration which can be anticipated with a high level of confidence based on past experience. However, net migration within Nowra Bomaderry has been adjusted to reflect the anticipated impact of the university sub-campus now established there, and continuing growth in numbers of people arriving from centres such as Sydney and Wollongong. Details of these adjustments are provided with the individual projections.

Once these three components of population growth have been established; viz survivors, births and net migration, they are added to the 2001 population to estimate the 2006 population by age group. This process is then repeated to estimate the population in subsequent years.

To produce the best possible projections, usual residents data has been used in the 2001 year except for Nowra/Bomaderry. This data has only recently become available for small areas and reflects where people responding to the Census indicated was their 'home' (usual residence). Hence, the projections estimate the number of usual residents in each required area according to age.

3. *Projecting Population*

This covers the broad principles behind the population projections. Probability based models such as Demograph[1] work best in large areas where there are sufficient numbers of people for average survival rates and average birth rates to provide a good indication of what is likely to happen in the future. Very small areas are greatly affected by local circumstances, for example, exceptional longevity in one family, or a family displaying low fertility.

[1] Probability of survival (survival rate), probability of birth of a child (birth rates)

The purpose of this project as a whole has allowed many of the smaller centres within the Shoalhaven to be grouped, as services are to be supplied to them from common infrastructure. This means that population numbers for projection have been able to be kept above 1,500, minimising (but not eliminating) the impact of local circumstances on the population outcome.

Nevertheless there have been circumstances where projections produced by the model are unlikely. The projections prepared for Manyana – Conjola have been replaced by ones based on dwelling production in the area over the last 4 years. However, as the notes to the Manyana – Conjola projection indicate even this alternative method did not yield results which are considered reliable; growth would be meteoric!

4. Dwelling Projections

Dwelling projections for each area are derived from the population projections.

Derivation method is to apply local occupancy rates (average number of people per dwelling) in the locality for which projections are being prepared to the projected population numbers. This produces an expected number of dwellings to be occupied by the projected population. Additional dwellings reflect the difference between the stock of dwellings at the beginning of each required projection period and the anticipated number of dwellings at the end of each period, eg, 2001 to 2006.

However, occupancy rates have been declining for many years and there is no reason to expect such declines to cease, although the rate of decline is certainly flowing in all cases observed. The result is that more dwellings are being required by the population each year than growth in the number of people from year to year would suggest.

Future occupancy rates have been estimated by applying curve fitting techniques, such as non-linear regression, to occupancy rates at the last 4 Census. This approach generates a declining predicted occupancy rate, albeit one declining at a steadily slowing rate. The fit between the curve and actual data was generally good or very good, although it is not certain that future rates will in fact follow those anticipated by curve fitting or any other predictive technique.

It is noticeable that many areas display similar occupancy rate decline curves, albeit with different localities being at different points on the curve. Nowra-Bomaderry, for example, is well down the curve, with a comparatively low occupancy rate in 2001 leading to the expectation of a very slow decline for the next 30 years.

In contrast, the Bay and Basin district currently has substantially higher occupancy rates, but those rates are declining in a similar fashion to Nowra-Bomaderry rates. Accordingly, rates in St Georges Basin are predicted to decline rapidly for the next few years. Occupancy rate graphs and predictions are provided in Appendix 1.

Another important factor for predicting future dwelling numbers in the Shoalhaven is the number of unoccupied dwellings there. Most of these unoccupied dwellings are believed to be used for 'holiday lettings' or as weekenders/retreats. Hence they are only used occasionally and conduct of the Census in early August (ie late winter) and out of school holidays is the time such dwellings are most likely to be vacant.

Within the dwelling projections, unoccupied dwellings are assumed to remain at the same proportion of total dwelling stock in each area as they were in 2001. This is a conservative assumption as their numbers have increased substantially in past years – nevertheless the 1996 to 2001 period was marked by small changes only in the number of unoccupied dwellings in a large majority of the Shoalhaven.

In summary, dwelling projections are mathematically linked to the population projections. Projected dwelling numbers do not change in a directly proportional manner to the population projections, however, as the former rely on slowly declining occupancy rates and preservation of vacant dwelling numbers at the proportion of stock they represented in August 2001.

5. *Dwelling Type Projections*

Consideration was given to projection of future dwelling numbers in each of the following categories:

- Detached dwellings
- Villas, town houses
- Flats and home units
- Other (includes not stated, caravans & similar, flat attached to shop)

As indicated in the preceding section, total dwelling numbers predicted for each area are essentially determined by numbers of people predicted to live in the area, predicted occupancy rates and predicted vacant dwelling numbers.

Within this constraint of total dwelling numbers, each dwelling type was factored to grow in numbers at a similar rate to growth in numbers of that dwelling type over the 1996 to 2001 period; growth in subsequent years is assumed to be at a rate proportional to growth in that dwelling type over the 1996-2001 period.

The outcome of this approach is that in almost all areas, medium density type housing, such as villas and flats, is growing considerably more quickly than detached dwellings. In a small number of areas such as Sussex Inlet, growth of medium density housing numbers has been so rapid – and from a very small base – that the rate has not been considered to be sustainable.

However, since 2000 the number of dwelling approvals for dwellings other than detached has declined. Therefore, these projections were considered to be unreliable and Council has reverted to a general allowance of 10% of all dwellings being other than detached. Some modification was made by area depending on zoning ie, medium density zone and where land supply would encourage higher density housing. This aspect will need to be monitored with the five yearly reviews.

6. Vacant Land Stocks

This is the last component of the projections. The model utilises vacant land stocks at March 2000 available from Council's comprehensive survey of that date, adjusts those stocks for activity between the survey date and the 2001 Census, then calculates the amount of land remaining according to two categories:

- Detached dwellings
- Other dwellings

The population projections and the demand for dwellings has been based on census years, ie, 2001 – 2006 etc to 2036. However, the baseline date for the plan is notionally July 2004 and extends to June 2034. This has required an adjustment to be made on a pro rata basis to bring the dwelling demand into line with the plan periods. Similarly, Council's last comprehensive land use survey was conducted in the year 2000. To adjust the land stocks data local area dwelling approvals have been used. In some cases, ie, Shoalhaven Heads 2004 surveys were carried out to supplement Council information.

The result of adjustment is an estimate of vacant land stocks at 30 June 2009. Additional dwelling requirements for the 2004-2009 period are then subtracted from the estimated vacant lot stocks figure, providing estimated vacant stocks at August 2009. A similar process is used in subsequent periods up to year 2034.

Dwelling demand in excess of anticipated land stocks has been identified in some urban areas but in most cases has been assumed to be capable of being satisfied by rezoning within the locality (shown as investigation areas). However, in a few cases where major constraints will prevent any rezoning the notional demand further growth has been curtailed.

7. Commercial, Industrial and other Non Residential

Commercial, industrial and other non residential (excluding caravan parks) have been assumed to grow at the following rates:

- For major growth areas of Nowra, Bomaderry and Ulladulla growth will be at the same rate as residential for the areas.
- For the unique tourist area of Berry growth will be at the same rate as residential.
- For all other areas mostly comprising coastal villages growth will be at 50% of the residential growth for these areas.

8. Reliability of the Projections and Estimates

While the age and sex projections have been prepared using a well recognised population projection method, there is no certainty that these projections will be met.

While the age and sex projections have been prepared using a well recognised population projection method, there is no certainty that these projections will be met. Equally, actual population growth may exceed the projections or in some cases be less than the projected growth.

The methods used to estimate other future population characteristics are ultimately based on characteristics of the current and past population. There can be no certainty that the future population will have those same characteristics. Factors such as an important new industry developing in the area may dramatically change the nature of demand for housing there, as may changes in the cost of housing.

As dwelling and land stock projections are derived from the population projections, the former should be treated as less reliable than the population projections themselves. This reflects the additional sources of error potentially affecting dwelling and land stock projections, such as unanticipated changes in occupancy rates, change in housing type preferences of the population or State regulation of dwelling type availability; each of these three sources of change are tenable within the projection period of 2006 to 2036.

Nevertheless, the projections are based on the best information available at present. Further, there are no defects apparent in the information available at present which suggest that corrections or adjustments should be made to improve the reliability of the projections and associated estimates.

9. *Transfer of Demand*

Past trends within Shoalhaven have included substantial growth in the coastal towns and villages.

Due to environmental constraints and pattern of land tenure it is envisaged that Nowra and Bomaderry will provide a far greater proportion of the total growth in the future. The opportunities have been included in a concept plan for the Nowra/Bomaderry area and more detail is to be provided in the *'soon to be released'* Structure Plan.

The State Government has identified the potential for Nowra/Bomaderry to play a role as a major regional centre on the fringe of the Greater Sydney Metropolitan area.

Overall there will be a growing trend towards urban consolidation with a greater emphasis on multi-unit and integrated development.

Appendices

a) Population Projection Tables & Projection Plans

Section 64 - City Wide - Dwelling Summary

LOCATION		2004	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
Kangaroo Valley			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		20	0	20	0	11	0	0	5	51	5
	Consolidation		0	0	0	0	0	0	0	0		
	New		0	0	0	0	0	0	0	0	0	0
	Total		20	0	20	0	11	0	0	5	51	0
	Add Dwellings required		20		20		11		5		51	
	Total Dwellings	204	224		244		255		260			
Berry			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		0	8	0	0	0	0	0	5	0	13
	Consolidation		0	0	0	0	0	0	0	0		
	New		168	100	87	100	50	35	0	0	305	235
	Total		168	108	87	100	50	35	0	5	305	248
	Add Dwellings required		276		187		85		5		553	
	Total Dwellings	739	1015		1202		1287		1292			
Shoalhaven Heads			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		20	60	0	30	0	39	0	40	20	169
	Consolidation		0	0	0	0	0	0	0	0		
	New		30	0	197	14	153	24	0	0	380	38
	Total		50	60	197	44	153	63	0	40	400	207
	Add Dwellings required		110		241		216		40		607	
	Total Dwellings	1638	1748		1989		2205		2245			
Nowra			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		960	114	824	278	297	125	10	50	2091	567
	Consolidation		0	0	0	80	0	570	0	720	0	1370
	New		30	10	500	60	1086	119	2040	719	3656	908
	Total		990	124	1324	418	1383	814	2050	1489	5747	2845
	Add Dwellings required		1114		1742		2197		3539		8592	
	Total Dwellings	8478	9592		11334		13531		17070			
Bomaderry			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		190	85	50	85	26	36	0	5	266	211
	Consolidation		0	0	0	20	0	130	0	170	0	320
	New		0	0	300	30	1814	400	950	336	3064	766
	Total		190	85	350	135	1840	566	950	511	3330	1297
	Add Dwellings required		275		485		2406		1461		4627	
	Total Dwellings	3634	3909		4394		6800		8261			
Culburra Beach /Crookhaven /Greenwell Point /Orient Point			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		86	58	27	48	0	10	0	10	113	126
	Consolidation		0	0	0	0	0	0	0	0	0	0
	New		11	0	115	5	334	10	178	33	638	48
	Total		97	58	142	53	334	20	178	43	751	174
	Add Dwellings required		155		195		354		221		925	
	Total Dwellings	3199	3354		3549		3903		4124			
Callala Bay /Callala Beach /Currarong			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		213	15	47	15	0	8	0	8	260	46
	Consolidation		0	0	0	0	0	0	0	0	0	0
	New		120	0	249	27	0	0	0	0	369	27
	Total		333	15	296	42	0	8	0	8	629	73
	Add Dwellings required		348		338		8		8		702	
	Total Dwellings	2579	2927		3265		3273		3281			
St Georges Basin			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		673	193	525	152	247	50	0	10	1445	405
	Consolidation		0	0	0	0	0	0	0	0	0	0
	New		47	0	75	5	366	38	0	0	488	43
	Total		720	193	600	157	613	88	0	10	1933	448
	Add Dwellings required		913		757		701		10		2381	
	Total Dwellings	6539	7452		8209		8910		8920			
Huskisson/Vincentia			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		93	42	16	93	20	175	0	10	129	320
	Consolidation		0	0	0	0	0	0	0	0	0	0
	New		266	107	388	0	700	93	0	0	1354	200
	Total		359	149	404	93	720	268	0	10	1483	520
	Add Dwellings required		508		497		988		10		2003	
	Total Dwellings	3014	3522		4019		5007		5017			
Sussex Inlet, Swan Haven, Cudmirrah, Berrara			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		673	193	525	152	247	50	0	10	1445	405
	Consolidation		0	0	0	0	0	0	0	0	0	0
	New		100	0	136	50	190	54	226	7	652	111
	Total		773	193	661	202	437	104	226	17	2097	516
	Add Dwellings required		966		863		541		243		2613	
	Total Dwellings	2975	3941		4804		5345		5588			
Bendalong, Berringer Lake, Conjola, Conjola Park, Cumjurong Point, Fishermans Paradise, Lake Conjola, Manyana, North Bendalong			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		264	23	48	6	0	0	0	10	312	39
	Consolidation		0	0	0	0	0	0	0	0	0	0
	New		90	6	451	46	259	30	0	0	800	82
	Total		354	29	499	52	259	30	0	10	1112	121
	Add Dwellings required		383		551		289		10		1233	
	Total Dwellings	1840	2223		2774		3063		3073			
Milton/Ulladulla			Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached
	Infill		372	113	182	136	145	327	110	290	809	866
	Consolidation		0	0	0	0	0	0	0	0	0	0
	New		200	15	347	42	770	63	680	50	1997	170
	Total		572	128	529	178	915	390	790	340	2806	1036
	Add Dwellings required		700		707		1305		1130		3842	
	Total Dwellings	7656	8356		9063		10368		11498			
Total City												
	Total											
	Add Dwellings reqd.		5768		6583		9101		6682		28129	
	Total Dwellings	42495	48263		54846		63947		70629			

13/10/2005

SECTION 64 **KANGAROO VALLEY**

AREA		DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL														
1		51	5	General	20		20		11			5	51	5
2													0	0
3													0	0
4													0	0
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**20**	**0**	**20**	**0**	**11**	**0**	**0**	**5**	**51**	**5**
NEW														
1													0	0
2													0	0
3													0	0
4													0	0
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
INFILL & NEW	**TOTAL**				**20**	**0**	**20**	**0**	**11**	**0**	**0**	**5**	**51**	**5**
ADD.DEWLL.REQUIRED					**20**		**20**		**11**		**5**		**56**	
TOTAL DWELLINGS				**204**	**224**		**244**		**255**		**260**			
				Dec 2001										
DWELLING SHORTFALL					**0**		**0**		**0**		**0**		**0**	
TOTAL DWELLINGS SUPPLIED					**224**		**244**		**255**		**260**			

LAND SUPPLY Jun-04 Jun-09 Jun.-14 Jun-24 Jun-34

NOTE 2001 HOUSE COUNT VALUE OF 204 IS TAKEN FROM - KANGAROO VALLEY SEWERAGE - OPTION DEVELOPMENT - FINAL DRAFT REPORT REFERENCE 313613 - AUGUST 2004 PREPARED BY CH2MHILL

13/10/2005

SECTION 64 BERRY

AREA		DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL														
1	Berry Township		13			8						5	0	13
2													0	0
3													0	0
4													0	0
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**0**	**8**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**13**
NEW														
1	Hitchcocks Lane	287	85		150		87	50	50	35			287	85
2	Kangaroo Valley	18			18								18	0
3	Princes Hwy/Victoria St		150	40 Care Attach		100		50					0	150
4													0	0
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**168**	**100**	**87**	**100**	**50**	**35**	**0**	**0**	**305**	**235**
INFILL & NEW	**TOTAL**				**168**	**108**	**87**	**100**	**50**	**35**	**0**	**5**	**305**	**248**
ADD.DEWLL.REQUIRED					**276**		**187**		**85**		**5**		**553**	
TOTAL DWELLINGS				**739**	**1015**		**1202**		**1287**		**1292**			
				June 2004										
DWELLING SHORTFALL														
TOTAL DWELLINGS SUPPLIED														

LAND SUPPLY

			Jun-04	Jun-09	Jun.-14	Jun-24	Jun-34
ADD.DEWLL.REQUIRED PAST GROWTH				47	50	53	15
TOTAL DWELLINGS PAST GROWTH			739	786	836	889	904

13/10/2005

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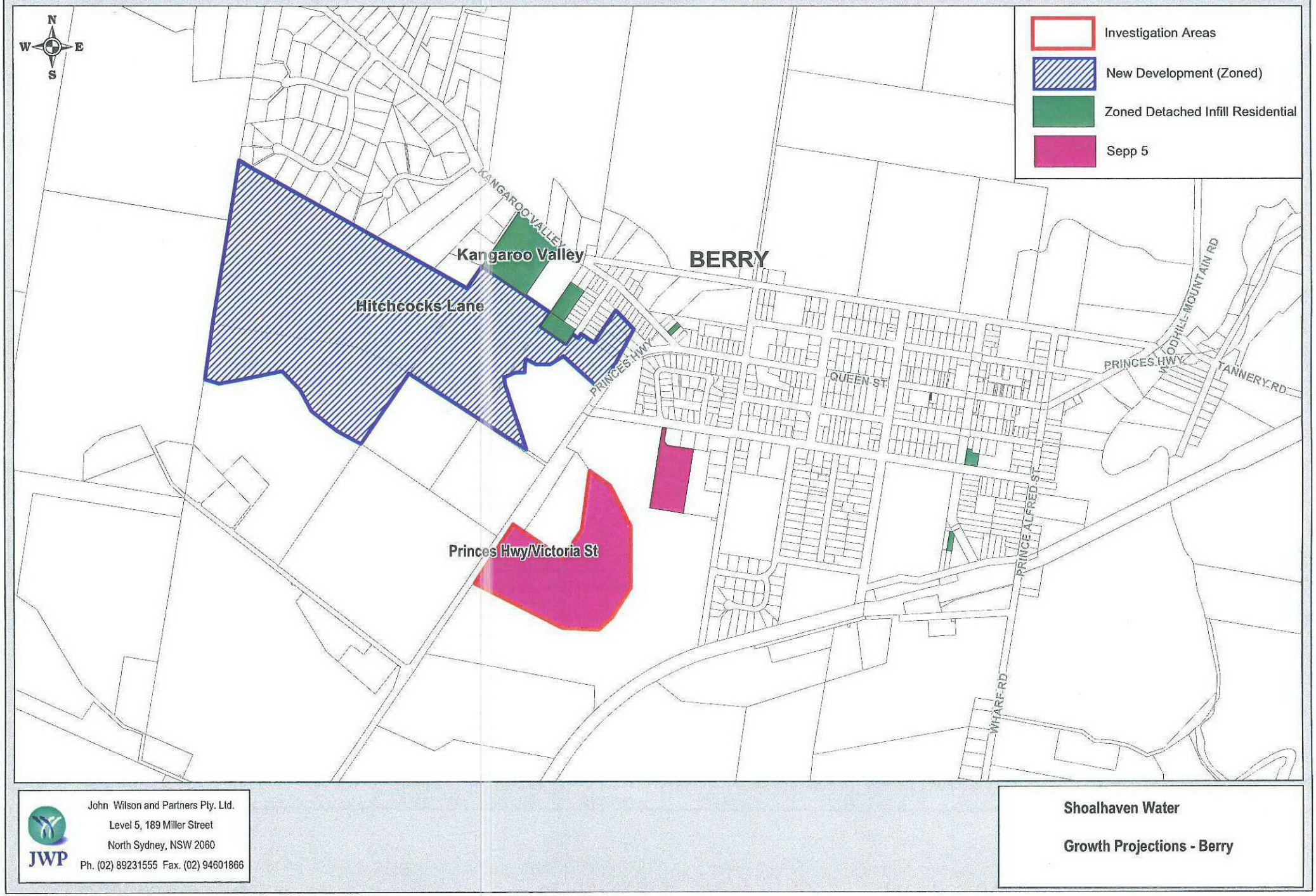

JWP

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Shoalhaven Water

Growth Projections - Berry

SECTION 64 SHOALHAVEN HEADS

AREA		DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL														
1		20	69	see note below	20	50		10		9			20	69
2			100	general attached Dual Occupancy,100		10		20		30		40	0	100
3				(over long period)									0	0
4													0	0
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				20	60	0	30	0	39	0	40	20	169
NEW														
1	aborig.land claim 6693	40	4	Shoalhaven Heads Rd/Booned Dr.	30		10	4					40	4
2	aborig.land claim 6692	340	34	Scott St/Towers Rd.			187	10	153	24			340	34
3													0	0
4													0	0
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				30	0	197	14	153	24	0	0	380	38
INFILL & NEW	TOTAL				50	60	197	44	153	63	0	40	400	207
ADD.DEWLL.REQUIRED					110		241		216		40		607	
TOTAL DWELLINGS				1638	1748		1989		2205		2245			
				June 2004										
DWELLING SHORTFALL					59		0		89		305		453	
TOTAL DWELLINGS SUPPLIED					1807		2048		2353		2698			
					Jun-04		Jun-09		Jun.-14		Jun-24		Jun-34	

NOTE: The supply of land at Shoalhaven Heads is to all intent and purposes is exhausted.Continued significant development is dependent upon the granting of the aboriginal land claims and subsequent development of these areas for which there is little precedent for this so timing is unreliable.

13/10/2005

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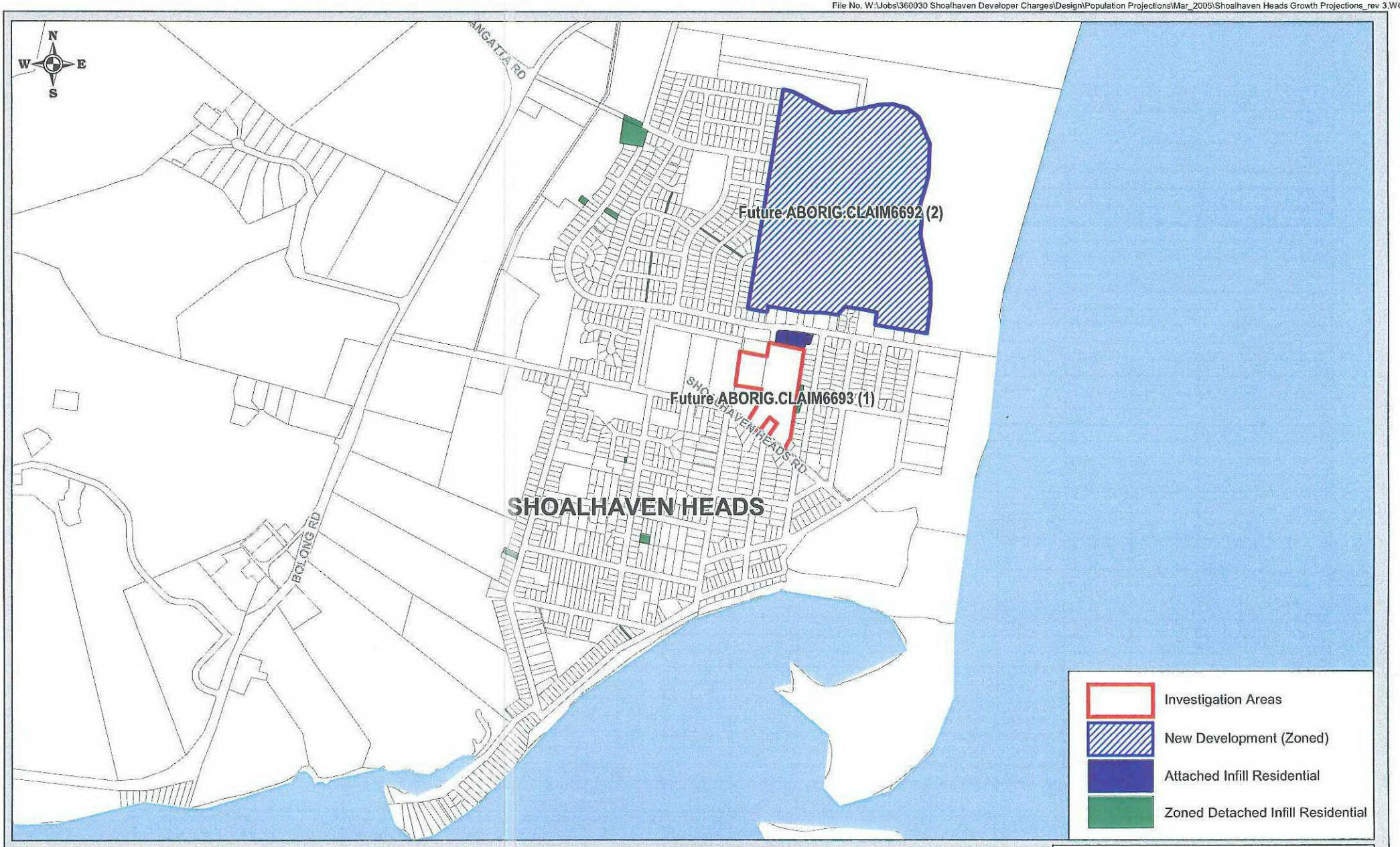

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Shoalhaven Water

Growth Projections - Shoalhaven Heads

SECTION 64 BOMADERRY AREA **STRUCTURE PLAN AREA**

AREA			DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
			Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL															
	1	Bomaderry	216	191		140	80	50	80	26	31	0	0	216	191
	2	Cambewarra	50	20		50	5	0	5	0	5	0	5	50	20
	3													0	0
	4													0	0
	5													0	0
	6													0	0
	7													0	0
														0	0
		SUB-TOTAL				**190**	**85**	**50**	**85**	**26**	**36**	**0**	**5**	**266**	**211**
(URBAN CONSOLIDATION)														0	0
	9	Bomaderry	0	1482		0	0	0	20	0	130	0	170	0	320
	10													0	0
	11													0	0
	12													0	0
		SUB-TOTAL				**0**	**0**	**0**	**20**	**0**	**130**	**0**	**170**	**0**	**320**
NEW															
	1	MossValeRd North	1040	260		0	0	0	0	400	200	640	60	1040	260
	2	MossValeRd South	1000	250		0	0	0	0	800	110	200	140	1000	250
	3	BangaleeRd West	160	40		0	0	0	0	50	20	110	20	160	40
	4	CrammsRd	864	216		0	0	300	30	564	70	0	116	864	216
	5													0	0
	6													0	0
	7													0	0
	8													0	0
	9													0	0
	10													0	0
	11													0	0
	12													0	0
		SUB-TOTAL				**0**	**0**	**300**	**30**	**1814**	**400**	**950**	**336**	**3064**	**766**
INFILL & NEW		**TOTAL**				**190**	**85**	**350**	**135**	**1840**	**566**	**950**	**511**	**3330**	**1297**
ADD.DEWLL.REQUIRED						**275**		**485**		**2406**		**1461**		**4627**	
TOTAL DWELLINGS					3634	**3909**		**4394**		**6800**		**8261**			
					June 2004										
DWELLING SHORTFALL						**0**		**0**		**0**		**0**		**0**	
TOTAL DWELLINGS SUPPLIED						**3909**		**4394**		**6800**		**8261**			

Jun-04 Jun-09 Jun.-14 Jun-24 Jun-34

13/10/2005

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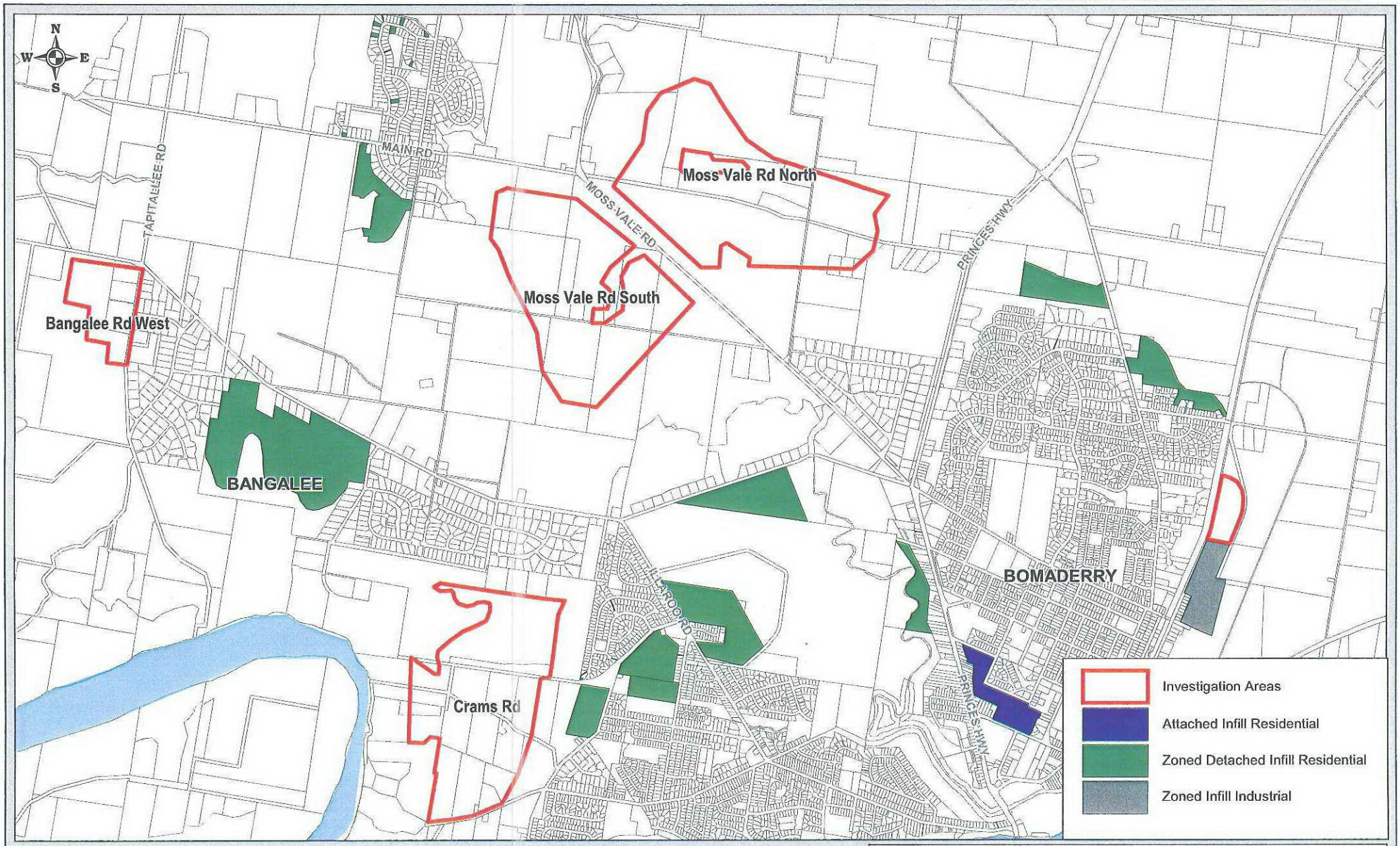

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Shoalhaven Water

Growth Projections - Cambewarra, Bomaderry, North Nowra

SECTION 64 NOWRA AREA **STRUCTURE PLAN AREA**

AREA		DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL														
1	North Nowra	221	24		120	14	80	10	21	0	0	0	221	24
2	Nowra	363	422		120	55	200	208	43	119	0	40	363	422
3	West Nowra	284	20		120	5	144	10	20	5	0	0	284	20
4	Worrigee	1223	101		600	40	400	50	213	1	10	10	1223	101
5													0	0
6													0	0
7													0	0
	SUB-TOTAL				**960**	**114**	**824**	**278**	**297**	**125**	**10**	**50**	**2091**	**567**
(URBAN CONSOLIDATION)													0	0
9	North Nowra	0	1805		0	0	0	10	0	140	0	120	0	270
10	Nowra	0	3383		0	0	0	70	0	430	0	600	0	1100
11													0	0
12													0	0
	SUB-TOTAL				**0**	**0**	**0**	**80**	**0**	**570**	**0**	**720**	**0**	**1370**
NEW														
1	Mundamia	576	144		0	0	400	40	176	104	0	0	576	144
2	Cabbage Tree Lane	1744	436		0	0	0	0	840	0	904	436	1744	436
3	Worrigee 2	312	78		30	10	100	20	70	15	112	33	312	78
4	Bamarang	1784	446		0	0	0	0	0	0	1024	250	1024	250
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**30**	**10**	**500**	**60**	**1086**	**119**	**2040**	**719**	**3656**	**908**
INFILL & NEW	**TOTAL**				**990**	**124**	**1324**	**418**	**1383**	**814**	**2050**	**1489**	**5747**	**2845**
ADD.DEWLL.REQUIRED					**1114**		**1742**		**2197**		**3539**		**8592**	
TOTAL DWELLINGS				**8478**	**9592**		**11334**		**13531**		**17070**			
				June 2004										
DWELLING SHORTFALL					**0**		**0**		**0**		**0**		**0**	
TOTAL DWELLINGS SUPPLIED					**9592**		**11334**		**13531**		**17070**			

Jun-04 Jun-09 Jun.-14 Jun-24 Jun-34

13/10/2005

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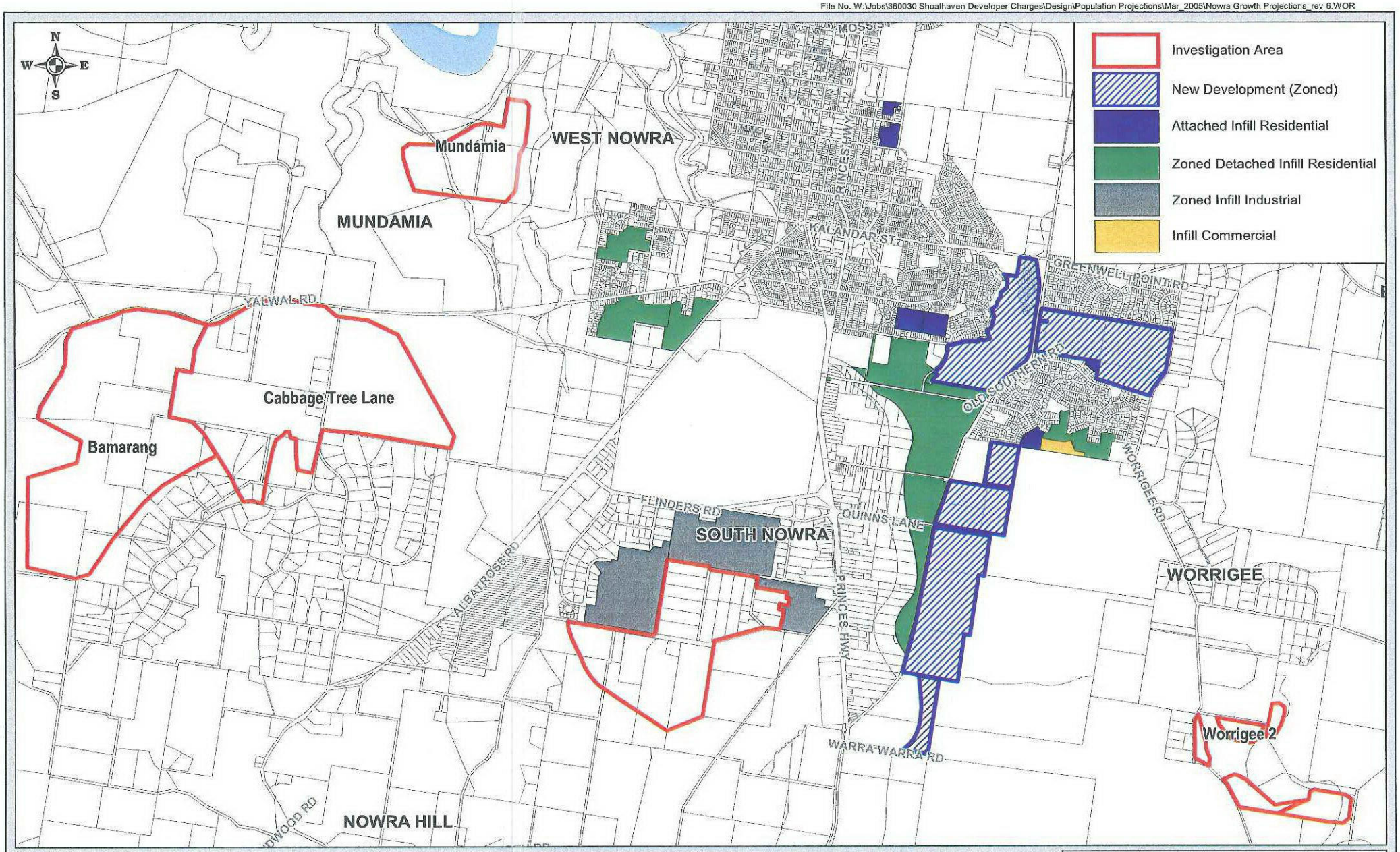

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Shoalhaven Water

Growth Projections - Nowra

SECTION 64 CULBURRA BEACH/CROOKHAVEN/GREENWELL POINT/ORIENT POINT

AREA		DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL														
1	Culburra Beach	70	118		50	50	20	48		10		10	70	118
2	Greenwell Point	32	4		25	4	7						32	4
3	Orient Point	11	4		11	4							11	4
4													0	0
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**86**	**58**	**27**	**48**	**0**	**10**	**0**	**10**	**113**	**126**
NEW														
1	Greenwell Point Rd/Bindaree St.	21		GWP	11		10						21	0
2	Park Row, Culburra Beach	67		Jeringah LALC			20		47				67	0
3	Culburra expansion area	550	50				85	5	287	10	178	33	550	48
4													0	0
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**11**	**0**	**115**	**5**	**334**	**10**	**178**	**33**	**638**	**48**
INFILL & NEW	**TOTAL**				**97**	**58**	**142**	**53**	**334**	**20**	**178**	**43**	**751**	**174**
ADD.DEWLL.REQUIRED					**155**		**195**		**354**		**221**		**925**	
TOTAL DWELLINGS				**3199**	**3354**		**3549**		**3903**		**4124**			
				June 2004										
DWELLING SHORTFALL														
TOTAL DWELLINGS SUPPLIED					**3354**		**3549**		**3903**		**4124**			

Jun-04 Jun-09 Jun.-14 Jun-24 Jun-34

NOTE : If the Culburra expansion outside the Lake Wollumboola catchment is not developed a shortfall of 80 dwellings occurs in the 2009-2014 period and the supply is exhausted completely in the following period.In essence the land supply is to year 2013 without this land

NOTE: If the Culburra expansion area is developed at an earlier stage that would in turn affect the increase the demand as recent growth has been curtailed by the lack of land in Culburra

13/10/2005

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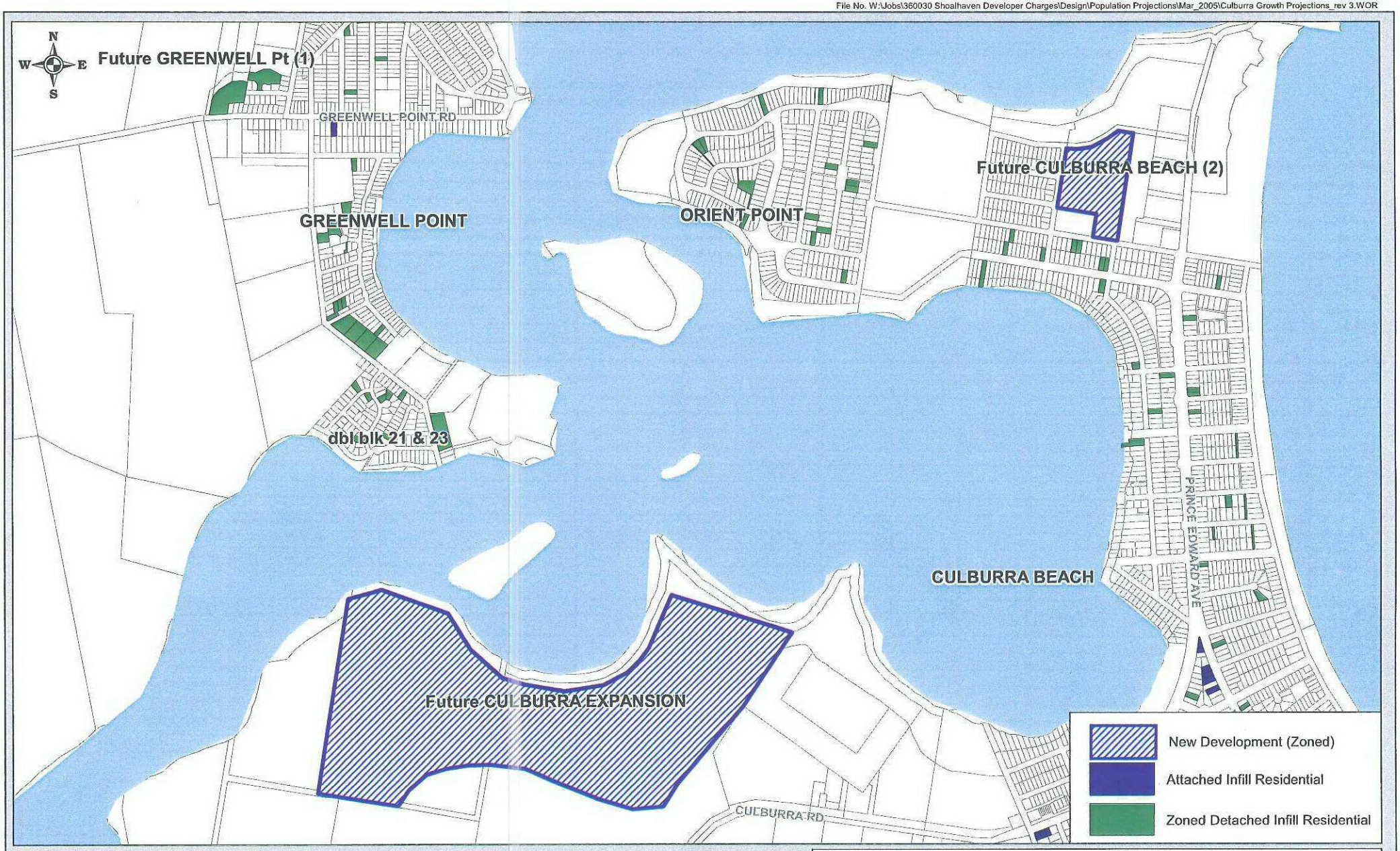

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Shoalhaven Water

Growth Projections - Culburra Beach/ Crookhaven/ Greenwell Point/ Orient Point

SECTION 64 CALLALA BAY/BEACH,CURRARONG

AREA		DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL														
1	Callala Bay	181	30		160	10	21	10		5		5	181	30
2	Callala Beach	61	14		40	4	21	4		3		3	61	14
3	Currarong	13			10		3						13	0
4	Myola	5	2		3	1	2	1					5	2
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**213**	**15**	**47**	**15**	**0**	**8**	**0**	**8**	**260**	**46**
NEW														
1	Callala Bay Sheaffe St.	36	5		30		6	5					36	5
2	Callala Bay Emmett St	220	22				220	22					220	22
3	Callala Beach/Griffin St	93			90		3						93	0
4	Calla Beach/Roskell Rd	20					20						20	0
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**120**	**0**	**249**	**27**	**0**	**0**	**0**	**0**	**369**	**27**
INFILL & NEW	**TOTAL**				**333**	**15**	**296**	**42**	**0**	**8**	**0**	**8**	**629**	**73**
ADD.DEWLL.REQUIRED					**348**		**338**		**8**		**8**		**702**	
TOTAL DWELLINGS				**2579**	**2927**		**3265**		**3273**		**3281**			
				June 2004										
DWELLING SHORTFALL					**36**		**152**							
TOTAL DWELLINGS SUPPLIED					**2963**		**3453**		**3461**		**3469**			
				Jun-04	Jun-09		Jun.-14		Jun-24		Jun-34			

Note ; New Area 2 requires rezoning area delineated in Jervis Bay Settlement Strategy

13/10/2005

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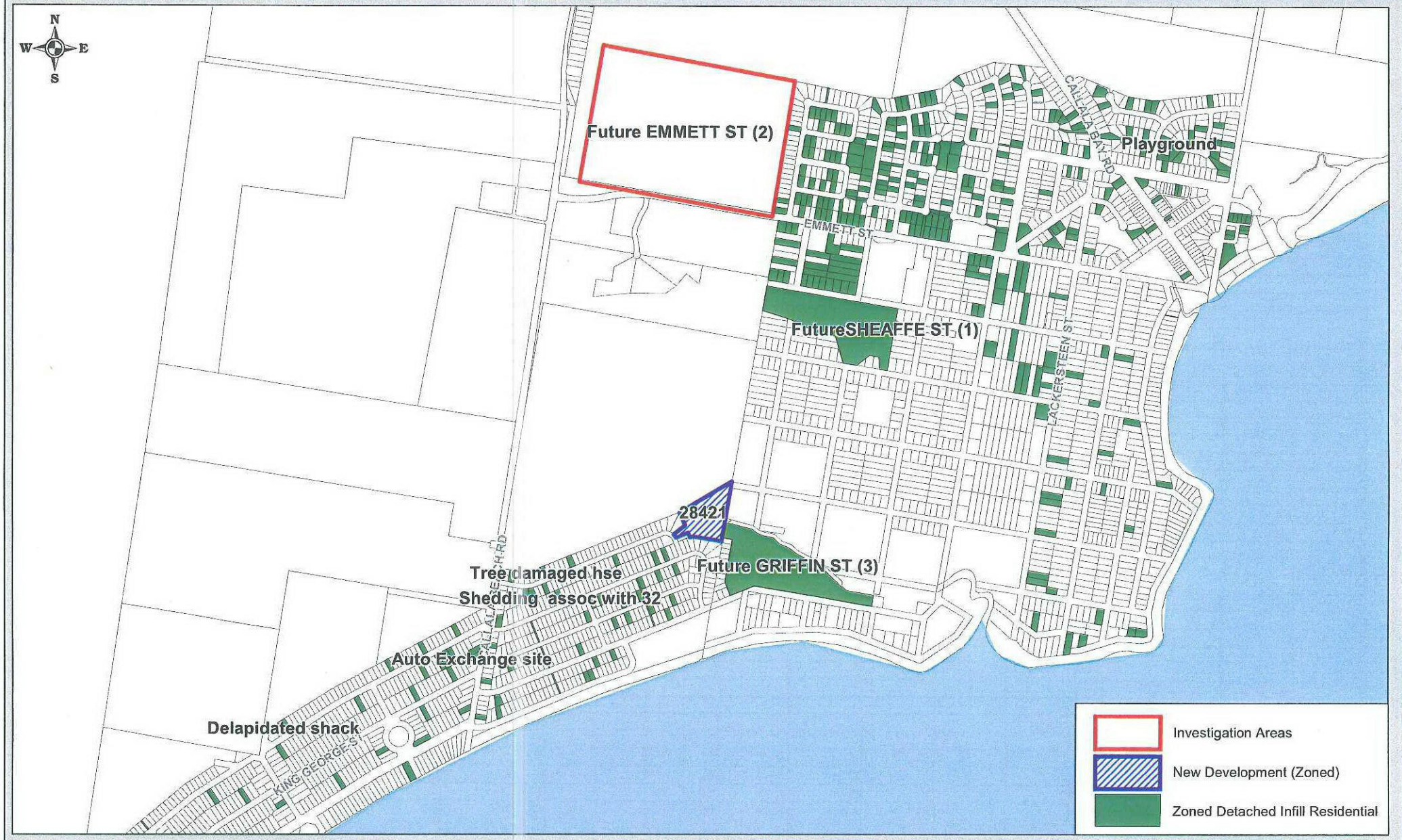

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Shoalhaven Water

Growth Projections - Callala Bay/Beach

SECTION 64 **HUSKISSON / VINCENTIA AREA**

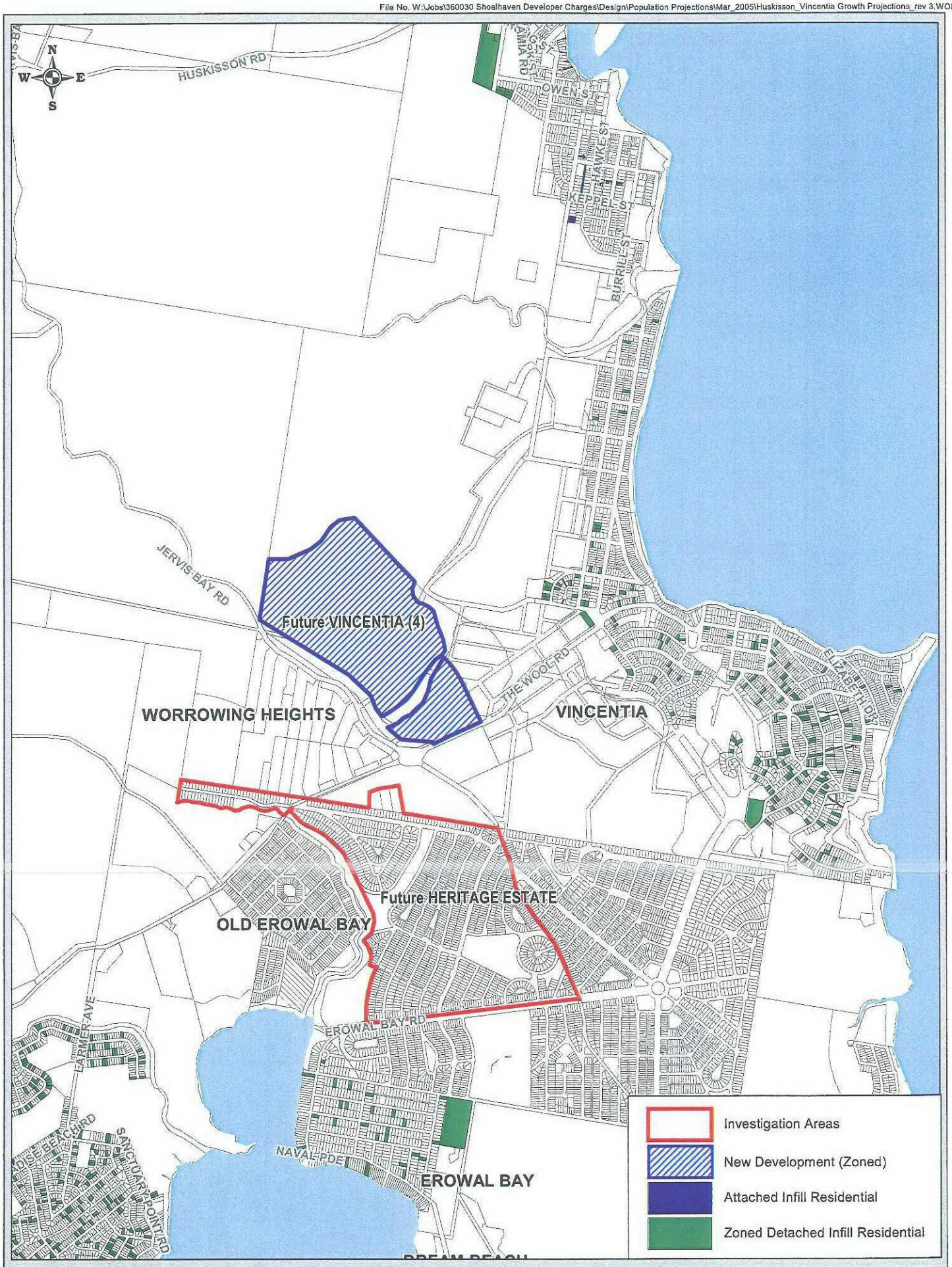
AREA		DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL														
1	Woollamia	27	2		6	0	8	1	13	1	0	0	27	2
2	Huskisson	0	169		0	0	0	50	0	114	0	5	0	169
3	Vincentia	100	145		85	40	8	40	7	60	0	5	100	145
4	Hyams Beach	2	4		2	2	0	2	0	0	0	0	2	4
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**93**	**42**	**16**	**93**	**20**	**175**	**0**	**10**	**129**	**320**
NEW														
1	Vincentia crossroads	654	130		266	107	388	0	0	23			654	130
2	Heritage Estates	700	70						700	70			700	70
3													0	0
4													0	0
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**266**	**107**	**388**	**0**	**700**	**93**	**0**	**0**	**1354**	**200**
INFILL & NEW	**TOTAL**				**359**	**149**	**404**	**93**	**720**	**268**	**0**	**10**	**1483**	**520**
ADD.DEWLL.REQUIRED					**508**		**497**		**988**		**10**		**2003**	
TOTAL DWELLINGS				**3014**	**3522**		**4019**		**5007**		**5017**			
				June 2004										
DWELLING SHORTFALL					**0**		**0**		**0**		**0**		**0**	
TOTAL DWELLINGS SUPPLIED					**3522**		**4019**		**5007**		**5017**			

Jun-04 Jun-09 Jun.-14 Jun-24 Jun-34

NOTE: THE LAND SUPPLY IN THEORY RUNS OUT IN 2023-24

13/10/2005

File No. W:\Jobs\360030 Shoalhaven Developer Charges\Design\Population Projections\Mar_2005\Huskisson_Vincentia Growth Projections_rev 3.WOR



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Shoalhaven Water

Growth Projections - Huskisson/ Vincentia

SECTION 64 **SAINT GEORGES BASIN AREA**

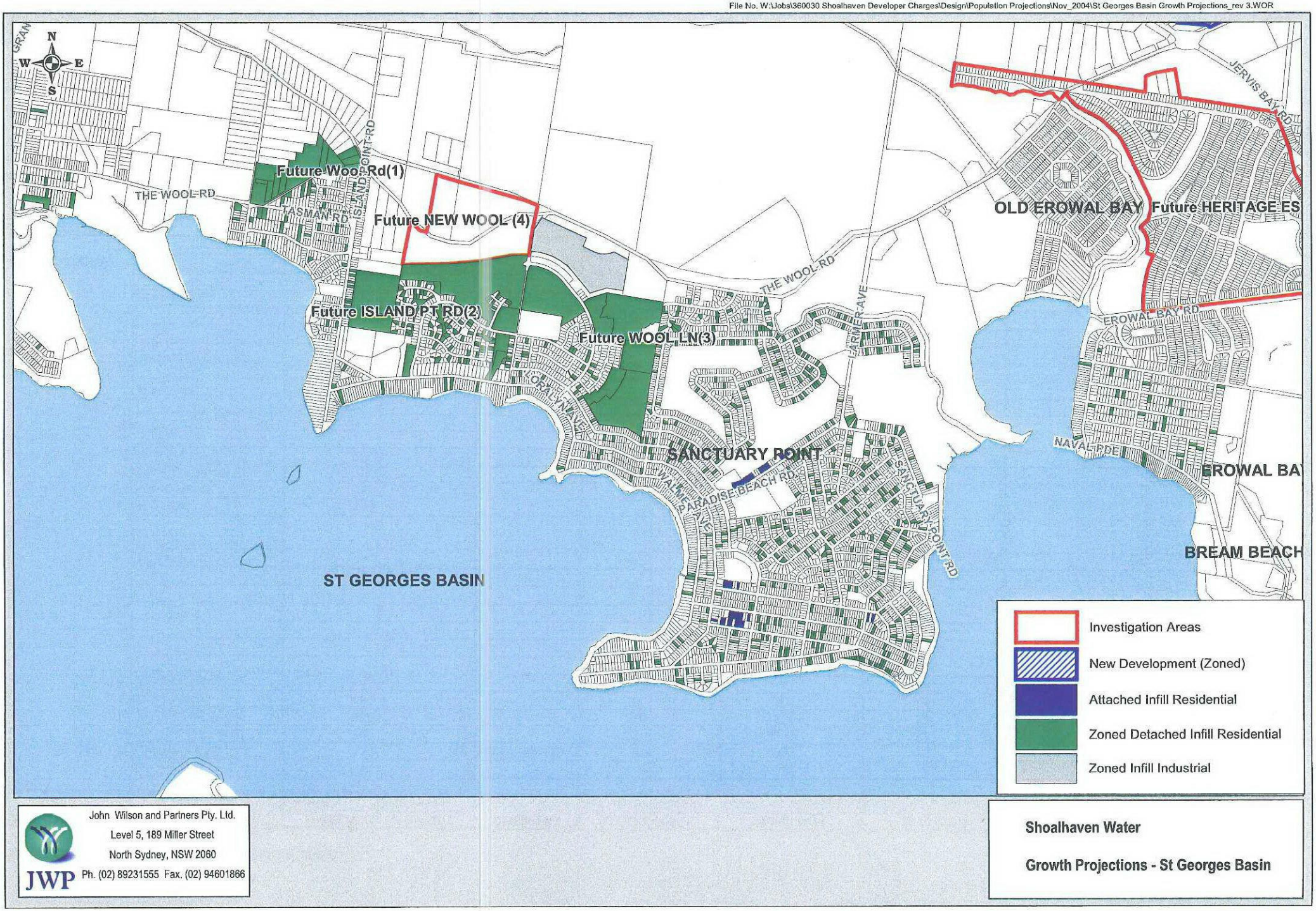
AREA		DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL														
1	Erowal Bay	11	6		8	2	2	2	1	2			11	6
2	Old Erowal Bay	123	305	Henry Kendall	30	180	35	125	58	0			123	305
3	Sanctuary Point	741	52		320	5	283	13	138	29		5	741	52
4	St.Georges Basin	496	32		280	4	180	10	36	13		5	496	32
5	Basin Veiw	59	8		30	2	20	2	9	4			59	8
6	Wrights Beach	15	2		5		5		5	2			15	2
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**673**	**193**	**525**	**152**	**247**	**50**	**0**	**10**	**1445**	**405**
NEW														
1	Wool Rd.	48	4		7		10		31	4			48	4
2	Island Pt.Rd.	52	8		20		15	3	17	5			52	8
3	Wool Ln/Anson St.	126	13		20		50	2	56	11			126	13
4	New Wool Rd	262	18						262	18			262	18
5													0	0
6													0	0
7													0	0
8													0	0
9													0	0
10													0	0
11													0	0
12													0	0
	SUB-TOTAL				**47**	**0**	**75**	**5**	**366**	**38**	**0**	**0**	**488**	**43**
INFILL & NEW	**TOTAL**				**720**	**193**	**600**	**157**	**613**	**88**	**0**	**10**	**1933**	**448**
ADD.DEWLL.REQUIRED					**913**		**757**		**701**		**10**		**2381**	
TOTAL DWELLINGS				**6539**	**7452**		**8209**		**8910**		**8920**			
				June 2004										
DWELLING SHORTFALL					**0**		**0**		**0**		**0**		**0**	
TOTAL DWELLINGS SUPPLIED					**7452**		**8209**		**8910**		**8920**			

Jun-04 Jun-09 Jun.-14 Jun-24 Jun-34

NOTE: THE LAND SUPPLY IN THEORY RUNS OUT IN 2023-24

13/10/2005

File No. W:\Jobs\360030 Shoalhaven Developer Charges\Design\Population Projections\Nov_2004\St Georges Basin Growth Projections_rev 3.WOR



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Shoalhaven Water

Growth Projections - St Georges Basin

SECTION 64 SUSSEX INLET,SWANHAVEN,CUDMIRRAH.BERRARA

AREA		DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL														
1	Sussex Inlet	220	27		130	10	70	10	10	2	10	5	220	27
2	Swanhaven	9	5						9			5	9	5
3	Cudmirrah	8	5		4		4					5	8	5
4	Berrara	31	13		20	4	6	4	5			5	31	13
5														
6														
7														
8														
9														
10														
11														
12														
	SUB-TOTAL				**154**	**14**	**80**	**14**	**24**	**2**	**10**	**20**	**268**	**50**
NEW														
1	Sussex Inlet Rd/Springs Rd SI	196	66		100		70	40	26	26			196	66
2	Sussex Inlet Suncrest Ave, SI	120	30				66	10	54	20			120	30
3	Sussex Inlet Extension, SI	700	70								180		180	0
4	Springs Rd/Thomson St.South, SI	80	8						60	8	20		80	8
5	Springs Rd/Thomson St.North, SI	76	7						50		26	7	76	7
6														
7														
8														
9														
10														
11														
12														
	SUB-TOTAL				**100**	**0**	**136**	**50**	**190**	**54**	**226**	**7**	**652**	**111**
INFILL & NEW	**TOTAL**				**254**	**14**	**216**	**64**	**214**	**56**	**236**	**27**	**920**	**161**
ADD.DEWLL.REQUIRED					**268**		**280**		**270**		**263**		**1081**	
TOTAL DWELLINGS				**2975**	**3243**		**3523**		**3793**		**4056**			
				June 2004										
DWELLING SHORTFALL					**0**		**0**		**0**		**0**		**0**	
TOTAL DWELLINGS SUPPLIED					**3243**		**3523**		**3793**		**4056**			

Jun-04 Jun-09 Jun.-14 Jun-24 Jun-34

NOTE: New area 3 requires rezoning

13/10/2005

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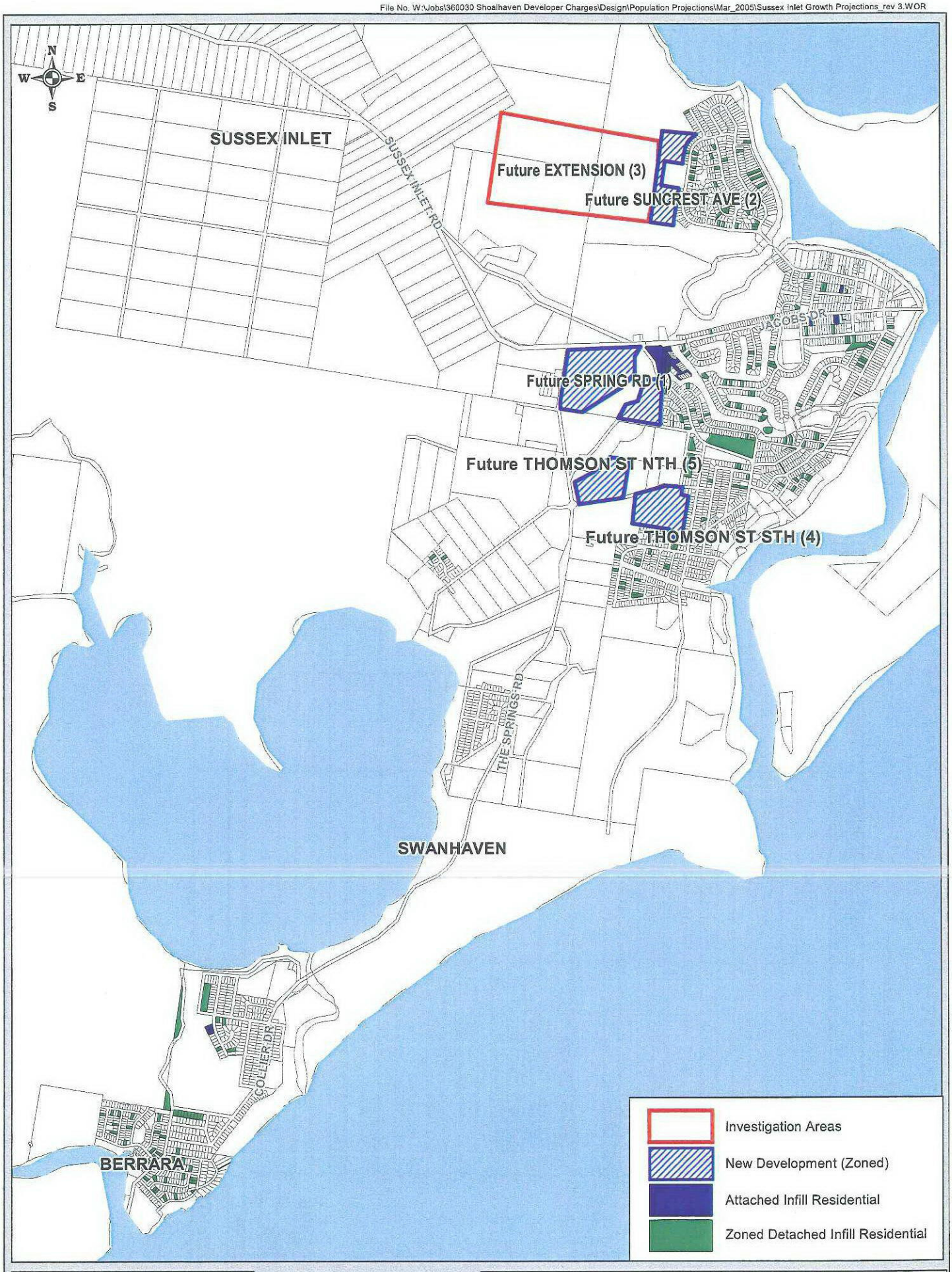

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Shoalhaven Water

Growth Projections - Sussex Inlet/ Swanhaven/ Cudmirrah/ Berrara

SECTION 64 **BENDALONG,BERRINGER LAKE,CONJOLA,CONJOLA PARK,CUNJURONG POINT,FISHERMANS PARADISE,LAKE CONJOLA CONJOLA PARK,MANYANA,NORTH BENDALONG**

AREA		DWELLING CAPACITY		COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL														
1	Fishermans Paradise	66	4		50	2	16	2					66	4
2	Bendalong	19	2		15	2	4						19	2
3	Manyana	112	19		100	10	12	4				5	112	19
4	Cunjurong	8	2		7	2	1						8	2
5	Berringer Lake	7	0		2		5						7	0
6	Conjola Park	47	4		40	4	7						47	4
7	Lake Conjola	53	8		50	3	3					5	53	8
8														
9														
10														
11														
12														
	SUB-TOTAL				**264**	**23**	**48**	**6**	**0**	**0**	**0**	**10**	**312**	**39**
NEW														
1	Fishermans Paradise Rd	37	4		10	2	27	2					37	4
2	ManyanaDrive/TheBounty	63	6		40		23	6					63	6
3	ManyanaDrive/CurversDr	140	16		20	2	120	14					140	16
4	Berringer Rd	160	16		20	2	140	14					160	16
5	Cunjurong Point Rd	300	30				41		259	30			300	30
6	Lake Conjola	100	10				100	10					100	10
7														
8														
9														
10														
11														
12														
	SUB-TOTAL				**90**	**6**	**451**	**46**	**259**	**30**	**0**	**0**	**800**	**82**
INFILL & NEW	**TOTAL**				**354**	**29**	**499**	**52**	**259**	**30**	**0**	**10**	**1112**	**121**
ADD.DEWLL.REQUIRED					**383**		**551**		**289**		**10**		**1233**	
TOTAL DWELLINGS				**1840**	**2223**		**2774**		**3063**		**3073**			
				June 2004										
DWELLING SHORTFALL					**0**		**0**		**0**		**0**		**0**	
TOTAL DWELLINGS SUPPLIED					**2223**		**2774**		**3063**		**3073**			

Jun-04 Jun-09 Jun.-14 Jun-24 Jun-34

NOTE

The projections in this spreadsheet are based on a different method of projection than other areas That is dwelling approvals rather than population growth.The validity of this method cannot be maintained for a period longer than 10 years. It can be seen from the above table that that land supply is exhausted in this period except for new 5 Cunjurong Point Road .There are some questions over this land as it is State Land and may not be available for development.

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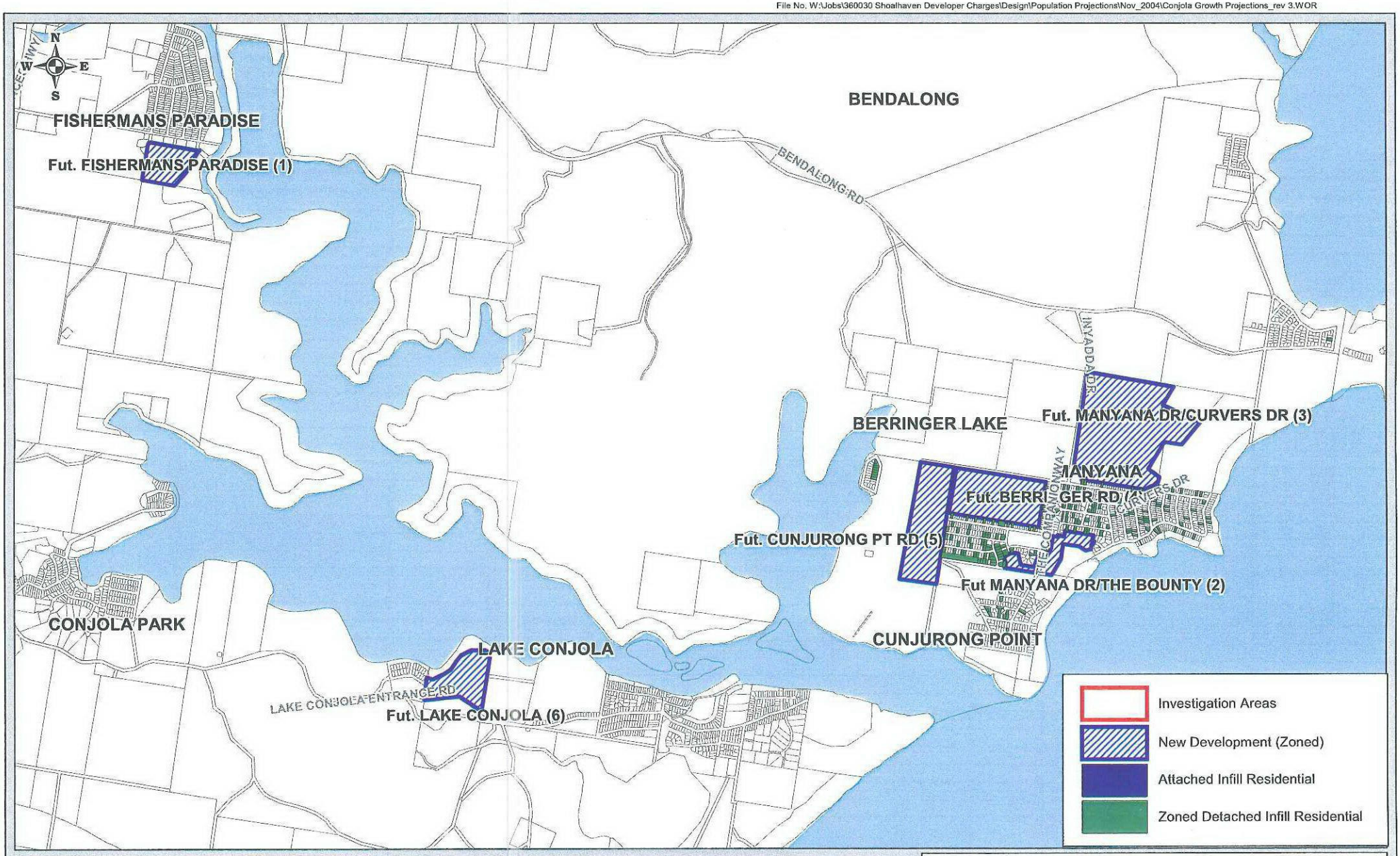

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Shoalhaven Water

Growth Projections - Berringer Lake, Manyana, Cunjorong Point, Fishermans Paradise, Lake Conjola

SECTION 64 MILTON ULLADULLA

AREA		DWELLING CAPACITY				COMMENT	2004-2009		2009-2014		2014-2024		2024-2034		TOTAL	
		LOTS	TOTAL DWELLINGS	Detached	Attached		Detached	Attached	Detached	Attached	Detached	Attached	Detached	Attached	Detached	attached
INFILL																
1	Milton/Ulladulla						347	113	167	130	145	327	110	290	769	860
2	Tabourie Lake						25		15	6					40	6
3															0	0
4															0	0
5															0	0
6															0	0
7															0	0
8															0	0
9															0	0
10															0	0
11															0	0
12															0	0
	SUB-TOTAL						**372**	**113**	**182**	**136**	**145**	**327**	**110**	**290**	**809**	**866**
NEW																
	New Attached							10		20		15		5	0	50
1	Milton	153	170	153	17		15		30	2	40	5	68	7	153	14
2	Milton GordenSt precinct	52		52					10		20		22	4	52	4
3	Narrwallee	176	200	176	24		15	2	60	4	80	7	20	7	175	20
4	Bishop Dr.Mollymook Bc	265	290	265	25		25	2	35	4	90	7	110	7	260	20
5	Settlers Way Mollymook	270	113	270	113	CARAVAN PARK LONG TERM	15	1	35	4	100	7	110	4	260	16
6	PrincesHighwayNth Ulla	510	560	510	50		25		40	4	160	10	190	7	415	21
7	Cashman Rd.Ulladulla	226	250	226	24		30		40	4	80	4	70	2	220	10
8	Kings Point	172		172					10		100	4	50	2	160	6
9	Princes Highway Burrill L	120		120					10		70	2	20	2	100	4
10	Dolpin Point Rd DolphinPt	370		370			30		60		30	2	20	3	140	5
11	Tabourie Lake	62		62			45		17						62	0
	SUB-TOTAL						**200**	**15**	**347**	**42**	**770**	**63**	**680**	**50**	**1997**	**170**
INFILL & NEW	**TOTAL**						**572**	**128**	**529**	**178**	**915**	**390**	**790**	**340**	**2806**	**1036**
ADD.DEWLL.REQUIRED							**700**		**707**		**1305**		**1130**		**3842**	
TOTAL DWELLINGS						**7656**	**8356**		**9063**		**10368**		**11498**			
						June 2004										
DWELLING SHORTFALL							**0**		**0**		**0**		**0**		**0**	
TOTAL DWELLINGS SUPPLIED							**8356**		**9063**		**10368**		**11498**			

Jun-04 Jun-09 Jun.-14 Jun-24 Jun-34

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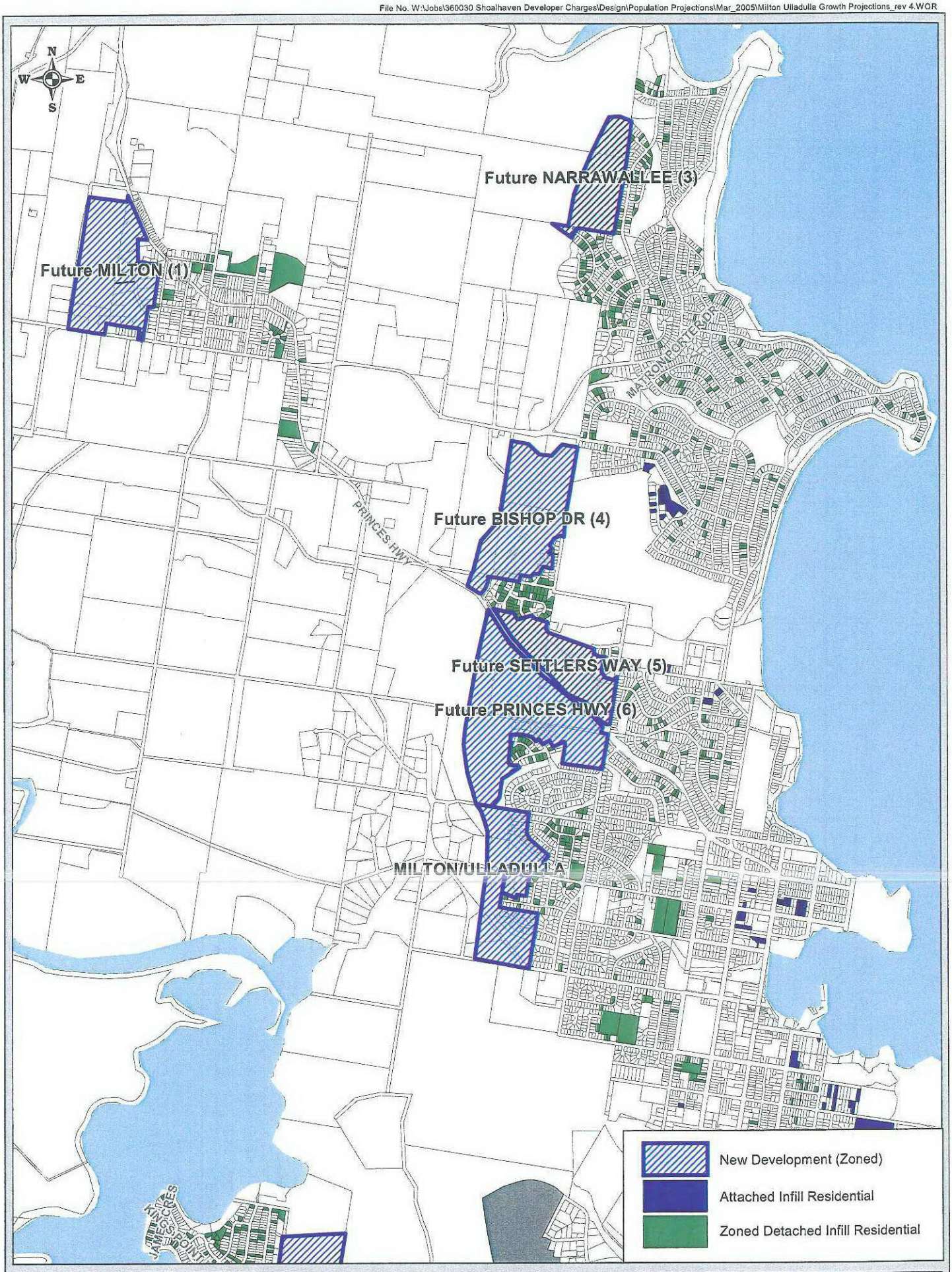

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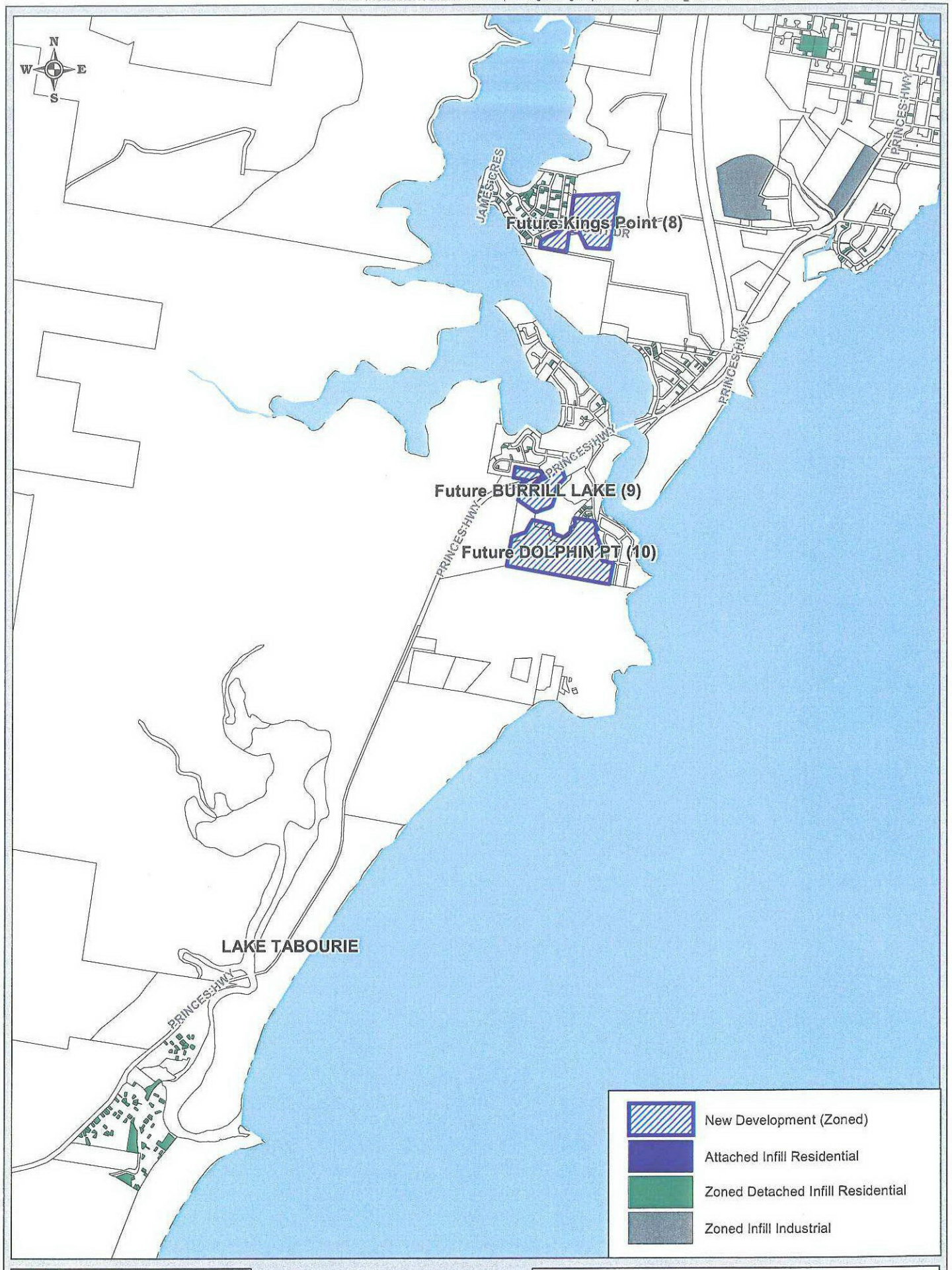
Growth Projections - Milton, Ulladulla

File No. W:\Jobs\360030 Shoalhaven Developer Charges\Design\Population Projections\Mar_2005\Milton Ulladulla Lake Tabourie Growth Projections_rev 4.WOR



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Shoalhaven Water

Growth Projections - Milton, Ulladulla, Lake Tabourie

Shoalhaven Water

A Group of Shoalhaven City Council

SECTION 64 CITY WIDE DEVELOPMENT SERVICING PLANS

HEADWORKS CAPACITY, CAPABILITY AND CAPITAL WORKS CALCULATIONS

AUGUST 2005

Bill Tomkinson
Planning and Development Manager
Shoalhaven Water

Ljupco Lazarevski
Systems Development Engineer
Shoalhaven Water

INTRODUCTION

The Section 64 City Wide Development Servicing Plans (DSP) is required to be calculated in accordance with the Department of Energy, Utilities and Sustainability Guidelines. Included in the DSP's are Water Supply and Wastewater Headworks Capital Works comprising:

- Water Treatment Plants (WTP's)
- Trunk Water Mains and Reservoirs
- Wastewater Treatment Plants (WwTP's)
- Trunk Sewers, pumping stations and transfer pipelines

The Headworks Capital Works Plan is calculated from 2005/06 to 2034/35 and will be reviewed every five years with the review of the City Wide DSP.

1.0 WATER SUPPLY

1.1 Design

For Treatment Plants, Trunk Mains and Reservoirs the Design Standards is one day's peak demand.

1.2 Peak Day Demand

To determine a peak day demand the records were reviewed from the Bamarang Flatrock and Milton Water Treatment Plants for the peak day event during a series of hot days. Records indicate that peak demands were experienced in January 1994, December 1997 and November 2002 as shown in Table 1 below:

1994	Usage (ML/d)	1997	Usage (ML/d)	2002	Usage (ML/d)
1-Jan	90.98	16-Dec	70.77	2-Nov	85.14
2-Jan	87.21	17-Dec	73.15	3-Nov	76.50
3-Jan	82.77	18-Dec	82.91	4-Nov	81.03
4-Jan	82.84	19-Dec	64.73	5-Nov	79.03
5-Jan	77.92	20-Dec	69.87	6-Nov	73.45
6-Jan	88.03	21-Dec	68.23	7-Nov	70.24
7-Jan	92.90	22-Dec	75.29	8-Nov	82.11
8-Jan	102.91	23-Dec	81.05	9-Nov	76.42
9-Jan	95.76	24-Dec	77.06	10-Nov	75.72
10-Jan	87.61	25-Dec	51.39	11-Nov	75.68
11-Jan	70.51	26-Dec	63.73		
12-Jan	83.64	27-Dec	68.25		
13-Jan	82.86	28-Dec	68.71		
14-Jan	63.35	29-Dec	67.72		
15-Jan	65.21	30-Dec	93.31		
16-Jan	73.70	31-Dec	94.95		
17-Jan	59.80	1-Jan 98	79.47		
18-Jan	62.29	2-Jan-98	75.27		
19-Jan	55.57				
20-Jan	55.69				
21-Jan	57.10				
22-Jan	68.18				
23-Jan	69.68				
24-Jan	60.47				
25-Jan	73.78				
26-Jan	92.12				
27-Jan	70.19				
28-Jan	56.79				
29-Jan	76.66				
30-Jan	74.25				
31-Jan	67.27				

TABLE 1 –RECORDS OF PERIODS WITH HIGH/PEAK DEMANDS

The November 2002 peak was during Level 1 Water Restrictions and is therefore, discarded. Although some peak days were experienced over the Christmas/New Year peak holiday period 1st January 1994 (90.98Ml/d) and 31 December 1997 (94.95Ml/d) the peak day experienced in Shoalhaven was 8 January 1994 at 102.91ML/d.

Since 1994 the city has grown from a permanent population of 75,000 to around 92,000 people. Whilst the population has increased the peak day of 1993 has not been repeated, however, it is not to say that it could be in the future as population further increases. Therefore, a peak day demand of 103 Ml/d has been adopted.

This is consistent with the general community awareness of the need to reduce water consumption from vigorous Demand Management measures such as promotion, education, water efficient devices and water pricing.

1.3 Growth

In extrapolating the peak day demand into the future there will be variation of growth between residential and non-residential. Residential population growth has been determined by Shoalhaven Council's Planning Services Group and has also advised that the following non-residential growth should be used:

- Caravan Parks maintained at existing development (no growth),
- Growth of non-residential for Nowra/Bomaderry based on provided floor areas for commercial and land areas for industrial growth,
- Growth of non-residential for Saint Georges Basin and Ulladulla in proportion to 50% of residential growth
- Growth of non-residential for other areas in proportion to 25% of residential growth.

It is also assumed that large industrial customers, Manildra (5Ml/d peak) and Australian Paper (11 Ml/d) will maintain this current demand and no new large water users would be established.

1.4 Residential Peak Demand

The calculation of residential demand is determined by:

- Peak day demand 103 Ml/d
- Less Australian Paper 11 Ml/d
- Less Manildra 5 Ml/d
- Less Non-residential 14 Ml/d
- Peak residential 73 Ml/d

The 2004 total residential ET's is 42,495 hence the 2004 peak day demand is 1,718 litres/ET/day (73Ml/d ÷ 42,495 ET). For non-residential demand see Section 1.5.

Due to limited available peak day data and attenuation in storages with an approximate current 1.5 days peak demand capacity, a peak demand for residential properties is recommended at 2,000 l/ET/d. Note that this is 50% of the value adopted in traditional design using Public Works Design Standards where no consumption data is available.

1.5 Calculation of Non-Residential Peak Demand

Non-residential peak demand was calculated from meter readings over 2003/2004. Over this period meters were read either monthly, three monthly or annually as shown in Table 3 below. Monthly consumption figures were also used to determine the peak month.

WATER Non Residential 2003-2004		
TOTAL	3,659,227	kls per annum
MONTHLY A/C's	804,808	kls per annum

TABLE 2 – ANNUAL NON-RESIDENTIAL USAGE

The total non-residential usage was 3,659,227 kilolitres per annum or 10 Ml/d on average.

Monthly Accounts Consumption (kL) (Sept 03 to August 04)	
Sep-03	63,581
Oct-03	65,078
Nov-03	58,532
Dec-03	76,620
Jan-04	92,939
Feb-04	67,367
Mar-04	69,576
Apr-04	72,520
May-04	60,418
Jun-04	54,901
Jul-04	63,207
Aug-04	60,069
Total	**804,808**
Minimum	**54,901**
Maximum	**92,939**
Average	**67,067**

TABLE 3 – MONTHLY USAGE OF NON-RESIDENTIAL USERS

The ratio of average monthly to peak month consumption is:
= 92,939 ÷ 67,067 x 100 = 138.6% say 140%.

Therefore the peak non-residential day (2004) is assumed to be the ratio of the average non-residential day x 140%, or 14 Ml/day (10 Ml/d x 1.4).

The demand from meter reading was determined for each locality and placed under the serving reservoir zone as shown in Table 4, with caravan parks isolated from non-residential consumption.

1.6 Reservoirs

The existing reservoir and capacities are shown on Table 5 together with additional required storage capacities. Table 5 also notes water supply pumping station augmentation. This has been transferred to Table 6 – Shoalhaven Water Schemes – Proposed Water Supply Capital Works Program.

1.7 Treatment Plant Capacity

The treatment plant capacity for both North and Southern Shoalhaven is 113.5 Ml/d and will be upgraded to 143.5 Ml/d (Bamarang, 30 Ml/d upgrade) from 2010/11. Further augmentation to the Bamarang WTP to 173.5 Ml/d (30 Ml/d upgrade) from 2022/23 as shown on Table 6 – Shoalhaven Water Schemes – Proposed Water Supply Capital Works Program.

1.8 Proposed Capital Works

The growths for residential and non-residential have been converted to peak demands in the growth periods to year 2034 as shown in Table 5.

The demands from all residential, non-residential, caravan parks, farms and Manildra have been included for Treatment Plant and Reservoir capacity.

In addition to being provided with treated water, APM and Manildra are supplied with their raw water needs via a dedicated pipeline.

The determination of Capital Works cost is based on DEUS reference rates and as shown on Table 6. Note that costs (pipelines, pumping stations, reservoirs, etc) have been increased by 30% due to current contract values.

These costs, together with growth projections and proposed headworks have been used in developing the proposed capital works program as shown on Table 6 – Water Supply Capital Works Program.

2.0 WASTEWATER

Wastewater Headworks only applies to Treatment Plants. An assessment has been done on the residential and non-residential demand (June 2004) and for the future out to 2034. The current loading equivalent persons (EP) and future loading is shown on Table 9 for each of the 11 growth areas.

2.1 Calculation of Non-Residential Peak Demand

The non-residential peak demand was calculated from wastewater discharge accounts in the 11 areas as shown in Table 7. Caravan Park usage was deducted to determine the net non-residential loading.

This loading was then converted to EP using an EP loading factor. Different EP loadings were used for some WwTP's.

Sewerage Treatment Plant	EP loading (L/d/EP)	Annual Loading (kL/an)
Berry	240	87.60
Milton/Ulladulla	224	81.76
All Others	240	87.60

TABLE 7 – EQUIVALENT POPULATION LOADING FACTOR

2.2 Growth

The non-residential growth is based on the following:

Nowra/Bomaderry,

- Non-residential (commercial and industrial) areas, as prepared by Planning Department (floor areas and land areas), and
- Caravan Parks maintained as existing developments (no growth);

Saint Georges Basin and Milton/Ulladulla,

- Caravan Parks maintained as existing developments (no growth); and
- Growth of non-residential areas (where development type is unknown), in proportion to 50% of residential growth.

All other areas,

- Caravan Parks maintained as existing developments (no growth); and
- Growth of non-residential areas (where development type is unknown), in proportion to 25% of residential growth.

Large industrial customers, Manildra and Australia Paper are assumed to maintain their current independent wastewater and trade waste management.

The growth of residential and non-residential has been converted to equivalent persons in the growth periods to 2034 as shown on Table 9 – Proposed Wastewater Headworks.

2.3 Proposed Capital Works

The capacity at Treatment Plant has been assessed in relation to the loadings shown on Table 9. The determination of Capital Works cost is based on DEUS reference rates and as shown on Table 10. Note that costs (pipelines, treatment plants, pumping stations, etc) have been increased by 30% due to current contract values.

These costs, together with growth projections and proposed headworks have been used in developing the proposed capital works program as shown on Table 10 – Wastewater Capital Works Program.

TABLE 4

NON RESIDENTIAL WATER USE BY RESERVOIR ZONE

Zone	Localities	Percentage % within Zone	Annual Usage (kL/an)	Annual Usage per Zone (kL/an) : [CxD]	Farms(kL/an)	Caravan Parks (kL/an)	Annual NET Non Residential Usage per Zone (kL/an) : [E-F-G]	Gross Non-Residential Peak Day Demand (kL/d): [(E/365)x1.4]	Gross Non Res. ET's : [H/2]	Net Non-Residential Peak Day Demand (kL/d) : [(G/365)x1.4]	Net Non Res. ET's : [J/2]
A	B	C	D	E	F	G	H	H	I	J	K
KANGAROO VALLEY	Kangaroo Valley	1.00	31,136	31,136	6,341	8,711	16,084	119.4	59.7	61.7	30.8
	Barrengarry	1.00	1,054	1,054	713	0	341	4.0	2.0	1.3	0.7
	Total			32,190	7,054	8,711	16,425	123.5	61.7	63.0	31.5
BERRY	Berry/Bundawallah	1.00	131,174	131,174	43,166	0	88,008	503.1	251.6	337.6	168.8
	Berry Mountain	1.00	8,880	8,880	7,586	0	1,294	34.1	17.0	5.0	2.5
	Far Meadow	0.50	20,099	10,050	8,321	0	1,729	38.5	19.3	6.6	3.3
	Total			150,104	59,073	0	91,031	575.7	287.9	349.2	174.6
SHOALHAVEN HEADS	Shoalhaven Heads	1.00	110,853	110,853	0	76,450	34,403	425.2	212.6	132.0	66.0
	Coolangatta	1.00	20,857	20,857	13,661	0	7,196	80.0	40.0	27.6	13.8
	Coolangatta Rural	1.00	577	577	0	0	577	2.2	1.1	2.2	1.1
	Total			132,287	13,661	76,450	42,176	507.4	253.7	161.8	80.9
CAMBEWARRA	Cambewarra Village/Rural	1.00	4,470	6,323	5,575	0	748	24.3	12.1	2.9	1.4
	Tapitallee	1.00	1,234	1,234	978	0	256	4.7	2.4	1.0	0.5
	Bangalee	1.00	8,878	8,878	137	0	8,741	34.1	17.0	33.5	16.8
	Illaroo	1.00	167	167	0	0	167	0.6	0.3	0.6	0.3
	Total			16,602	6,690	0	9,912	63.7	31.8	38.0	19.0
NORTH NOWRA	Bomaderry	1.00	367,659	367,659	162	13,195	354,302	1410.2	705.1	1359.0	679.5
BOMADERRY	North Nowra	1.00	111,749	111,749	2,180	7,335	102,234	428.6	214.3	392.1	196.1
	Bolong	1.00	142,841	142,841	76,623	0	66,218	547.9	273.9	254.0	127.0
	Meroo Meadow	1.00	20,849	20,849	16,959	0	3,890	80.0	40.0	14.9	7.5
	Jaspers Brush	1.00	52,569	52,569	42,148	0	10,421	201.6	100.8	40.0	20.0
	Back Forest	1.00	14,066	14,066	7,778	0	6,288	54.0	27.0	24.1	12.1
	Far Meadow	0.50	20,099	10,050	8,321	0	1,729	38.5	19.3	6.6	3.3
	Total			719,783	154,171	20,530	545,082	2760.8	1380.4	2090.7	1045.4
NOWRA LOW LEVEL	Nowra	1.00	460,195	460,195	0	8,915	451,280	1765.1	882.6	1730.9	865.5
	Terara	1.00	184,112	184,112	138,161	16,246	29,705	706.2	353.1	113.9	57.0
	Numbaa	1.00	70,666	70,666	61,215	0	9,451	271.0	135.5	36.3	18.1
	Brundee	1.00	57,505	57,505	49,364	0	8,141	220.6	110.3	31.2	15.6
	East Nowra	1.00	6,546	6,546	0	0	6,546	25.1	12.6	25.1	12.6
	Pyree	1.00	94,524	94,524	85,040	0	9,484	362.6	181.3	36.4	18.2
	Matfield	1.00	5,667	5,667	4,452	0	1,215	21.7	10.9	4.7	2.3
	Comerong Island	1.00	3,660	3,660	2,474	0	1,186	14.0	7.0	4.5	2.3
	Total			882,875	340,706	25,161	517,008	3386.4	1693.2	1983.0	991.5
NOWRA HIGH LEVEL	South Nowra	0.85	184,383	156,726	0	6,143	150,583	601.1	300.6	577.6	288.8
	Worrigee	1.00	35,597	35,597	5,264	0	30,333	136.5	68.3	116.3	58.2
	West Nowra	1.00	177,339	177,339	549	0	176,790	680.2	340.1	678.1	339.0
	Total			369,662	5,813	6,143	357,706	1417.9	708.9	1372.0	686.0
BAMARANG	Bamarang	1.00	2,320	2,320	1,327	0	993	8.9	4.4	3.8	1.9
	Long Reach	1.00	18,451	18,451	4,741	0	13,710	70.8	35.4	52.6	26.3
	Mundamia	1.00	15,272	15,272	1,919	0	13,353	58.6	29.3	51.2	25.6
	Nowra R	1.00	19,981	19,981	1,039	0	18,942	76.6	38.3	72.7	36.3
	Barringella	1.00	1,775	1,775	0	0	1,775	6.8	3.4	6.8	3.4
	Total			57,799	9,026	0	48,773	221.7	110.8	187.1	93.5
NOWRA HILL	South Nowra	0.15	184,383	27,657	482	0	27,175	106.1	53.0	104.2	52.1
(INDUSTRIAL)	Nowra Hill	1.00	22,713	22,713	9,839	0	12,874	87.1	43.6	49.4	24.7
	Yerriyong	1.00	474	474	0	0	474	1.8	0.9	1.8	0.9
	Total			50,844	10,321	0	40,523	195.0	97.5	155.4	77.7
NOWRA HILL	Parma	1.00	9,455	9,455	4,341	0	5,114	36.3	18.1	19.6	9.8
	Falls Creek	1.00	5,020	5,020	2,253	0	2,767	19.3	9.6	10.6	5.3
	Comberton	1.00	4,251	4,251	2,313	0	1,938	16.3	8.2	7.4	3.7
	Total			18,726	8,907	0	9,819	71.8	35.9	37.7	18.8
CULBURRA	Greenwell Point	1.00	39,939	39,939	1,576	15,493	22,870	153.2	76.6	87.7	43.9
CALLALA	Orient Point	1.00	13,604	13,604	0	0	13,604	52.2	26.1	52.2	26.1
CURRARONG	Crookhaven Heads	1.00	567	567	0	0	567	2.2	1.1	2.2	1.1
	Culburra Beach	1.00	49,990	49,990	0	1,016	48,974	191.7	95.9	187.8	93.9
	Culburra	1.00	18,449	18,449	0	16,013	2,436	70.8	35.4	9.3	4.7
	Woolumboola	1.00	4,175	4,175	240	0	3,935	16.0	8.0	15.1	7.5
	Callala Bay	1.00	7,473	7,473	630	0	6,843	28.7	14.3	26.2	13.1
	Callala Beach	1.00	12,550	12,550	0	0	12,550	48.1	24.1	48.1	24.1
	Myola	1.00	9,992	9,992	621	9,286	85	38.3	19.2	0.3	0.2
	Currarong	1.00	16,763	16,763	0	10,790	5,973	64.3	32.1	22.9	11.5
	Beecroft	1.00	182	182	0	0	182	0.7	0.3	0.7	0.3
	Total			173,684	3,067	52,598	118,019	666.2	333.1	452.7	226.3
VINCENTIA	Woollamia	1.00	11,155	11,155	1,003	4,627	5,525	42.8	21.4	21.2	10.6
HUSKISSON	Huskisson	1.00	76,910	76,910	0	3,861	73,049	295.0	147.5	280.2	140.1
SAINT GEORGES BASIN	Vincentia	1.00	49,128	49,128	0	0	49,128	188.4	94.2	188.4	94.2
TOMERONG	Hyams Beach	1.00	3,332	3,332	0	0	3,332	12.8	6.4	12.8	6.4
	Worrowing Heights	1.00	9,308	9,308	0	0	9,308	35.7	17.9	35.7	17.9
	Old Erowal Bay	1.00	527	527	0	0	527	2.0	1.0	2.0	1.0
	Erowal Bay	1.00	1,939	1,939	0	0	1,939	7.4	3.7	7.4	3.7
	Bream Beach	1.00	4,695	4,695	0	4,695	0	18.0	9.0	0.0	0.0
	Wrights Beach	1.00	5,136	5,136	0	4,501	635	19.7	9.8	2.4	1.2
	Sanctuary Point	1.00	55,056	55,056	0	3,130	51,926	211.2	105.6	199.2	99.6
	Saint Georges Basin	1.00	22,924	22,924	0	3,744	19,180	87.9	44.0	73.6	36.8
	Basin View	1.00	2,904	2,904	0	0	2,904	11.1	5.6	11.1	5.6
	Tomerong	1.00	3,581	3,581	1,328	0	2,253	13.7	6.9	8.6	4.3
	Tomerong Rural	1.00	89	89	0	0	89	0.3	0.2	0.3	0.2
	Bewong	1.00	2,720	2,720	0	0	2,720	10.4	5.2	10.4	5.2
	Wandandian	1.00	7,187	7,187	442	0	6,745	27.6	13.8	25.9	12.9
	Sussex Rural	0.33	135,280	45,048	913	0	44,135	172.8	86.4	169.3	84.6
	Swanhaven	1.00	9,552	9,552	0	3,228	6,324	36.6	18.3	24.3	12.1
	Cudmirrah	1.00	22,944	22,944	0	21,872	1,072	88.0	44.0	4.1	2.1
	Berrara	1.00	12,913	12,913	0	12,862	51	49.5	24.8	0.2	0.1
	Total			347,048	3,686	62,520	280,842	1331.1	665.6	1077.2	538.6
SUSSEX INLET	Sussex Urban	0.67	135,280	90,638	0	36,452	54,186	347.7	173.8	207.8	103.9
	Total			90,638	0	36,452	54,186	347.7	173.8	207.8	103.9
BERRINGER	Bendalong	1.00	15,524	15,524	0	2,836	12,688	59.5	29.8	48.7	24.3
	Manyana	1.00	865	865	0	0	865	3.3	1.7	3.3	1.7
	Berringer Lake	1.00	346	346	0	0	346	1.3	0.7	1.3	0.7
	Cunjurong Point	1.00	172	172	0	0	172	0.7	0.3	0.7	0.3
	Cunjurong	1.00	578	578	0	0	578	2.2	1.1	2.2	1.1
	Total			17,485	0	2,836	14,649	67.1	33.5	56.2	28.1
LAKE CONJOLA	Lake Conjola	1.00	45,365	45,365	0	40,642	4,723	174.0	87.0	18.1	9.1
	Total			45,365	0	40,642	4,723	174.0	87.0	18.1	9.1
FISHERMANS	Conjola	1.00	12	12	0	0	12	0.0	0.0	0.0	0.0
PARADISE	Fishermans Paradise	1.00	420	420	0	0	420	1.6	0.8	1.6	0.8
	Conjola Park	1.00	101	101	0	0	101	0.4	0.2	0.4	0.2
	Yattee Yattah	1.00	10,228	10,228	9,684	0	544	39.2	19.6	2.1	1.0
	Total			10,761	9,684	0	1,077	41.3	20.6	4.1	2.1
MILTON/ULLADULLA	Milton/Little Forest	1.00	75,953	75,953	15,255	4,823	55,875	291.3	145.7	214.3	107.2
SYSTEM	Croobyar	1.00	17,231	17,231	17,545	0	-314	66.1	33.0	-1.2	-0.6
	Woodstock	1.00	28,519	28,519	26,143	0	2,376	109.4	54.7	9.1	4.6
NARRAWALLEE &	Mollymook Beach	1.00	19,796	19,796	0	0	19,796	75.9	38.0	75.9	38.0
NORTH ULLADULLA	Mollymook	1.00	45,803	45,803	0	729	45,074	175.7	87.8	172.9	86.4
	Narrawallee	1.00	12,569	12,569	5,852	0	6,717	48.2	24.1	25.8	12.9
ULLADULLA	Ulladulla	1.00	245,001	245,001	0	46,406	198,595	939.7	469.9	761.7	380.9
	Ulladulla Rural	1.00	1,693	1,693	887	0	806	6.5	3.2	3.1	1.5
	Kings Point	1.00	112	112	0	0	112	0.4	0.2	0.4	0.2
BURRIL LAKE	Burril Lake	1.00	43,795	43,795	0	27,996	15,799	168.0	84.0	60.6	30.3
	Dolphin Point	1.00	652	652	0	0	652	2.5	1.3	2.5	1.3
	Lake Tabourie	1.00	42,327	42,327	401	36,147	5,779	162.4	81.2	22.2	11.1
	Total			533,451	66,083	116,101	351,267	2046.1	1023.1	1347.3	673.7
OVERALL TOTAL	Total			3,649,303	697,942	448,144	2,503,217	13,997	6,999	9,601	4,801

TABLE 5

SHOALHAVEN WATER SCHEMES - PROPOSED RESERVOIR - HEADWORKS

KANGAROO VALLEY SCHEME

AREA		2004	2004-2009	2009-2014	2014-2024	2024-2034	COMMENTS
KANGAROO VALLEY	Residential Growth ET's		20	20	11	4	
	Total Residential ET's	204	224	244	255	259	
	Annual Net Non-Res. Usage (kL)	16,425					
	Non-Res. Growth ET's		1	1	0	0	
	Total Non-Res. ET's	32	32	33	33	33	
	Caravan Park Sites	168	168	168	168	168	
	Caravan Park ET's	55	55	55	55	55	
	Farms/Rural Properties (kL)	7,054					
	Farms/Rural Properties (ET's)	10	10	10	10	10	
	Total ET's	301	321	342	353	357	
	Kangaroo Valley - ML	1.80					
	TOTAL (ML)	1.80	0.00	0.00	0.00	0.00	
	CUM TOTAL (ML)	1.80	1.80	1.80	1.80	1.80	
	Reservoir Capacity (ET's)	900	900	900	900	900	
	Is Augmentation Required?	NO	NO	NO	NO	NO	
Total Peak	TOTAL DEMAND ON SYSTEM (ET's)	301	321	342	353	357	
Total Peak	TOTAL SYSTEM CAPACITY (ET's)	900	900	900	900	900	
Total Peak	TOTAL DEMAND ON SYSTEM (ML)	0.6	0.6	0.7	0.7	0.7	
Total Peak	TOTAL SYSTEM CAPACITY (ML)	1.8	1.8	1.8	1.8	1.8	

NORTHERN AND SOUTHERN SCHEMES

AREA		2004	2004-2009	2009-2014	2014-2024	2024-2034	COMMENTS
BERRY	Residential Growth ET's		244	157	75	4	
	Total Residential ET's	739	983	1,140	1,214	1,218	
	Annual Non-Res. Usage (kL)	91,031					
	Non-Res. Growth ET's		14	8	3	0	
	Total Non-Res. ET's	175	189	197	200	200	
	Caravan Park Sites	0	0	0	0	0	
	Caravan Park ET's	0	0	0	0	0	
	Farms/Rural Properties (kL)	59,073					
	Farms/Rural Properties (ET's)	113	113	113	113	113	
	Total ET's	1,027	1,285	1,449	1,527	1,531	
	Berry 1 - ML	1.40					
	Berry 2 - ML	1.40					- Augmentation Required
	NEW - ML	0.00	0.00	0.00	0.00	2.00	to Georges Street WPS
	TOTAL (ML)	2.80	0.00	0.00	0.00	2.00	- Augmentation Required
	CUM TOTAL (ML)	2.80	2.80	2.80	2.80	4.80	to Rising Main
	Reservoir Capacity (ET's)	1,400	1,400	1,400	1,400	2,400	
	Is Augmentation Required?	NO	NO	YES	YES	NO	
SHOALHAVEN HEADS	Residential Growth ET's		151	228	286	333	
	Total Residential ET's	1,638	1,789	2,017	2,303	2,636	
	Annual Non-Res. Usage (kL)	55,837					
	Non-Res. Growth ET's		2	3	4	4	
	Total Non-Res. ET's	107	110	113	117	121	
	Caravan Park Sites	1,000	1,000	1,000	1,000	1,000	
	Caravan Park ET's	330	330	330	330	330	
	Farms/Rural Properties (kL)	13,661					
	Farms/Rural Properties (ET's)	26	26	26	26	26	
	Total ET's	2,101	2,255	2,486	2,776	3,113	
	S/Heads - ML	2.30					
	NEW - ML	0.00	3.00	0.00	0.00	2.00	
	TOTAL (ML)	2.30	3.00	0.00	0.00	2.00	
	CUM TOTAL (ML)	2.30	5.30	5.30	5.30	7.30	
	Reservoir Capacity (ET's)	1,150	2,650	2,650	2,650	3,650	
	Is Augmentation Required?	YES	NO	NO	YES	NO	
CAMBEWARRA	Residential Growth ET's		79	54	113	173	
	Total Residential ET's	626	705	758	871	1,043	
	Annual Non-Res. Usage (kL)	16,602					
	Non-Res. Growth ET's		1	1	1	2	
	Total Non-Res. ET's	32	33	33	35	36	
	Caravan Park Sites	0	0	0	0	0	
	Caravan Park ET's	0	0	0	0	0	
	Farms/Rural Properties (kL)	6,690					
	Farms/Rural Properties (ET's)	13	13	13	13	13	
	Total ET's	671	750	804	918	1,092	
	Cambewarra - ML	2.30					
	NEW - ML	0.00	0.00	0.00	0.00	0.00	
	TOTAL (ML)	2.30	0.00	0.00	0.00	0.00	
	CUM TOTAL (ML)	2.30	2.30	2.30	2.30	2.30	
	Reservoir Capacity (ET's)	1,150	1,150	1,150	1,150	1,150	
	Is Augmentation Required?	NO	NO	NO	NO	NO	
BOMADERRY/ NORTH NOWRA	Residential Growth ET's		326	535	1,364	1,374	
	Total Residential ET's	6,074	6,400	6,935	8,299	9,673	
	Annual Non-Res. Usage (kL)	545,082					Non Residential Growth based on
	Non-Res. Growth ET's		42	59	74	130	Planning information
	Total Non-Res. ET's	1,045	1,087	1,146	1,220	1,350	(floor space (m2)/250m2) + (Ha x 5ET/ha)
	Caravan Park Sites	90	90	90	90	90	+(No. of pupils / 25 pupils per ET)
	Caravan Park ET's	30	30	30	30	30	
	Farms/Rural Properties (kL)	154,171					
	Farms/Rural Properties (ET's)	296	296	296	296	296	
	Total ET's	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	Less Cambewarra ET's	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	NET Total ET's	6,819	7,108	7,648	8,974	10,305	
	* Pitt St (low Level) - ML	15.00					- New Reservoir/s required to serve
	* Pitt St (High Level) - ML	0.50					
	NEW - ML	0.00	0.00	0.00	5.50	0.00	Moss Vale Rd Expansion Areas
	TOTAL (ML)	15.50	0.00	0.00	5.50	0.00	- New WPS + RM required to serve
	CUM TOTAL (ML)	15.50	15.50	15.50	21.00	21.00	Moss Vale Rd Expansion Areas
	Reservoir Capacity (ET's)	7,750	7,750	7,750	10,500	10,500	- Pitt St. reservoir acts as transfer reservoir
	Is Augmentation Required?	NO	NO	NO	NO	NO	- 5ML used as transfer amount as each area served by Pitt St would not have the same Peak Day
NOWRA	Residential Growth ET's		947	1,530	1,932	3,092	
	Total Residential ET's	5,478	6,425	7,955	9,886	12,979	
	Annual Non-Res. Usage (kL)	973,829					Non Residential Growth based on
	Other Non-Res. Growth ET's		202	240	342	397	Planning information
	Total Other Non-Res. ET's	1,868	2,070	2,310	2,653	3,050	(floor space (m2)/250m2) + (Ha x 5ET/ha)
	Caravan Park Sites	345	345	345	345	345	+(No. of pupils / 25 pupils per ET)
	Caravan Park ET's	114	114	114	114	114	
	Farms/Rural Properties (kL)	374,773					
	Farms/Rural Properties (ET's)	719	719	719	719	719	
Manildra	Non-Res. ET's	3,050	3,050	3,050	3,050	3,050	
Dairy Farmers	Non-Res. ET's	222	222	222	222	222	
Australian Paper (APPM)	Non-Res. ET's	45	45	45	45	45	
	Total ET's	11,495	12,644	14,414	16,689	20,178	
	Flatrock 1 (low level) - ML	4.50					
	Flatrock 2 (low level) - ML	2.30					
	Flatrock High Level - ML	8.10					
	Industrial - ML	2.30					
	NEW - ML	0.00	10.00	0.00	13.00	0.00	
	TOTAL (ML)	17.20	10.00	0.00	13.00	0.00	
	CUM TOTAL (ML)	17.20	27.20	27.20	40.20	40.20	
	Reservoir Capacity (ET's)	8,600	13,600	13,600	20,100	20,100	
	Is Augmentation Required?	YES	NO	YES	NO	YES	
CULBURRA / ORIENT PT	Residential Growth ET's		138	179	348	208	
	Total Residential ET's	3,199	3,337	3,516	3,864	4,072	
	Annual Non-Res. Usage (kL)	92,386					
	Non-Res. Growth ET's		2	2	4	3	
	Total Non-Res. ET's	177	179	181	186	188	
	Caravan Park Sites	682	682	682	682	682	
	Caravan Park ET's	225	225	225	225	225	
	Farms/Rural Properties (kL)	1,816					
	Farms/Rural Properties (ET's)	3	3	3	3	3	
	Total ET's	3,605	3,744	3,926	4,278	4,489	
CALLALA/MYOLA/ CURRARONG	Residential Growth ET's		380	477	6	6	
	Total Residential ET's	2,579	2,959	3,436	3,442	3,447	
	Annual Non-Res. Usage (kL)	25,633					
	Non-Res. Growth ET's		2	4	0	0	
	Total Non-Res. ET's	49	51	55	55	55	
	Caravan Park Sites	185	185	185	185	185	
	Caravan Park ET's	61	61	61	61	61	
	Farms/Rural Properties (kL)	1,251					
	Farms/Rural Properties (ET's)	2	2	2	2	2	
	Total ET's	2,692	3,073	3,554	3,560	3,566	
CULBURRA/CALLALA	Overall Total ET's	6,296	6,817	7,480	7,838	8,055	

TABLE 5

SHOALHAVEN WATER SCHEMES - PROPOSED RESERVOIR - HEADWORKS

KANGAROO VALLEY SCHEME

(COONAMIA)	Coonamia 1 - ML	13.00					
	Coonamia 2 - ML	2.30					
	Currarong - ML	3.00					
	NEW - ML	0.00	0.00	0.00	0.00	0.00	
	TOTAL (ML)	18.30	0.00	0.00	0.00	0.00	
	CUM TOTAL (ML)	18.30	18.30	18.30	18.30	18.30	
	Reservoir Capacity (ET's)	9,150	9,150	9,150	9,150	9,150	
	Is Augmentation Required?	NO	NO	NO	NO	NO	
HUSKISSON/VINCENTIA BAY	Residential Growth ET's		463	469	908	7	
	Total Residential ET's	3,014	3,477	3,946	4,854	4,861	
	Annual Non-Res. Usage (kL)	132,037					
	Non-Res. Growth ET's		10	9	16	0	
	Total Non-Res. ET's	253	263	272	287	288	
	Caravan Park Sites	489	489	489	489	489	489 sites served by Vincentia Reservoir
	Caravan Park ET's	161	161	161	161	161	
	Farms/Rural Properties (kL)	1,003					
	Farms/Rural Properties (ET's)	2	2	2	2	2	
	Total ET's	3,431	3,904	4,382	5,305	5,312	
ST. GEORGES BASIN/ TOMERONG BASIN	Residential Growth ET's		855	710	393	7	
	Total Residential ET's	6,539	7,394	8,104	8,497	8,504	
	Annual Non-Res. Usage (kL)	152,491					
	Non-Res. Growth ET's		10	7	4	0	783 sites served by Bewong Reservoir
	Total Non-Res. ET's	292	302	309	313	313	
	Caravan Park Sites	1,087	1,087	1,087	1,087	1,087	304 sites within Saint Georges Basin
	Caravan Park ET's	359	359	359	359	359	
	Farms/Rural Properties (kL)	2,683					
	Farms/Rural Properties (ET's)	5	5	5	5	5	
	Total ET's	7,195	8,060	8,777	9,173	9,181	
BAY & BASIN	Overall Total ET's	10,626	11,964	13,159	14,478	14,492	
	Vincentia - ML	13.00					1.4ML res to Hyams Beach
	Hyams Beach - ML	1.40					13 ML res to Huski/Vincentia & Basin
	** Bewong (20) - ML	14.50					** - 14.5 ML cap of 20 ML at Bewong res
	NEW - ML	0.00	0.00	0.00	0.00	0.00	to Basin/Tomerong/Wandandian/
	TOTAL (ML)	28.90	0.00	0.00	0.00	0.00	Millellen Farmlets/Swanhaven/
	CUM TOTAL (ML)	28.90	28.90	28.90	28.90	28.90	Cudmirrah/Berrara
	Reservoir Capacity (ET's)	14,450	14,450	14,450	14,450	14,450	- Total Storage for Area = 28.9 ML
	Is Augmentation Required?	NO	NO	NO	YES	YES	- Size of Reservoir would need to be considered based on future growth
SUSSEX INLET	Residential Growth ET's		264	261	253	255	
	Total Residential ET's	2,975	3,239	3,500	3,753	4,008	
	Annual Non-Res. Usage (kL)	54,186					
	Non-Res. Growth ET's		2	2	2	2	
	Total Non-Res. ET's	104	106	108	110	112	
	Caravan Park Sites	702	702	702	702	702	
	Caravan Park ET's	232	232	232	232	232	
	Farms/Rural Properties (kL)	0					
	Farms/Rural Properties (ET's)	0	0	0	0	0	
	Total ET's	3,311	3,577	3,840	4,095	4,352	
	Sussex - ML	13					
	NEW - ML	0	0	0	0	0	
	TOTAL (ML)	13.00	0.00	0.00	0.00	0.00	
	CUM TOTAL (ML)	13.00	13.00	13.00	13.00	13.00	
	Reservoir Capacity (ET's)	6,500	6,500	6,500	6,500	6,500	
	Is Augmentation Required?	NO	NO	NO	NO	NO	
CONJOLA REGIONAL	Total Residential ET's		374	535	280	7	
	Annual Non-Res. Usage (kL)	1,840	2,214	2,750	3,030	3,037	
	Annual Non-Res. Usage (kL)	26,449					
	Non-Res. Growth ET's		2	2	1	0	
	Total Non-Res. ET's	39	41	44	45	45	
	Caravan Park Sites	1,052	1,052	1,052	1,052	1,052	
	Caravan Park ET's	347	347	347	347	347	
	Farms/Rural Properties (kL)	9,684					
	Farms/Rural Properties (ET's)	19	19	19	19	19	
	Total ET's	2,245	2,621	3,159	3,440	3,447	
	Berringer - ML	8.00					
	Conjola - ML	0.68					
	Fishermans - ML	4.00					
	NEW - ML	0.00	0.00	0.00	0.00	0.00	
	TOTAL (ML)	12.68	0.00	0.00	0.00	0.00	
	CUM TOTAL (ML)	12.68	12.68	12.68	12.68	12.68	
	Reservoir Capacity (ET's)	6,340	6,340	6,340	6,340	6,340	
	Is Augmentation Required?	NO	NO	NO	NO	NO	
MILTON/ULLADULLA	Total Residential ET's		662	654	1,188	1,028	
	Annual Non-Res. Usage (kL)	7,656	8,318	8,971	10,159	11,187	
	Annual Non-Res. Usage (kL)	351,267					
	Non-Res. Growth ET's		15	14	23	18	
	Total Non-Res. ET's	674	688	702	725	743	
	Caravan Park Sites	2,233	2,233	2,233	2,233	2,233	
	Caravan Park ET's	737	737	737	737	737	
	Farms/Rural Properties (kL)	66,083					
	Farms/Rural Properties (ET's)	127	127	127	127	127	
	Total ET's	9,193	9,869	10,537	11,748	12,794	
	Milton - ML	4.54					
	Narrawallee - ML	10.00					
	North Ulladulla - ML	2.27					
	West Ulladulla 1 - ML	10.00					
	West Ulladulla 2 - ML	5.00					
	Burrill Lake - ML	1.36					
	NEW - ML	0.00	10.00	0.00	0.00	0.00	- New reservoir to provide service to Milton growth
	TOTAL (ML)	33.17	10.00	0.00	0.00	0.00	area and to improve levels of service and to provide
	CUM TOTAL (ML)	33.17	43.17	43.17	43.17	43.17	improvement to operation of trunk system
	Reservoir Capacity (ET's)	16,585	21,585	21,585	21,585	21,585	
	Is Augmentation Required?	NO	NO	NO	NO	NO	
OTHERS	Annual Non-Res. Usage (kL)	76,524					Served by existing reservoirs via offtakes from
	Non-Res. ET's		4	4	4	4	trunk mains
	Total Non-Res. ET's	147	151	155	159	163	
	Total ET's	147	151	155	159	163	
Other Reservoirs (ML)	Crozier's Rd	0.10					Rural Supply
	Bryces Rd	0.10					Rural Supply
	Coolangatta	0.10					Rural Supply
	Nowra (High Level - West Street)	0.23					Urban Supply
	Bamarang WTP	5.00					Reservoir located at WTP
	Bamarang WTP	16.00					Reservoir located at WTP
	Radar Hill	10.00					Transfer Reservoir + Rural Supply
	Cresswell Estate	0.10					Rural Supply
	Cresswell Estate	0.10					Rural Supply
	Milton WTP	0.60					Reservoir located at WTP
Partly included above	Pitt St (Part of 20ML res)	5.00					5ML allowance for serving other services reservoirs
Partly included above	Bewong Res (Part of 20ML res)	5.50					5.5ML allowance to supplement the Southern System
	TOTAL (ML)	42.83	0.00	0.00	0.00	0.00	
	CUM TOTAL (ML)	42.83	42.83	42.83	42.83	42.83	
	Reservoir Capacity (ET's)	21,415	21,415	21,415	21,415	21,415	
	Total Residential Demand (ET's)	41,105	45,829	51,510	58,429	64,577	
	Total Non-Residential Demand (ET's)	8,247	8,587	8,943	9,422	9,982	
	Total Caravan Park Demand (ET's)	2,595	2,595	2,595	2,595	2,595	
	Total Farms Demand (ET's)	1,312	1,325	1,325	1,325	1,325	
Total Peak	TOTAL DEMAND ON SYSTEM (ET's)	53,260	58,336	64,373	71,771	78,480	
Total Peak	TOTAL SYSTEM CAPACITY (ET's)	94,490	105,990	105,990	115,240	117,240	
Total Peak	TOTAL DEMAND ON SYSTEM (ML)	106.52	116.58	128.65	143.45	156.86	
Total Peak	TOTAL SYSTEM CAPACITY (ML)	188.98	211.98	211.98	230.48	234.48	

NOTES:

PDD	2	kL/d/ET
Annual Non-Residential Consumption represents usage from Sep 03' to Aug 04'		
No growth allowed for Caravan Parks, Manildra, APPM, Dairy Farmer		
Caravan Park Sites	660	L/d
No. of Persons per Caravan Site	6	
Caravan Park Site/Residential Lot	0.33	ET's
Formula for calc. of residential growth (ET's)	(dettached x 1.0) + (attached x 0.7) + (consolidation x 0.7) + (shortfall x 1.0)	

TABLE 6

SHOALHAVEN WATER SCHEMES - PROPOSED HEADWORKS CAPITAL WORKS PROGRAMME

GROWTH WORKS - REAL DOLLARS $'000	Backlog %	Growth %	SUBSIDY	04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
STAGE 2B.1	50	50	50.0%	300					300						0											0											0
STAGE 2B.3		100		50	50				100						0											0											0
STAGE 2B.4 - BAM WTP (30ML/d Upgrade)		100							0		300	2,500	8,000	2,000	12,800									300	2,500	2,800	8,000	2,000									10,000
STAGE 2B.5 - Bewong - Pointer Rd (TM + WPS)		100							0	550	11,000	7,000			18,550											0											0
MILTON RESERVOIR (10Ml) + WPS		100				497	1,620		2,117						0											0											0
SHOALHAVEN HEADS RESERVOIR (3Ml)		100					234	812	1,046						0											0											0
SHOALHAVEN HEADS RESERVOIR (2Ml)		100							0				181	566	747											0								181	566	747
BERRY RESERVOIR (2Ml)		100							0						0	66	275									341											0
BERRY WATER PUMPING STATION AUG (54kW)		100							0						0	947										947											0
BERRY RISING MAIN (250mm x 3000m)		100							0						0		297	930								1,227											0
NORTH BOMADERRY RESERVOIR (5.5ML)		100							0						0											0											0
NOWRA RESERVOIR (10 Ml)		100							0						0	1,669										1,669											0
NOWRA RESERVOIR (13 Ml)		100					442	1,379	1,821					534	534											0											0
TOTAL				350	50	497	2,296	2,191	5,384	550	11,300	9,500	8,181	3,100	32,631	2,682	572	930	0	0	0	0	0	300	2,500	6,984	8,000	2,000	0	0	0	0	0	0	181	566	10,747

DEVELOPER FUNDED - REAL DOLLARS $'000				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
East Berry Aug (420mx100mm + 150mm Interconnections)		100		56					56						0											0											0
Berry Distribution Aug. (200mm x 1850m)		100							0					429	429											0											0
Berry Upsizing of Reticulation from 100mm to 150mm (Stage 1: 190m) (Stage 2: 25m)		100		9	1				10						0											0											0
Berry upsizing of Reticulation from 150mm to 200mm for 170m		100			6				6						0											0											0
Berry upsizing of Reticulation from 200mm to 250mm for 670m & 250mm to 300mm for 990m		100					97		97						0											0											0
S/Heads - Trunk Main from Res to Start of Reticulation (300mm x 1850m)		100						112	112	497					497											0											0
S/Heads - Feeder Main within Growth Area (250mm x 300m)		100							0						0		72									72											0
Cambewarra - TM along Illaroo Rd to Bangalee (200mm x 3200m)		100							0						0		121	670								791											0
Nth Nowra - TM from Pitt St Res to New North Bomaderry Res (300mm x 4000m)		100							0					240	240	1,509										1,509											0
Nth Nowra - TM from Pitt St TM to Crams Rd Expansion Area (375mm x 650m)		100							0		295				295											0											0
TM from New Res into Moss Vale Rd Exp. Areas (375mm x 1500m)		100							0						0				481							481											0
Link Btn North Moss Vale Rd Growth Area & Gladioli Farm Estate (150mm x 950m)		100							0						0											0								188			188
Sth Nowra - TM along Princes HWY @ South Nowra (450mm x 230m)		100						171	171						0											0											0
Sth Nowra - Feeder Main along Quinns Lane (250mm x 825m)		100							0	333					333											0											0
Sth Nowra - Feeder main along Princes HWY (250mm x 770m)		100							0						0	344										344											0
Sth Nowra - Feeder main along Old Southern Rd (Stage 1 : 200mm x 905m) (Stage 2 : 200mm x 210m)		100		224			52		276						0											0											0
Sth Nowra - Feed main on East side of Old Southern Rd (Stage 1 : 150mm x 510m) (Stage 2 : 150mm x 510m)		100							0			100	101		201											0											0
Sth Nowra - Feeder Main along Princes HWY (150mm x 1030m)		100							0						0				221							221											0
Sth Nowra - Feeder main (from Old Sthn Rd to Princes HWY) (150mm x 770m)		100							0						0								311			311											0
Sth Nowra - TM from Industrial Res to Flinders Industrial Estate (300mm x 3000m)		100			180	980			1,160						0											0											0
Sth Nowra - Augmentation of Existing Reticulation along Prosperity St		100							0	82					82											0											0
Sth Nowra - Augmentation of Existing Reticulation along Central Avenue		100						123	123						0											0											0
Mundamia - TM from 13ML res to Cabbage Tree Lane Exp. Area (Various sizes)		100							0				408	2,327	2,735											0											0
Mundamia - Feeder mains within Mundamia Growth Area (250mm x 400m)		100							0		95				95											0											0
Culburra - TM into New Expansion Area (300mm x 800m)		100							0					230	230											0											0
Callala - TM extension into Expansion Area (200mm x 275m)		100							0				50		50											0											0
Basin - Feeder main Ext. along Island Pt Rd & The Wool Rd (250mm x 1100m)		100							0						0		354									354											0
Basin - Feeder main Ext. from Anson St into Kean St (250mm x 400m)		100						129	129						0											0											0
Basin - TM Ext. from 600TM to Vincentia Exp. Area (Stage 1: 375mm x 1300m + 300mm x 250m)) (Stage 2: 300mm x 400m)		100				661		115	776						0											0											0
Basin - Anson St Extension (250mm x 375m)		100						121	121						0											0											0
Sussex Inlet - TM Ext. along Sunset Ave & into Expansion area (250mm x 850m)		100							0						0											0					240						240
Narrawallee - Feeder main ext. into Growth Area (250mm x 200m)		100							0	45					45											0											0
Nth Ulladulla - Feeder main ext. into Growth Area (200mm x 950m)		100				390			390						0											0											0
Nth Ulladulla - Augmentation for Draft LEP 359 (200mm x 1050m)	50	50							0		338				338											0											0
Dolphin Pt - Part Duplication of Feeder main (150mm x 500m)		100							0			99			99											0											0
Ulladulla - Feeder main for high level zone (160mm x 500m)		100			99				99						0											0											0
TOTAL				289	286	2,083	97	771	3,526	957	728	199	559	3,226	5,669	1,853	193	1,024	702	0	0	0	311	0	0	4,083	0	0	0	0	240	0	188	0	0	0	428

STUDIES and INVESTIGATIONS				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
Berry		100			5				5						0											0											0
Nth Nowra		100			10				10						0											0											0
Huskisson/Vincentia		100			15				15						0											0											0
Sth Nowra		100			10				10						0											0											0
St Georges Basin/Tomerong		100			5				5						0											0											0
Milton/Ulladulla		100			20				20						0											0											0
Development Servicing Plan		100		38	65	10	10	10	133	50	5	5	5	5	70	25	5	5	5	5	25	5	5	5	5	90	25	5	5	5	5	25	5	5	5	5	90
TOTAL				38	130	10	10	10	198	50	5	5	5	5	9,947	25	5	5	5	5	25	5	5	5	5	90	25	5	5	5	5	25	5	5	5	5	90

RENEWAL				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
Strongs Road					50	450			500						0											0											0
Flatrock-Nowra Trunk							75	1000	1075						0											0					100	1500					1600
Berrara-Beringer Pipeline					250	2,500	500		3250						0											0											0
Strengthen Porters Creek Dam								3,000	3000						0											0											0
Northern Headworks				75	178	204	51	42	550	200	300	400	500	600	2000	750	900	1050	1200	1350	1500	1600	1700	1800	1900	13000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	18000
Northern Distrbution				194	430	125	145	110	1004	200	220	240	260	280	1200	300	320	340	360	380	400	420	440	460	480	3800	500	500	500	500	500	500	500	500	500	500	4500
Southern Headworks + Distrbution				18	125	10	10	20	183	300	320	340	360	380	1700	400	410	420	430	440	450	460	470	480	490	4050	500	500	500	500	500	500	500	500	500	500	4500
TOTAL				287	1033	3289	781	4172	9562	700	840	980	1120	1260	4900	1450	1630	1810	1990	2170	2350	2480	2610	2740	2870	20650	3000	3000	3000	3000	3100	4500	3000	3000	3000	3000	28600

NEW WORKS				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
Northern Headworks				200	185	30	120	150	685	150	150	150	150	150	750	150	150	150	150	150	150	150	150	150	150	1,500	150	150	150	150	150	150	150	150	150	150	1,500
Northern Distrbution				260	640	160	40	100	1200	100	100	100	100	100	500	100	100	100	100	100	100	100	100	100	100	1,000	100	100	100	100	100	100	100	100	100	100	1,000
Southern Headworks + Distrbution				123	15	45	205	50	438	50	50	50	50	50	250	50	50	50	50	50	50	50	50	50	50	500	50	50	50	50	50	50	50	50	50	50	500
TOTAL				583	840	235	365	300	2,323	300	300	300	300	300	1,500	300	300	300	300	300	300	300	300	300	300	3,000	300	300	300	300	300	300	300	300	300	300	3,000

MAJOR MAINTENANCE				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
Northern Headworks				117	172	30	275	40	634	26	300	300	300	300	1226	300	300	300	300	300	300	300	300	300	300	3,000	300	300	300	300	300	300	300	300	300	300	3,000
Northern Distrbution				150	225	476	640	140	1631	140	100	100	100	100	540	100	100	100	100	100	100	100	100	100	100	1,000	100	100	100	100	100	100	100	100	100	100	1,000
Southern Headworks + Distrbution				136	100	135	150	200	721	200	200	200	200	200	1000	200	200	200	200	200	200	200	200	200	200	2,000	200	200	200	200	200	200	200	200	200	200	2,000
TOTAL				403	497	641	1,065	380	2,986	366	600	600	600	600	2,766	600	600	600	600	600	600	600	600	600	600	6,000	600	600	600	600	600	600	600	600	600	600	6,000

GRAND TOTAL				1,950	2,836	6,755	4,614	7,824	23,979	2,923	13,773	11,584	10,765	8,491	57,413	6,910	3,300	4,669	3,597	3,075	3,275	3,385	3,826	3,945	6,275	40,807	11,925	5,905	3,905	3,905	4,245	5,425	4,093	3,905	4,086	4,471	48,865

171,064

TABLE 10

SHOALHAVEN WASTEWATER SCHEMES - PROPOSED HEADWORKS CAPITAL WORKS PROGRAMME (REAL DOLLARS)

SUBSIDISED SCHEMES BACKLOG & GROWTH - REAL DOLLARS $'000	Backlog %	Growth %	SUBSIDY	04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
KANGAROO VALLEY (1400ep)	90%	10	45.0%	200	350	770	6,000	4,400	11,720	390					390											0											0
BERRY - Stage 1 (3500ep)	50	50	25.0%	5,000	1,400	440			6,840						0											0											0
REMS - 1A (St Geo Basin upgrade)	73	27	36.8%	950	1,250	132			2,332						0											0											0
REMS - 1B (Includes Nowra 12000ep)	73	27	36.8%				3,000	7,900	10,900	7,000	4,500	2,500	100		14,100											0											0
CURRARONG (Connect into Callala)	90	10	45.0%	616	600	4,220	3,780	550	9,766	233					233											0											0
SUSSEX INLET Reclaimed Water Mgt	20	80	0.0%					150	150	1500					1,500											0											0
CONJOLA REGIONAL (11000ep)	80	20	40.0%	1,300	17,000	28,000	2,400	840	49,540						0											0											0
ULLADULLA STAGE 1A (28000ep)	20	80	30.0%	14,500	3,470	2,760	865		21,595						0											0											0
ULLADULLA STAGE 1B - Pump Stn Upgrade	20	80	10.0%	200	510	1,120	2,720	1,400	5,950	1,100					1,100											0											0
ULLADULLA Reclaimed Water Mgt	20	80	10.0%			190	250	690	1,130	2,060					2,060											0											0
LAKE TABOURIE (Connect into Ulladulla)	90	10	45.0%	450	1,030	7,800	730	400	10,410						0											0											0
WOOLAMIA (Connect into Vincentia incl retic upgrade)	80	20	0.0%				250	900	1,150	600					600											0											0
TOMERONG (Connect into St Geo Basin)	50	50	0.0%						0	250	1,000	100			1,350											0											0
WANDANDIAN (Connect into St Geo Basin)	50	50	0.0%						0						0	250	250	800								1,300											0
TOTAL				23,216	25,610	45,432	19,995	17,230	131,483	13,133	5,500	2,600	100	0	21,333	250	250	800	0	0	0	0	0	0	0	1,300	0	0	0	0	0	0	0	0	0	0	0

DEVELOPER FUNDED TREATMENT WORKS- REAL DOLLARS $'000				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
SHOALHAVEN HEADS (6000ep)	56	44			400	858	4,000		5,258						0											0											0
BOMADERRY (Inlet Upgrade 20500ep)	50	50							0	2,000					2,000											0											0
BOMADERRY (8000ep)	0	100							0						0		1,240	3,850								5,090											0
REMS Stg 2 (Storage and Ocean Extension)	0	100							0						0	6,200	7,000	7,000								20,200											0
NOWRA (12000ep)	0	100							0						0				2,060	6,500						8,560											0
CULBURRA (4000ep)	10	90							0			818	2,570		3,388											0											0
CALLALA (6000ep)	46	54							0	1,278	3,980				5,258											0											0
VINCENTIA (6000ep)	0	100							0						0							1,278	3,980			5,258											0
St GEORGES BASIN (6000ep)	19	81							0				1,239	3,873	5,112											0											0
SUSSEX INLET (6000ep)	60	40							0	1470	4600				6,010											0											0
SUSSEX INLET (4000ep)	0	100							0						0										821	821	2566										2,566
MILTON/ULLADULLA (10000ep)	0	100							0						0											0	1804	5638									7,442
TOTAL				0	400	858	4,000	0	5,258	4,748	8,580	818	3,809	3,873	21,828	6,200	8,240	10,850	2,060	6,500	0	1,278	3,980	0	821	39,929	4,378	5,638	0	0	0	0	0	0	0	0	10,008

DEVELOPER FUNDED DISTRIBUTION WORKS				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
BERRY	0	100							800						0											0											0
Berry SPS No. 5 (Mark Radium Park)	16	84		200	600				800						0											0											0
SHOALHAVEN HEADS	0	100							0						0											400											0
Shoalhaven Heads SPS in Nth East cnr of Growth area	0	100							0						0					400						400											0
BOMADERRY	0	100							1,286						1,535											6,452											1,155
SPS-B-F1 + RM + GM	0	100							0						0	1,854			49			49			49	2,001			49								49
SPS-B-F4 + RM + GM	0	100							0						0			1,342			49				49	1,440		49			49			49			147
SPS-B-F5 + RM + GM	0	100							0						0	1,877										1,877											0
SPS-B-F7 + RM + GM	0	100							0						0											0		763		49		49		49		49	959
SPS-B-F8 + RM + GM	0	100							0						0							418				418											0
SPS-B-F9 + RM + GM	0	100							0						0										320	320											0
SPS-B-F10 + RM + GM	0	100							0						0							396				396											0
Bomaderry- Gravity Mains (GM's) - Mulgan Creek Lines	85	15							0	1,287					1,287											0											0
Augmentation of Edwards Ave PS (Wet Weather Storage) Bomaderry 300m	60	40							0			200			200											0											0
Cambewarra 200 dia RM FROM sps 23 to Bomaderry Retic.	85	15		200	464				664	48					48											0											0
Augment SPS 8 - New Pumps, SCA + WW storage	0	100						251	251						0											0											0
Augment SPS 25 - New Pumps	0	100					20		20						0											0											0
SPS+RM @ Mortons Cnr, Bomaderry	0	100				83	268		351						0											0											0
NOWRA	0	100							3,745						2,030											3,430											2,015
Browns Rd. Sth Nowra - SPS 19+RM+GM's	0	100		600					600						0											0											0
Duplication of Surcharge Main 300dia - Hillcrest Ave to Nowra STP (3.3km)	0	100						400	400	420					420											0											0
Worrigee SPS N-F2 + RM	0	100							0		828				828		49									49											0
Mundamia SPS N-F4 + RM + GM	0	100							0						0			740					49			789											0
Cabbage Tree Lane SPS N-F1 + RM + GM	0	100							0						0		2,510					82				2,592	82	442				82					606
Sth Nowra Industrial Est - SPS N-F5 + RM	0	100							0						0											0	745										745
Sth Nowra Residential - SPS B + RM + GM	0	100							0				443		443											0											0
Sth Nowra Residential - SPS C + RM + GM	0	100						465	465						0											0											0
Sth Nowra Residential - SPS D + RM + GM	0	100							0						0											0							325				325
Sth Nowra Residential - SPS E + RM + GM	0	100							0					339	339											0			339								339
Sth Nowra Residential - SPS 18 + RM + GM	0	100							0						0											0											0
Augment SPS 21 (Nth Nowra) - New SPS	0	100				72	231		303						0											0											0
Augment SPS 20 (Nth Nowra) - New SPS + RM	0	100				95	304		399						0											0											0
Augment SPS 16 (Nth Nowra) - New Pumps + WW Storage	0	100						59	59						0											0											0
Augment SPS 12 (Nth Nowra) - New Pumps + SCA + WW Storage	0	100				89			89						0											0											0
Augment SPS 9 - New Pumps + WW Storage	0	100					59		59						0											0											0
Augment SPS 13 - New Pumps	0	100				20			20						0											0											0
Augment SPS 14 - New Pumps + SCA	0	100					50		50						0											0											0
Augment SPS 15 - New Pumps	0	100				20			20						0											0											0
Augment SPS 16 - New SPS + RM	0	100					139	473	612						0											0											0
Augment SPS 21 - New SPS + RM	0	100				86	284		370						0											0											0
Augment SPS 24 - 3rd Pump + RM + WW Storage	0	100					49	230	279						0											0											0
Augment SPS 26 (Uni) - New Pumps	0	100				20			20						0											0											0
CULBURRA	0	100							0						420											734											295
Expansion Area - SPS A + RM	0	100							0	420					420											0											0
Expansion Area - SPS B + RM	0	100							0						0	370										370											0
Expansion Area - SPS C + RM	0	100							0						0							364				364											0
Expansion Area - SPS D + RM	0	100							0						0											0			295								295
CALLALA	0	100							279						543											0											0
Expansion Area - SPS A + RM	0	100							0	543					543											0											0
Expansion Area - SPS B + RM	0	100						279	279						0											0											0
HUSKISSON/VINCENTIA	0	100							694						523											2,178											0
Expansion Area - SPS F1 + RM	0	100							0						0			1,425				49			49	1,523											0
Expansion Area - SPS F2 + RM	0	100				694			694						0								328			328											0
Expansion Area - SPS F3 + RM	0	100							0						0						327					327											0
Expansion Area - SPS F4 + RM	0	100							0		523				523											0											0
SAINT GEORGES BASIN	0	100							890						29											632											0
The Wool Rd - SPS + RM + GM	0	100							0						0	632										632											0
The Wool Rd - GM	0	100							0		29				29											0											0
Augment - SPS 6 - New SPS + RM	0	100				94	306		400						0											0											0
Augment - SPS 10 - New Pumps + WW Storage	0	100				70			70						0											0											0
Augment - SPS 8 - New Pumps + WW Storage	0	100					100		100						0											0											0
Augment - SPS 20 - New Pumps + WW Storage	0	100				50			50						0											0											0
Augment - SPS 21 - New Pumps + WW Storage	0	100					70		70						0											0											0
Augment - SPS 17 - Upgrade Pumps + SCA	0	100						200	200						0											0											0
SUSSEX INLET	0	100							0						410											359											534
Thomson St (North) - SPS + RM	0	100							0						0	326										326											0
Flood Ave, Industrial Estate - SPS + RM	10	90							0		410				410											0											0
Thomson St (South) - GM	0	100							0						0		33									33											0
Badgee Expansion Area - GM	0	100							0						0											0	534										534
MILTON/ULLADULLA	0	100							1,957						2,145											366											0
Gordon & Graham St, Milton Stage 1 - SPS + RM	65	35					448		448						0											0											0
Gordon & Graham St, Milton Stage 2 - GM	65	35							0					96	96											0											0
Croobyar Rd, Milton Stage 1 - SPS M2 + RM + GM	30	70		200	500				700						0											0											0
Croobyar Rd, Milton Stage 2 - GM (150 dia x 390m)	30	70					269		269						0											0											0
Croobyar Rd, Milton Stage 2 - RM (200 dia x 770m)	30	70							0			141			141											0											0
Croobyar Rd, Milton Stage 3 - GM (150dia x 230m)	30	70				34			34						0											0											0
Narrawallee - SPS + RM + GM	0	100							0	293					293											0											0
Decommission PS Z8 - Garside Road + GM Extension	0	100							0			38			38											0											0
King Point Rezoned - SPS-K3 + RM	0	100							0						0			314								314											0
King Point Rezoned - GM Augmentation	0	100							0						0								52			52											0
Dolphin Point SPS - D2 + RM	65	35		200	306				506						0											0											0
Trunk Gravity Mains from Milton - Ulladulla SPS U1	50	50							0			1,577			1,577											0											0
TOTAL				1,400	1,870	1,427	2,597	2,357	9,651	3,011	1,790	1,956	443	435	7,635	5,059	2,592	3,821	49	400	376	1,358	429	0	467	14,551	1,361	1,254	683	49	49	131	325	98	0	49	3,999

RENEWAL /REPLACEMENT WORKS - REAL DOLLARS				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
BERRY - Stage 2 Pump Stn Upgrade	20	80	10.0%			400	400		800						0											0											0
BOMADERRY TRICKLING FILTERS (4000ep)									0	2800					2,800											0											0
NOWRA STP INLET WORKS (12000ep)									0		2200				2,200											0											0
NOWRA STP REPLACE TRICKLING FILTERS (12000ep)									0						0		6200									6200											0
RELINE SEWERS (Milton/Ulladulla System)							500	500	1,000	500					500											0											0
RELINE SEWERS (Northern Systems)				1700	2100	1600	600	600	6,600	600					600											0											0
Northen Headworks				182.5	453.7	567	219	179	1,601	139	550	650	750	850	2,939	950	1050	1150	1250	1350	1450	1550	1650	1750	1900	14050	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	21000
Southern Headworks + Distribution System				30	85	50	50	50	265	50	300	315	330	345	1,340	360	375	390	405	420	435	450	465	490	500	4290	500	500	500	500	500	500	500	500	500	500	5000
North Distribution System				41	380	40	40	40	541	40	150	170	190	210	760	230	250	270	290	310	330	350	370	390	400	3190	400	400	400	400	400	400	400	400	400	400	4000
TOTAL				1,954	3,019	2,657	1,809	1,369	10,807	4,129	3,200	1,135	1,270	1,405	11,139	1,540	7,875	1,810	1,945	2,080	2,215	2,350	2,485	2,630	2,800	27,730	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	30,000

NEW WORKS - REAL DOLLARS				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
NOWRA SURCHARGE MAIN RECONFIGURATION	52	48				200			200	1800					1,800											0											0
Northen Headworks				380.5	693	700	520	447.5	2,741	130	500	500	500	500	2,130	500	500	500	500	500	500	500	500	500	500	5000	500	500	500	500	500	500	500	500	500	500	5000
Southern Headworks + Distribution System				270	20	20	20	20	350	20	20	20	20	20	100	20	20	20	20	20	20	20	20	20	20	200	20	20	20	20	20	20	20	20	20	20	200
North Distribution System				187	580	50	50	50	917	50	50	50	50	50	250	50	50	50	50	50	50	50	50	50	50	500	50	50	50	50	50	50	50	50	50	50	500
TOTAL				838	1,293	970	590	518	4,208	2,000	570	570	570	570	4,280	570	570	570	570	570	570	570	570	570	570	5,700	570	570	570	570	570	570	570	570	570	570	5,700

MAJOR MAINTENANCE - REAL DOLLARS				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
Northen Headworks				508	504	466	461	170	2,109	145	350	350	350	350	1,545	350	350	350	350	350	350	350	350	350	350	3500	145	350	350	350	350	350	350	350	350	350	3295
Southern Headworks + Distribution System				62	144	50	50	50	356	50	50	50	50	50	250	50	50	50	50	50	50	50	50	50	50	500	50	50	50	50	50	50	50	50	50	50	500
North Distribution System				32	180	100	100	100	512	100	100	100	100	100	500	100	100	100	100	100	100	100	100	100	100	1000	100	100	100	100	100	100	100	100	100	100	1000
TOTAL				602	828	616	611	320	2,977	295	500	500	500	500	2,295	500	500	500	500	500	500	500	500	500	500	5,000	295	500	500	500	500	500	500	500	500	500	4,795

TOTAL MAJOR CAPITAL WORKS				28,009	33,020	51,960	29,602	21,794	164,384	27,316	20,140	7,579	6,692	6,783	68,510	14,119	20,027	18,351	5,124	10,050	3,661	6,056	7,964	3,700	5,158	94,210	9,596	10,962	4,753	4,119	4,119	4,201	4,395	4,168	4,070	4,119	54,502

STUDIES & INVESTIGATIONS				04/05	05/06	06/07	07/08	08/09	5 Yr TOTAL	09/10	10/11	11/12	12/13	13/14	5 Yr TOTAL	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	10 Yr TOTAL	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	10 Yr TOTAL
BERRY	50	50							0						0											0											0
SHOALHAVEN HEADS	50	50							0						0				15							15											0
BOMADERRY	50	50							0					40	40		20		25		20			10		75											0
NOWRA	50	50					20		20	25					25	50	25								25	100											0
CULBURRA	50	50						30	30						0											0											0
CALLALA	50	50					20		20						0											0											0
HUSKISSON/VINCENTIA	50	50				30			30						0											0											0
SAINT GEORGES BASIN	50	50							0					10	10											0											0
SUSSEX INLET	50	50			20				20						0											0											0
MILTON/ULLADULLA	50	50							0		50				50		15									15											0
DEVELOPER SERVICING PLAN	0	100		107	137	10	10	10	274	50	5	5	5	5	70	25	5	5	5	5	25	5	5	5	5	90	25	5	5	5	5	25	5	5	5	5	90
TOTAL				107	157	40	50	40	394	75	55	5	5	55	195	75	65	5	45	5	45	5	5	15	30	295	25	5	5	5	5	25	5	5	5	5	90

OVERALL TOTAL				28,116	33,177	52,000	29,652	21,834	170,036	27,391	20,195	7,584	6,697	6,838	90,533	14,194	20,092	18,356	5,169	10,055	3,706	6,061	7,969	3,715	5,188	134,434	9,621	10,967	4,758	4,124	4,124	4,226	4,400	4,173	4,075	4,124	54,592

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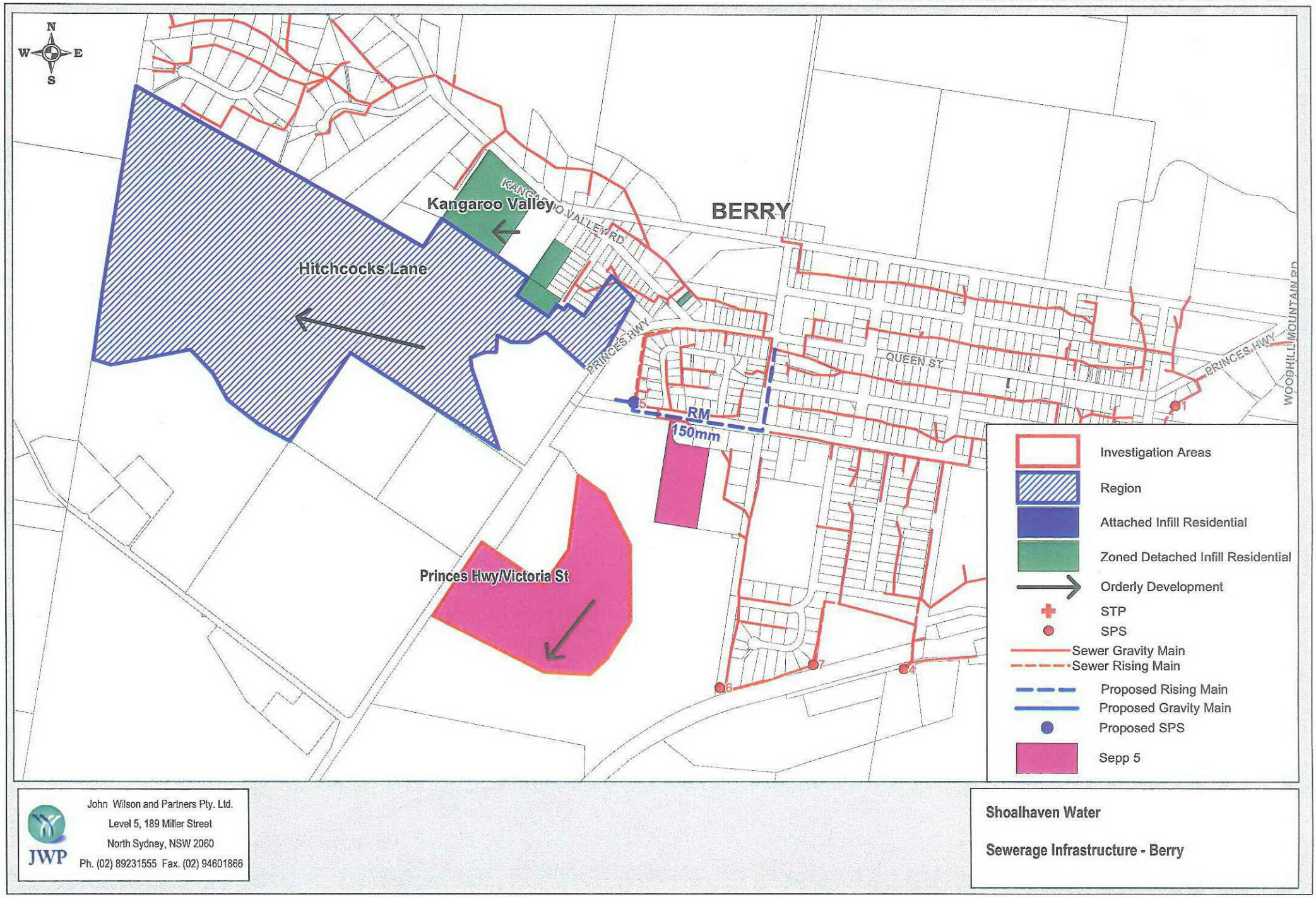

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Shoalhaven Water

Sewerage Infrastructure - Berry

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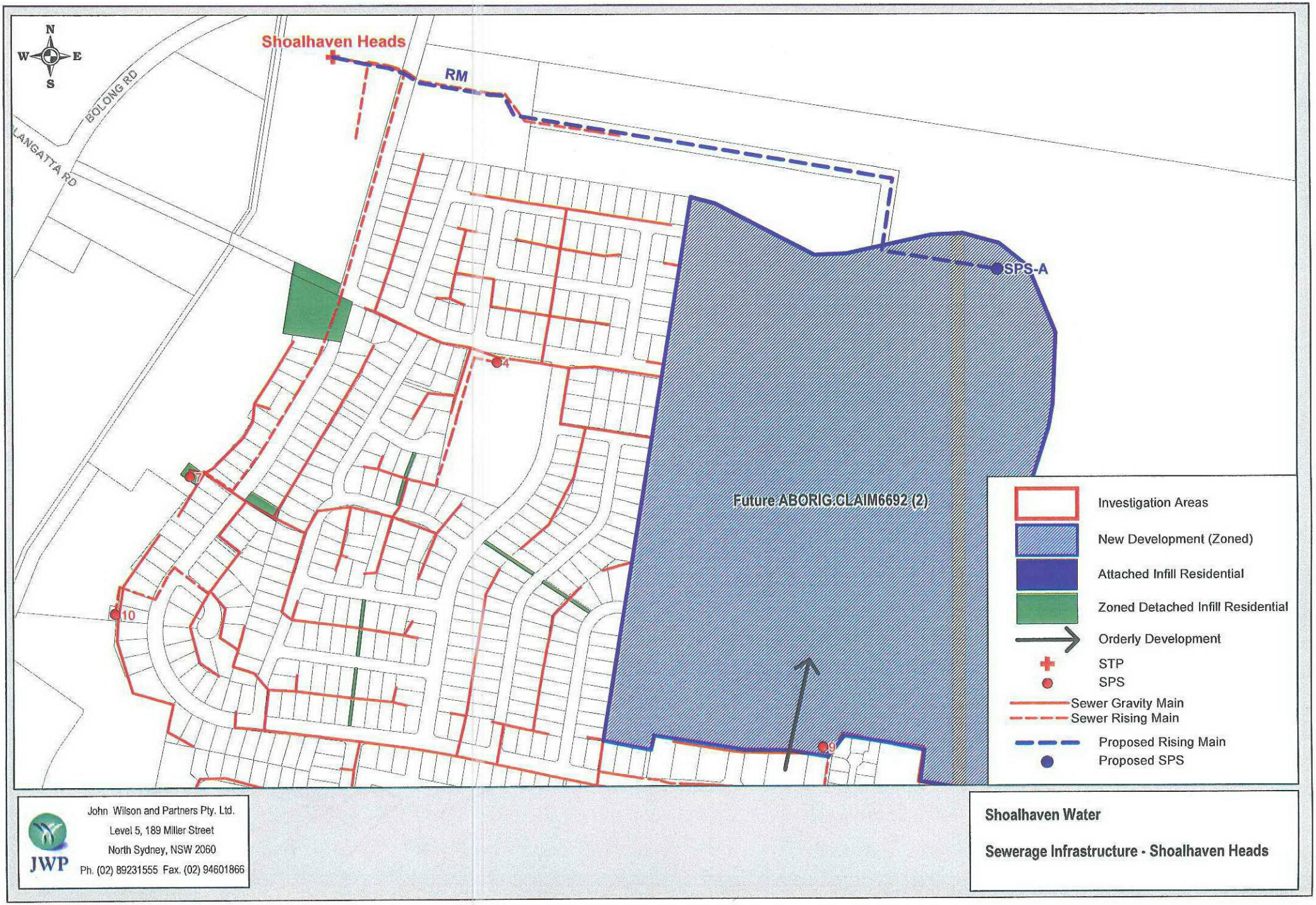

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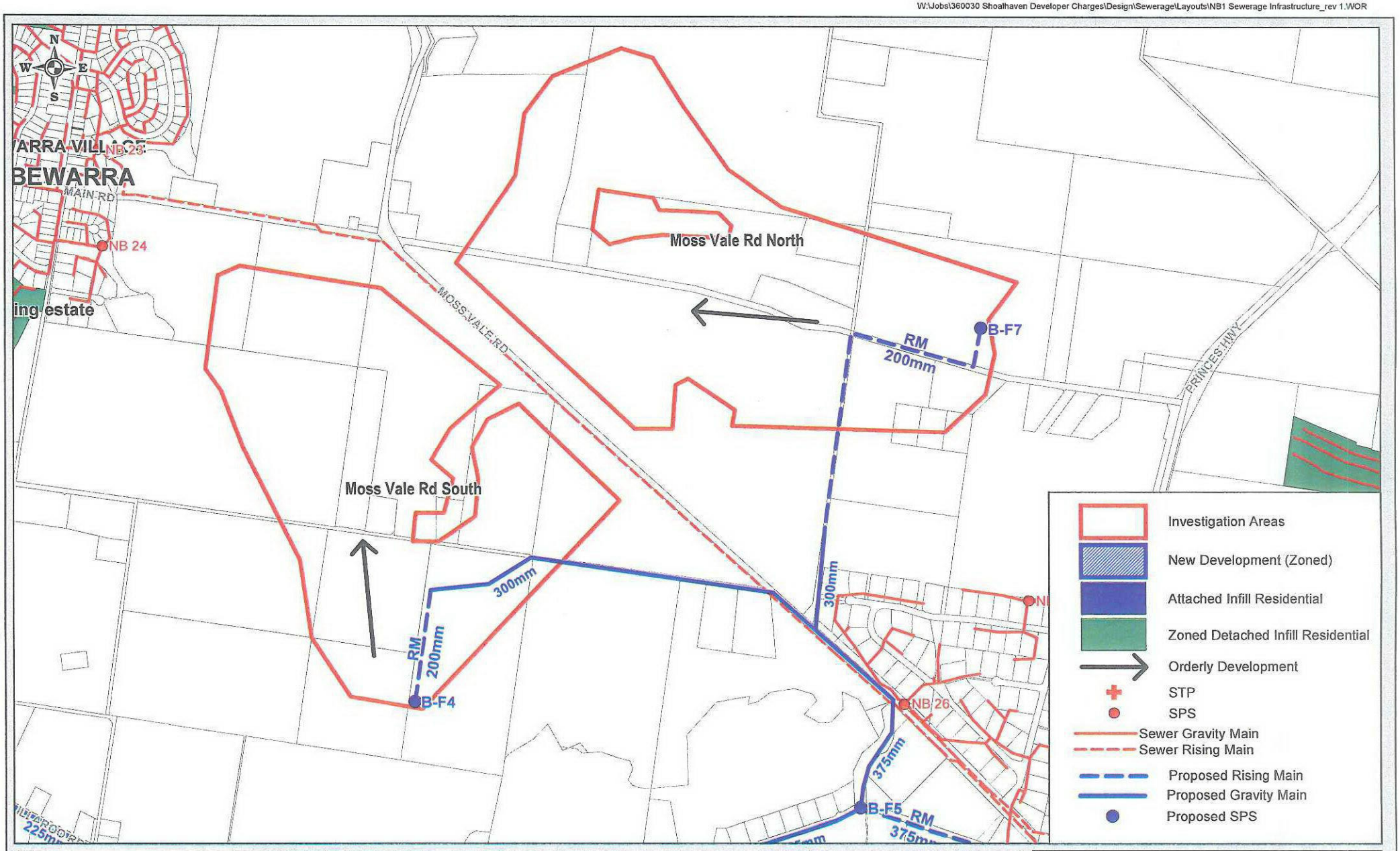

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Sewerage Infrastructure - Bomaderry

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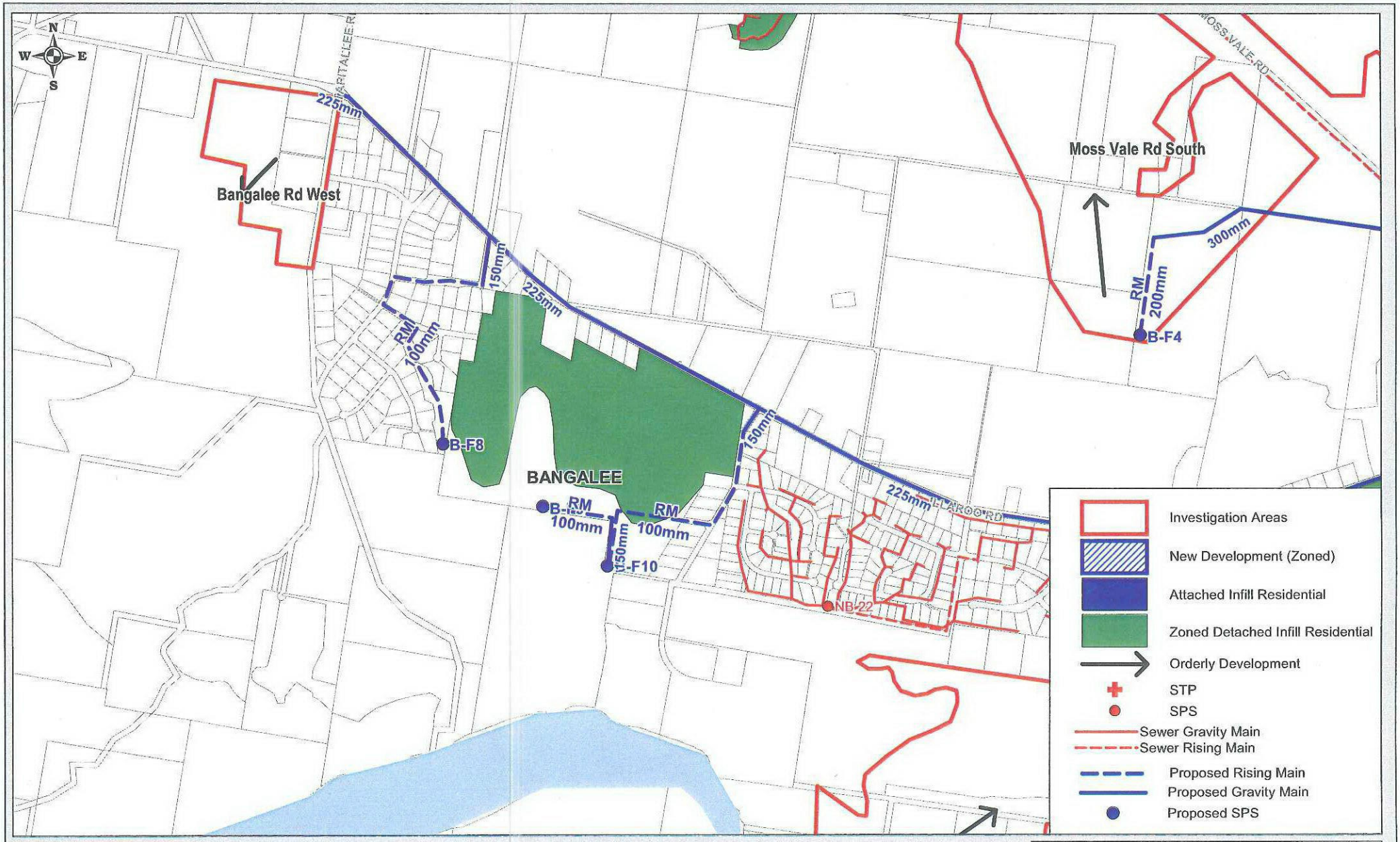

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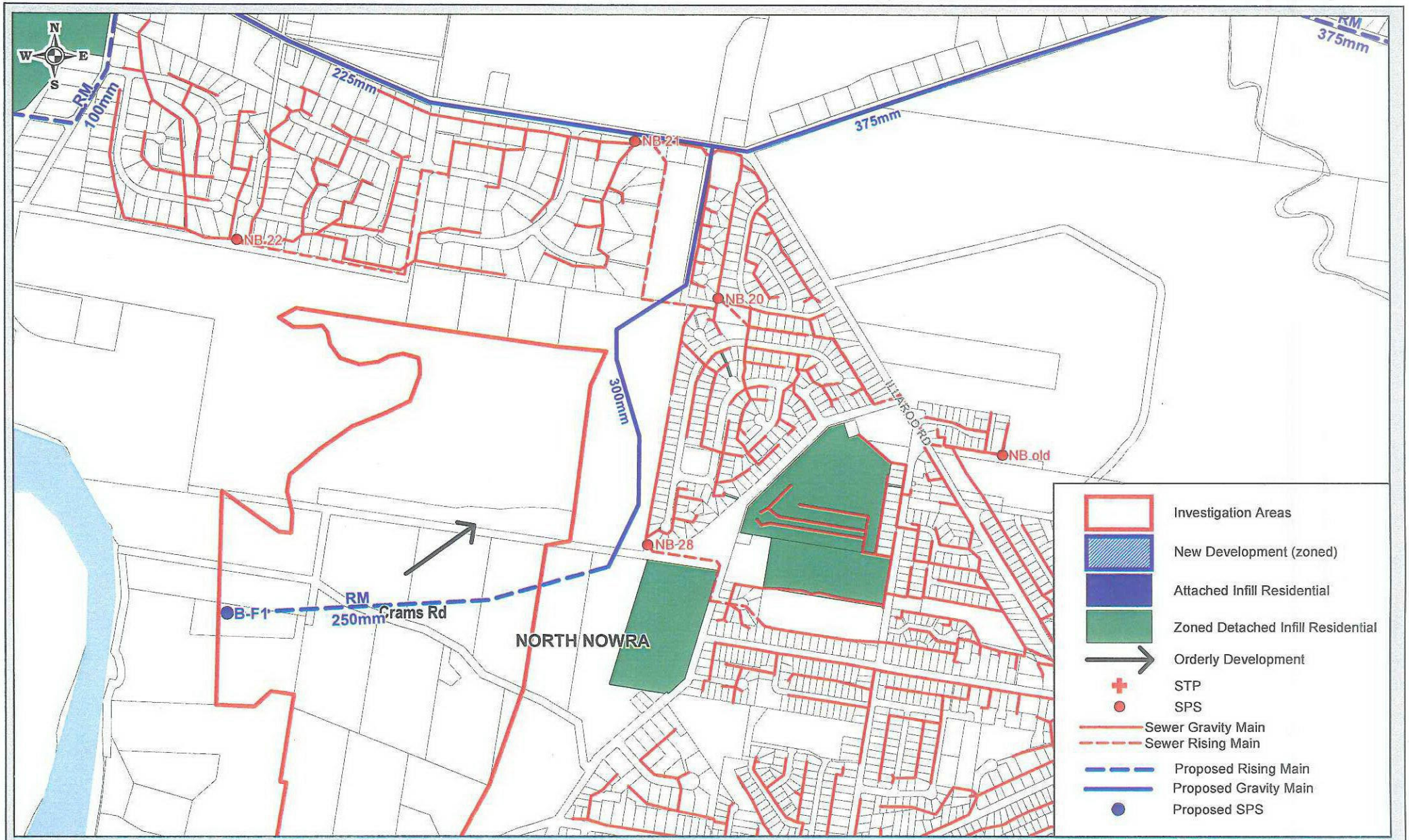

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Sewerage Infrastructure - Bomaderry

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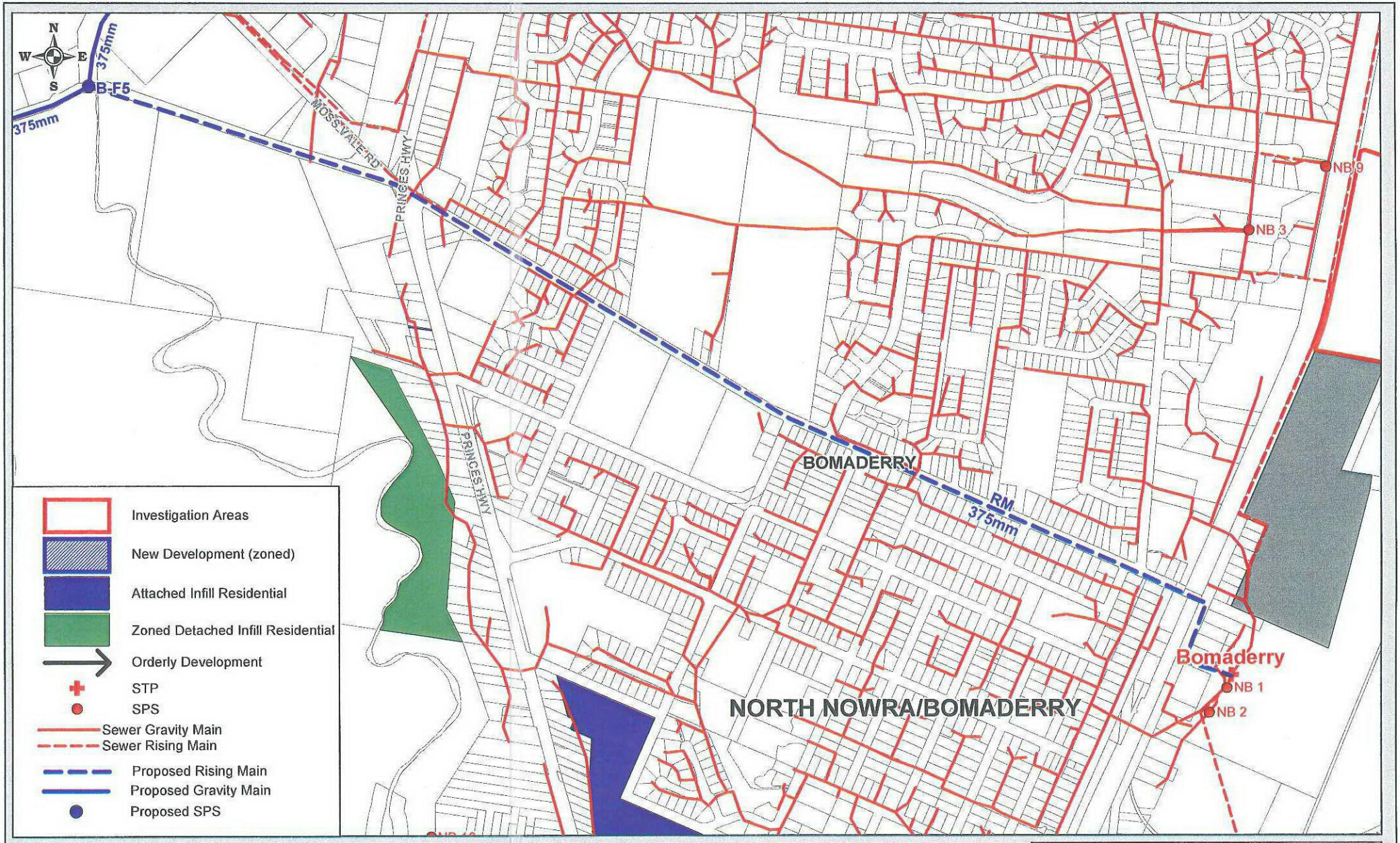

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Sewerage Infrastructure - Bomaderry

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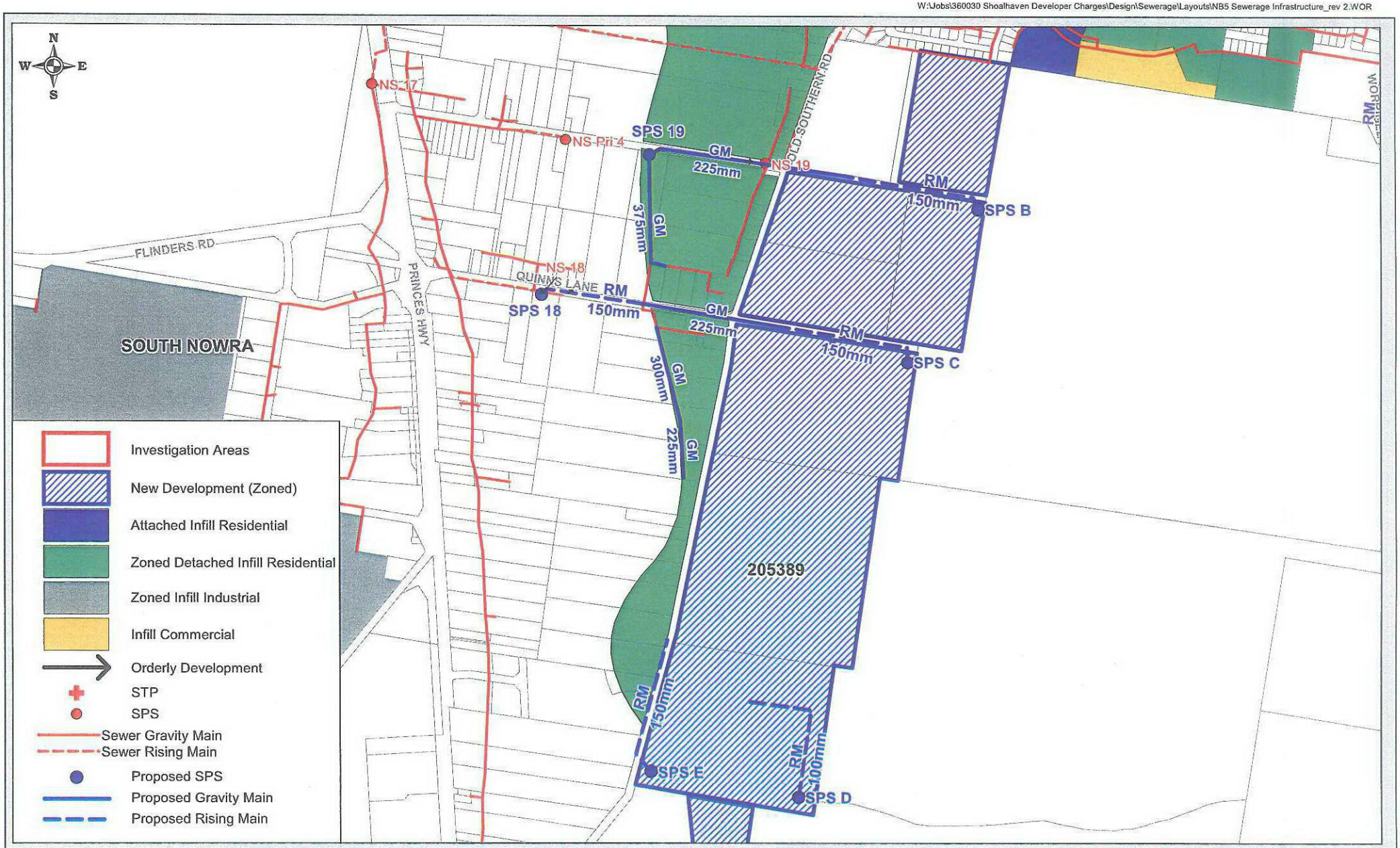

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Shoalhaven Water

Sewerage Infrastructure - South Nowra

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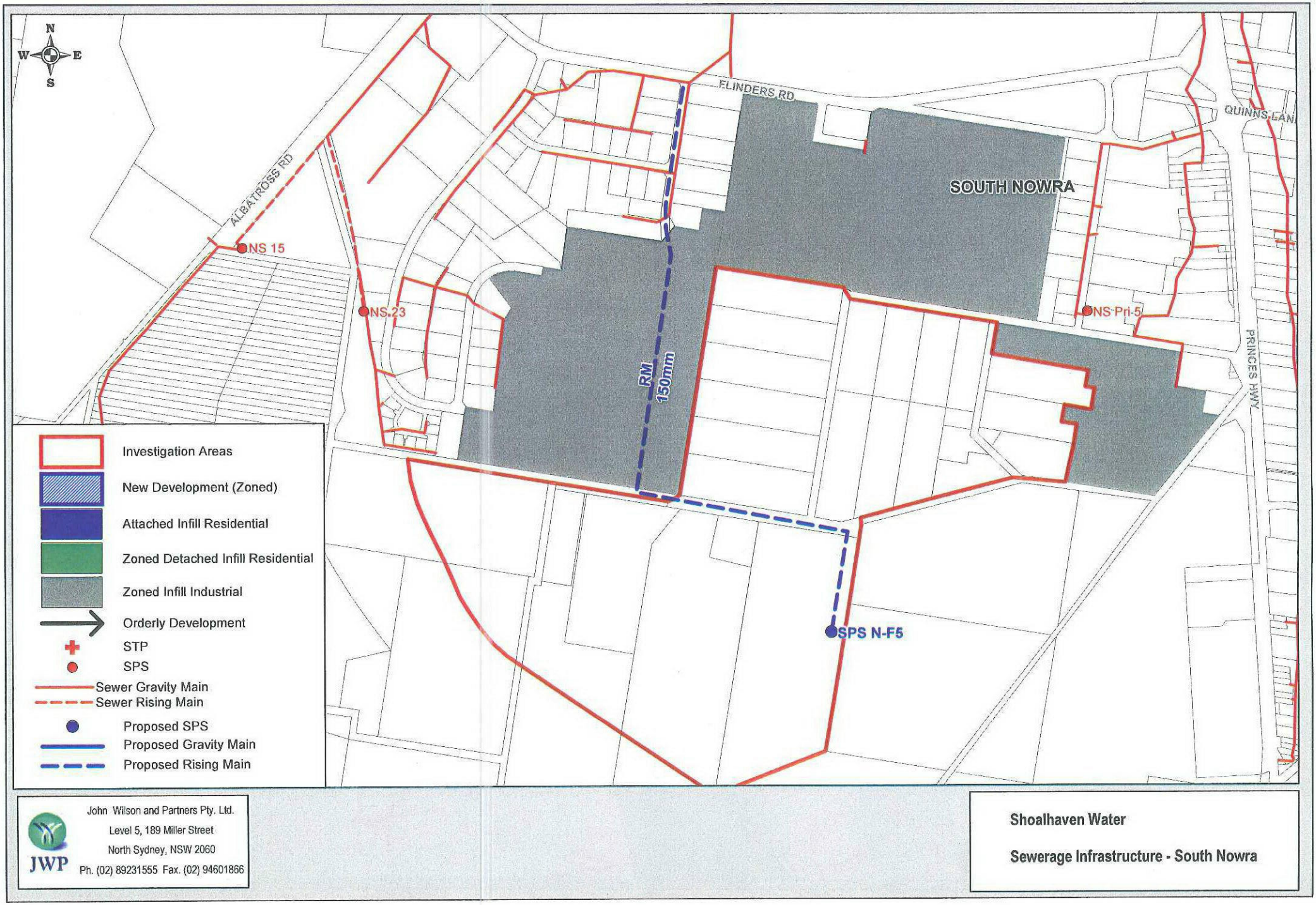

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Sewerage Infrastructure - South Nowra

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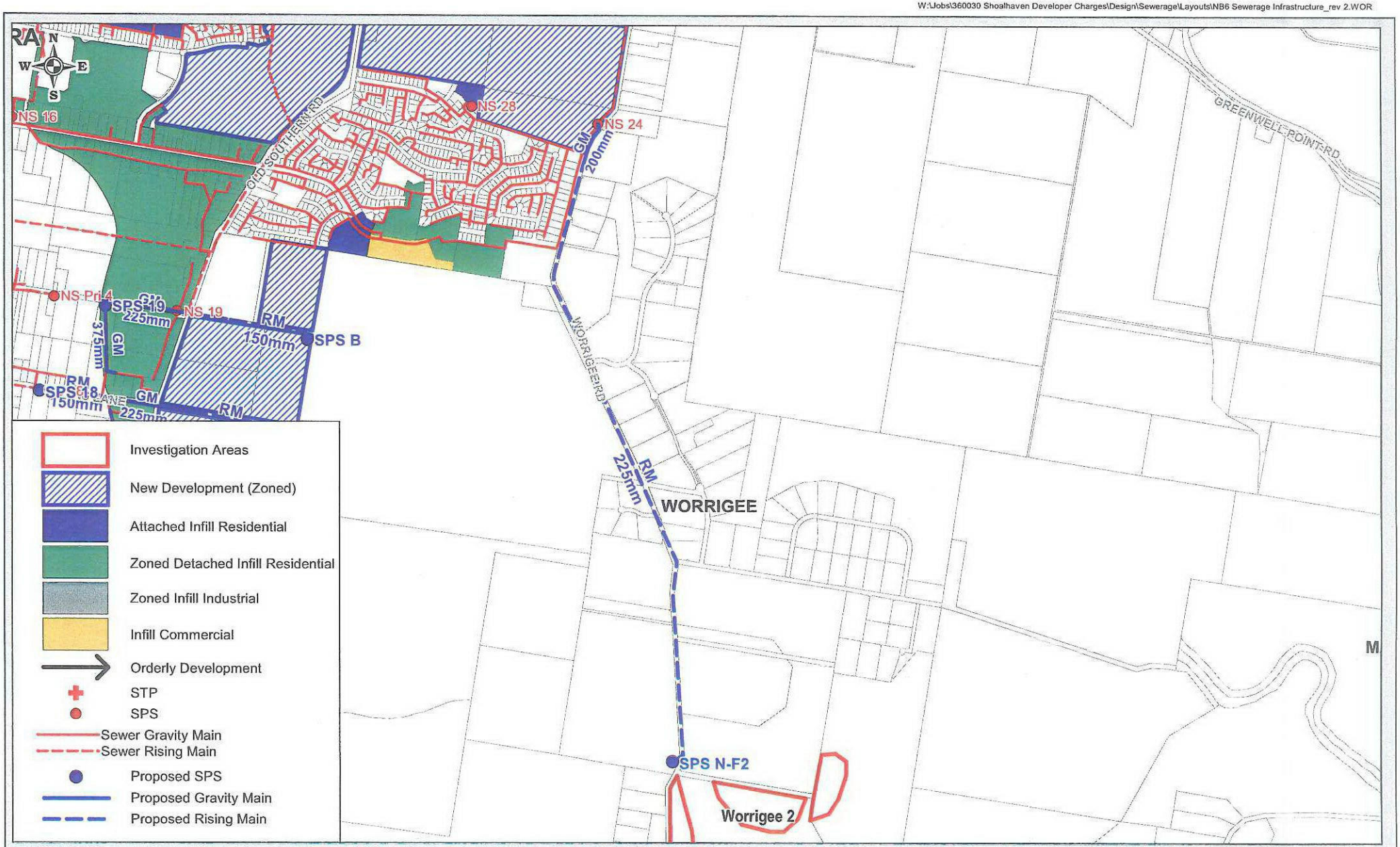

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Shoalhaven Water

Sewerage Infrastructure - Worrigee

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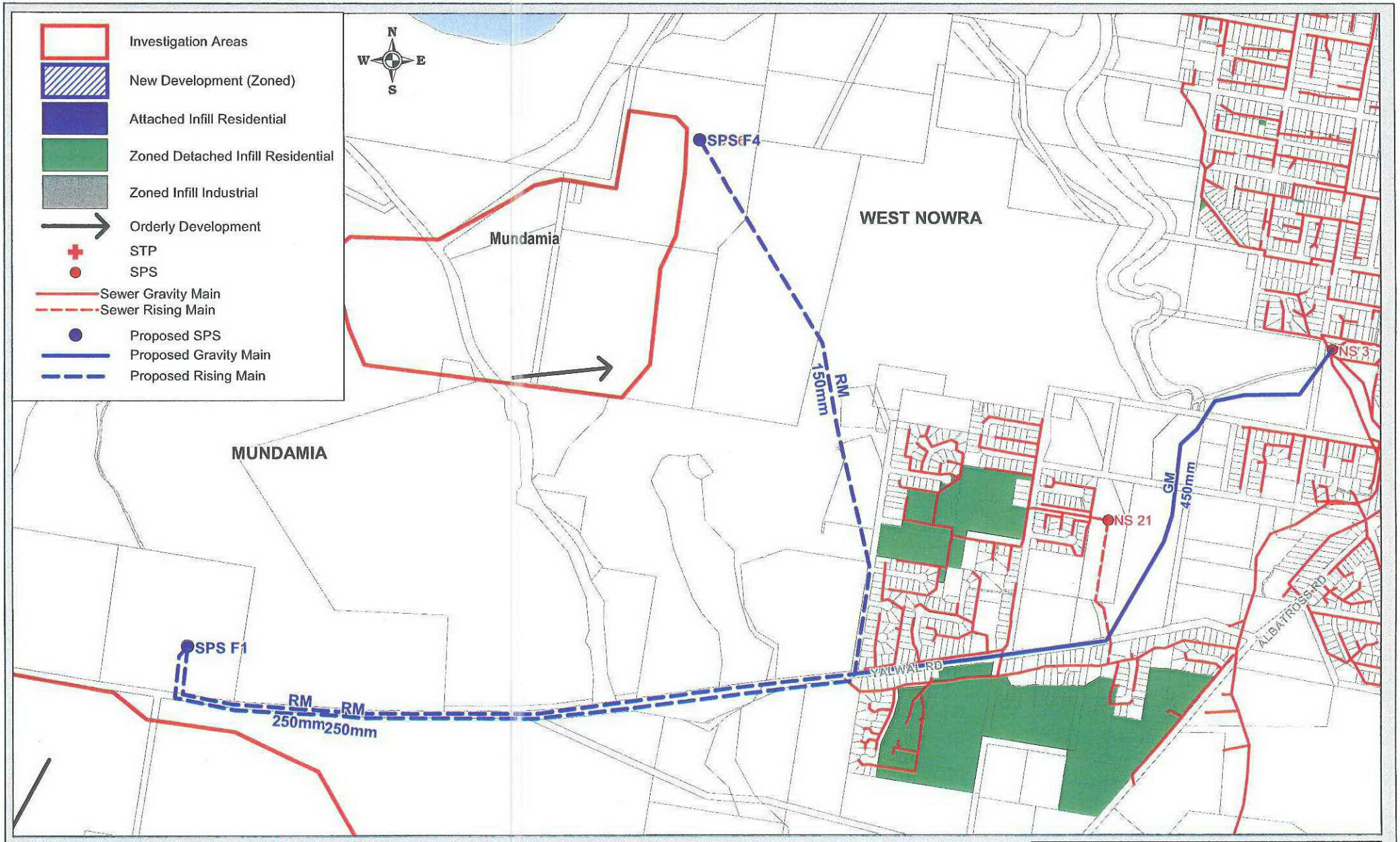

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Sewerage Infrastructure - West Nowra

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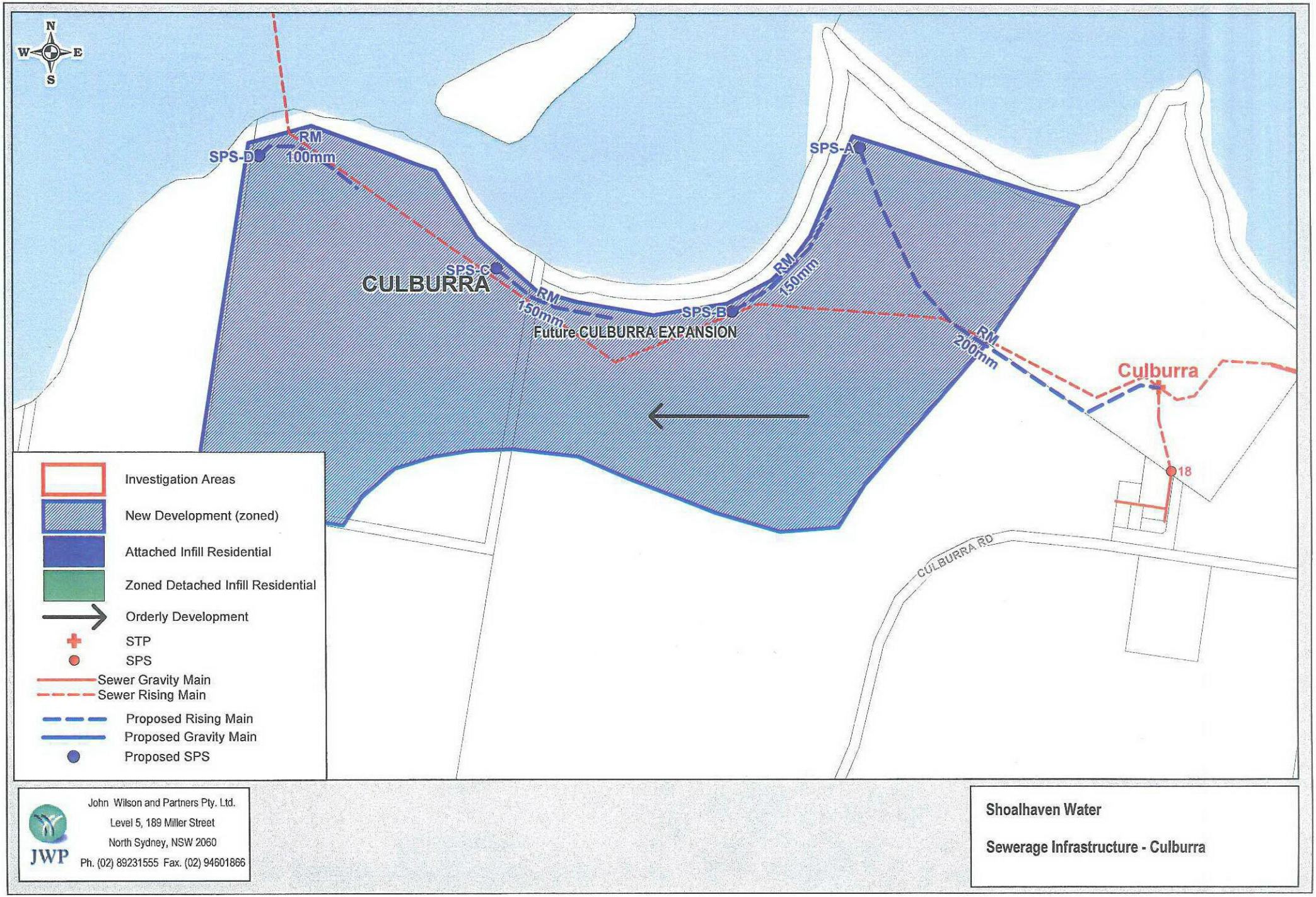

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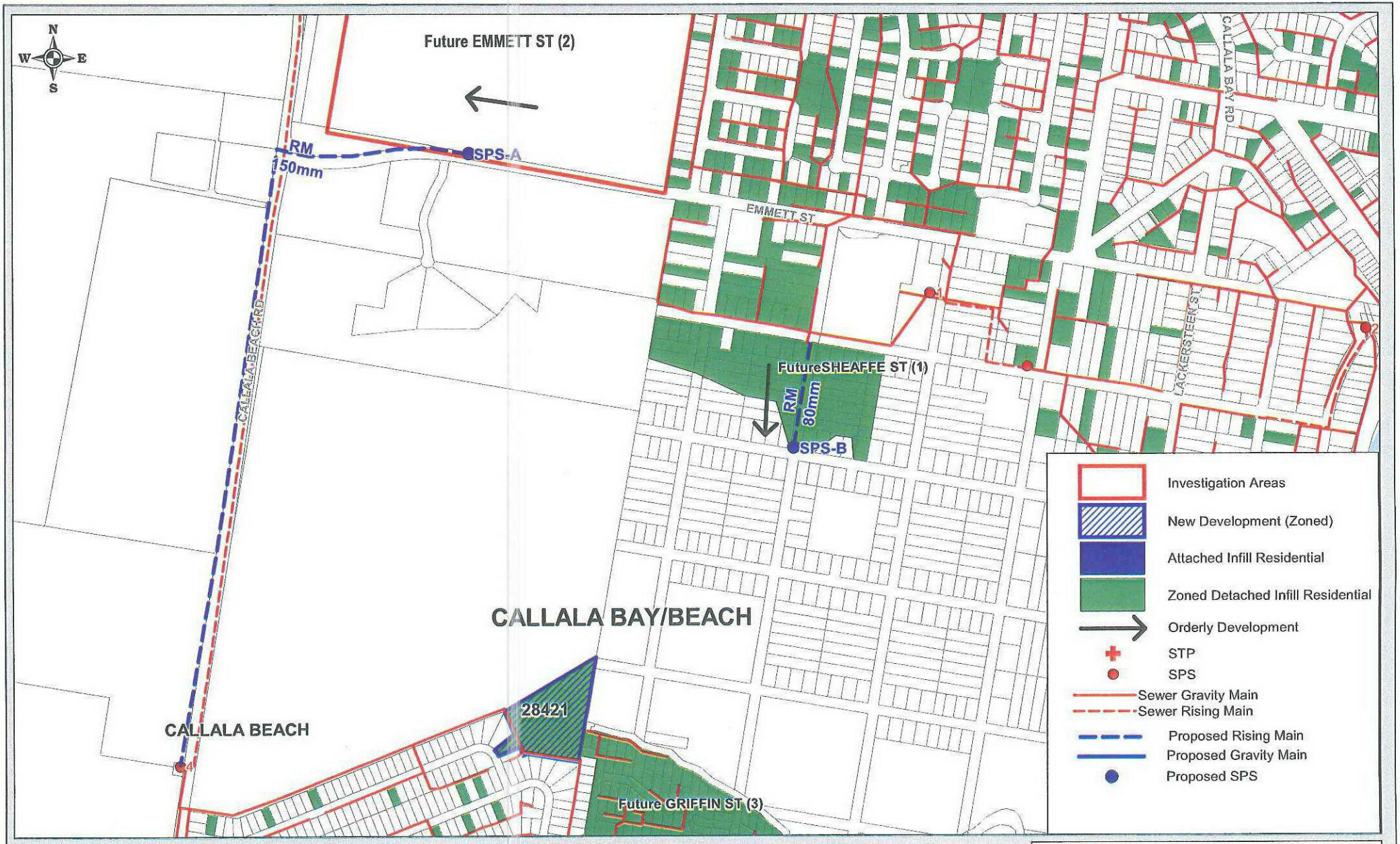

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Sewerage Infrastructure - Callala

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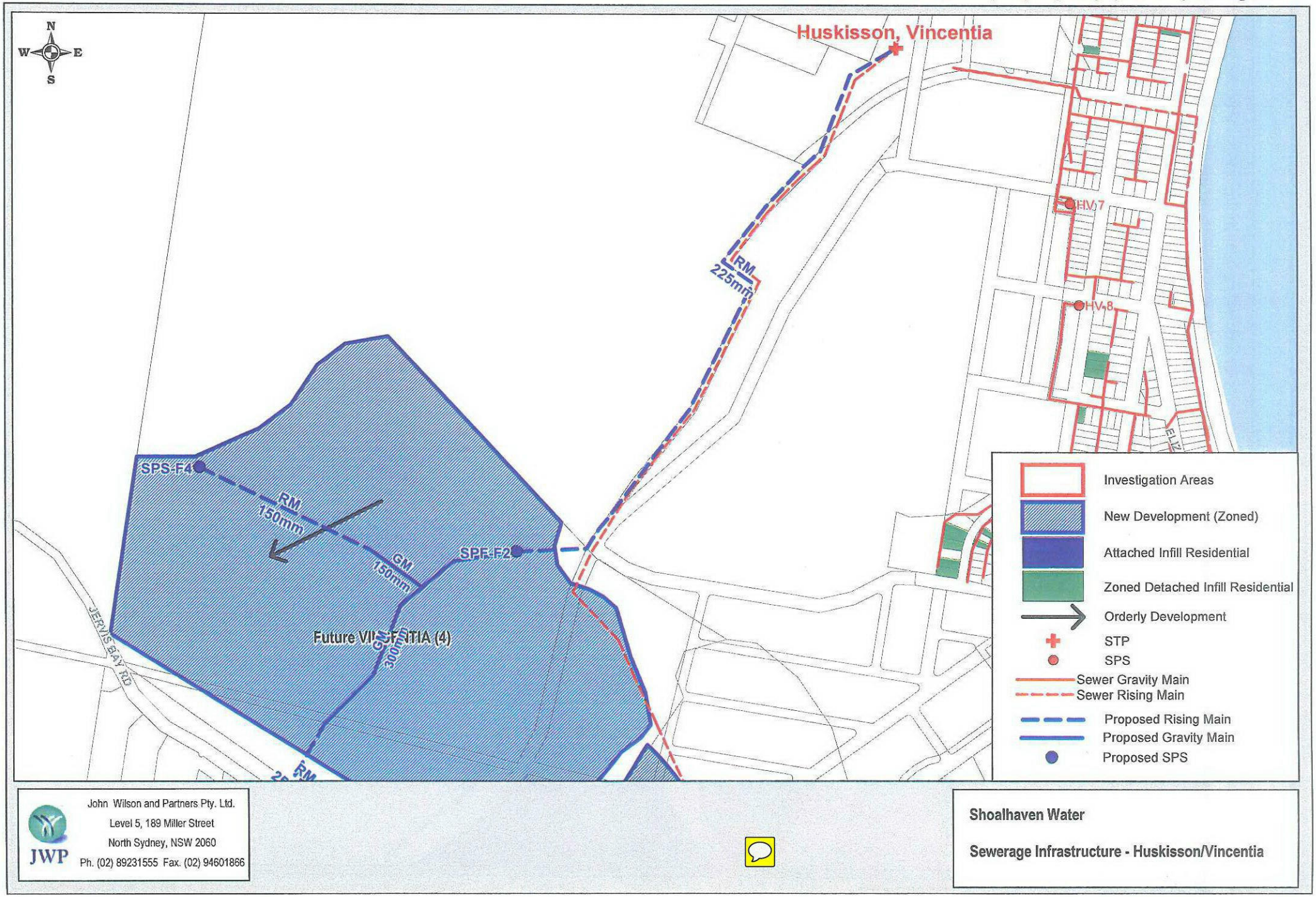

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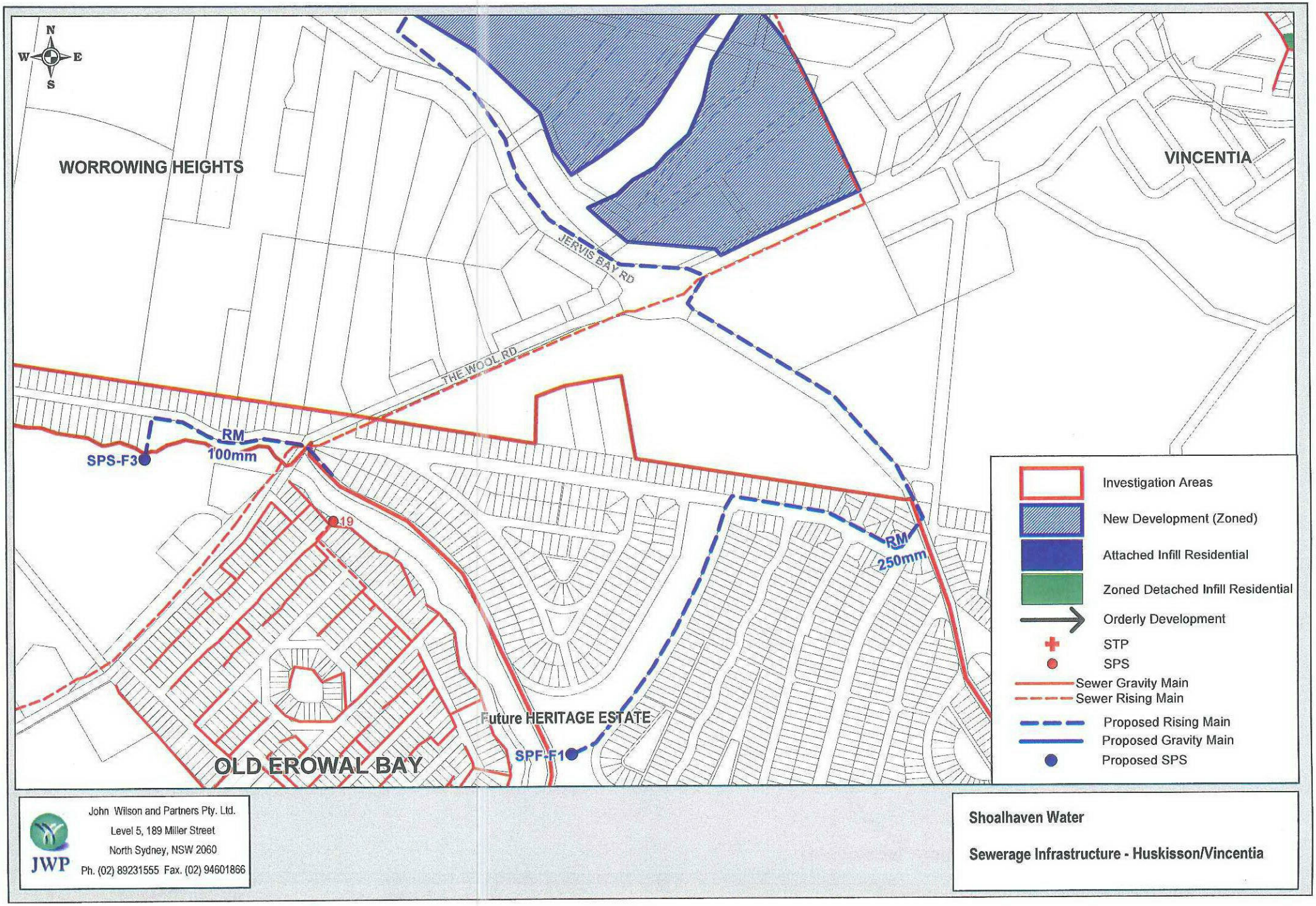

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Sewerage Infrastructure - Huskisson/Vincentia

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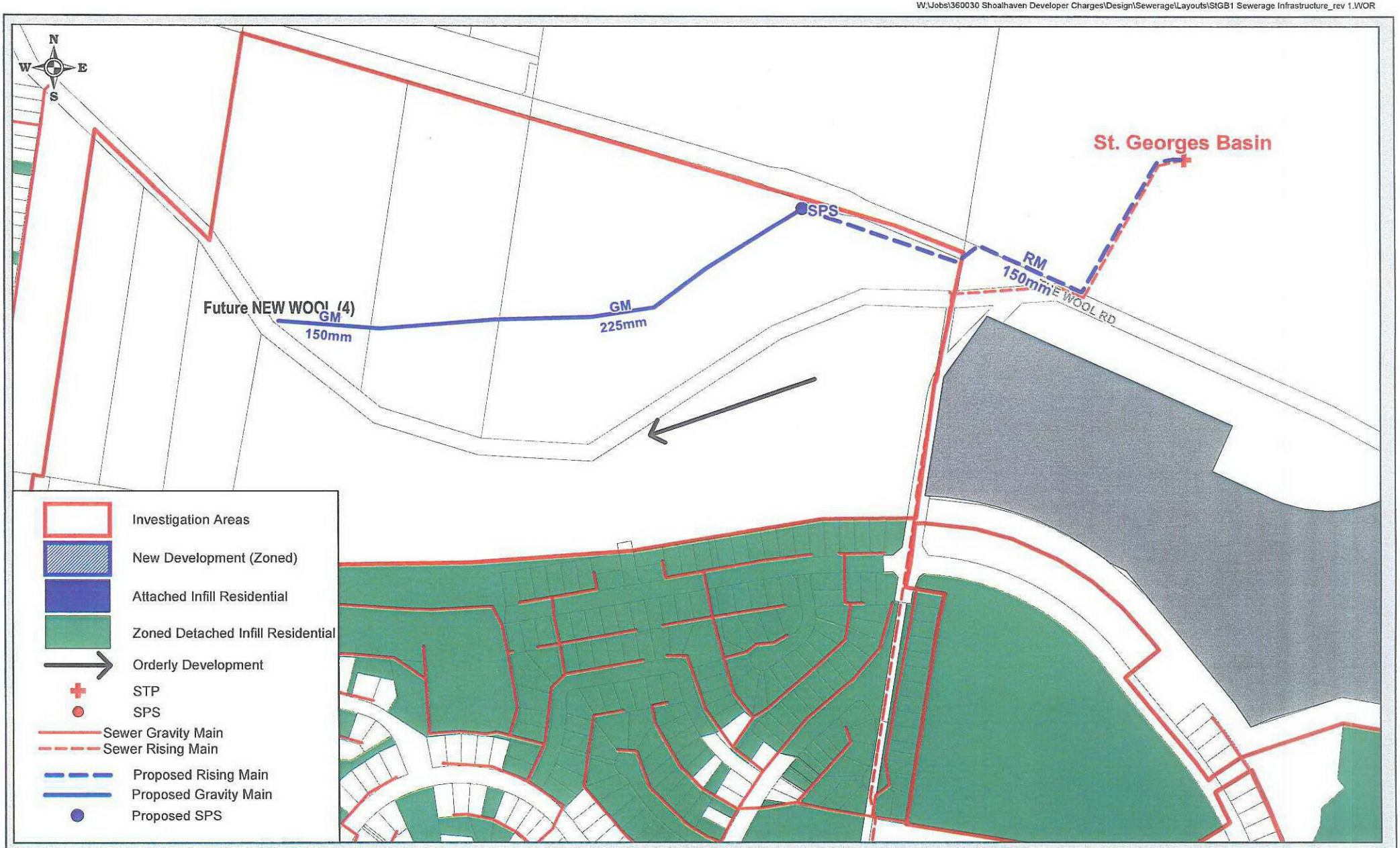

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Sewerage Infrastructure - St Georges Basin

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Sewerage Infrastructure - St Georges Basin

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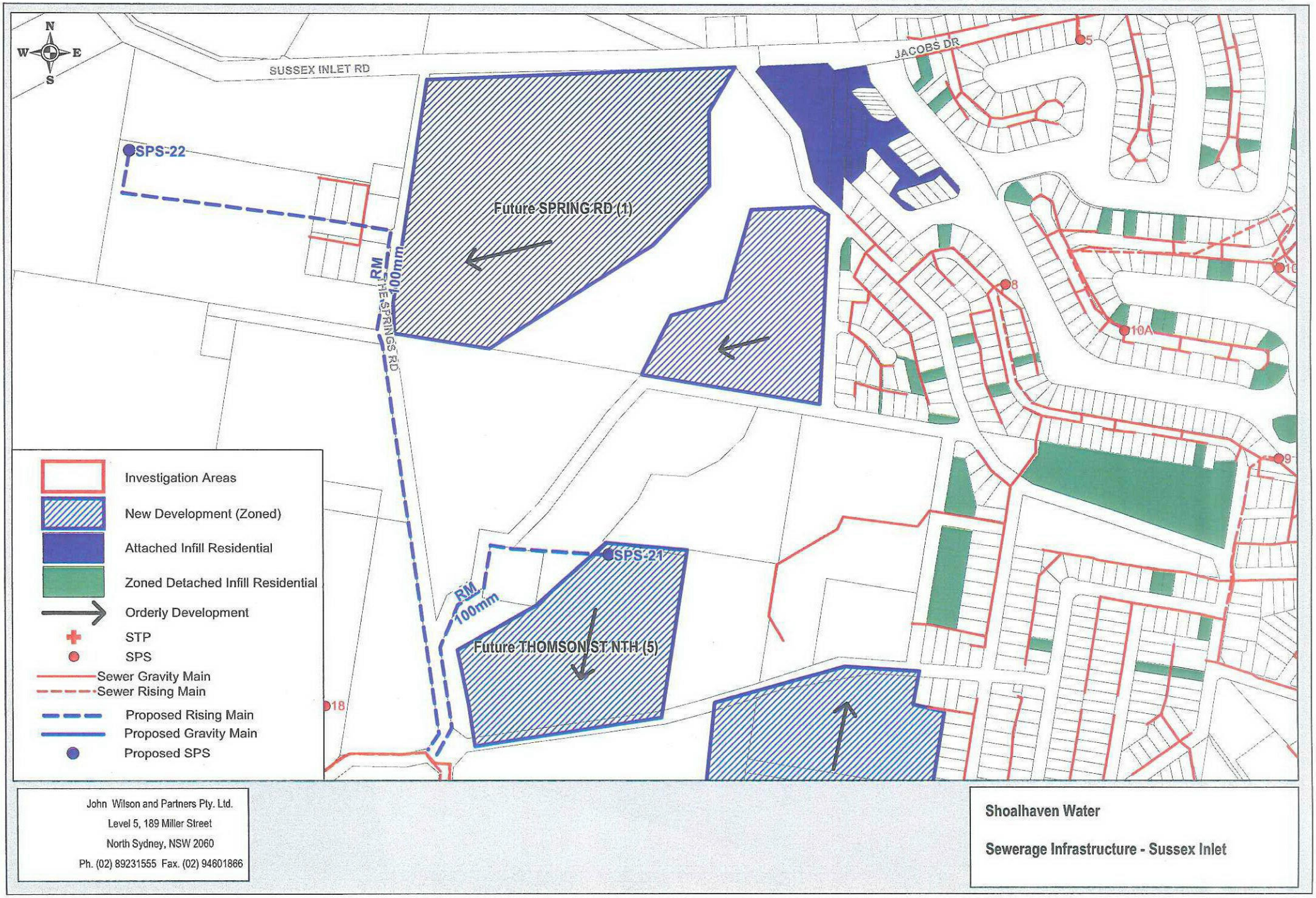

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Sewerage Infrastructure - Sussex Inlet

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Sewerage Infrastructure - Sussex Inlet

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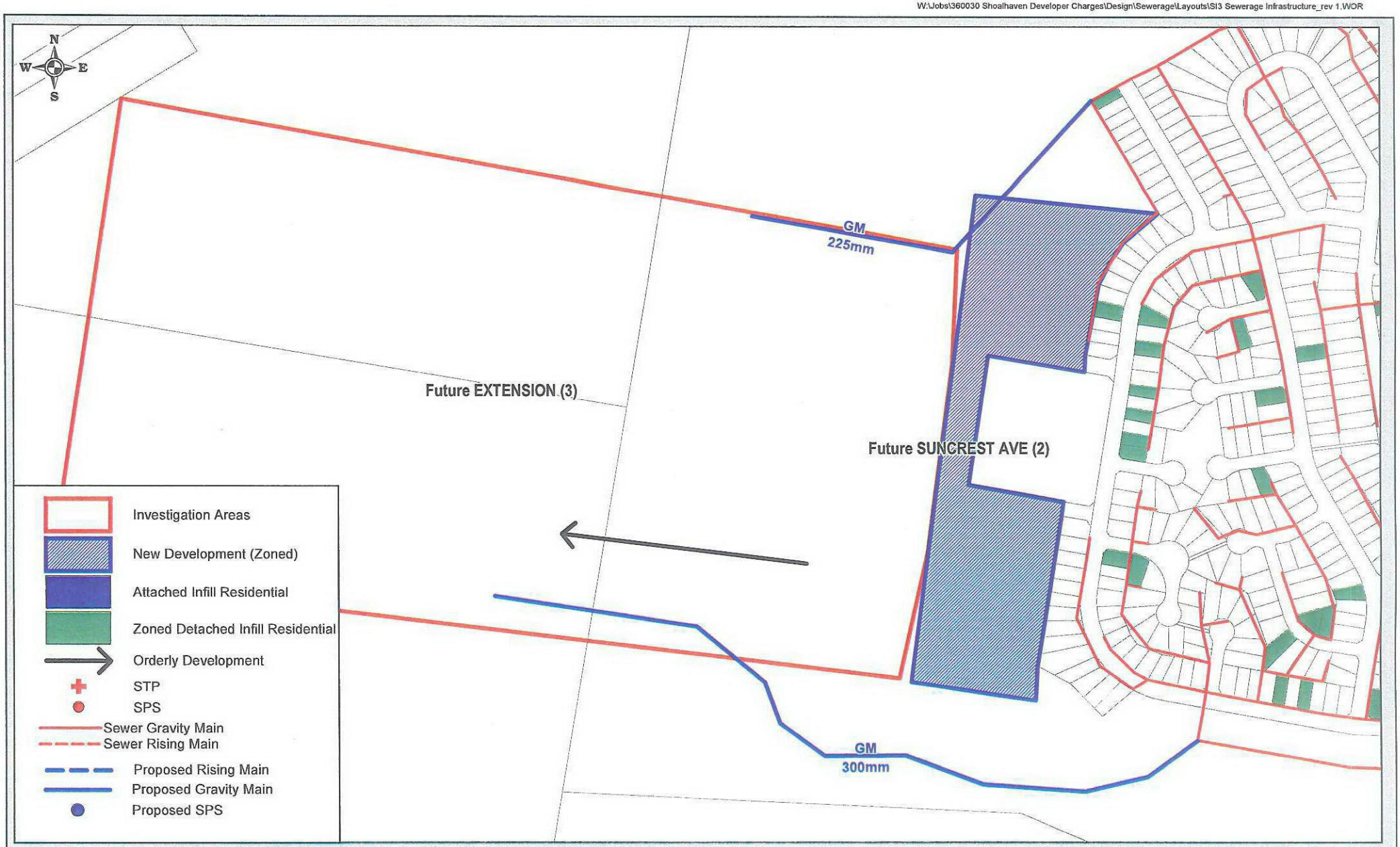

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Sewerage Infrastructure - Sussex Inlet

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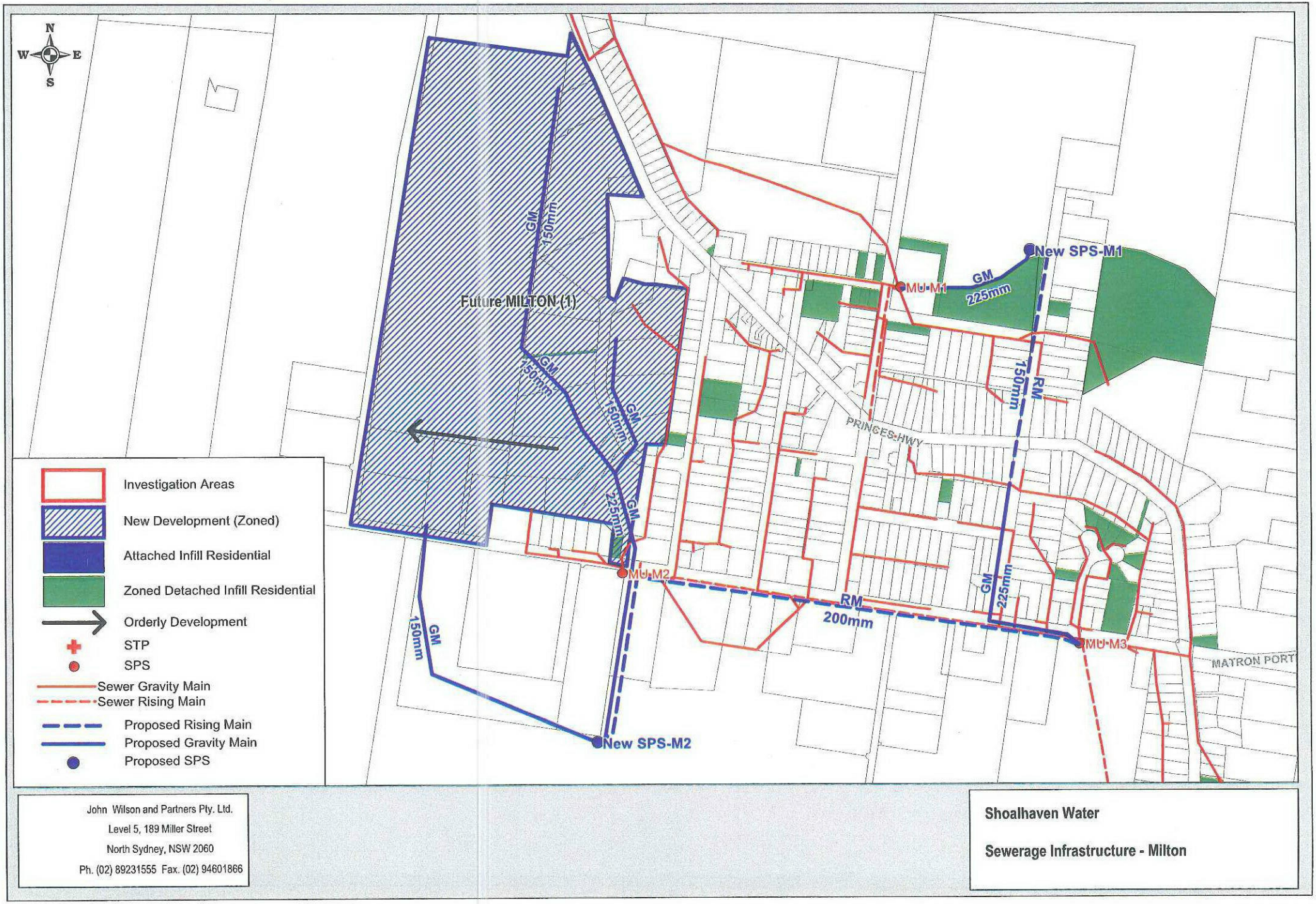

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Sewerage Infrastructure - Milton

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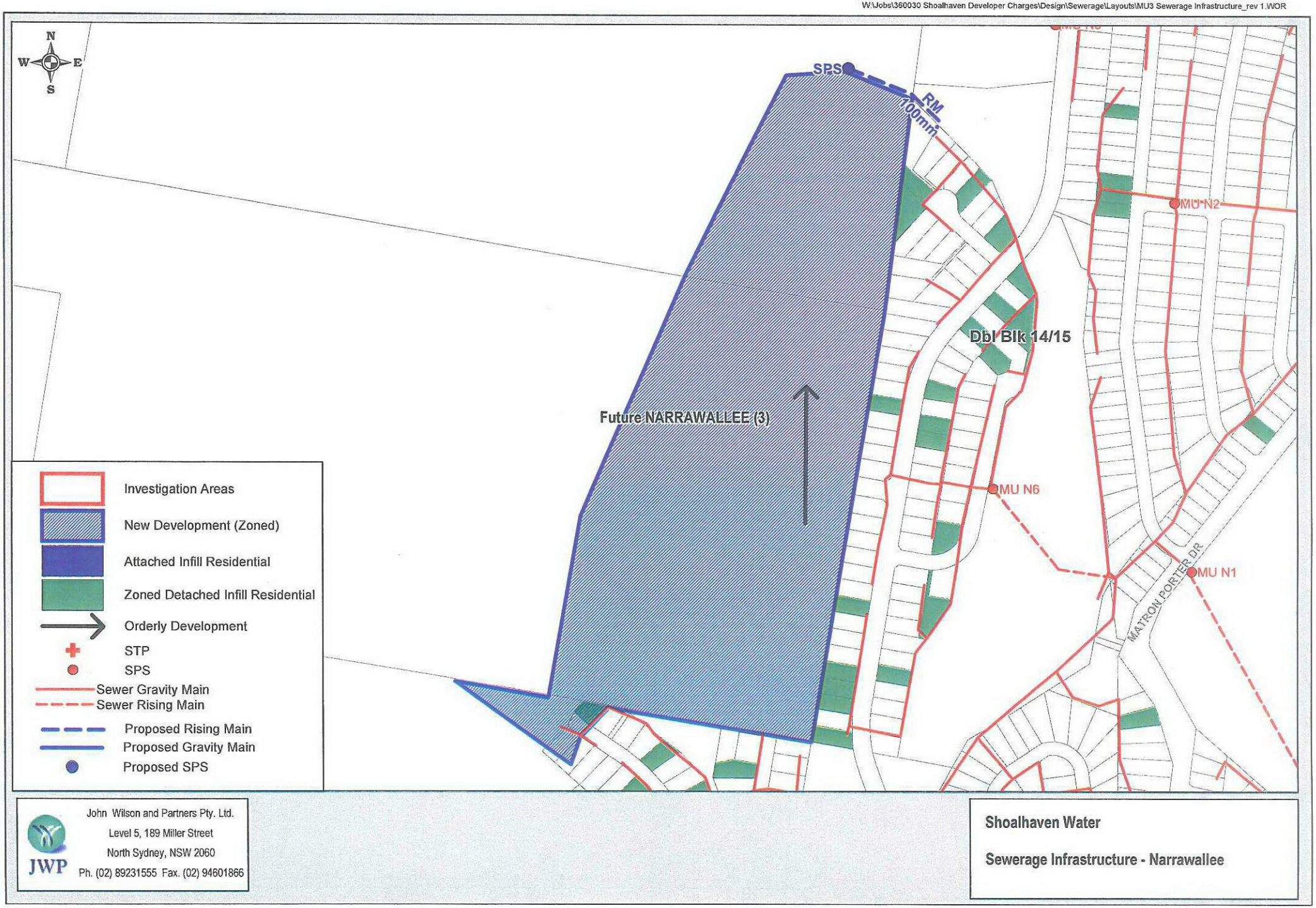

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Sewerage Infrastructure - Narrawallee

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Sewerage Infrastructure - Mollymook

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Sewerage Infrastructure - Ulladulla

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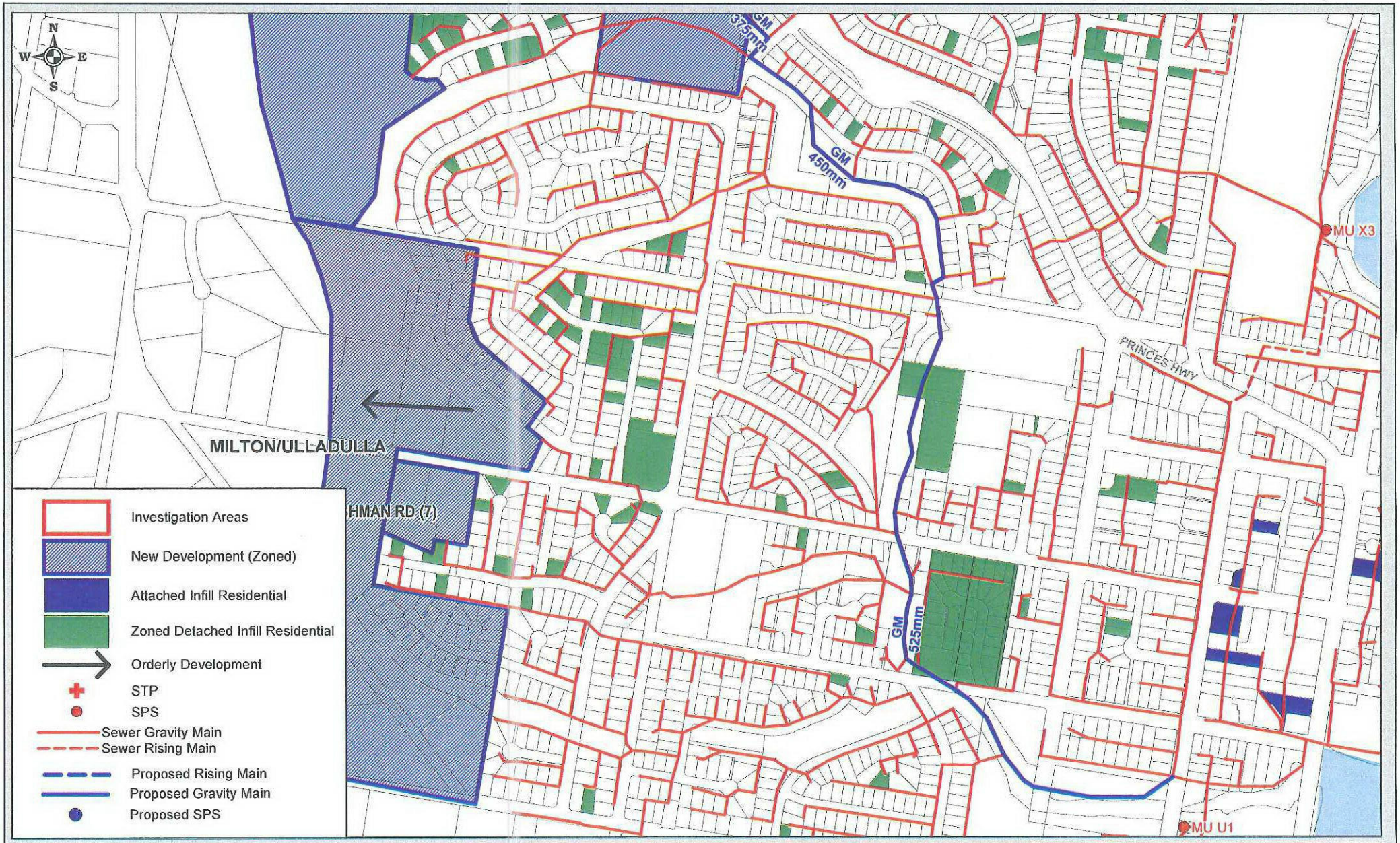

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Sewerage Infrastructure - Ulladulla

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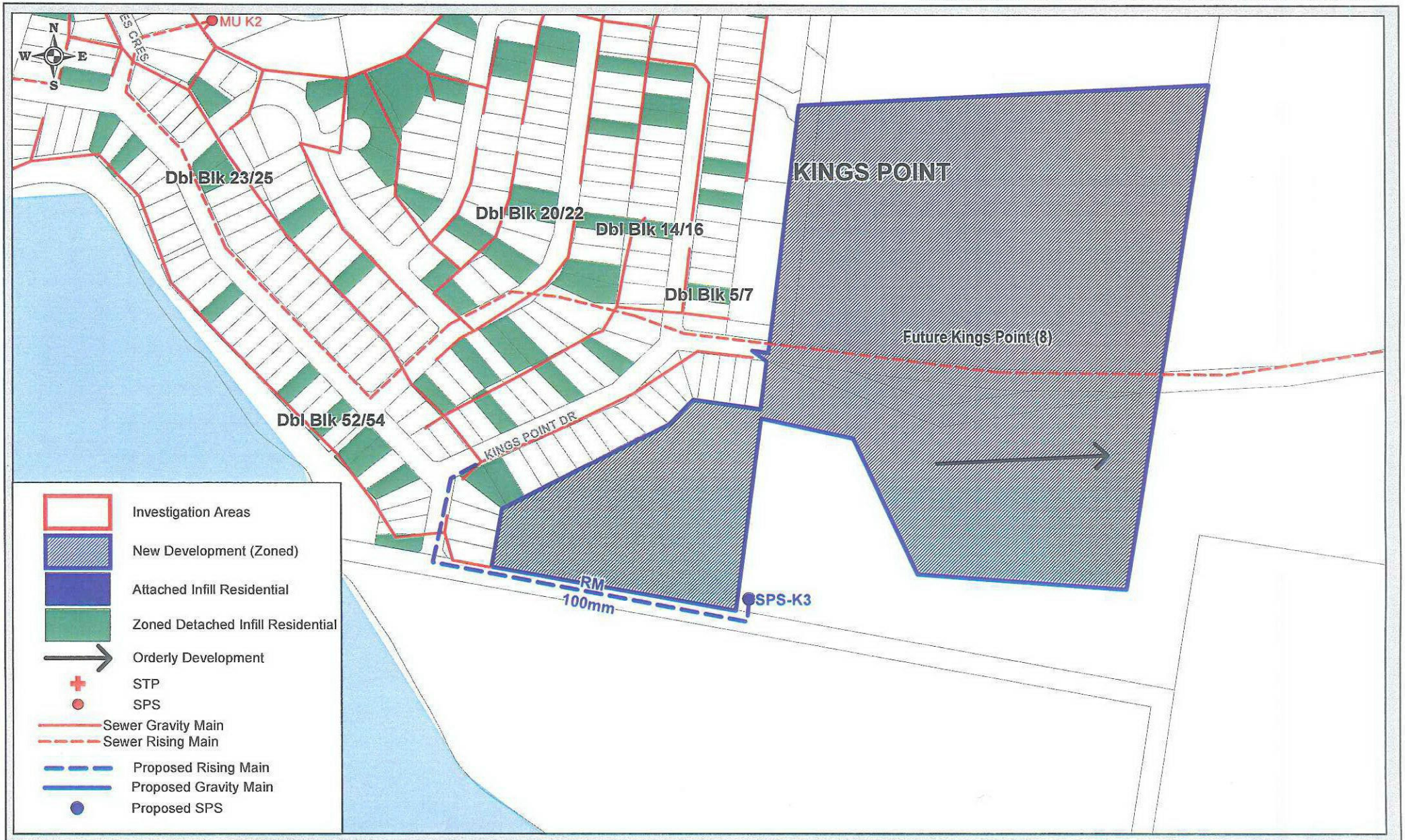

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Sewerage Infrastructure - Kings Point

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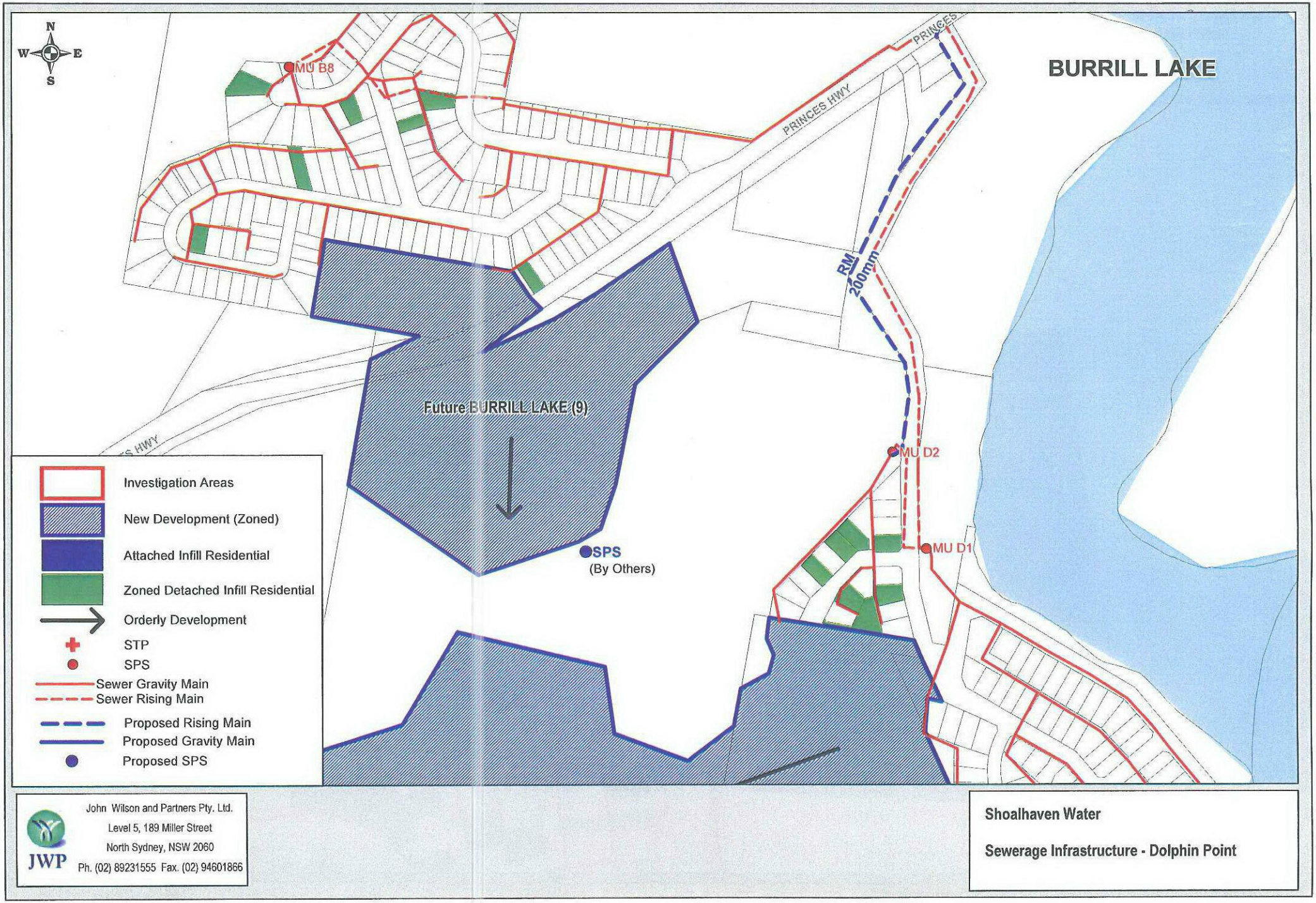

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Shoalhaven Water

Sewerage Infrastructure - Dolphin Point

TABLE 8

NON RESIDENTIAL SEWER DISCHARGE BY SEWERAGE TREATMENT WORKS

Zone	Localities	Annual Discharge per STP (kL/an)	Caravan Parks (kL/an)	Annual NET Non Residential Discharge per STP (kL/an) : D-E	Gross Non-Residential Ave Day Demand (kL/d): (D/365)	Daily Discharge (L/d/EP)	Gross Non Res. EP's : [(G/H)*1000]	Net Non-Residential Ave Day Demand (kL/d) : [F/365]	Net Non Res. EP's : (J/240)*1000	No. of EP's to ET's	Net Non Res. ET's : K/L
A	B	D	E	F	G	H	I	J	K	L	M
BERRY	Berry	49,693	0	49,693	136.1	240	567.3	136.1	567.3	2.5	226.9
	Total	**49,693**	**0**	**49,693**	**136.1**	**240**	**567.3**	**136.1**	**567.3**	**2.5**	**226.9**
SHOALHAVEN HEADS	Shoalhaven Heads	99,533	76,450	23,083	272.7	240	1298.5	63.2	263.5	3.2	82.3
	Total	**99,533**	**76,450**	**23,083**	**272.7**	**240**	**1136.2**	**63.2**	**263.5**	**3.2**	**82.3**
BOMADERRY	Bomaderry	202,551	13,195	189,356	554.9	240	2642.5	518.8	2161.6	2.5	864.6
	Cambewarra Village	4,392	0	4,392	12.0	240	57.3	12.0	50.1	2.5	20.1
	Total	**206,943**	**13,195**	**193,748**	**567.0**	**240**	**2362.4**	**530.8**	**2211.7**	**2.5**	**884.7**
NOWRA	Nowra	406,399	8,915	397,484	1113.4	240	5302.0	1089.0	4537.5	2.5	1,815.0
	Terara	17,202	16,246	956	47.1	240	224.4	2.6	10.9	2.5	4.4
	North Nowra	55,566	0	55,566	152.2	240	724.9	152.2	634.3	2.5	253.7
	Nowra Rural	4,206	0	4,206	11.5	240	54.9	11.5	48.0	2.5	19.2
	South Nowra	156,157	6,143	150,014	427.8	240	2037.3	411.0	1712.5	2.5	685.0
	Worrigee	6,232	0	6,232	17.1	240	81.3	17.1	71.1	2.5	28.5
	West Nowra	7,197	0	7,197	19.7	240	93.9	19.7	82.2	2.5	32.9
	Mundamia	609	0	609	1.7	240	7.9	1.7	7.0	2.5	2.8
	Comberton	1,616	0	1,616	4.4	240	21.1	4.4	18.4	2.5	7.4
	Yerriyong	357	0	357	1.0	240	4.7	1.0	4.1	2.5	1.6
	East Nowra	1,707	0	1,707	4.7	240	22.3	4.7	19.5	2.5	7.8
	Total	**657,248**	**31,304**	**625,944**	**1800.7**	**240**	**7502.8**	**1714.9**	**7145.5**	**2.5**	**2,858.2**
CULBURRA	Greenwell Point	38,834	15,493	23,341	106.4	240	506.6	63.9	266.4	3.2	83.3
	Orient Point	431	0	431	1.2	240	5.6	1.2	4.9	3.2	1.5
	Culburra Beach	47,226	1,016	46,210	129.4	240	616.1	126.6	527.5	3.2	164.8
	Culburra	16,976	16,013	963	46.5	240	221.5	2.6	11.0	3.2	3.4
	Total	**103,467**	**32,522**	**70,945**	**283.5**	**240**	**1181.1**	**194.4**	**809.9**	**3.2**	**253.1**
CALLALA	Callala Bay	6,757	0	6,757	18.5	240	88.2	18.5	77.1	3.2	24.1
CURRARONG	Callala Beach	759	0	759	2.1	240	9.9	2.1	8.7	3.2	2.7
	Myola	9,286	9,286	0	25.4	240	121.1	0.0	0.0	3.2	0.0
	Currarong	347	0	347	1.0	240	4.5	1.0	4.0	3.2	1.2
	Total	**17,149**	**9,286**	**7,863**	**47.0**	**240**	**195.8**	**21.5**	**89.8**	**3.2**	**28.1**
HUSKISSON/	Huskisson	71,889	3,861	68,028	197.0	240	937.9	186.4	776.6	3.2	242.7
VINCENTIA	Vincentia	47,909	0	47,909	131.3	240	625.0	131.3	546.9	3.2	170.9
	Hyams Beach	3,310	0	3,310	9.1	240	43.2	9.1	37.8	3.2	11.8
	Worrowing Heights	8,962	0	8,962	24.6	240	116.9	24.6	102.3	3.2	32.0
	Total	**132,070**	**3,861**	**128,209**	**361.8**	**240**	**1507.6**	**351.3**	**1463.6**	**3.2**	**457.4**
SAINT GEORGES BASIN	Old Erowal Bay	364	0	364	1.0	240	4.7	1.0	4.2	2.5	1.7
TOMERONG	Erowal Bay	1,575	0	1,575	4.3	240	20.5	4.3	18.0	2.5	7.2
	Bream Beach	4,695	4,695	0	12.9	240	61.3	0.0	0.0	2.5	0.0
	Wrights Beach	4,954	4,501	453	13.6	240	64.6	1.2	5.2	2.5	2.1
	Sanctuary Point	50,746	3,130	47,616	139.0	240	662.0	130.5	543.6	2.5	217.4
	Saint Georges Basin	20,564	3,744	16,820	56.3	240	268.3	46.1	192.0	2.5	76.8
	Basin View	2,615	0	2,615	7.2	240	34.1	7.2	29.9	2.5	11.9
	Total	**85,513**	**16,070**	**69,443**	**234.3**	**240**	**976.2**	**190.3**	**792.7**	**2.5**	**317.1**
SUSSEX INLET	Sussex Inlet	121,734	39,608	82,126	333.5	240	1588.2	225.0	937.5	3.2	293.0
	Farnham Rural	235	0	235	0.6	240	3.1	0.6	2.7	3.2	0.8
	Swanhaven	4,527	0	4,527	12.4	240	59.1	12.4	51.7	3.2	16.1
	Cudmirrah	22,668	21,872	796	62.1	240	295.7	2.2	9.1	3.2	2.8
	Berrara	12,862	12,862	0	35.2	240	167.8	0.0	0.0	3.2	0.0
	Total	**162,026**	**74,342**	**87,684**	**443.9**	**240**	**1849.6**	**240.2**	**1001.0**	**3.2**	**312.8**
CONJOLA	Bendalong	0	0	0	0.0	240	0.0	0.0	0.0	3.2	0.0
	Manyana	0	0	0	0.0	240	0.0	0.0	0.0	3.2	0.0
	Berringer Lake	0	0	0	0.0	240	0.0	0.0	0.0	3.2	0.0
	Lake Conjola	0	0	0	0.0	240	0.0	0.0	0.0	3.2	0.0
	Fishermans Paradise	0	0	0	0.0	240	0.0	0.0	0.0	3.2	0.0
	Conjola Park	0	0	0	0.0	240	0.0	0.0	0.0	3.2	0.0
	Cunjurong Point	0	0	0	0.0	240	0.0	0.0	0.0	3.2	0.0
	Cunjurong	0	0	0	0.0	240	0.0	0.0	0.0	3.2	0.0
	Total	**0**	**0**	**0**	**0.0**	**240**	**0.0**	**0.0**	**0.0**	**3.2**	**0.0**
MILTON/ULLADULLA	Milton	51,217	4,823	46,394	140.3	224	668.2	127.1	567.4	2.5	227.0
SYSTEM	Mollymook Beach	19,191	0	19,191	52.6	224	250.4	52.6	234.7	2.5	93.9
	Mollymook	40,040	729	39,311	109.7	224	522.4	107.7	480.8	2.5	192.3
	Narrawallee	1,814	0	1,814	5.0	224	23.7	5.0	22.2	2.5	8.9
	Ulladulla	223,052	46,406	176,646	611.1	224	2910.0	484.0	2160.5	2.5	864.2
	Ulladulla Rural	1,693	0	1,693	4.6	224	22.1	4.6	20.7	2.5	8.3
	Kings Point	82	0	82	0.2	224	1.1	0.2	1.0	2.5	0.4
	Burrill Lake	33,335	26,271	7,064	91.3	224	434.9	19.4	86.4	2.5	34.6
	Dolphin Point	624	0	624	1.7	224	8.1	1.7	7.6	2.5	3.1
	Lake Tabourie	1,167	0	1,167	3.2	224	15.2	3.2	14.3	2.5	5.7
	Albert Rural	30,887	0	30,887	84.6	224	403.0	84.6	377.8	2.5	151.1
	Total	**403,102**	**78,229**	**324,873**	**1104.4**	**224**	**4930.3**	**890.1**	**3973.5**	**2.5**	**1,589.4**
OVERALL TOTAL	**Total**	**1,784,674**	**331,398**	**1,453,276**	**4,890**		**20,702**	**3,982**	**16,855**		**6,553**

TABLE 9

SHOALHAVEN WASTEWATER SCHEMES - PROPOSED HEADWORKS

AREA		2004	Backlog 2005-2009	TOTAL 2005-2009	2010-2014	2015-2024	2025-2034	COMMENTS
KANGAROO VALLEY	Residential Growth ET's		204	20	20	11	4	
	Total Residential ET's	0		224	244	255	259	
	Annual Net Non-Res. Discharge (kL/an)	0						
	Non-Res. Growth ET's		0	1	1	1	0	Non residential ET's estimated at quarter of the
	Total Non-Res. ET's	0	60	61	63	64	64	rate of residential growth where development unkown
	Caravan Park - Sites	0	168	168	168	168	168	
	Caravan Park ET's	0	120	120	120	120	120	
	Total ET's	0	384	405	427	439	442	
	Total Residential EP's	0	510	560	610	638	646	
	Total Non-Res. EP's	0	150	154	157	159	159	
	Caravan Park EP's	0	480	480	480	480	480	
	Total EP's	0	1,140	1,193	1,247	1,276	1,285	
	Kangaroo Valley - EP's	0						
	NEW - EP's	0		1,400	0	0	0	
	TOTAL (EP's)	0		1,400	0	0	0	
	CUM TOTAL (EP's)	0		1,400	1,400	1,400	1,400	
	Is Augmentation Required?	NO		NO	NO	NO	NO	
BERRY	Residential Growth ET's	0	0	244	157	75	4	
	Total Residential ET's	739		983	1,140	1,214	1,218	
	Annual Non-Res. Usage (kL/an)	49,693						
	Non-Res. Growth ET's		0	19	10	4	0	Non residential Growth Estimated at quarter the
	Total Non-Res. ET's	227	0	246	255	260	260	rate of residential growth where development unkown
	Caravan Park - Sites	0	0	0	0	0	0	
	Caravan Park ET's	0	0	0	0	0	0	
	Total ET's	966	0	1,228	1,395	1,474	1,477	
	Total Residential EP's	1,848	0	2,457	2,849	3,035	3,044	
	Total Non-Res. EP's	567	0	614	639	649	649	
	Caravan Park EP's	0	0	0	0	0	0	
	Total EP's	2,415	0	3,071	3,488	3,684	3,693	
	Berry STP - EP's	2,000						
	NEW - EP's	0		1,500	0	0	0	
	TOTAL (EP's)	2,000		1,500	0	0	0	
	CUM TOTAL (EP's)	2,000		3,500	3,500	3,500	3,500	
	Is Augmentation Required?	YES		NO	NO	NO	NO	
SHOALHAVEN HEADS	Residential Growth ET's		0	133	228	259	242	
	Total Residential ET's	1,638		1,771	1,999	2,259	2,500	
	Annual Non-Res. Usage (kL)	23,083						
	Non-Res. Growth ET's		0	2	3	3	2	Non residential Growth Estimated at quarter the
	Total Non-Res. ET's	82	0	84	87	90	92	rate of residential growth where development unkown
	Caravan Park - Sites	1,000	0	1,000	1,000	1,000	1,000	
	Caravan Park ET's	714	0	714	714	714	714	
	Total ET's	2,435	0	2,570	2,800	3,062	3,306	
	Total Residential EP's	5,242	0	5,668	6,397	7,227	8,000	
	Total Non-Res. EP's	264	0	269	278	287	294	
	Caravan Park EP's	2,856	0	2,856	2,856	2,856	2,856	
	Total EP's	8,361	0	8,793	9,531	10,370	11,150	
	S/Heads STP - EP's	4,000						
	NEW - EP's	0		6,000	0	0	0	
	TOTAL (EP's)	4,000		6,000	0	0	0	
	CUM TOTAL (EP's)	4,000		10,000	10,000	10,000	10,000	
	Is Augmentation Required?	YES		NO	NO	NO	NO	
BOMADERRY/CAMBEWARRA	Residential Growth ET's		0	250	445	2,236	1,308	
	Total Residential ET's	3,634		3,884	4,328	6,564	7,872	
	Annual Non-Res. Usage (kL)	193,748						Future non Residential Growth based on
	Non-Res. Growth ET's		0	38	54	69	123	Planning Information
	Total Non-Res. ET's	885	0	923	977	1,046	1,169	(floor space (m2)/250m2) + (Ha x 5ET/ha)
	Caravan Park - Sites	90	0	90	90	90	90	+(No. of pupils / 25 pupils per ET)
	Caravan Park ET's	64	0	64	64	64	64	
	Total ET's	4,583	0	4,871	5,369	7,675	9,105	
	Total Residential EP's	9,085	0	9,709	10,820	16,411	19,680	
	Total Non-Res. EP's	2,212	0	2,307	2,443	2,615	2,922	
	Caravan Park EP's	257	0	257	257	257	257	
	Total EP's	11,554	0	12,273	13,520	19,283	22,859	
	Bomaderry STP - EP's	12,500						
	NEW - EP's	0		0	0	8,000	0	
	TOTAL (EP's)	12,500		0	0	8,000	0	
	CUM TOTAL (EP's)	12,500		12,500	12,500	20,500	20,500	
	Is Augmentation Required?	NO		NO	NO	NO	NO	
NORTH NOWRA, NOWRA MUNDAMIA, WORRIGEE TERARA	Residential Growth ET's		0	1,077	1,617	1,953	3,092	
	Total Residential ET's	8,478		9,555	11,171	13,124	16,217	
	Annual Non-Res. Usage (kL)	625,944						Future non Residential Growth based on
	Non-Res. Growth ET's		0	206	245	348	404	Planning Information
	Total Other Non-Res. ET's	2,855	0	3,061	3,306	3,657	4,061	(floor space (m2)/250m2) + (Ha x 5ET/ha)
	Caravan Park - Sites	345	0	345	345	345	345	+(No. of pupils / 25 pupils per ET)
	Caravan Park ET's	246	0	246	246	246	246	
	Total ET's	11,583	0	12,865	14,727	17,027	20,524	
	Total Residential EP's	21,195	0	23,887	27,929	32,811	40,541	
	Total Non-Res. EP's	7,145	0	7,660	8,273	9,142	10,152	
	Caravan Park EP's	985	0	985	985	985	985	
	Total EP's	29,326	0	32,532	37,186	42,938	51,679	
	Nowra STP - EP's	21,000						
	NEW - EP's			12,000	0	12,000	0	
	TOTAL (EP's)	21,000		12,000	0	12,000	0	
	CUM TOTAL (EP's)	21,000		33,000	33,000	45,000	45,000	
	Is Augmentation Required?	YES		NO	NO	NO	NO	
CULBURRA / ORIENT PT GREENWELL POINT	Residential Growth ET's		0	138	179	348	208	
	Total Residential ET's	3,199		3,337	3,516	3,864	4,072	
	Annual Non-Res. Usage (kL)	70,945						
	Non-Res. ET's		0	3	3	6	4	Non residential Growth Estimated at quarter the
	Total Non-Res. ET's	253	0	256	259	266	269	rate of residential growth where development unkown
	Caravan Park - Sites	682	0	682	682	682	682	
	Caravan Park ET's	487	0	487	487	487	487	
	Total ET's	3,939	0	4,080	4,262	4,616	4,828	
	Total Residential EP's	10,237	0	10,677	11,250	12,364	13,030	
	Total Non-Res. EP's	810	0	819	830	850	862	
	Caravan Park EP's	1,948	0	1,948	1,948	1,948	1,948	
	Total EP's	12,994	0	13,443	14,028	15,162	15,839	
	Culburra STP - EP's	8,000						
	NEW - EP's	3,000		0	4,000	0	0	
	TOTAL (EP's)	11,000		0	4,000	0	0	
	CUM TOTAL (EP's)	11,000		11,000	15,000	15,000	15,000	
	Is Augmentation Required?	NO		YES	NO	NO	NO	
CALLALA, MYOLA CURRARONG	Residential Growth ET's		584	369	432	6	6	
	Total Residential ET's	1,995		2,948	3,380	3,385	3,391	
	Annual Non-Res. Usage (kL)	7,863						
	Non-Res. ET's		0	1	1	0	0	Non residential Growth Estimated at quarter the
	Total Non-Res. ET's	28	0	29	30	30	30	rate of residential growth where development unkown
	Caravan Park - Sites	185	320	505	505	505	505	
	Caravan Park ET's	132	229	361	361	361	361	
	Total ET's	2,155	813	3,338	3,771	3,776	3,782	
	Total Residential EP's	6,384	0	9,433	10,814	10,832	10,850	
	Total Non-Res. EP's	90	0	94	97	97	97	
	Caravan Park EP's	528	914	1,442	1,442	1,442	1,442	
	Total EP's	7,002	914	10,969	12,354	12,372	12,390	
	Callala STP - EP's	6,000						
	NEW - EP's	0		0	6,000	0	0	
	TOTAL (EP's)	6,000		0	6,000	0	0	

TABLE 9

SHOALHAVEN WASTEWATER SCHEMES - PROPOSED HEADWORKS

AREA		2004	Backlog 2005-2009	TOTAL 2005-2009	2010-2014	2015-2024	2025-2034	COMMENTS
	CUM TOTAL (EP's)	6,000		6,000	12,000	12,000	12,000	
	Is Augmentation Required?	NO		YES	NO	NO	NO	
HUSKISSON/VINCENTIA WOOLLAMIA	Residential Growth ET's		105	463	469	908	7	
	Total Residential ET's	2,909		3,477	3,946	4,854	4,861	
	Annual Non-Res. Usage (kL)	128,209						
	Other Non-Res. ET's		0	18	17	33	0	Non residential Growth Estimated at quarter the
	Public Facilities near B&B Leisure Centre		0	12	12	0	0	rate of residential growth where development unkown
	Town Centre Development		0	25	40	0	0	
	sub-total		0	55	69	33	0	
	Total Non-Res. ET's	457	0	513	582	615	616	
	Caravan Park - Sites	416	91	507	507	507	507	
	Caravan Park ET's	297	65	362	362	362	362	
	Total ET's	3,664	170	4,352	4,890	5,831	5,839	
	Total Residential EP's	9,309	336	11,127	12,628	15,533	15,555	
	Total Non-Res. EP's	1,464	0	1,640	1,862	1,969	1,970	
	Caravan Park EP's	1,188	260	1,448	1,448	1,448	1,448	
	Total EP's	11,960	596	14,216	15,938	18,950	18,973	
	Huskisson/Vincentia STP - EP's	14,000						
	NEW - EP's	0		0	0	6,000	0	
	TOTAL (EP's)	14,000		0	0	6,000	0	
	CUM TOTAL (EP's)	14,000		14,000	14,000	20,000	20,000	
	Is Augmentation Required?	NO		NO	NO	NO	NO	
ST. GEORGES BASIN TOMERONG	Residential Growth ET's		206	855	710	675	7	
	Total Residential ET's	6,333		7,394	8,104	8,779	8,786	
	Annual Non-Res. Usage (kL)	69,443						
	Non-Res. ET's		0	17	13	12	0	Non residential Growth Estimated at half the
	Total Non-Res. ET's	248	0	264	277	289	289	rate of residential growth where development unkown
	Caravan Park - Sites	304	0	304	304	304	304	
	Caravan Park ET's	217	0	217	217	217	217	
	Total ET's	6,798	206	7,876	8,598	9,284	9,292	
	Total Residential EP's	15,833	515	18,485	20,260	21,947	21,964	
	Total Non-Res. EP's	619	0	661	693	722	722	
	Caravan Park EP's	868	0	868	868	868	868	
	Total EP's	17,320	515	20,015	21,821	23,536	23,554	
	Saint Georges Basin STP - EP's	16,000						
	NEW - EP's	0			6,000		0	
	TOTAL (EP's)	16,000		0	6,000	0	0	
	CUM TOTAL (EP's)	16,000		16,000	22,000	22,000	22,000	
	Is Augmentation Required?	NO		YES	NO	NO	NO	
SUSSEX INLET	Residential Growth ET's		0	264	261	253	255	
	Total Residential ET's	2,975		3,239	3,500	3,753	4,008	
	Annual Non-Res. Usage (kL)	87,684						
	Non-Res. ET's		0	7	6	6	6	Non residential Growth Estimated at quarter the
	Total Non-Res. ET's	313	0	320	326	332	338	rate of residential growth where development unkown
	Caravan Park - Sites	1,449	0	1,449	1,449	1,449	1,449	
	Caravan Park ET's	1,035	0	1,035	1,035	1,035	1,035	
	Total ET's	4,323	0	4,594	4,861	5,120	5,380	
	Total Residential EP's	9,520	0	10,364	11,199	12,009	12,825	
	Total Non-Res. EP's	1,001	0	1,023	1,044	1,063	1,081	
	Caravan Park EP's	4,138	0	4,138	4,138	4,138	4,138	
	Total EP's	14,659	0	15,526	16,381	17,210	18,044	
	Sussex Inlet STP - EP's	8,000						
	NEW - EP's	0		6,000	0	0	4,000	
	TOTAL (EP's)	8,000		6,000	0	0	4,000	
	CUM TOTAL (EP's)	8,000		14,000	14,000	14,000	18,000	
	Is Augmentation Required?	YES		NO	NO	YES	NO	
CONJOLA REGIONAL	Residential Growth ET's		1,840	374	535	280	7	
	Total Residential ET's	0		2,214	2,750	3,030	3,037	
	Annual Non-Res. Usage (kL)		30,133					
	Non-Res. ET's		0	5	7	3	0	Non residential Growth Estimated at quarter the
	Total Non-Res. ET's	0	107	113	120	123	123	rate of residential growth where development unkown
	Caravan Park - Sites	0	1,152	1,152	1,152	1,152	1,152	
	Caravan Park ET's	0	823	823	823	823	823	
	Total ET's	0	2,770	3,150	3,692	3,975	3,982	
	Total Residential EP's	0	5,888	7,086	8,799	9,695	9,717	
	Total Non-Res. EP's	0	344	361	383	393	393	
	Caravan Park EP's	0	3,290	3,290	3,290	3,290	3,290	
	Total EP's	0	9,522	10,737	12,472	13,378	13,401	
	Conjola STP - EP's	0						
	NEW - EP's	0		11,000	0	0	0	
	TOTAL (EP's)	0		11,000	0	0	0	
	CUM TOTAL (EP's)	0		11,000	11,000	11,000	11,000	
	Is Augmentation Required?	NO		NO	NO	YES	YES	
MILTON/ULLADULLA	Residential Growth ET's		427	662	654	1,188	1,028	
	Total Residential ET's	7,229		8,318	8,971	10,159	11,187	
	Annual Non-Res. Usage (kL)	324,873						
	Non-Res. ET's		0	73	65	114	93	Non residential Growth Estimated at half the
	Total Non-Res. ET's	1,589	0	1,662	1,727	1,842	1,935	rate of residential growth
	Caravan Park - Sites	1,585	648	2,233	2,233	2,233	2,233	
	Caravan Park ET's	1,132	463	1,595	1,595	1,595	1,595	
	Total ET's	9,951	890	11,575	12,294	13,596	14,717	
	Total Residential EP's	18,073	1,366	20,794	22,428	25,398	27,968	
	Total Non-Res. EP's	3,973	0	4,155	4,319	4,605	4,837	
	Caravan Park EP's	4,527	1,851	6,377	6,377	6,377	6,377	
	Total EP's	26,573	3,217	31,327	33,124	36,380	39,183	
	Milton/Ulladulla STP - EP's	28,000						
	NEW - EP's	0		0	0	0	10,000	
	TOTAL (EP's)	28,000		0	0	0	10,000	
	CUM TOTAL (EP's)	28,000		28,000	28,000	28,000	38,000	
	Is Augmentation Required?	NO		NO	NO	YES	NO	
Shoalhaven System Total Peak	ET's	50,395	5,233	60,903	67,086	75,877	82,675	
Shoalhaven System CAPACITY	ET's							
Shoalhaven System Total Peak	EP's	142,165	15,904	174,094	191,090	214,539	232,051	
Shoalhaven System CAPACITY	EP's	122,500	0	160,400	176,400	202,400	216,400	

NOTES:

Daily Loading all others	240	L/d/EP
Daily Loading Berry STP	240	L/d/EP
Daily Loading Milton/Ulladulla	224	L/d/EP
Occup. Ratio of EP's to ET's for inland	2.5	EP's/ET
Occup. Ratio of EP's to ET's for coast	3.2	EP's/ET

Annual Non-Residential Discharge represents usage from Sep 03' to Aug 04'
No growth allowed for Caravan Parks, Manildra, APPM, Dairy Farmer

All Caravan Sites based on Tourist Persons	6	Tourist EP's	
1 Tourist Person	0.476	EP (permanent EP)	
Caravan Site	2.856	EP's	(6 x 0.476 EP's)
Discharge to Sewer per Tourist Person	100	L/d/Tourist EP	
Discharge to Sewer per Caravan Park Site	600	L/d/CPS	(100 l/d x 6 Tourist EP's)
Discharge to Sewer per Residential ET	840	L/d/ET	(210l/d x 4 EP's)
Caravan Park Site	0.714	per ET	

Shoalhaven Water Technical Library - Water & Wastewater Reference - Shoalhaven City Council Development Servicing Plans for Sewerage Services November 2005