

**DEVELOPMENT SERVICING PLAN
FOR
YASS VALLEY COUNCIL
SEWERAGE**



**ADOPTED: 22/ 05/2013
EFFECTIVE: 23/ 05/2013**

MARCH 2013

This is a development servicing plan which has been prepared in accordance with Section 64 of the Local Government Act, 1993, and Section 306 of the Water Management Act, 2000.

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YASS VALLEY COUNCIL

DEVELOPMENT SERVICING PLAN (DSP) - SEWERAGE

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DEVELOPMENT SERVICING PLAN - SEWERAGE

Summary

This Development Servicing Plan (DSP) covers sewerage Developer Charges (DC) for the Yass Valley Council.

This DSP has been prepared with consideration to *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater (2012) Consultation Draft*. These are the latest relevant guidelines, managed by the NSW Office of Water (NOW).

The sewerage system for which Yass Valley Council seeks to levy DC includes collector mains, pump stations and a treatment plant. Reticulation and associated pump stations, rising mains are provided by developers as part of the subdivision/development works.

This DSP aims to:

1. Allow Council to require an equitable monetary contribution for the provision of sewerage infrastructure to meet the loading generated by development.
2. Facilitate the future provision of sewerage services to the Yass Valley Council area which meets the required levels of service with regard to pump station capacity, collector main capacity, treatment plant capacity and treated effluent quality.
3. Set out the schedule and programme of proposed works to meet increasing sewerage loads generated by development.
4. Detail the contribution rates and Yass Valley Council's payment policies.

To enable this, a future demand estimate of sewerage load for the Council has been undertaken. The demand estimate is the basis used for determining the infrastructure required to meet the need generated by future development.

DC are applicable for existing and proposed works which serve future development.

Section 3 details the existing works and proposed works schedule for sewerage infrastructure to meet the expected loading.

The calculated DC, based on full cost recovery, is tabulated below.

Yass Valley Council - Sewerage Developer Charges

Location	Developer Charge / ET (\$12/13)
Yass Existing, and Other* < 500 ET	\$5,651
Hamilton Rise	\$8,411
Murrumbateman	\$14,367

*"Other < 500 ET" cover the following service areas:

- Black Range Road Industrial Precinct,
- Laidlaw St, and
- Wellington Road.

DC calculations relating to this DSP will be reviewed after a period of five to six years, or when any significant changes occur in proposed works, growth projections or standards.

In the period between any reviews, DC will be revised on 1 July each year on the basis of movements in the Consumer Price Index (CPI) for Canberra, in the preceding 12 months to December, excluding the impact of GST.

There are a number of payment methods for DC and Works-in-K ind contributions are allowable subject to certain conditions.

The developer shall be responsible for the full cost of the design and construction of sewerage reticulation works within subdivisions, including pump stations and rising mains.

1. The Introduction

1.1 Legislation

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*.

This DSP has been prepared in accordance with the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater (2012), Consultation Draft*, managed by NOW, pursuant to Section 306 (3) of the *Water Management Act 2000*.

1.2 Purpose of the DSP

The purpose of the DSP is to achieve the following objectives:

1. Allow Yass Valley Council to require an equitable monetary contribution for the provision of sewerage infrastructure to meet the loads generated by new development.
2. Facilitate the provision of sewerage services to the Yass Valley Council area which meets the required levels of service with regard to pump station capacity, collector main capacity, treatment plant capacity and treated effluent quality.
3. Identify the existing relevant works and set out a schedule and programme of proposed works to meet increasing sewerage loads generated by development.
4. Detail the contribution rates and Yass Valley Council's payment policies.

The sewerage system for which Yass Valley Council seeks to levy DC includes collector mains, pump stations and a treatment plant. Reticulation and associated pump stations, rising mains are provided by developers as part of the subdivision/development works.

1.3 Land to which the DSP Applies

This DSP applies to all land in the Yass Valley Council area that is within the sewerage benefit area which is to be connected to the sewerage system as a result of development. This includes connection of land with existing residences and/or non-residential buildings if sewerage DC have not been paid previously; and may be in addition to costs for shared, special extension of system outside the general sewerage benefit area. Maps of the sewerage areas can be found in Appendix 3.

1.4 Calculation Guidelines

This DSP has been prepared with consideration given to *Guidelines - Developer Charges for Water Supply, Sewerage and Stormwater, (2012) Consultation Draft*. These were the latest relevant guidelines from the NOW, at the time of DC calculation, and are based on recommendations of the Independent Pricing and Regulatory Tribunal (IPART)

1.5 Date From Which This DSP Comes Into Effect

This DSP was adopted by Yass Valley Council on 22/05/2013 and came into effect on 23/05/2013.

DC will be levied pursuant to this DSP, as a condition of development consent granted on or after the day this DSP came into effect.

1.6 Relationship Between The DSP and other Existing Policies or Plans

A number of environmental planning instruments apply to the development of land to which this DSP relates, including State Environmental Planning Policies.

A full listing of the State Environmental Planning Policies applying to Yass Valley Council is attached to this DSP as Appendix No. 1. Various other Yass Valley Council Development Servicing Plans are also relevant, as listed in Appendix 2.

This DSP supersedes any other requirements related to sewerage DC for the area covered by this DSP. This DSP takes precedence over any of Yass Valley Council's codes or policies where there are any inconsistencies relating to sewerage developer charges. (The term "Developer Contributions" may formerly have been used to refer to Developer Charges.)

1.7 Assets Relevant to the DSP

The purpose of the DSP is that new development should pay for assets from which they benefit. Collection systems and treatment works are provided by Yass Valley Council and paid for through developer charges. Reticulation works are provided by the developer. Asset categories are defined as follows:

1.7.1 Collection Systems

For the purposes of this DSP sewerage collection systems comprise trunk mains, major pumping stations and rising mains.

1.7.2 Treatment Works

The capacity of a treatment works can be expressed in terms of equivalent tenements. This assumes a domestic strength sewage with pollutant concentrations similar to that from residential areas.

For developments with domestic strength sewage, the number of additional equivalent tenements is directly related to the volume of discharge.

For developments with high strength sewage, the number of additional equivalent tenements is related to the pollutant load.

1.7.2 Reticulation

Reticulation generally consists of all the internal distribution pipes within the subdivision or which specifically serve that subdivision. In some instances, Yass Valley Council is the developer.

The developer shall be responsible for the full cost of the design and construction of sewerage reticulation works within subdivisions including sewer pump stations and rising mains.

Plans of sewerage infrastructure are in Appendix 3.

2. Methodology

2.1 Calculation Method for Developer Charges

2.1.1 General Methodology

In its most simplistic description, the calculation determines the equivalent cost of one brand new set of assets to serve development as if those assets could be constructed now. Practically, however, sewerage infrastructure consists of an on-going

progression of old and new assets with complex interconnection. Sewerage assets may be constructed many years ahead of full capacity to reflect cost effective and practical staging of works.

Only collection systems and treatment works have been taken into account in the DC calculation. The construction of any reticulation pipework required will be the responsibility of the developer.

The methodology used was developed with consideration given to the latest guidelines, managed by NOW, *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater (2012) Consultation Draft*. The NPV of Annual Charges Method was used and this is based on the following general equation, as recommended by the Independent Pricing and Regulatory Tribunal (IPART):

Developer charge = Capital charge – Reduction amount.

The ***capital charge*** is the Present Value (MEERA basis) of all expenditure on assets used to service the development.

The ***reduction amount*** is 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 bills.

The calculated DC is based on full cost recovery.

2.1.2 Detailed Methodology

The methodology and calculation is included in Appendix 4.

2.2 Tenement and Demand Estimates

Most types of development will increase the demand on the sewerage system. Sewerage assets may directly or indirectly benefit a development by allowing increased loading to be serviced.

For residential subdivisions, the increased demand is directly related to the number of additional tenements created.

For medium density development each dwelling unit is considered to increase demand by two thirds (2/3) of a tenement. Therefore charges may be multiplied by 0.67 in the case of town houses which are less than 3 bedrooms, cluster housing, villa units, medium density, dual occupancy and 1 bedroom flats.

The increased demands generated by other types of development (including non-residential) need to be assessed in terms of additional equivalent tenements. The number of additional equivalent tenements is calculated in accordance with the Public Works Department's Manual of Practice: *Sewer Design* (1984), administered by NOW and/or historical data for similar developments respectively. Planned development of the sewerage system is based on these long-term growth projections.

DC pay for the provision of system capacity to suit new development. New development may be served by a combination of existing and/or new works.

2.3 Works Covered by This DSP

The existing and proposed works covered by this DSP are itemised in Section 3. All Yass Valley Council's collection systems and treatment works, subject to DC Guidelines, are shown in these tables.

2.4 Cost Estimates

“Current replacement” cost estimates of the existing and proposed works are based on unit rates for construction published in the *NSW Reference Rates for Valuation of Existing Water Supply, Sewerage and Stormwater Assets* by NSW Department of Land and Water Conservation, managed by NOW. These cost estimates are shown in Section 3.

3. Works Included And Cost Estimates

Both existing and proposed works which are relevant for inclusion in this DSP are itemised in Appendix 4. Cost estimates and year of construction information are included.

4. Levels of Service and Design Parameters for Sewerage

4.1 Levels of Service

System design and operation are based on providing the following key Sewerage Levels of Service to Yass Valley Council:

EQUIVALENT TENEMENT

- An ET is an ADWF of 200L/EP/d multiplied by the utility’s occupancy ratio (persons per house)

FAILURES

- No more than 50 sewer blockages per year
- No more than 3 mechanical breakdowns per year
- No dry weather overflows to the environment
- No more than 20 sewer overflows to the environment per 100 km mains per year

RESPONSE TIME

- Respond on site during working hours to major spills in Yass within 30 min and Murrumbateman 60 min; 90 min outside working hours and to moderate spills
- All sewer chokes removed and service restored within 8 hours
- Respond to 95% of customer complaints: oral – 1 work day, written – 5 work days

EFFLUENT QUALITY

- Sewage effluent meets Environment Protection Authority (EPA) 90 Percentile Licence Limits (BOD, SS, Total N, NH₃N, Oil & Grease, Total P and Faecal coliform).

ODOUR COMPLAINTS

- No more than 1 sewage odour complaint per 1,000 properties per year

These levels of service are targets that Yass Valley Council aims to achieve. They are not intended to form a formal customer contract.

4.2 Design Parameters

Investigation and design of sewerage system components is based on the *Manual of Practice: Sewer Design* (1984) and the *Manual of Practice: Sewerage Pumping Station Design* (1986). These manuals were prepared by NSW Public Works and are administered by NOW.

Technical reports relating to the system components in the DSP are included in Section 6, References.

5. Developer Charges

5.1 Reticulation

Yass Valley Council does not charge a monetary charge for the construction of reticulation pipework. Developers are responsible for the provision of these works which would generally be handed over to Yass Valley Council upon completion of the development.

5.2 Collection Systems and Treatment Works

The calculated DC, is tabulated below. This is based on full cost recovery.

Yass Valley Council - Sewerage Developer Charges

Location	Developer Charge / ET (\$12/13)
Yass Existing, and Other* < 500 ET	\$5,651
Hamilton Rise	\$8,411
Murrumbateman	\$14,367

**“Other < 500 ET” cover the following service areas:

- Black Range Road Industrial Precinct,
- Laidlaw St, and
- Wellington Road.

Details of the derivation of the calculated DC is included in Appendix 4.

5.3 Payment of Developer Charges

5.3.1 Timing of Payments

Subject to clauses 5.3.2 and 5.3.3 the timing for payments of DC is as follows:

For complying development Following the issuing of a complying development certificate and prior to the commencement of work

(whether or not the certificate is issued by Council or an accredited certifier).

For other development Prior to the release of the Construction Certificate.

For subdivision Prior to the release of the Linen Plan.

5.3.2 Method of Payment

DC must be made in the form of monetary payments to Yass Valley Council. Development consents requiring the payment of a DC will contain a condition specifying the amount payable in monetary terms at the time the consent is issued. A note will be attached to the consent condition which will advise that the DC will be at the rate which applies at the time of payment. That is, the rate may increase, through indexation or replacement of this DSP with a new one, from the time the condition appears on the notice of development consent until the time the DC is actually paid to Council.

The deferral of payment of contributions to the point of sale of each lot is permissible subject to application in writing to Council, and approval by the General Manager. Deferred payment of contributions will be subject to the following requirements:

- The maximum time frame granted for deferment is twenty-four (24) months;
- The applicant is to provide Council with an original copy of an unconditional Bank Guarantee in favour of Council to the total value of contributions payable, plus interest calculated for twenty-four months from the date of deferment;
- Interest will be charged in accordance with Councils Fees and Charges at the rate applicable for outstanding rates at the time the application for deferred payment is approved;
- Should the contributions not be paid by the completion of the approved period, Council may exercise its right under the agreement to call in the Bank Guarantee without notice; æ å
- Council will not permit the payment of contributions in instalments

5.3.3 Works-in-Kind Contributions

Upon written request, Council will consider an offer by the applicant to make a contribution by way of Works in Kind provided that:

- The proposed work satisfies the demands for the kind of public amenities and facilities for which the contribution is sought;
- The proposed work will not prejudice the timing or the manner of the provision of the amenity or facility for which the contribution was required;
- The value of the work is at least equal to the value of the contribution assessed in accordance with this plan and that this value is adequately documented;

- Agreement has been reached as to the standard of work to be undertaken; and
- Where the difference of the value of the Works in Kind is less than the contribution assessed in accordance with this plan, the balance shall be made by way of monetary contribution.

As part of the Council's decision making process, a request will only be considered provided that the applicant was agreeable to all of the following stipulations:

- An agreement between the applicant and Council on the cost of the works (and value of the work in kind) which is to be determined by reference to satisfactory plans, breakdown of costs, review of audited statements and accounts or similar submitted by the applicant. There will be no indexing of the value of the Works in Kind or credits so granted.
- The number of credits for a particular type of contribution will be determined by dividing the agreed value of the proposed work by the rate applying to that contribution at the time of the agreement. The credits so agreed will be progressively reduced as the development proceeds. The agreed works schedule may specify those works that may be considered as Works in Kind.
- An agreed 12 month Defects Liability Period for the cost of the agreed work.
- An agreed standard of workmanship.
- An agreed timetable for the inspection of the works.
- An agreed program for the completion of the works.
- Submission of an itemised statement of costs (including all receipts) of the completed works. Where the final cost of the works is less than the initial agreed cost of works, the balance is to be paid to Council as a monetary contribution. The costs of works are to also include a breakdown of all labour costs.

Please note that Council will not acknowledge any costs incurred associated with the agreement of Works in Kind as part of above itemised statement.

The decision to accept settlement of a contribution by way of Works in Kind is at the sole discretion of Council and will require a Council resolution prior to implementation.

It is Council's preference that, for broad-acre release areas, Council accepts Works in Kind and that these are to be fully constructed prior to the release of the Linen Plan or at such time as identified in a "written agreement" between Council and the developer.

Should Works in Kind, that have been agreed to by Council, be later withdrawn by the applicant for any reason, then the applicant will be liable for the payment of contributions in accordance with the conditions of development consent or complying development certificate plus any indexations that may have occurred since the approval date.

5.4 Staged Subdivision/Development

In the event of a staged subdivision or development, Yass Valley Council will accept the staged payment of developer charges as specified above, that is, prior to the release of the Linen Plan for each stage of subdivision and prior to the release of any building approval for a particular stage of a development.

Deferred payment of DC, other than in accordance with Yass Valley Council's requirements for Staged Subdivision and Development, is not permitted by Yass Valley Council.

5.5 Reviewing and Revising of Developer Charges

Developer charges calculations relating to this DSP will be reviewed after a period of five to six years, or when any significant changes occur in proposed works, growth projections or standards.

In the period between any reviews, developer charges will be revised on 1 July each year on the basis of movements in the Consumer Price Index (CPI) for Canberra, in the preceding 12 months to December, excluding the impact of GST.

6. References

- (1) Department of Land and Water Conservation, *Guidelines - Developer Charges for Water Supply, Sewerage and Stormwater (2012) Consultation Draft*
- (2) NSW Public Works Department, *Manual of Practice: Sewer Design (1984)*
- (3) NSW Public Works Department , *Manual of Practice: Sewerage Pumping Station Design (1986)*.

APPENDIX No. 1 - State Environmental Planning Policies Applying To Yass Valley Council Sewerage

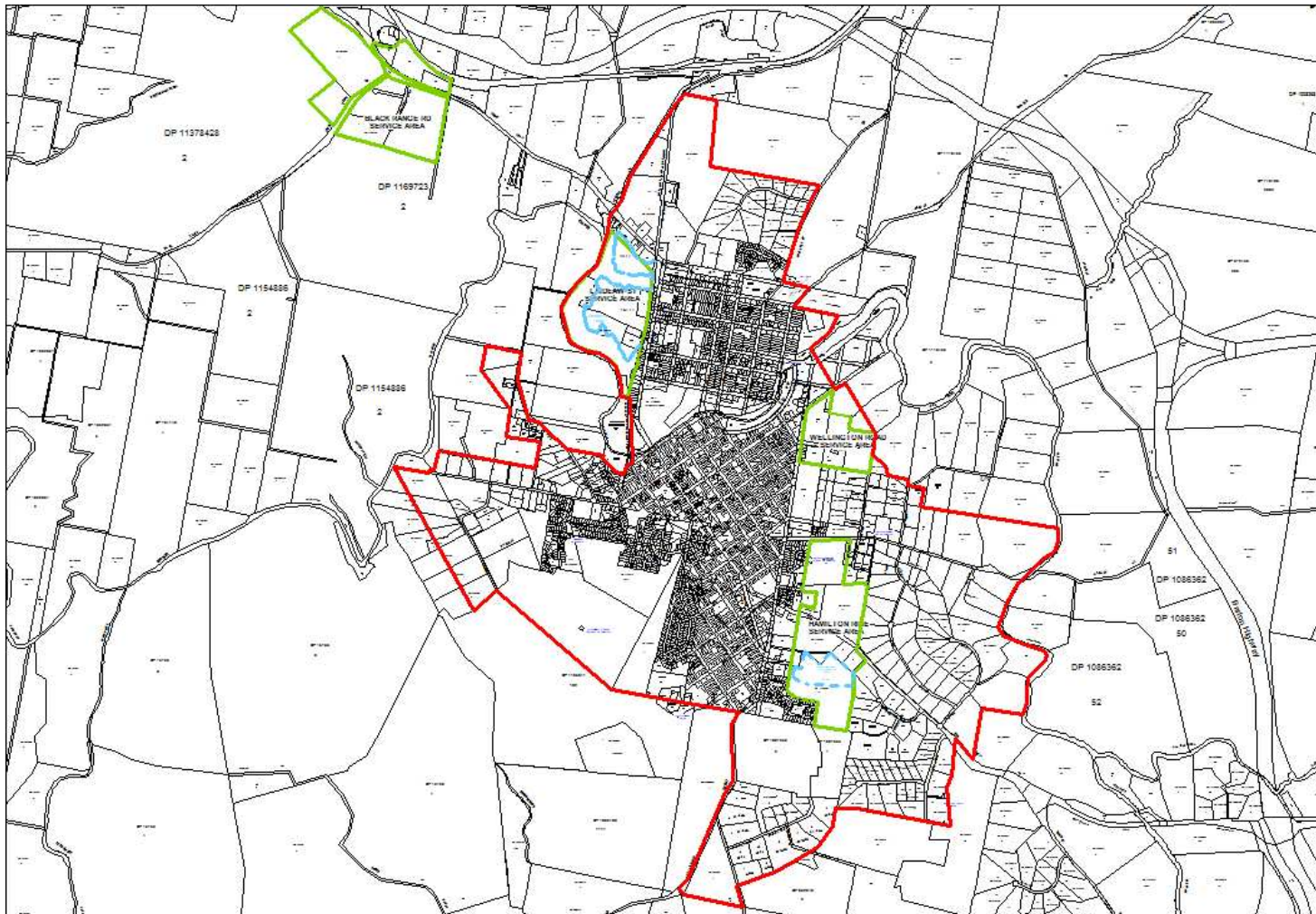
At the time of preparation of this DSP, there were no State Environmental Planning Policies applicable to the Yass Valley Council sewerage scheme. Should policies become applicable during the life of this DSP, these should be listed in this Appendix.

APPENDIX No. 2 - Yass Valley Council – Other DSP's Relevant

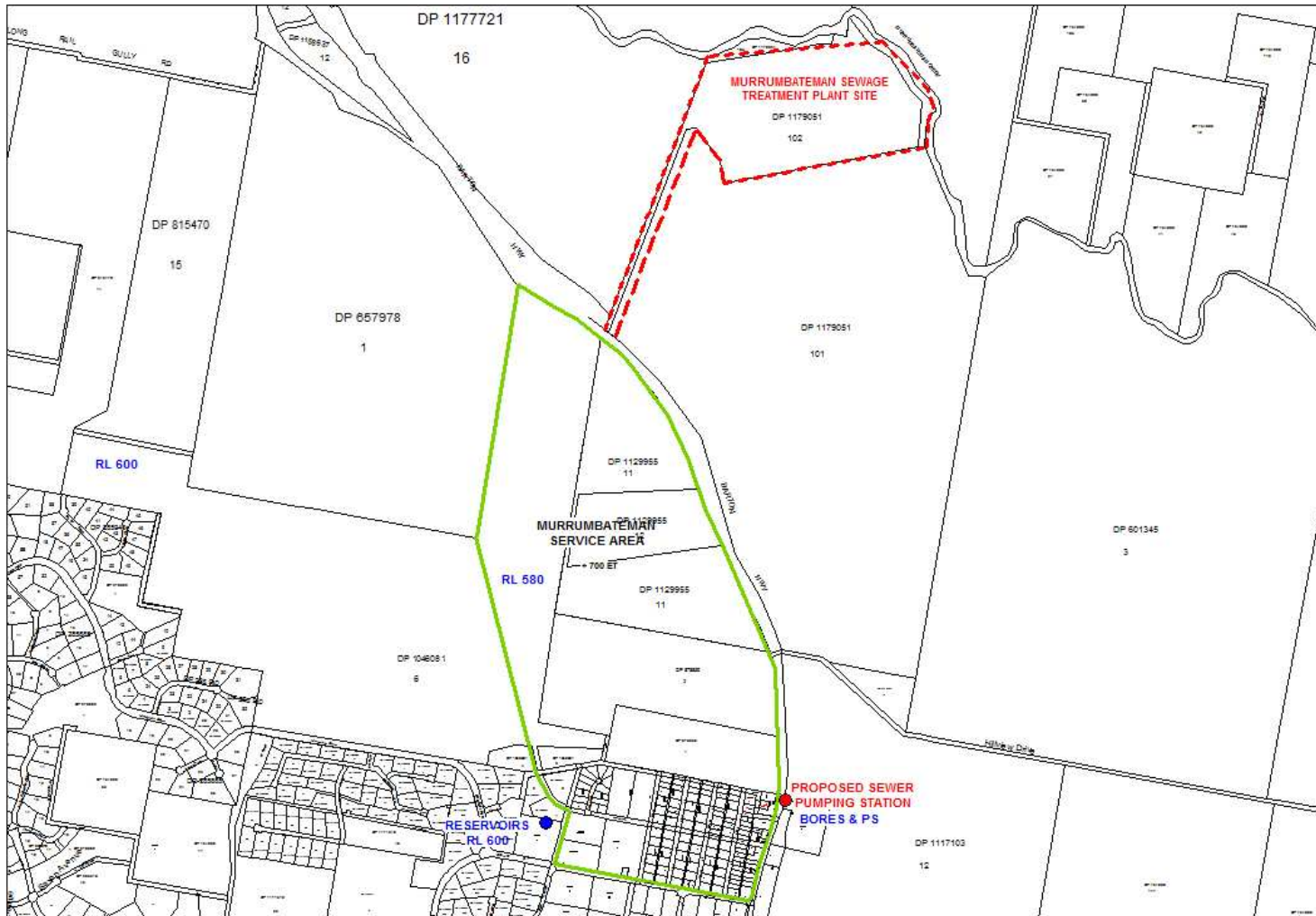
Yass Section 64 Water Supply Plan

Yass Section 94 Plan

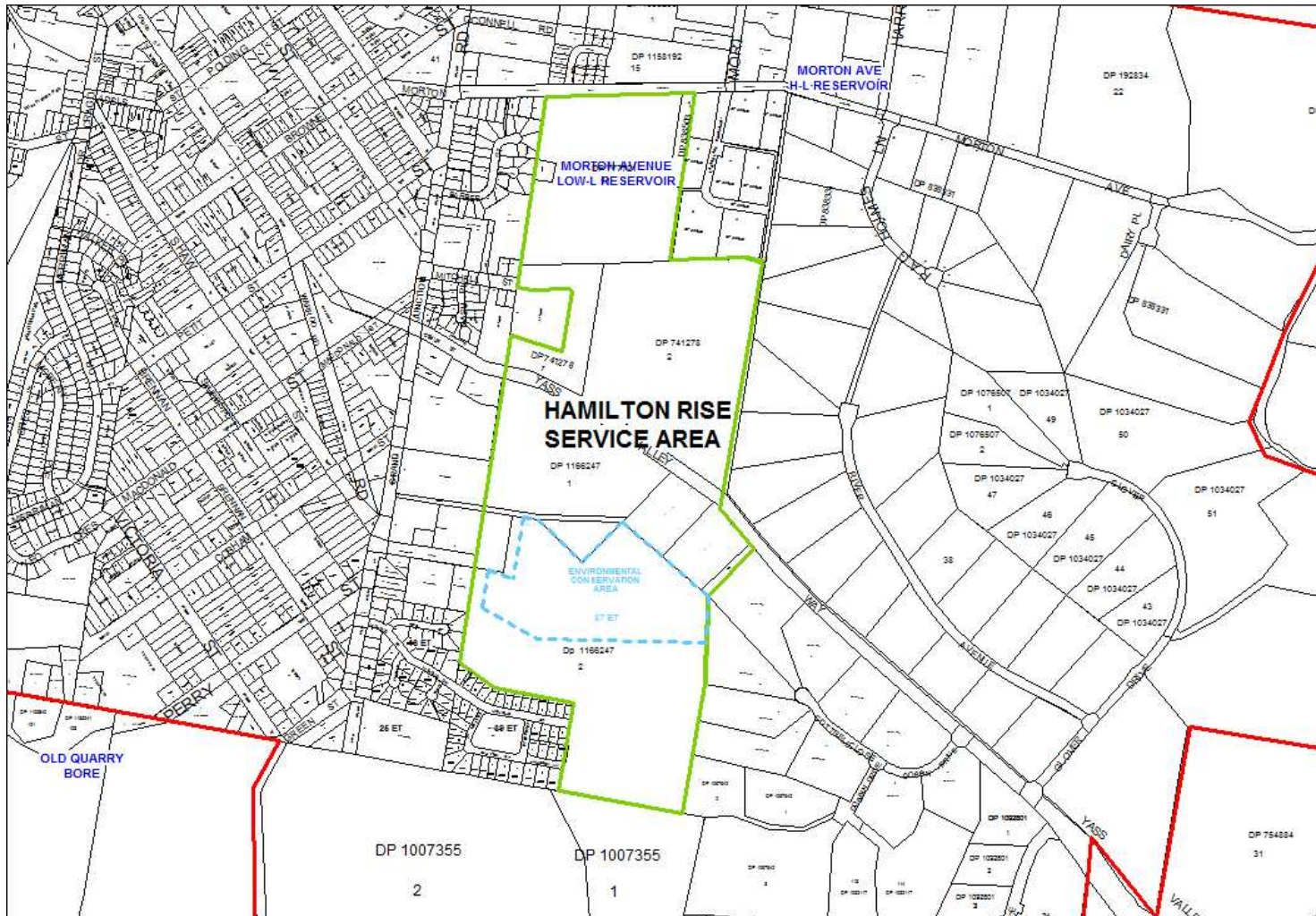
APPENDIX No. 3 - Plans Of Service Areas



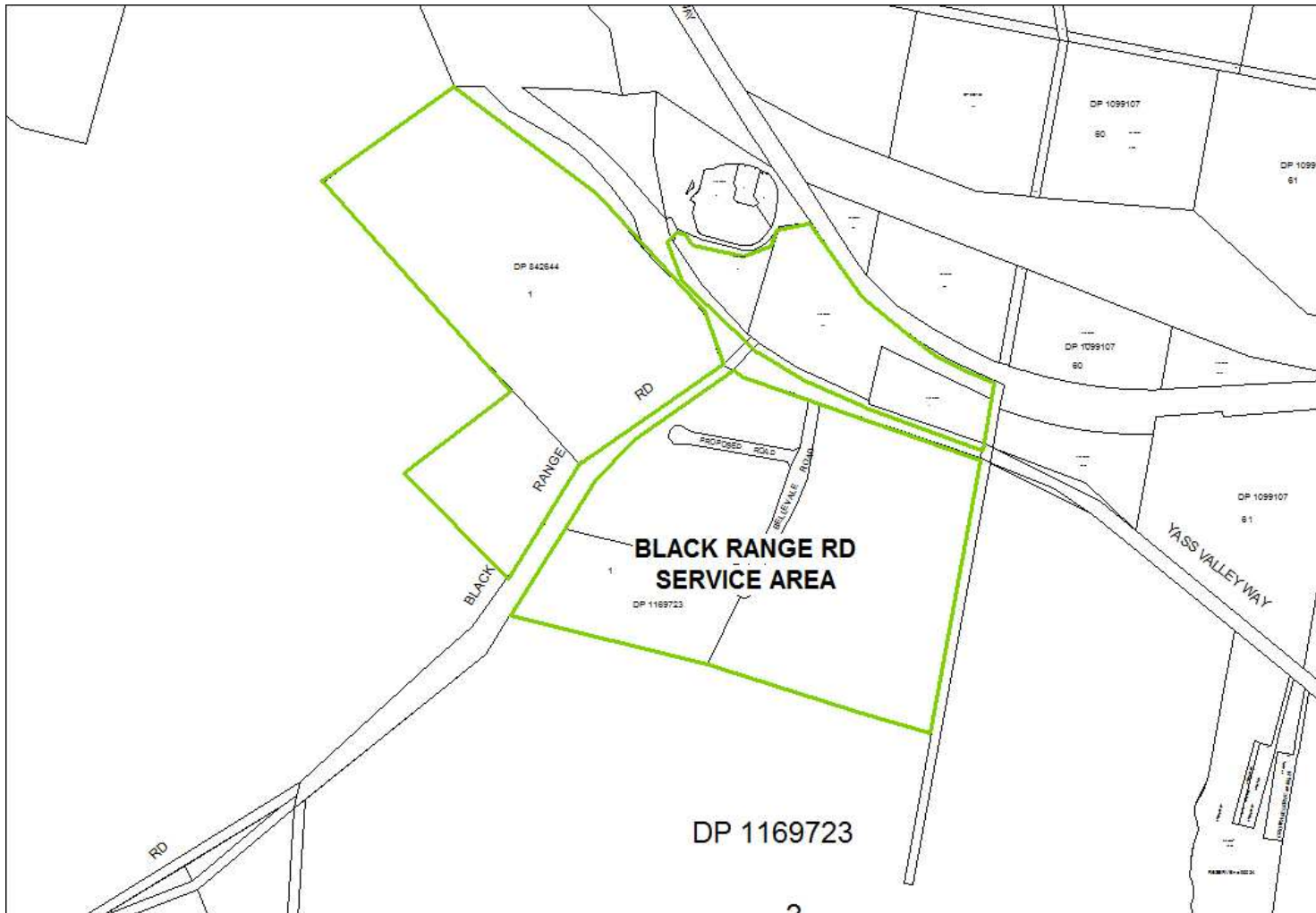
Yass Service Area



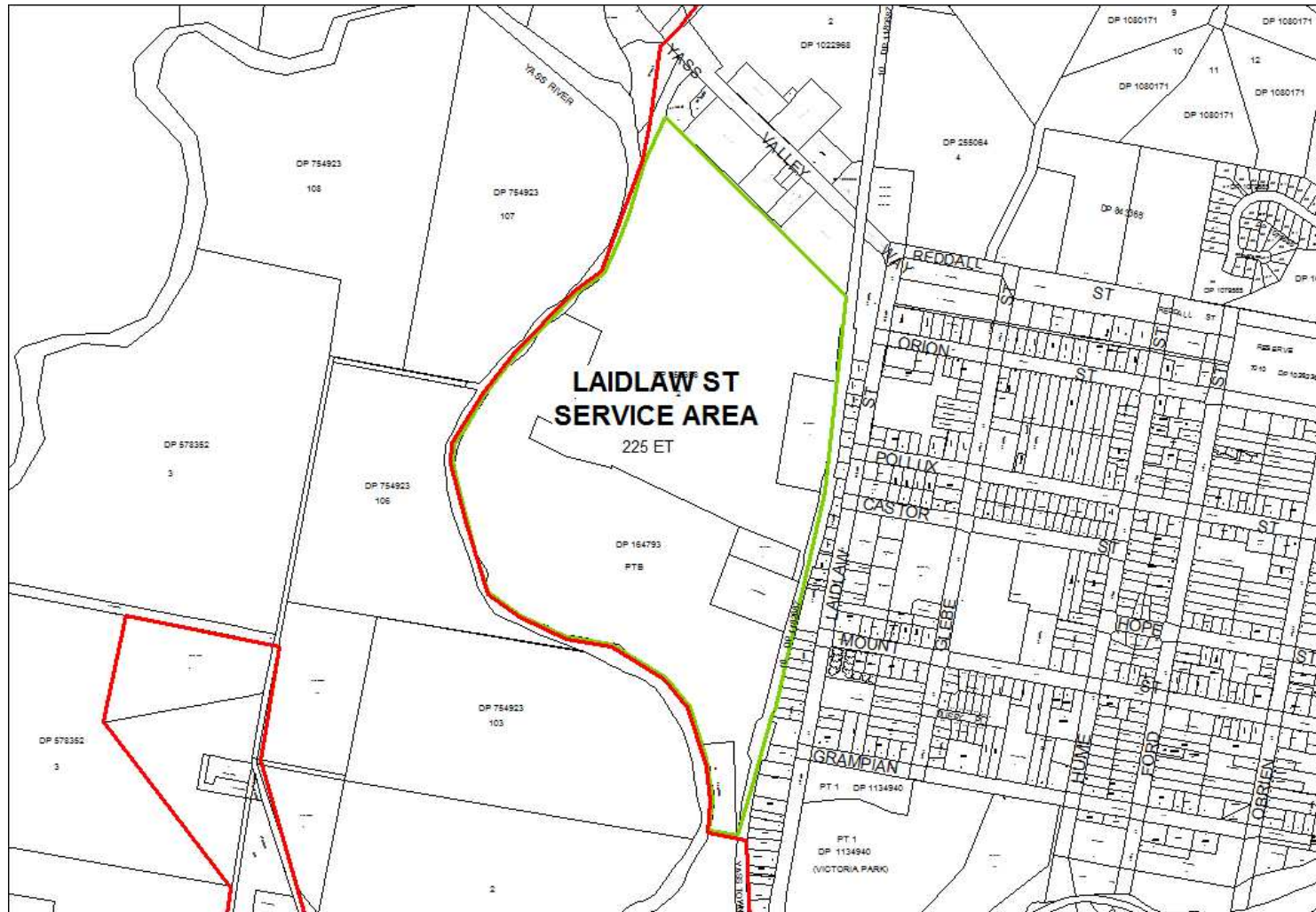
Murrumbateman Service Area



Hamilton Rise Service Area



Black Range Road Service Area



Laidlaw St Service Area



Wellington Road Service Area

APPENDIX No. 4 – Calculations

Developer Charges for Water Supply and Sewerage

+ Y=Yass General
 YH=Yass - Hamilton Rise
 YW=Yass - Wellington St
 YB= Yass - Bk Range Rd
 YL=Yass - Laidlaw St
 Bi=Binalong
 Bo=Bowning
 M=Murrumbateman

YASS VALLEY COUNCIL SEWERAGE

YASS EXIST. & OTHERS <500 ET

Component		Council Service Area Denotations +	Year Commissioned	Effective year of commissioning for ROI 1	Capital Cost* (2012/13\$)	PV of Capital Cost (2012/13\$)		Capacity (EPs)	occupancy ratio 2	Capacity (ETs) 3	Cost per ET (\$ per ET)	Year when Capacity is Taken-Up	Take-up Period (Years)	Return on Investment Factor 4,5	Capital Charge per ET (2012/13\$)
Pre 1996 Works															
Collection/Transport System															
GRAVITY MAINS															
PUMP STATIONS and RISING MAINS															
Pump Station	River Bank PS	Y YB YH YL YW	1939	1996	\$546,000.00	\$546,000.00				3,500	\$156.00	2030	35	1.58	\$247.00
Pump Station	River Bank PS	Y YB YH YL YW	1987	1996	\$460,460.00	\$460,460.00				3,500	\$131.56	2030	35	1.58	\$208.00
Rising Main	200 CI Riverbank PS	Y YB YH YL YW	1938	1996	\$88,560.00	\$88,560.00				3,500	\$25.30	2030	35	1.58	\$40.00
Rising Main	200 CI CL Riverbank PS	Y YB YH YL YW	1976	1996	\$35,640.00	\$35,640.00				3,500	\$10.18	2030	35	1.58	\$16.00
Rising Main	250 DI CL Riverbank PS	Y YB YH YL YW	1987	1996	\$363,195.00	\$363,195.00				3,500	\$103.77	2030	35	1.58	\$164.00
Pump Station	Primary School PS	Y YB YH YL YW	1965	1996	\$40,040.00	\$40,040.00				3,500	\$11.44	2030	35	1.58	\$18.00
Pump Station	Primary School PS	Y YB YH YL YW	1994	1996	\$32,760.00	\$32,760.00				3,500	\$9.36	2030	35	1.58	\$15.00
Rising Main	50 uPVC Primary School PS	Y YB YH YL YW	1995	1996	\$1,540.00	\$1,540.00				3,500	\$0.44	2030	35	1.58	\$1.00
Pump Station	Ford St PS	Y YB YH YL YW	1974	1996	\$54,600.00	\$54,600.00				3,500	\$15.60	2030	35	1.58	\$25.00
Rising Main	150 CI Ford St PS	Y YB YH YL YW	1979	1996	\$173,000.00	\$173,000.00				3,500	\$49.43	2030	35	1.58	\$78.00
Pump Station	BP PS	Y YB YH YL YW	1978	1996	\$40,040.00	\$40,040.00				3,500	\$11.44	2030	35	1.58	\$18.00
Rising Main	80 AC BP PS	Y YB YH YL YW	1974	1996	\$37,400.00	\$37,400.00				3,500	\$10.69	2030	35	1.58	\$17.00
Pump Station	Laidlaw St PS	Y YB YH YL YW	1978	1996	\$45,500.00	\$45,500.00				3,500	\$13.00	2030	35	1.58	\$21.00
Rising Main	100 AC Laidlaw St PS	Y YB YH YL YW	1974	1996	\$36,900.00	\$36,900.00				3,500	\$10.54	2030	35	1.58	\$17.00
Pump Station	Petit St PS	Y YB YH YL YW	1983	1996	\$45,500.00	\$45,500.00				3,500	\$13.00	2030	35	1.58	\$21.00
Rising Main	80 uPVC Petit St PS	Y YB YH YL YW	1984	1996	\$11,000.00	\$11,000.00				3,500	\$3.14	2030	35	1.58	\$5.00
Pump Station	Effluent PS	Y YB YH YL YW	1983	1996	\$132,860.00	\$132,860.00				3,500	\$37.96	2030	35	1.58	\$60.00
Pump Station	Effluent PS	Y YB YH YL YW	1986	1996	\$25,480.00	\$25,480.00				3,500	\$7.28	2030	35	1.58	\$12.00
Pump Station	Shantala PS	Y YB YH YL YW	1992	1996	\$36,400.00	\$36,400.00				3,500	\$10.40	2030	35	1.58	\$16.00
Rising Main	90 uPVC Shantala PS	Y YB YH YL YW	1994	1996	\$9,900.00	\$9,900.00				3,500	\$2.83	2030	35	1.58	\$4.00
Rising Main	100 uPVC Service Centre	Y YB YH YL YW	1995	1996	\$420,300.00	\$420,300.00				3,500	\$120.09	2030	35	1.58	\$190.00
Rising Main	Petit St PS	Y YB YH YL YW	1984	1996	\$8,880.00	\$8,880.00				3,500	\$2.54	2030	35	1.58	\$4.00
Rising Main	Shantala PS	Y YB YH YL YW	1994	1996	\$6,660.00	\$6,660.00				3,500	\$1.90	2030	35	1.58	\$3.00
Rising Main	Primary School PS	Y YB YH YL YW	1995	1996	\$1,036.00	\$1,036.00				3,500	\$0.30	2030	35	1.58	\$0.00
Rising Main	Yass Service Centre PS	Y YB YH YL YW	1995	1996	\$340,051.00	\$340,051.00				3,500	\$97.16	2030	35	1.58	\$154.00
Sewer Treatment Works															
Pasveer Channel 1	STP	Y YB YH YL YW	1978	1996	\$1,496,040.00	\$1,496,040.00				2,800	\$534.30	2018	23	1.36	\$726.00
Pasveer Channel 2	STP	Y YB YH YL YW	1978	1996	\$1,496,040.00	\$1,496,040.00				2,800	\$534.30	2018	23	1.36	\$726.00
Site works	STP	Y YB YH YL YW	1978	1996	\$118,300.00	\$118,300.00				2,800	\$42.25	2018	23	1.36	\$57.00
Site works	STP	Y YB YH YL YW	1993	1996	\$72,800.00	\$72,800.00				2,800	\$26.00	2018	23	1.36	\$35.00
Sludge Lagoons	STP	Y YB YH YL YW	1939	1996	\$91,000.00	\$91,000.00				2,800	\$32.50	2018	23	1.36	\$44.00
Sludge Lagoons	STP	Y YB YH YL YW	1978	1996	\$91,000.00	\$91,000.00				2,800	\$32.50	2018	23	1.36	\$44.00
Sludge Lagoons	STP	Y YB YH YL YW	1993	1996	\$31,000.00	\$31,000.00				2,800	\$11.07	2018	23	1.36	\$15.00
Effluent Ponds	STP	Y YB YH YL YW	1986	1996	\$48,000.00	\$48,000.00				2,800	\$17.14	2018	23	1.36	\$23.00
Tertiary Ponds	STP	Y YB YH YL YW	1974	1996	\$213,000.00	\$213,000.00				2,800	\$76.07	2018	23	1.36	\$103.00
Fencing (Trickling F)	STP	Y YB YH YL YW	1978	1996	\$27,300.00	\$27,300.00				2,800	\$9.75	2018	23	1.36	\$13.00
Post 1996 Works															
Collection/Transport System															
GRAVITY MAINS															
PUMP STATIONS AND RISING MAINS															
Pump Station	River Bank SPS - generator	Y YB YH YL YW	2020	2020	\$310,000.00	\$180,422.82				3,506	\$51.46	2035	16	1.58	\$81.00
Pump Station	PS Refurbishment	Y YB YH YL YW	2015	2015	\$25,000.00	\$20,407.45				3,506	\$5.82	2030	16	1.58	\$9.00
Pump Station	Ford St PS	Y YB YH YL YW	2003	2003	\$36,400.00	\$36,400.00				3,506	\$10.38	2030	28	2.16	\$22.00
Pump Station	Ford St PS	Y YB YH YL YW	2012	2012	\$15,656.00	\$15,656.00				3,506	\$4.47	2030	19	1.72	\$8.00
Pump Station	Ford St PS upgrade	Y YB YH YL YW	2016	2016	\$250,000.00	\$190,723.80				3,506	\$54.40	2030	15	1.54	\$84.00
Pump Station	BP PS upgrade	Y YB YH YL YW	2017	2017	\$1,100,000.00	\$784,284.80				3,506	\$223.70	2030	14	1.50	\$335.00
Pump Station	Laidlaw St PS switchboard	Y YB YH YL YW	2013	2013	\$50,000.00	\$46,728.97				3,506	\$13.33	2030	18	1.67	\$22.00
Pump Station	Laidlaw St PS upgrade RM	Y YB YH YL YW	2021	2021	\$300,000.00	\$163,180.12				3,506	\$46.54	2030	10	1.33	\$62.00
Pump Station	Laidlaw St PS	Y YB YH YL YW	2002	2002	\$14,560.00	\$14,560.00				3,506	\$4.15	2030	29	2.21	\$9.00
Pump Station	BP PS	Y YB YH YL YW	2000	2000	\$21,840.00	\$21,840.00				3,506	\$6.23	2030	31	2.31	\$14.00
Pump Station	PS Refurbishment	Y YB YH YL YW	2013	2013	\$25,000.00	\$23,364.49				3,506	\$6.66	2030	18	1.67	\$11.00
Pump Station	PS Refurbishment	Y YB YH YL YW	2017	2017	\$25,000.00	\$17,824.65				3,506	\$5.08	2030	14	1.50	\$8.00
Pump Station	Hatton Park PS2	Y YB YH YL YW	2009	2009	\$129,165.00	\$129,165.00				3,506	\$36.84	2030	22	1.86	\$68.00
Pump Station	Hatton Park PS1	Y YB YH YL YW	2006	2006	\$147,500.00	\$147,500.00				3,506	\$42.07	2030	25	2.00	\$84.00
Rising Main	90 PE Hatton Park PS 1	Y YB YH YL YW	2009	2009	\$23,700.00	\$23,700.00				3,506	\$6.76	2030	22	1.86	\$13.00
Rising Main	100 uPVC Hatton Park PS 2	Y YB YH YL YW	2006	2006	\$51,000.00	\$51,000.00				3,506	\$14.55	2030	25	2.00	\$29.00
Pump Station	PS Refurbishment	Y YB YH YL YW	2021	2021	\$25,000.00	\$13,598.34				3,506	\$3.88	2030	10	1.33	\$5.00
Pump Station	Willow Ck PS	Y YB YH YL YW	2006	2006	\$88,500.00	\$88,500.00				3,506	\$25.24	2030	25	2.00	\$51.00
Rising Main	80 uPVC Willow Ck PS	Y YB YH YL YW	2006	2006	\$307,500.00	\$307,500.00				3,506	\$87.71	2030	25	2.00	\$176.00
Pump Station	PS Refurbishment	Y YB YH YL YW	2019	2019	\$25,000.00	\$15,568.74				3,506	\$4.44	2030	12	1.41	\$6.00

Component		Council Service Area Denotations +	Year Commissioned	Effective year of commissioning for ROI 1	Capital Cost* (2012/13\$)	PV of Capital Cost (2012/13\$)		Capacity (EPs)	occupancy ratio 2	Capacity (ETs) 3	Cost per ET (\$ per ET)	Year when Capacity is Taken-Up	Take-up Period (Years)	Return on Investment Factor 4,5	Capital Charge per ET (2012/13\$)
Management	DSP upgrade	Y YB YH YL YW	2013	2013	\$15,000.00	\$14,018.69				3,506	\$4.00	2017	5	1.14	\$5.00
Management	SBP upgrade	Y YB YH YL YW	2013	2013	\$15,000.00	\$14,018.69				3,506	\$4.00	2017	5	1.14	\$5.00
Rising Main	Willow Ck PS	Y YB YH YL YW	2006	2006	\$248,788.00	\$248,788.00				3,506	\$70.96	2030	25	2.00	\$142.00
Rising Main	Hatton Park PS	Y YB YH YL YW	2006	2006	\$41,262.00	\$41,262.00				3,506	\$11.77	2030	25	2.00	\$24.00
Rising Main	Hatton Park PS	Y YB YH YL YW	2009	2009	\$19,175.00	\$19,175.00				3,506	\$5.47	2030	22	1.86	\$10.00
Sewer Treatment Works															
Handrails	STP	Y YB YH YL YW	2010	2010	\$65,380.00	\$65,380.00				2,800	\$23.35	2018	9	1.29	\$30.00
Inlet works	New STP	Y YB YH YL YW	2010	2010	\$591,303.19	\$591,303.19				4,155	\$142.31	2030	21	1.81	\$258.00
IDEAT	New STP	Y YB YH YL YW	2010	2010	\$1,450,939.87	\$1,450,939.87				4,155	\$349.20	2030	21	1.81	\$633.00
Balance Pond	New STP	Y YB YH YL YW	2010	2010	\$42,400.00	\$42,400.00				4,155	\$10.20	2030	21	1.81	\$18.00
Sludge Lagoon	New STP	Y YB YH YL YW	2010	2010	\$513,453.00	\$513,453.00				4,155	\$123.57	2030	21	1.81	\$224.00
Septage PS	New STP	Y YB YH YL YW	2010	2010	\$135,586.72	\$135,586.72				4,155	\$32.63	2030	21	1.81	\$59.00
UV	New STP	Y YB YH YL YW	2010	2010	\$320,915.00	\$320,915.00				4,155	\$77.24	2030	21	1.81	\$140.00
Alum Dosing	New STP	Y YB YH YL YW	2010	2010	\$196,100.00	\$196,100.00				4,155	\$47.20	2030	21	1.81	\$85.00
Sludge Hardstand	New STP	Y YB YH YL YW	2010	2010	\$242,405.04	\$242,405.04				4,155	\$58.34	2030	21	1.81	\$106.00
Amenities Bldg	New STP	Y YB YH YL YW	2010	2010	\$327,171.97	\$327,171.97				4,155	\$78.74	2030	21	1.81	\$143.00
Package PS	New STP	Y YB YH YL YW	2010	2010	\$49,307.00	\$49,307.00				4,155	\$11.87	2030	21	1.81	\$21.00
Electrical	New STP	Y YB YH YL YW	2010	2010	\$1,942,773.94	\$1,942,773.94				4,155	\$467.57	2030	21	1.81	\$847.00
Potable water structure	New STP	Y YB YH YL YW	2010	2010	\$32,208.00	\$32,208.00				4,155	\$7.75	2030	21	1.81	\$14.00
Pipe works structure	New STP	Y YB YH YL YW	2010	2010	\$168,720.00	\$168,720.00				4,155	\$40.61	2030	21	1.81	\$74.00
Road works	New STP	Y YB YH YL YW	2010	2010	\$682,186.00	\$682,186.00				4,155	\$164.18	2030	21	1.81	\$297.00
Fencing	New STP	Y YB YH YL YW	2010	2010	\$106,318.00	\$106,318.00				4,155	\$25.59	2030	21	1.81	\$46.00
Augmentation	New STP	Y YB YH YL YW	2013	2013	\$50,000.00	\$46,728.97				4,155	\$11.25	2030	18	1.67	\$19.00
Miscellaneous															
Pump Station	New Laidlaw St PS	YL	2017	2017	\$530,000.00	\$377,882.68				4,155	\$90.95	2035	19	1.72	\$156.00
225 Trunk Main	225 TM Upgrade Mains	YL	2017	2017	\$175,000.00	\$124,772.58				4,155	\$30.03	2035	19	1.72	\$52.00
Rising Main	Wellington Rd PS	YW	2016	2016	\$105,000.00	\$80,104.00				4,155	\$19.28	2030	15	1.54	\$30.00
Pump Station	Wellington Rd PS	YW	2016	2016	\$485,000.00	\$370,004.18				4,155	\$89.05	2035	20	1.76	\$157.00
Pump Station	Black Range Rd-SPS	YB	2017	2017	\$500,000.00	\$356,493.09				4,155	\$85.80	2035	19	1.72	\$147.00
Total															
					\$18,700,395.73	\$17,530,522.80					\$4.908				\$7,979.00

Rate of return (pre 1996) 3%
Rate of return (post 1996) 7%
Discount Rate 7%
Year Now 2012/13

- For pre-1996 assets, the effective year of commissioning for calculating Return on Investment (ROI) factors is January 1996, ie: 1995/96.
- The ROI factor for pre-1996 works is based on a rate of return (discount rate) of 3% pa real. The ROI factor assumes a uniform annual take-up of lots over the take-up period, commencing in the effective year of commissioning of the asset.
- The ROI factor for post-1996 assets is based on a rate of return (discount rate) of 7% pa real, together with a uniform annual take-up of lots over the take-up period, commencing in the year of commissioning of the asset.

* Current Replacement Costs are based on "NSW Reference Rates for Valuation of Water Supply, Sewerage and Stormwater Assets", Ministry of Energy and Utilities, June 2003*, adjusted to Year Now dollars

Developer Charges for Water Supply and Sewerage

+ Y=Yass General
 YH=Yass - Hamilton Rise
 YW=Yass - Wellington St
 YB= Yass - Bk Range Rd
 YL=Yass - Laidlaw St
 Bi=Binalong
 Bo=Bowring
 M=Murrumbateman

YASS VALLEY COUNCIL SEWERAGE

HAMILTON

Component		Council Service Area Denotations +	Year Commissioned	Effective year of commissioning for ROI 1	Capital Cost* (2012/13\$)	PV of Capital Cost (2012/13\$)		Capacity (EPs)	occupancy ratio 2	Capacity (ETs) 3	Cost per ET (\$ per ET)	Year when Capacity is Taken-Up	Take-up Period (Years)	Return on Investment Factor 4,5	Capital Charge per ET (2012/13\$)
Pre 1996 Works															
Collection/Transport System															
GRAVITY MAINS															
PUMP STATIONS AND RISING MAINS															
RISING MAINS															
REUSE MAINS															
Sewer Treatment Works															
Post 1996 Works															
Collection/Transport System															
GRAVITY MAINS															
Trunk Main	225 TM Upgrade McDonald-Waroo Ma	YH	2016	2016	\$480,000.00	\$366,189.70				700	\$523.13	2035	20	1.76	\$923.00
Trunk Main	225 TM Upgrade Brennan-Shaw St Main	YH	2017	2017	\$1,049,999.60	\$748,635.20				700	\$1,069.48	2035	19	1.72	\$1,837.00
PUMP STATIONS AND RISING MAINS															
RISING MAINS															
Sewer Treatment Works															
Miscellaneous															
Total															
					\$1,529,999.60	\$1,114,824.91					\$1,593				\$2,760.00

Rate of return (pre 1996)	3%															
Rate of return (post 1996)	7%															
Discount Rate	7%															
Year Now	2012/13															
												YASS EXIST & OTHERS <500 ET CONTRIBUTION				\$7,979.00
												TOTAL				\$10,739.00

1. For pre-1996 assets, the effective year of commissioning for calculating Return on Investment (ROI) factors is January 1996, ie: 1995/96.
 4. The ROI factor for pre-1996 works is based on a rate of return (discount rate) of 3% pa real. The ROI factor assumes a uniform annual take-up of lots over the take-up period, commencing in the effective year of commissioning of the asset.
 5. The ROI factor for post-1996 assets is based on a rate of return (discount rate) of 7% pa real, together with a uniform annual take-up of lots over the take-up period, commencing in the year of commissioning of the asset.
 * Current Replacement Costs are based on "NSW Reference Rates for Valuation of Water Supply, Sewerage and Stormwater Assets", Ministry of Energy and Utilities, June 2003, adjusted to Year Now dollars

Capital Charge Summary	\$/ET
<u>Location</u>	
YASS EXIST. & OTHERS <500 ET;	7,979
HAMILTON	10,739
MURRUMBATAMAN	16,695

Weighted Capital Charge (based on design ET)				\$/ET
<u>Location</u>			Dev. Charge ET	Cap Charge
YASS EXIST & OTHER < 500 ET			499	7,979
HAMILTON			575	10,739
MURUMBATAMAN			555	16,695
Weighted Capital Charge				11,923

Summary

Location	Capital Charge / ET	Reduction / ET	Developer Charge / ET (\$12/13)
Yass Existing and Other < 500 ET	\$7,979	\$2,328	\$5,651
Hamilton	\$10,739	\$2,328	\$8,411
Murrumbateman	\$16,695	\$2,328	\$14,367
Weighted Average	\$11,923	\$2,328	\$9,595

Conversion of Assessments to ET's			
<u>Assessments</u>	factor	ET's	ET/ Residential Assessment
Residential Aesments comprised of:	2,597	2,449	0.94
Houses (non-pensioner)	1,996	1	1,996
Houses (pensioner)	411	0.87	358
Flats/Units/Town Houses (non-pensioner)	0	0.67	0
Flats/Units/Town Houses (pensioner)	0	0.55	0
Vacant Lots	190	0.5	95
Non-Residential asesments	225		
Annual Revenue from Rates and Charges			
		ET's	ET/ Non-Residential Assessment
10/11 Residential Revenue	\$0	0	1.75
10/11 Non-Residential Revenue	\$0		
10/11 Pensioner Rebate Grant	\$0		
10/11 Total Revenue	\$0		
<i>This revenue does not include revenue from Developer Charges</i>			

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

Yass Valley Council - Sewerage

Year	Year No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
	Year	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	
Developer Charges																						
	Year 1	2012/13																				
	Base Year	2012/13																				
	Average Capital Charges per ET (2012/13\$)	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	
	Inflation from Base year to Year 1 (%)	0.00%																				
	Capital Charges (2012/13\$)	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	
	Input Reduction Amounts (2012/13\$)	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	1,923	
	Developer Charge per ET (2012/13\$)																					
	Developer Charges per assessment - Residential (2012/13\$)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Developer Charges per assessment - Non-Residential (2012/13\$)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Assessments & ETs																						
		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
	Residential Assessments at year end	2,180	2,186	2,238	2,292	2,347	2,403	2,461	2,520	2,580	2,642	2,705	2,770	2,836	2,904	2,974	3,045	3,118	3,193	3,270	3,348	3,428
	Non Residential Assessments at year end	224	225	227	229	231	233	235	237	239	241	243	245	247	249	251	254	257	260	263	266	269
	Backlog Assessments at year end	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Assessments at year end	2,404	2,411	2,465	2,521	2,578	2,636	2,696	2,757	2,819	2,883	2,948	3,015	3,083	3,153	3,225	3,299	3,375	3,453	3,533	3,614	3,697
	ET per Residential Assessment	0.94																				
	ET per Non Residential Assessment	1.75																				
	Total ETs	2,441	2,449	2,501	2,555	2,610	2,667	2,725	2,784	2,843	2,905	2,968	3,033	3,098	3,166	3,235	3,307	3,381	3,456	3,534	3,613	3,693
	New ETs per year (excluding backlog)	-	7	52	54	55	56	58	59	60	62	63	65	66	67	69	72	74	76	78	79	80
	Cumulative New ETs (excluding backlog)	-	7	60	114	169	225	283	342	402	464	527	591	657	724	794	866	939	1,015	1,093	1,171	1,252
	PV (new ETs excluding backlog) 30 years @ 7% pa	-	809	869	885	900	916	931	945	960	974	987	1,001	1,013	1,025	1,036	1,046	1,053	1,059	1,064	1,066	1,068
Revenue and Expenditure																						
Rates & Charges Revenue, Trade Waste Charges, Other Sales and Charges, Pensioner Rebate Grant																						
	Revenue (\$'000) (2012/13\$)	1,503	1,553	1,569	1,572	1,586	1,643	1,727	1,769	1,797	1,858	1,923	1,983	2,069	2,162	2,248	2,292	2,337	2,309	2,244	2,291	
	OMA Expenditure (\$'000) (2012/13\$)	1,066	1,090	1,116	1,269	1,319	1,338	1,355	1,374	1,391	1,412	1,432	1,455	1,478	1,500	1,525	1,550	1,608	1,630	1,656	1,681	
	Revenue less OMA Expenditure (\$'000)	437	463	453	303	267	305	372	395	406	446	491	528	591	662	723	742	729	679	588	610	
	Revenue less OMA Expenditure for new ETs (\$'000)	1	11	20	20	23	32	46	56	65	79	96	112	135	162	189	206	214	210	191	207	
	PV (Revenue less OMA Expenditure for new ETs) 30 years @ 7% pa (\$'000)	1,716	1,922	2,024	2,145	2,416	2,660	2,836	2,956	3,143	3,362	3,522	3,663	3,820	3,889	3,908	3,932	4,101	4,412	4,921	5,687	
	Output (calculated) Reduction Amounts	2,121	2,211	2,287	2,382	2,639	2,858	3,000	3,080	3,226	3,404	3,519	3,616	3,727	3,754	3,737	3,733	3,871	4,148	4,615	5,324	
	Output with first 5 years averaged	2,328	2,328	2,328	2,328	2,328	2,858	3,000	3,080	3,226	3,404	3,519	3,616	3,727	3,754	3,737	3,733	3,871	4,148	4,615	5,324	
	% Difference Between the Input and Output	21%																				

Difference Greater Than 2%, Go to Next Iteration

General Notes:

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

Specific Notes:

Assume zero growth after 30 years

Table X - Calculation of Developer Charges using the NPV of Annual Charges Method Based on Input Reduction Amounts of ### /ET (2nd iteration)

Yass Valley Council - Sewerage

Year	Year No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
	Year	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	
Developer Charges																						
	Year 1	2012/13																				
	Base Year	2012/13																				
	Average Capital Charges per ET (2012/13\$)	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	11,923	
	Inflation from Base year to Year 1 (%)	0.00%																				
	Capital Charge (2012/13\$)	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	11,920	
	Input Reduction Amounts (2012/13\$)	2,328	2,328	2,328	2,328	2,328	2,858	3,000	3,080	3,226	3,404	3,519	3,616	3,727	3,754	3,737	3,733	3,871	4,148	4,615	5,324	
	Developer Charge per ET (2012/13\$)	9,590	9,590	9,590	9,590	9,590	9,060	8,920	8,840	8,690	8,520	8,400	8,300	8,190	8,170	8,180	8,190	8,050	7,770	7,310	6,600	
	Developer Charges per assessment - Residential (2012/13\$)	9,010	9,010	9,010	9,010	9,010	8,520	8,380	8,310	8,170	8,010	7,900	7,800	7,700	7,680	7,690	7,700	7,570	7,300	6,870	6,200	
	Developer Charges per assessment - Non-Residential (2012/13\$)	15,768	15,768	15,768	15,768	15,768	14,910	14,665	14,543	14,298	14,018	13,825	13,650	13,475	13,440	13,458	13,475	13,248	12,775	12,023	10,850	
Assessments & ETs																						
	Residential Assessments at year end	2,180	2,186	2,238	2,292	2,347	2,403	2,461	2,520	2,580	2,642	2,705	2,770	2,836	2,904	2,974	3,045	3,118	3,193	3,270	3,348	3,428
	Non Residential Assessments at year end	224	225	227	229	231	233	235	237	239	241	243	245	247	249	251	254	257	260	263	266	269
	Backlog Assessments at year end	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Assessments at year end	2,404	2,411	2,465	2,521	2,578	2,636	2,696	2,757	2,819	2,883	2,948	3,015	3,083	3,153	3,225	3,299	3,375	3,453	3,533	3,614	3,697
	ET per Residential Assessment	0.94																				
	ET per Non Residential Assessment	1.75																				
	Total ETs	2,441	2,449	2,501	2,555	2,610	2,667	2,725	2,784	2,843	2,905	2,968	3,033	3,098	3,166	3,235	3,307	3,381	3,456	3,534	3,613	3,693
	New ETs per year (excluding backlog)	-	7	52	54	55	56	58	59	60	62	63	65	66	67	69	72	74	76	78	79	80
	Cumulative New ETs (excluding backlog)	-	7	60	114	169	225	283	342	402	464	527	591	657	724	794	866	939	1,015	1,093	1,171	1,252
	PV (new ETs excluding backlog) 30 years @ 7% pa	-	809	869	885	900	916	931	945	960	974	987	1,001	1,013	1,025	1,036	1,046	1,053	1,059	1,064	1,066	1,068
Revenue and Expenditure																						
Rates & Charges Revenue, Trade Waste Charges, Other Sales and Charges, Pensioner Rebate Grant																						
	Revenue (\$'000) (2012/13\$)	1,503	1,553	1,569	1,572	1,586	1,643	1,727	1,769	1,797	1,858	1,923	1,983	2,069	2,162	2,248	2,291	2,337	2,309	2,244	2,291	
	OMA Expenditure (\$'000) (2012/13\$)	1,066	1,090	1,116	1,269	1,319	1,338	1,355	1,374	1,391	1,412	1,432	1,455	1,478	1,500	1,525	1,550	1,608	1,630	1,656	1,681	
	Revenue less OMA Expenditure (\$'000)	437	463	453	303	267	305	372	395	406	446	491	528	591	662	723	741	729	679	588	610	
	Revenue less OMA Expenditure for new ETs (\$'000)	1	11	20	20	23	32	46	56	65	79	96	112	135	162	189	206	214	210	191	207	
	PV (Revenue less OMA Expenditure for new ETs) 30 years @ 7% pa (\$'000)	1,716	1,921	2,024	2,145	2,416	2,660	2,835	2,956	3,143	3,361	3,522	3,662	3,820	3,889	3,907	3,932	4,104	4,411	4,920	5,687	
	Output (calculated) Reduction Amounts	2,121	2,211	2,287	2,382	2,639	2,858	3,000	3,080	3,226	3,404	3,519	3,615	3,726	3,753	3,736	3,733	3,875	4,148	4,614	5,324	
	Average Calculated Reduction for a 5 yr Period	2,328	2,328	2,328	2,328	2,328	2,858	3,000	3,080	3,226	3,404	3,519	3,615	3,726	3,753	3,736	3,733	3,875	4,148	4,614	5,324	
	% Difference Between the Input and Output	0%																				

**Difference Less Than 2%, Calculation Complete
Developer Charges for the first 5 years = \$9590 in year 2012/13 dollars**

General Notes:

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

Developer Cha	9,592	9,592	9,592	9,592	9,592	9,062	8,920	8,840	8,694	8,516	8,401	8,305	8,194	8,167	8,184	8,187	8,045	7,772	7,306	6,596
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ESTIMATED TAKE-UP OF NEW SUBDIVISION LAND (Starting point based on water connections)

Yass & Bowing EP/ET= 2.6
 Binalong EP/ET= 2.4
 Murrumbateman EP/ET= 2.7
 Commercial EP/ET= 2.7

R-ET Residential equivalent tenements
 C-ET Commercial equivalent tenements
 (Average Commercial consumer = 1.75 ET)
 Σ ET Residential plus Commercial equivalent tenements

575 ET 200 ET 230 ET +1418 ET ≈ 600 ET

+880 ET

Year	Yass	Yass	Hamilton	Wellington	Laidlaw	Yass	Black	Yass	C	Bowing	Binalong	Bo + Bi	R.Bo + Bi	C	Yass + Bowing + Binalong			Murrumbateman				Yass + Bo	
	Population	R-ET	new ET	new ET	new ET	Residual	Range Rd	new ET	ET	Population	Population	ET	ET	ET	Population	EP	Σ ET	Population	R-ET	C-ET	Σ ET	EP	EP
1996	4,451	1,712							386	234	331	228	72		5,016	6,253	2,398	255	85	17	102	301	6,554
2010	5,699	2,192							490	260	396	265	72		6,355	7,872	3,019	312	104	17	121	358	8,230
2011	5,824	2,240				48			490	260	403	268	72		6,487	8,005	3,070	315	105	17	122	361	8,365
2012	5,970	2,296				56			490	265	410	273	72		6,645	8,163	3,131	317	106	17	123	363	8,526
2013	6,119	2,353	30	10		17			495	271	418	278	73		6,807	8,340	3,199	336	113	17	130	382	8,722
2014	6,272	2,412	25	10		24			500	276	425	283	73		6,973	8,521	3,268	377	128	17	145	423	8,944
2015	6,429	2,473	25	10	10	15			505	281	433	288	74		7,143	8,706	3,339	436	150	17	167	482	9,189
2016	6,589	2,534	25	10	10	17			510	287	441	293	75		7,317	8,896	3,412	496	172	17	189	542	9,438
2017	6,754	2,598	30	10	10	13			515	293	449	298	76		7,496	9,090	3,487	558	195	17	212	604	9,694
2018	6,923	2,663	30	10	10	15			520	299	457	303	76		7,678	9,289	3,563	623	219	17	236	668	9,958
2019	7,096	2,729	30	10	10	17			525	305	465	309	77		7,866	9,493	3,641	690	244	17	261	736	10,228
2020	7,273	2,797	30	10	10	18			531	311	473	315	78		8,058	9,701	3,721	763	271	18	289	812	10,512
2021	7,455	2,867	30	10	10	20			536	317	482	320	79		8,254	9,914	3,802	841	300	19	319	893	10,806
2022	7,642	2,939	30	10	10	22			541	323	491	326	80		8,455	10,132	3,886	925	331	20	351	979	11,111
2023	7,833	3,013	30	10	10	23			547	330	499	332	80		8,662	10,355	3,971	1,011	363	28	391	1,087	11,442
2024	8,028	3,088	30	10	15	20			552	336	508	338	81		8,873	10,583	4,059	1,100	396	28	424	1,176	11,759
2025	8,229	3,165	30	10	15	22			558	343	518	344	82		9,090	10,817	4,149	1,192	430	29	459	1,271	12,087
2026	8,435	3,244	30	10	15	24			563	350	527	350	83		9,312	11,056	4,240	1,289	466	34	500	1,381	12,437
2027	8,646	3,325	30	10	15	26			569	357	536	357	84		9,539	11,301	4,334	1,395	505	34	539	1,487	12,787
2028	8,862	3,408	30	10	15	28			575	364	546	363	84		9,772	11,551	4,430	1,508	547	35	582	1,603	13,154
2029	9,083	3,494	30	10	15	30			580	371	556	370	85		10,011	11,808	4,529	1,627	591	35	626	1,721	13,529
2030	9,311	3,581	20	10	15	42			586	379	566	376	86		10,255	12,070	4,629	1,754	638	40	678	1,862	13,932
2031	9,543	3,671	20	10	15	45			592	386	576	383	87		10,506	12,339	4,733	1,902	693	40	733	2,010	14,349
2032	9,782	3,762	20	10	15	47			598	394	586	390	88		10,762	12,614	4,838	2,081	759	41	800	2,191	14,805
2033	10,026	3,856	20			74			604	402	597	397	89		11,025	12,895	4,946	2,283	834	41	875	2,394	15,289
2034	10,277	3,953				96			610	410	608	404	90		11,295	13,184	5,057	2,488	910	41	951	2,599	15,782
2035	10,534	4,052				99			616	418	619	412	91		11,571	13,479	5,170	2,623	960	41	1001	2,734	16,212
2036	10,797	4,153				101			622	427	630	419	91		11,854	13,780	5,286	2,758	1010	43	1053	2,874	16,655
2037	11,067	4,257				104			628	435	641	427	92		12,144	14,090	5,404	2,893	1060	43	1103	3,009	17,099
2038	11,344	4,363				106			635	444	653	435	93		12,440	14,406	5,526	3,028	1110	43	1153	3,144	17,550
2039	11,628	4,472				109			641	453	664	443	94		12,745	14,730	5,650	3,163	1160	43	1203	3,279	18,009
2040	11,918	4,584				112			647	462	676	451	95		13,056	15,061	5,777	3,298	1210	43	1253	3,414	18,476
2041	12,216	4,699				115			654	471	689	459	96		13,376	15,401	5,907	3,433	1260	45	1305	3,555	18,955
2042	12,522	4,816				117			660	480	701	467	97		13,703	15,748	6,041	3,568	1310	45	1355	3,690	19,438
2043	12,835	4,936				120			667	490	714	476	98		14,038	16,104	6,177	3,703	1360	45	1405	3,825	19,929
2044	13,156	5,060				123			674	500	726	485	99		14,382	16,468	6,317	3,838	1410	45	1455	3,960	20,428
2045	13,484	5,186				126			680	510	740	493	100		14,734	16,841	6,460	3,973	1460	45	1505	4,095	20,936

