



# **WATER TECHNICAL REPORT**

**FOR**

**DEVELOPMENT  
SERVICING PLAN**

**May 2005**

## **FORWARD**

This document has been prepared by Singleton Councils Water and Waste Section, and of necessity, some assumptions have been made about candidate new development areas in the Singleton Local Government Area.

Some of these candidate areas are currently the subject of applications for rezoning, whilst others are not.

It is emphasized that this report is not recommending any specific or additional areas for development.

Water and Sewer supply availability is subject to a number of changing circumstances, and is in any case conditional upon a separate planning and development assessment.

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## 1. INTRODUCTION

This report collates and presents the following information relating to the Singleton Local Government Area:

- population and lot projections
- standards of service and design parameters
- design parameters used
- design calculation for planned assets
- assets for which Council proposes the Developers pay a share, and their capacity
- capital works programs
- references

This information has been used to plan infrastructure needs to service the township of Singleton, including adjacent specific developmental areas and villages.

With reference to Plan 1 (Water – Future and Existing Assets which Council Proposes the Developers Pay a Share), the areas already serviced and/or those under consideration for future water supply services in the township of Singleton include the following:

- Retreat Estate (east of Bridgman Road and north of Bridgman Ridge)
- Pinnacle Estate (north of Singleton Heights, west of Bridgman Road)
- Singleton Heights Upper Zone (northern part of Singleton heights, west of Bridgman Road)
- Singleton Heights Middle Zone (southern part of Singleton heights, west of Bridgman Road and the Hunter River)
- Maison Dieu Rural Residential and Industrial Estate (west of New England Highway and north of Hunter River)
- Gowrie Gates (west of New England Highway and just north of Hunter River)
- Huntview Estate (east of Bridgman Road and north of Hunter River)
- Singleton Town Lower Zone (old part of town consisting of Town West, Town East and Town Infill (east of Town East))
- Bridgman Ridge (north of Huntview Estate and east of Bridgman Road)

Other areas (including villages) already serviced and/or considered to be serviced with water supply, and not shown on Plan 1, includes the following:

- Gresford Road Sub Area (approximately 5m east-north-east of Singleton Town)
- Singleton Army Base (approximately 6 km south of Singleton Town)
- Mount Thorley Industrial Estate (approximately 12 km south-west of Singleton Town)
- Broke Village (approximately 24 km south-south-west of Singleton Town)
- Bulga Village (approximately 21 km south-west of Singleton Town)
- Camberwell Village (approximately 14 km north-west of Singleton Town)
- Jerrys Plains (approximately 30 km west of Singleton Town)

This report provides the technical background and calculations for the preparation of the Development Servicing Plan (DSP) for Singleton, including the villages. For the township of Singleton and its immediate vicinity, the existing and future water assets which Council proposes the developers pay a share are shown on Plan 1.



In this report, irrespective of the documents that are referenced, all the cost figures are adjusted to June 2004 by the movements in the Construction Cost Index.

## 2. POPULATION AND LOT PROJECTIONS

Development in the township of Singleton has been widespread and the rate of development in lot numbers can vary from area to area.

Table 1 (Existing and Future Lots and ETs (Water)) shows the existing and/or potential future lots that can be created within each area.

With reference to the section in this report titled “Information on Population and Dwelling”, the lot (or dwelling) increment figure for census years 1996 and 2001 (provided by the Hunter Valley Research Foundation) indicates that the average increase in lot numbers for the whole of Singleton is 0.71% per annum. This report adopts a growth in allotment number of 1.0% per annum over the whole planning period to 2032/2033.

Based on the information from the Hunter Valley Research Foundation, it has been assumed that the average dwelling occupancy ratios range from 2.7 (minimum) to 2.9 (maximum) persons per dwelling (or lot).

For the purposes of supplying lot (or total dwelling) projection information for use in the DSP for Singleton, figures in both Table 2 (Lot Takeup (ET) – Water 2% 1% 0.5% - 050329) and Table 3 (Lot Takeup (ET) – Water – Army and Standpipe) have been derived from the adopted 1.0% per annum allotment growth rate.

For the purposes of the Development Servicing Plan, calculations only, and in the absence of more accurate information, each lot created will be considered to place a demand on Council’s water supply system equivalent to one Equivalent Tenement (ET).

Applications for development other than a single residence will however be assessed on a dwelling equivalent occupancy basis. Council has adopted for this purpose, the use of “Section 64 Determination of Equivalent Tenements Guidelines (Water Directorate January 2005)”.

Where the assessed equivalent occupancy is greater than 1 ET, a contribution will be sought for the additional demand.

### **3. STANDARDS OF SERVICE AND DESIGN PARAMETERS**

#### **3.1 *Water Quality***

Water Quality at least meets the drinking water quality guidelines in Australia, published by the National Health & Medical Research Council (NHMRC, 1996 edition) and the Australian Resources Council.

#### **3.2 *Standards of Service for Water***

This Plan has been prepared using the standards in Councils "Strategic Business Plan for Water Supply 1998/99". Copies of this business plan are available on request.

#### **3.3 *Water Design Parameters***

These are generally in accord with the Public Works Department's Water Supply Investigation Manual, however, there has been some reduction in instantaneous flow requirements (litres per second) in some circumstances in order to take into account current lower levels of outdoor water usage in peak hot weather.

The parameters are treated in more detail in Section 4.

## **4. DESIGN PARAMETERS USED**

### **4.1 *Water Supply Headworks***

Design parameters relating to water supply headworks are as detailed in the Public Works Department's Design Guidelines for Water Supply Schemes as follows:

- Restrictions on supply should not be necessary more than once every 10 years on average and should not last, in total, for more than 5% of the time.
- The system should be able to supply 80% of the unrestricted demand through a repeat of the worst recorded drought starting at the time restrictions are first applied.

### **4.2 *Service Reservoirs***

Generally designed to provide a volume of one peak day's demand, ie 4000 litres per tenement per day. Some reduction in this requirement can be adopted where computer modelling shows that an entire storage and distribution system functions satisfactorily.

### **4.3 *Pipelines***

All trunk mains are designed using computer modelling of Singleton's entire water transport and storage network. (Pipes ++ computer model used).

### **4.4 *Pumping Stations***

These are normally designed to deliver the required transfer capacity over a period of 20 hours. Full standby pumping capacity is normally provided to ensure continuity of supply. In supply critical locations, emergency generator backup of power systems is allowed for.

### **4.5 *Pipe Size and Class***

The smallest pipe size which satisfactorily allows for fire fighting flows in residential areas is 100 mm. In commercial areas, a minimum of 150 mm is used. The minimum pipe classes used are as follows:

Pipe Material	Pipe Diameter and Class		
	100 mm	150 mm	200 mm

PVC family	Class 16	Class 16	Class 16
Ductile Iron	'K9'	'K9'	'K9'

#### **4.6 Reticulation Pressures**

Reticulation systems are designed to supply the peak instantaneous demand by gravity while maintaining a minimum head of 12 m throughout the system. For streets with buildings well above the street level, increased head should be made available where this can be provided without large additional costs.

The desirable maximum head is 60 m, maximum allowable 120 m and normal acceptable maximum 90 m depending on cost of zoning.

During fire flow analysis, desirable residual pressure allowed is to be 12 metres, whilst ensuring pressure at least remains positive at lowest pressure areas of the reticulation system.

#### **4.7 Water Demands**

Singletons Water Reticulation networks are designed with the use of computer modelling to establish pipe sizing required for normal domestic demands.

Hot weather medium peak diurnal flow patterns, using a daily demand per ET of 4,000 litres, are used. The maximum demand averaged over 30 minutes, used in this specific model case is equal to 0.09 litres per second.

For practical purposes, a minimum fire flow of 12 litres per second (residential) and 18 litres per second (commercial and industry) is allowed for, whilst instantaneous demand remains at 0.1 litres per second. Checks are done for all demand nodes in the reticulation system. Positive residual heads are to be maintained throughout the system, with a target of 12 metres residual head where it can be obtained.

#### **4.8 Service Reservoirs**

Initially design for total storage of 1 peak day demand. This will consist of 30% for working capacity and 70% for reserve storage. Computer modelling of total water transport and storage systems is also carried out to ensure predicted system operation is satisfactory. This may then result in modifications of the reservoir design to obtain optimum performance and reliability.

#### **4.9 Pump Design**

Peak daily demand is to be conveyed over a 20 hour period. Fully redundant backup capacity is required, to ensure demands can be met when one pump is not in operation. Computer modelling of full system is carried out to optimise design.

#### ***4.10 Water Treatment Plant***

Is designed to meet peak daily demand of 4,000 litres per ET.

## 5. DESIGN CALCULATIONS FOR PLANNED ASSETS

### 5.1 *Lot and ET Yields*

Existing and Future Lots and ETs	Lot	ET
Retreat Estate (includes East of Retreat)	483 (50)	483 (50)
Pinnacle Estate	500	500
Singleton Heights Upper Zone	707	707
Singleton Heights Middle Zone	1028	1028
Maison Dieu Industrial Estate	381	371
Gowrie Gates Development	550	550
Huntermview Estate	900	900
Singleton Town Lower Zone (includes Town West Town East Town Infill)	3051 (1435) (1516) (100)	3051 (1435) (1516) (100)
Gresford Road Sub Area	150	150
Bridgman Ridge	800	800
Mount Thorley	90	139
Broke	157	157
Bulga	44	44
Camberwell	73	73
Singleton Army Base	625	625

### 5.2 *Reservoir to Serve Bridgman Ridge, Huntermview Estate and Nearby Areas*

A deficiency in storage capacity has been identified in this general area for some time. The servicing strategy identified as most suitable for technical and financial reasons has been to adjust existing pressure zoning for the above area, to allow supply from Singletons Upper Pressure Zone, rather than the existing middle pressure zone.

Whilst additional storage of 6.8 Megalitres was the starting point for design of this additional reservoir, computer network modelling indicates that a reservoir of 5.0 Megalitres capacity with associated control valving for pressure zoning works will operate satisfactorily.

### **5.3 *Glennies Creek Dam Booster Pump Station and Associated Balance Tank at Water Treatment Plant***

Singletons water treatment plant is directly connected via pipeline to the outlet works of Glennies Creek Dam. Whilst water at most times can be transported to the towns treatment plant under gravity, at Dam levels in the vicinity of 30% and lower, a booster pump station will be required to transport this water to Singleton.

Computer Hydraulic modelling has been used to establish that a pump station with a capacity of 379 litres per second at 70 metres of Head, delivering water to a 0.5 Megalitre balance tank nearby to, and above Singletons water treatment plant is required.

### **5.4 *Retreat Estate Water Mains***

All trunk mains in this contribution plan were designed and identified in Councils Development Servicing Plan for Retreat Estate – July 1996". This Plan can be made available upon request.

Recent computer hydraulic modelling of built infrastructure for this supply area has confirmed that the original design concept remains sound, whilst establishing there is adequate capacity for 483 ET (total), a slight reduction on the 501 ET allowed for in the original contribution plan.

### **5.5 *Pinnacle Estate Water Mains***

Trunk mains falling within this subdivision have been designed by computer hydraulic modelling, with the proposed future 200 mm diameter main required to complete full servicing flows and operating pressures for this sub area.

### **5.6 *Maison Dieu Industrial Area Water Mains***

Water demands and fire flows were designed for 381 lots.

Hydraulic computer modelling has shown that without the provision of an additional amplification main leading into this water supply area, normal operational supply pressures drop below the desirable minimum pressure of 20 metres. In addition, fire flows would result in negative reticulation pressures at elevations approaching 115 metre AHD, which is unacceptable.



Provision of an additional 150 mm diameter main 1697 metres long leading from the supply reservoir to the industrially zoned land in this supply area will improve operational residual pressures, and maintain positive pressure during fire flows, for land at or lower than 115 metres AHD.

Hydraulic modelling has also indicated the need for a relocation of the pressure boosting pumps feeding this supply area reservoir (higher demands will produce unacceptable reservoir draw down from the currently used Gowrie Reservoir). A 150 mm diameter main, 450 metres in length will be required to be constructed, linking the alternative McDougalls Hill Reservoir to this supply area, via an alternative booster pump system.

## **5.7 *Gowrie Gates Water Mains***

Provision has been made for internal trunk mains to service this area only.

A combination of 150 mm mains, 300 metres in length, and 200 mm mains, 1000 metres in length have been found by computer modelling to be sufficient for this purpose, whilst ensuring operational and fire fighting pressures and flow are satisfactory.

## **5.8 *Gresford Road Water Mains and Tank***

Provision has been made for limited supply of water to this area only, with infrastructure identified in the plan being the minimum to supply a tank top up, low pressure delivery system.

## **6. ASSETS FOR WHICH COUNCIL PROPOSES THE DEVELOPERS PAY A SHARE, AND THEIR CAPACITY**

### **6.1 Water Supply Areas**

With reference to Tables 1, 2 and 3 and Plan 1, the areas already serviced and/or under consideration for future water supply are as listed in the Introduction of this report.

### **6.2 Existing Reservoirs and their Water Supply Areas**

As shown on Plan 1, Singleton Town and its immediate vicinity are serviced by six (6) water storage reservoirs. Singleton Army Base, Mount Thorley Industrial Estate and the villages have additional water reservoirs. The areas serviced by reservoirs are also shown on Plan 1, as follows:

Rixs Creek Reservoir	- it supplies treated water to all the areas except the village of Jerrys Plains
Gowrie Reservoirs (2)	- they supply treated water to all areas except Retreat Estate, Singleton Heights Upper Zone, Hunterview Estate and the village of Jerrys Plains
McDougalls Hill	- it supplies treated water to all the areas except Retreat Estate, Singleton Heights Upper Zone, Hunterview Estate and the village of Jerrys Plains
Retreat Reservoir	- it supplies treated water to Retreat Estate
Apex Reservoir	- it supplies treated water to Maison Dieu Industrial Estate

Other water storage reservoirs and their water supply areas, not shown on Plan 1, are as follows:

Mount Thorley Reservoir	- it supplies treated water piped from Singleton to Mount Thorley Industrial Estate and the villages of Broke and Bulga
Jerrys Plains Reservoir	- it supplies treated water to the village of Jerrys Plains

### **6.3 Future Reservoirs and their Water Supply Areas**

Future water storage reservoirs shown on Plan 1 are as follows:

Hunterview Reservoir	- it supplies treated water (together with Rixs Creek Reservoir) to all the areas except the village of Jerrys Plains
----------------------	---

Future water storage reservoirs not shown on Plan 1 are as follows:

- |                         |   |
|-------------------------|---|
| Gresford Road Reservoir | - it supplies treated water (obtained from McDougalls Hill and Gowrie Reservoirs) to Gresford Road Sub Area   |
| Broke Reservoir         | - it supplies treated water (obtained from Singleton through Mount Thorley Reservoir) to the village of Broke |
| Jerrys Plains Reservoir | - it supplies treated water to the village of Jerrys Plains   |

## **6.4 Assets, Capacities, Timing and Costs**

Both the existing and future Assets for which Council proposes the developers pay a share are either shown on Plan 1 and/or Table 4 (Water Assets – Existing and Future).

Existing assets consist of the following:

- 150 mm diameter distribution mains
- 200 mm diameter distribution mains
- 250 mm diameter distribution mains
- 300 mm diameter distribution mains
- 375 mm diameter distribution/trunk mains
- 400 mm diameter distribution/trunk mains
- 450 mm diameter distribution/trunk mains
- 600 mm diameter trunk mains
- WTP (Water Treatment Plant)
- storage reservoirs/tanks
- CV (Control Valves)
- booster pump stations

Future assets consist of the following:

- storage reservoirs/tanks
- booster pump stations
- CV (Control Valves)
- 150 mm diameter distribution mains
- 200 mm diameter distribution mains
- 250 mm diameter distribution mains
- 375 mm diameter distribution mains
- 450 mm diameter trunk mains
- 50 mm outer diameter poly distribution mains
- 63 mm outer diameter poly feeder mains
- 75 mm outer diameter poly distribution mains

Also shown on Plan 1 are various groups of existing and proposed water main assets needed to supply water to the following areas:

- |        |   |
|--------|---|
| Type 1 | - existing trunk/distribution water mains required to supply raw water to the water treatment plant and |
|--------|---|

	treated water to all the areas except the village of Jerrys Plains
Type 2	- existing distribution water mains required to supply treated water to their own individual areas
Type 3	- existing trunk/distribution water mains required to supply treated water to all the areas except Retreat Estate, Singleton Heights Upper Zone, Huntview Estate and the village of Jerrys Plains.
Type 4	- existing distribution water mains required to supply treated water to more than one individual area
Type 5	- existing distribution water mains required to supply treated water to Mount Thorley Industrial Estate and, in the future, to the villages of Broke and Bulga
Type 6	- proposed distribution water mains which will be required to deliver treated water to the proposed Huntview Reservoir which will supply treated water (with Rixs Creek Reservoir) to all the areas except the village of Jerrys Plains
Type 7	- proposed distribution water mains which will be required to supply treated water to their own individual areas
Type 8	- proposed distribution water mains which will be required to supply treated water to more than one individual area

The capacity of each asset listed under a water supply area(s) heading on Table 4 relates to the ultimate allotment growth of the area(s). thus, an asset may be shared by more than one area.

The replacement cost of each existing asset is based on the reference rate from the NSW Reference Rates Manual (June 2003). To bring the replacement cost to June 2004, a CPI increase of 3% pa has been assumed. (Movements in the Construction Cost Index are not used any more as the Australian Bureau of Statistics has stopped its publication on movements in "Price Index of Materials Used in Building other than House Building". Similarly, the construction cost of any future asset is also based on the reference rate, plus 3% (in 2004 dollars).

Table 4 shows the year of construction of each existing asset. It also shows the target date(s) for the construction of each future asset. Where a future asset is to be constructed over more than one (1) year, its construction cost will be evenly distributed over the time land development is assumed to take place.

## **7. CAPITAL WORKS PROGRAMS**

Table 5 presents a summary of the capital works programs for the water supply systems (in the township of Singleton including its immediate vicinity and villages) for which Council proposes Developers pay a share through the DSP (Development Servicing Plan) for Singleton.

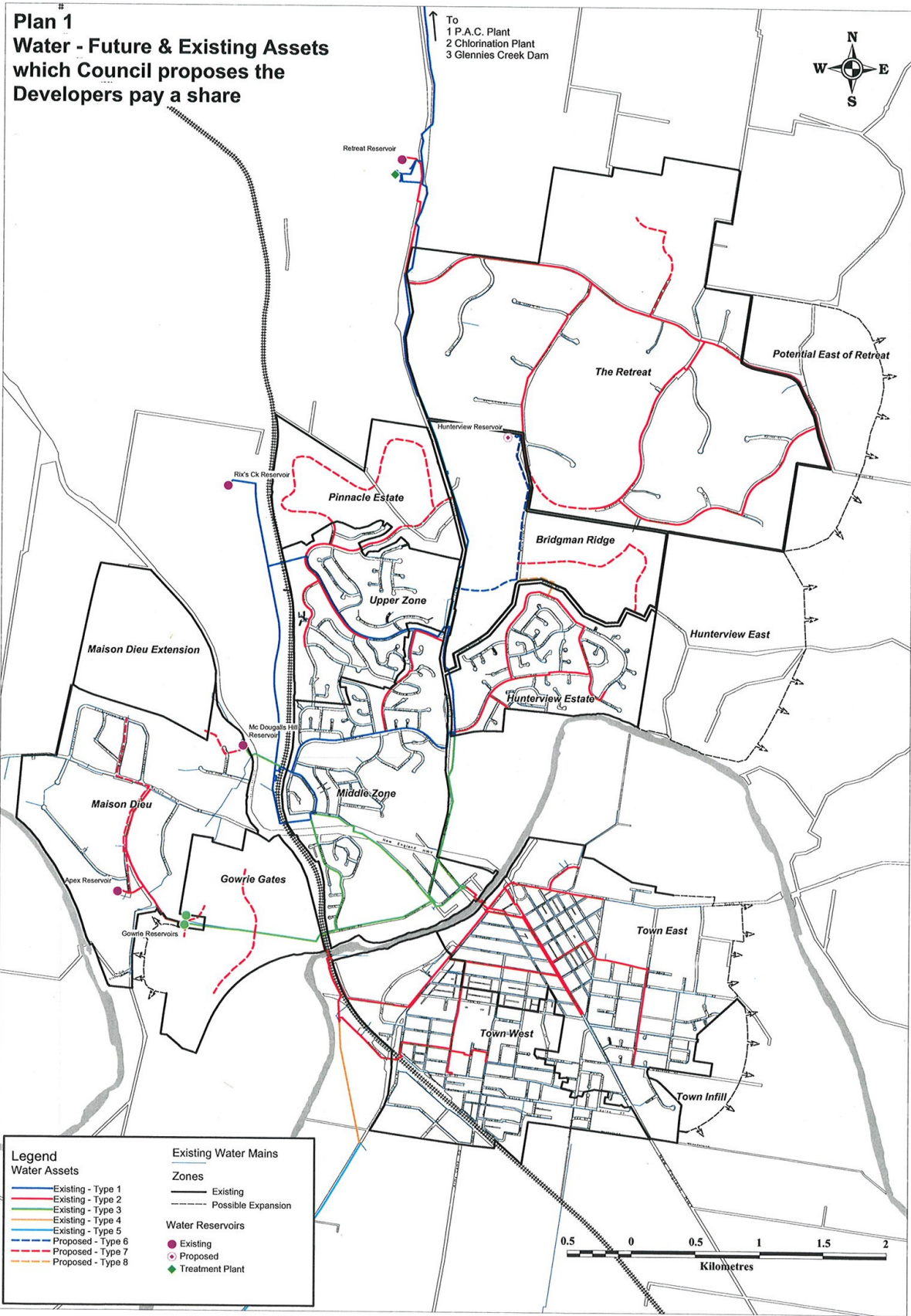
Any other assets required will be the responsibility of the individual developer to provide for the development. This includes water storage reservoirs/tanks, water booster pump stations and water distribution/reticulation mains.

The timing for construction of any future work is indicative only. The provision of any item will be dependent on the rate of development and the threshold criteria established for the need.

## 8. REFERENCES

- Ministry of Energy and Utilities “NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets (June 2003)”
- Australian Bureau of Statistics No 6407.0 – Price Index of Materials Used in Building other than House Building
- NSW Department of Public Works and Services (DPWS) Report No WE98103R March 1999 – Singleton Water Supply and Sewerage Schemes – Assessment of Population, Water Demands and Sewage Loadings
- NSW Department of Public Works – Water Supply Investigation Manual (Amended February 1990)
- Singleton Council “Strategic Business Plan for Water Supply (1998/99)”
- Singleton Council – Standard Policy for Water Supply
- Singleton Council – Databases for Single Water Assets
- Singleton Council – Development Servicing Plan for Retreat Estate (July 1996)
- Rust PPK Environment and Infrastructure – Singleton Water Supply Study (February 1997) – “Model Study”.
- NSW Water Directorate January 2005 – Section 64 Determination of Equivalent Tenements Guidelines
- B Carter and B Sim “Pipes++” analysis in pipes modelling for Singleton Councils “Development Servicing Plan for Singleton (July 2005)”.

***PLAN FOR WATER ASSETS***





***INFORMATION ON POPULATION AND DWELLINGS***

**Singleton – Population and Dwelling Profile  
1991 – 1996 – 2001**

	Total Population	Private Dwellings		Non private dwellings	Total dwellings	Average Occupancy Ratio	
		Occupied	Unoccupied			Max	Min
1991	11,861						
1996	12,519	4,356	231	25	4,612	2.9	2.9
2001	12,170	4,503	252	21	4,776	2.7	2.7

**Calculation**

	Total Population	Average Pop Change pa (%)	Total Dwelling	Average Dwe Change pa (%)
1991	11,861			
1996	12,519	1.11	4,612	
2001	12,170	-0.56	4,776	0.71

DWELLING CHARACTERISTICS *continued*

Geographic area	Occupied private dwellings	Unoccupied private dwellings	Non-private dwellings	Total dwellings
URBAN CENTRE/LOCALITY <i>cont.</i>				
NEW SOUTH WALES <i>cont.</i>				
2001 <i>cont.</i>				
Safety Beach (L)	216	15	—	231
St Georges Basin-Sanctuary Point	3 213	1 189	—	4 401
Salamander Bay-Soldiers Point	2 130	656	—	2 786
San Isidore (L)	104	6	—	110
Sandy Beach	632	57	—	689
Sawtell	5 377	413	6	5 796
Scone	1 617	164	13	1 994
Scotts Head (L)	351	125	—	477
Sesham (L)	120	5	—	125
Shoalhaven Heads	1 267	281	—	1 548
Silverwater (L)	275	83	—	358
Singleton	4 503	252	21	4 775
Smiths Lake (L)	338	225	3	566
Smithtown-Gladstone (L)	386	27	3	416
South Golden Beach	560	98	—	658
South West Rocks	1 814	452	4	2 270
Spring Hill (L)	98	4	—	102
Stanwell Park	435	56	3	494
Stanwell Tops (L)	155	7	—	162
Stockinbingal (L)	94	11	—	105
Stroud (L)	250	27	3	280
Stuarts Point (L)	352	63	—	415
Suffolk Park	1 312	116	—	1 428
Sunshine (L)	155	61	3	217
Sussex Inlet	1 389	691	5	2 085
Sutton (L)	90	4	—	94
Sydney	1 256 732	85 143	2 343	1 344 218
Tahmoor	1 464	88	—	1 552
Talbingo (L)	118	162	3	283
Tarnworth	12 489	967	59	13 515
Tepitallee (L)	96	—	—	96
Teralga (L)	119	28	3	150
Tareutta (L)	94	11	5	110
Taree	6 686	577	34	7 299
Tarraganda (L)	83	6	—	89
Tathra	703	171	3	877
Tea Gardens	599	209	3	811
Temora	1 643	183	13	1 839
Tenterfield	1 304	167	17	1 508
The Oaks	504	15	—	519
The Rock (L)	321	33	—	354
Thirlmere	902	36	—	938
Thredbo Village	451	44	60	555
Tingha (L)	250	31	—	281
Tinonee (L)	258	23	—	281
Tocumwal	654	96	18	768
Tomaklin (L)	382	173	—	555
Tomerong (L)	75	10	—	85
Tooleybuc (L)	92	10	4	106
Tottenham (L)	138	29	3	170
Trangie (L)	381	53	4	438
Trundle (L)	177	18	3	198
Tucabia (L)	90	11	—	101
Tullamore (L)	93	23	3	119
Turnbarumba	607	53	—	660
Turnbulgum (L)	130	12	—	142
Turnut	2 386	227	16	2 629
Tura Beach	906	214	—	1 120
Turoos Heads	933	587	—	1 520
Uki (L)	81	4	—	85

— nil or rounded to zero (including null cells)

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OCCUPIED PRIVATE DWELLINGS *continued*

Geographic area	FULLY OWNED	BEING PURCHASED	RENTED		TOTAL	
	Dwellings	Dwellings(a)	Median monthly loan repayment	Median weekly rent	Dwellings(b)	Persons(c)
	no.	no.	\$	\$	no.	no.
URBAN CENTRE/LOCALITY <i>cont.</i>						
NEW SOUTH WALES <i>cont.</i>						
2001 <i>cont.</i>						
Pitt Town (L)	96	103	1 085	27	241	734
Port Macquarie	6 887	3 067	905	4 323	15 482	36 304
Portland	376	175	590	111	710	1 797
Pottsville Beach	469	170	851	321	1 012	2 562
Quirindi	483	186	537	286	1 031	2 434
Raymond Terrace	1 309	1 228	795	1 751	4 483	12 281
Red Rock (L)	84	19	616	30	140	291
Richmond North	389	372	1 030	421	1 280	3 553
Richmond-Windsor	2 369	2 954	1 063	3 202	8 108	25 221
Robertson	136	141	995	59	357	1 023
Rothbury North (L)	54	71	808	40	152	480
Rylstone (L)	141	41	750	58	103	629
Safety Beach (L)	120	51	793	30	156	590
St Georges Basln-Sanctuary Point	1 685	580	670	614	137	3 213
Salamander Bay-Soldiers Point	1 035	382	997	532	158	2 130
San Isidore (L)	59	35	912	3	79	105
Sandy Beach	233	233	665	140	154	634
Sawtell	2 038	1 240	816	1 807	142	5 377
Scone	713	427	841	582	118	1 817
Scotts Head (L)	109	47	662	92	135	351
Seaham (L)	53	60	914	4	179	120
Shoalhaven Heads	830	178	836	203	147	1 267
Silverwater (L)	144	80	859	37	151	274
Singleton	1 568	1 176	922	1 426	137	4 503
Smiths Lake (L)	168	68	690	70	140	339
Smithtown-Gladstone (L)	219	97	658	51	130	388
South Golden Beach	186	162	742	186	176	560
South West Rocks	983	223	841	496	143	1 812
Spring Hill (L)	35	34	857	18	128	98
Stanwell Park	162	139	1 508	98	220	434
Stanwell Tops (L)	66	57	1 514	20	165	157
Stockinbingal (L)	52	27	610	14	91	96
Stroud (L)	132	56	654	40	114	249
Stuarts Point (L)	204	57	488	68	116	351
Suffolk Park	388	339	1 005	456	220	1 312
Sunshine (L)	80	35	628	25	156	155
Sussex Inlet	893	182	678	224	124	1 388
Sutton (L)	32	32	1 050	20	142	92
Sydney	484 314	288 988	1 308	377 708	218	1 256 732
Tahmoor	571	415	1 001	367	172	1 465
Talbingo (L)	68	12	616	34	102	117
Tamworth	4 811	2 991	760	4 099	130	12 489
Tapitallee (L)	42	51	1 016	3	—	96
Taraiga (L)	77	19	666	16	66	117
Tareutta (L)	48	22	478	15	83	94
Taree	2 799	1 429	706	2 147	114	6 688
Tarraganda (L)	46	27	966	5	87	82
Tethra	312	130	802	222	132	704
Tea Gardens	335	90	950	132	147	601
Temora	872	370	586	313	96	1 643

— nil or rounded to zero (including null cells)

(a) Comprises 'Being purchased' and 'Being purchased under a rent/buy scheme'.

(b) Includes 'Being occupied rent-free', 'Being occupied under a life tenure scheme', 'Other tenure type', and 'Not stated'.

(c) Includes overseas visitors.

DWELLING CHARACTERISTICS *continued*

Geographical area	OCCUPIED PRIVATE.....					OTHER.....			ALL.....	
	Fully owned	Being purchased (including rent/buy)	Rented (includes rent free)	Other (includes not stated)	Total occupied private dwellings	Median housing loan repayment	Median rent	Median household income	Unoccupied private dwellings	Non-private dwellings
	no.	no.	no.	no.	no.	\$ monthly	\$ weekly	\$ weekly	no.	no.
URBAN CENTRE/LOCALITY										
Paterson (L)	62	35	22	6	125	800	125	621	3	—
Patonga (L)	67	11	18	9	105	700	123	405	135	—
Paxton (L)	105	50	43	19	217	670	120	436	20	—
Peak Hill	201	51	133	19	404	502	60	382	41	5
Perisher Village	3	—	15	5	23	—	56	1 133	3	86
Perthville (L)	43	38	13	5	99	800	90	556	7	4
Pieton	358	325	215	46	944	950	120	671	64	—
Pitt Town (L)	95	99	24	3	221	867	160	773	7	—
Port Macquarie	5 945	2 366	4 171	807	13 289	800	135	454	1 516	58
Portland	407	159	120	22	708	683	114	562	82	3
Pottsville Beach	368	151	230	28	777	725	140	437	153	—
Quirindi	528	185	301	35	1 047	542	85	459	102	8
Raymond Terrace	1 192	984	1 928	132	4 236	758	100	502	249	10
Red Rock (L)	78	15	36	—	127	640	90	339	114	—
Richmond North	361	359	381	46	1 146	867	150	829	80	—
Richmond-Windsor	1 798	2 256	2 987	267	7 308	932	140	700	554	15
Robertson (L)	122	111	57	20	310	867	160	643	45	—
Rothbury North (L)	51	63	35	3	152	748	140	793	21	—
Rylstone (L)	140	58	68	13	286	691	88	493	33	—
Safety Beach (L)	108	50	26	3	187	737	150	566	16	—
St Georges Basin-Sanctuary Point	1 373	499	500	88	2 460	628	120	370	1 304	3
Salamander Bay-Soldiers Point	822	281	498	70	1 671	832	135	486	619	—
Sandy Beach	228	211	122	10	571	650	139	472	62	—
Sandy Point (L)	79	54	17	13	163	1 000	180	1 190	13	—
Satur	147	114	82	6	349	823	140	880	34	—
Sawtell	1 889	1 101	1 766	177	4 933	774	125	464	404	5
Scone	532	282	499	67	1 380	737	100	510	107	12
Scotts Head (L)	172	53	90	14	329	650	130	424	122	—
Seaham (L)	48	37	9	8	102	800	150	870	4	—
Seahampton (L)	31	57	3	3	94	740	160	594	8	—
Shoalhaven Heads	707	157	198	55	1 115	750	125	364	337	—
Silverwater (L)	117	68	43	10	236	838	147	536	85	—
Singleton	1 436	1 130	1 620	170	4 356	872	120	828	231	25
Smiths Lake (L)	142	87	67	6	304	630	130	442	175	—



DWELLING CHARACTERISTICS *continued*

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PERSON AND HOUSEHOLD CHARACTERISTICS, Urban Centres and Localities *continued*

Urban Centre/Locality	PERSONS.....						HOUSEHOLDS.....					
	Males no.	Females no.	Aged 0-14 years %	Aged 65 years or more %	Indigenous origin no.	Australian- born no.	Oseas-born (UK, Ireland and NZ) no.	Oseas- born (Other) no.	Total persons in 1996 no.	Total persons in 1991 no.	Lone person no.	Family with dependent children no.
Picton	1 270	1 398	27.7	9.7	41	2 221	249	99	2 668	2 116	186	397
Pitt Town (L)	343	330	26.3	6.1	3	582	34	32	673	632	32	103
Port Macquarie	16 108	17 601	19.3	23.1	517	28 728	2 540	1 262	33 709	26 798	3 210	3 790
Portland	931	957	24.0	12.8	32	1 731	57	37	1 888	2 055	162	239
Pottsville Beach	979	1 008	23.2	20.2	27	1 707	151	60	1 987	1 293	143	237
Quirindi	1 295	1 376	21.5	18.2	236	2 530	48	36	2 671	2 830	275	345
Raymond Terrace	6 111	6 221	29.4	6.3	327	10 782	690	482	12 332	11 159	727	2 020
Red Rock (L)	140	158	17.1	26.2	13	276	11	7	298	262	30	25
Richmond North	1 647	1 749	26.3	6.2	81	2 847	236	177	3 390	3 095	160	543
Richmond-Windsor	10 566	10 751	26.4	8.3	446	17 435	1 588	1 556	21 317	18 766	1 433	3 176
Robertson (L)	471	451	29.7	5.3	9	767	76	35	922	252	51	142
Rothbury North (L)	218	229	29.1	6.9	10	413	12	14	447	300	19	70
Rylstone (L)	363	360	25.0	16.0	9	654	29	20	723	721	79	96
Safety Beach (L)	283	282	27.6	15.8	3	488	38	19	565	530	19	90
St Georges Basin-Sanctuary Point	2 987	3 021	22.0	20.2	250	4 886	558	327	5 988	4 610	587	734
Salamanca Bay-Soldiers Point	2 039	2 048	21.0	20.2	57	3 443	349	192	4 087	n.a.	355	501
Sandy Beach	854	831	31.6	9.6	40	1 464	104	69	1 685	1 431	83	283
Sandy Point (L)	263	266	25.7	4.9	3	401	42	51	529	510	16	66
Satur	562	551	36.1	5.9	6	1 021	36	25	1 113	961	45	206
Sawtell	6 391	6 849	25.9	14.2	369	11 570	843	449	13 240	10 809	897	1 965
Scone	1 684	1 784	21.7	17.8	84	3 154	141	46	3 468	3 329	431	423
Scotts Head (L)	414	407	25.3	20.5	8	742	39	15	821	840	76	117
Seaham (L)	175	175	32.0	6.9	—	307	11	10	350	n.a.	7	58
Seahampton (L)	135	133	29.9	4.5	12	246	9	6	268	229	15	52
Shoalhaven Heads	1 243	1 243	17.9	26.2	39	2 077	214	105	2 486	2 351	318	241
Silverwater (L)	303	308	20.9	19.1	10	530	42	28	611	506	46	82
Singleton	6 369	6 150	26.9	9.2	311	11 213	579	338	12 519	11 861	873	1 871
Smiths Lake (L)	417	432	32.5	11.3	26	744	52	36	849	652	58	126
Smithtown-Gladstone (L)	481	479	24.2	18.3	20	905	27	12	960	965	103	118
South Golden Beach	652	675	30.0	8.9	21	1 124	99	60	1 327	782	70	220
South West Rocks	1 756	1 758	15.9	27.0	98	3 125	184	87	3 514	2 886	339	320
Spring Hill (L)	147	157	31.9	8.2	13	272	19	8	304	237	9	49
Stanwell Park	668	630	30.2	7.3	7	1 062	113	62	1 298	1 078	73	212
Stanwell Tops (L)	324	221	21.1	4.6	—	456	31	38	545	472	18	63
Stocktoningal (L)	127	128	27.8	8.6	6	232	15	4	255	262	23	37

2 PERSON AND HOUSEHOLD CHARACTERISTICS, Urban Centres and Localities *continued*

***TABLES***

Table 1 (Existing and Future Lots and ETs (Water))

EXISTING & FUTURE LOTS & ETs	Sub-area Lot Details			Sub-area ET Details			Singleton System Only			Singleton System With Villages			Singleton System + Villages / Abattoir / Army / Standpipe			For Assets Apportionment		
	Existing	Future	Total	Existing	Future	Total	No Of Lots			No Of ET			No Of Lots			No Of ET		
	No Of	No Of	No Of	No Of	No Of	No Of	Existing	Future	Total	Existing	Future	Total	Existing	Future	Total	Existing	Future	Total
	Lots	Lots	Lots	ET	ET	ET	Existing	Future	Total	Existing	Future	Total	Existing	Future	Total	Existing	Future	Total
All areas pay a share							5956	2594	8550	5951	2590	8540	6244	2670	8914	6280	2673	8953
All areas pay a share (except Retreat, East Of Retreat							4250	2210	6460	4245	2206	6450	4471	2280	6751	4507	2283	6790
Sing Hts Upper Zone, Camberwell & Huntview)																		
Retreat Estate	286	147	433	286	147	433												
East Of Retreat	0	50	50	0	50	50												
Pinnacle Estate	0	500	500	0	500	500												
Singleton Hts Upper zone	707	0	707	707	0	707												
Singleton Hts Middle zone	1028	0	1028	1028	0	1028												
Maison Dieu Industrial Estate	271	110	381	266	106	371												
Gowrie Gates Development	0	550	550	0	550	550												
Huntview Estate	713	187	900	713	187	900												
Singleton Town (Lower Zone, Old Part Of Town)	2951	100	3051	2951	100	3051												
Gresford Road Sub-Area	0	150	150	0	150	150												
Bridgman Ridge	0	800	800	0	800	800												
Mt Thorley	76	14	90	117	22	139												
Broke (Existing lots are backlog)	110	47	157	110	47	157												
Bulga (Existing lots are backlog)	35	9	44	35	9	44												
Camberwell (Existing lots are backlog)	67	6	73	67	6	73												
Singleton Abattoir (1.0 ML/d) equivalent no. of lots	250	0	250	250	0	250												
Singleton Army Base (1.9 ML/d to 2.5 ML/d)	475	150	625	475	150	625												
Standpipe (0.3 ML/d to 0.5 ML/d) equivalent number of lots	75	50	125	75	50	125												
Mt Thorley & Broke	186	61	247	227	69	296												
Bridgman Ridge & Huntview	713	987	1700	713	987	1700												
Jerry's Plains	58	28	86	58	28	86												

C:\BEN\WATER\Lots, ETs (Water) -Existing, Future Sep 2004



Water Technical Report for Development Servicing Plan

Table 2 (Lot Takeup (ET) - Water 2% 1% 0.5% - 050329)

Year	Lot Growth	Cum No Lot Of Lots Increment	Cum Lot Increment	Gowrie Gates		Maison Dieu		Pinnacle Estate		Huntersview Estate		Bridgman Ridge		Retreat Estate		East Of Retreat		Gresford Road		Town Infill		East Of Bridgman Ridge		Overall		No. of New Assessments			
				Lots		Lots		Lots		Lots		Lots		Lots		Lots		Lots		Lots		Lots		Lots		Res			
				ET		ET		ET		ET		ET		ET		ET		ET		ET		ET		ET		Res			
				150 MP# 1.00	100 MP# 0.96	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	100 MP# 1.00	
	ea			Inc	CT	Inc	CT	Inc	CT	Inc	CT	Inc	CT	Inc	CT	Inc	CT	Inc	CT	Inc	CT	Inc	CT	Inc	CT	Inc	CT		
0	2003/2004	5956				6	6	6	29	29	29	29	11	11	11					6	6	6		60	60	60	60		
1	2004/2005	6016	60	60				6	6	29	29	29	29	11	11	11								60	60	60	60		
2	2005/2006	6076	60	120				4	10	3	9	16	45	6	17	6	17	26	26	26	26	5	13	5	13	61	121	61	122
3	2006/2007	6136	61	180		13	13	13	13	12	3	12	57	12	57	4	21	4	19	45	4	17	4	17	63	184	63	195	
4	2007/2008	6199	61	242		13	26	13	26	3	15	3	12	69	12	69	5	26	5	26	19	65	19	65	4	20	64	248	
5	2008/2009	6260	62	304		13	40	13	40	3	18	3	17	12	81	12	91	5	30	19	84	19	84	4	24	66	312	66	312
6	2009/2010	6322	63	366		14	53	14	53	3	21	3	20	12	93	12	93	5	35	20	104	20	104	4	27	68	377	68	377
7	2010/2011	6386	63	430		14	67	14	67	3	23	3	22	12	106	12	106	5	40	5	40	20	124	20	124	70	441	70	441
8	2011/2012	6449	64	493		14	81	14	81	3	26	3	25	13	118	13	118	5	44	5	44	20	144	20	144	72	507	72	507
9	2012/2013	6514	64	558		14	95	14	95	3	29	3	28	13	131	13	131	5	49	5	49	20	164	20	164	77	573	77	576
10	2013/2014	6579	65	623		14	109	14	109	3	32	3	30	13	144	13	144	5	54	5	54	20	184	20	184	80	641	80	644
11	2014/2015	6645	66	689		14	123	14	123	3	34	3	33	13	157	13	157	5	59	5	59	21	203	21	203	86	709	86	712
12	2015/2016	6711	66	755		14	137	14	137	3	37	3	36	13	170	13	170	5	63	5	63	21	226	21	226	89	778	89	782
13	2016/2017	6778	67	822		15	152	15	152	3	40	3	39	13	183	13	183	5	68	5	68	21	247	21	247	90	827	90	832
14	2017/2018	6846	68	890		15	167	15	167	3	43	3	41	13	196	13	196	5	73	5	73	21	268	21	268	92	918	92	922
15	2018/2019	6915	68	959		15	181	15	181	3	46	3	44	13	210	13	210	5	78	5	78	22	290	22	290	94	939	94	943
16	2019/2020	6984	69	1028		15	195	15	195	3	49	3	47	14	223	14	223	5	84	5	84	22	312	22	312	96	1000	96	1005
17	2020/2021	7054	70	1098		15	211	15	211	3	52	3	50	14	237	14	237	5	89	5	89	22	334	22	334	98	1070	98	1075
18	2021/2022	7124	71	1168		15	227	15	227	3	55	3	53	14	251	14	251	5	94	5	94	22	356	22	356	100	1141	100	1146
19	2022/2023	7195	71	1239		15	242	15	242	3	58	3	56	14	265	14	265	5	99	5	99	22	378	22	378	102	1213	102	1218
20	2023/2024	7267	72	1311		16	258	16	258	3	61	3	59	14	279	14	279	5	104	5	104	23	401	23	401	104	1285	104	1290
21	2024/2025	7340	73	1384		16	273	16	273	3	65	3	62	14	293	14	293	5	110	5	110	23	424	23	424	106	1357	106	1362
22	2025/2026	7414	73	1458		16	289	16	289	3	68	3	65	14	308	14	308	5	115	5	115	23	447	23	447	108	1429	108	1434
23	2026/2027	7488	74	1532		16	305	16	305	3	71	3	68	15	322	15	322	5	121	5	121	23	470	23	470	110	1501	110	1506
24	2027/2028	7563	75	1607		16	321	16	321	3	74	3	71	15	337	15	337	5	126	5	126	24	494	24	494	112	1573	112	1578
25	2028/2029	7638	76	1682		16	338	16	338	3	77	3	74	15	352	15	352	5	132	5	132	24	517	24	517	114	1645	114	1650
26	2029/2030	7715	76	1759		17	354	17	354	3	81	3	77	15	367	15	367	5	137	5	137	24	541	24	541	116	1717	116	1722
27	2030/2031	7792	77	1836		17	371	17	371	3	84	3	81	15	382	15	382	5	143	5	143	24	566	24	566	118	1789	118	1794
28	2031/2032	7870	78	1914		17	388	17	388	3	87	3	84	15	397	15	397	5	149	5	149	25	590	25	590	120	1861	120	1866
29	2032/2033	7948	79	1992		17	405	17	405	3	91	3	87	15	413	15	413	5	154	5	154	25	615	25	615	122	1933	122	1938
30	2033/2034	8028	79	2072		17	422	17	422	3	94	3	90	16	428	16	428	5	160	5	160	25	640	25	640	124	2005	124	2010

## Water Technical Report for Development Servicing Plan

Table 2 (Lot Takeup (ET) - Water 2% 1% 0.5% - 050329)

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C.I.BENWATERILOI Takeup (ET) - Water 2% 1% 0.5% - 050329

Water 1% Lot Growth+New Assess

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# Water Technical Report for Development Servicing Plan

Table 3 (Lot Takeup (ET) - Water - Army and Standpipe)

Year			Lot	Cum No	Lot	Cum	Army				Standpipe				Overall				No. of New Assessments	
			Growth	Of Lots	Increment	Lot	Lots		ET		Lots		ET		Lots		ET			
			1%			Increment	150	MF=	1.00	50	MF=	1.00	151							
			pa				Inc	C T	Inc	C T	Inc	C T	Inc	C T	Inc	C T	Inc	C T	Res	Non - Res
0	2003 / 2004			550				475		475		75								
1	2004 / 2005			556	6	6		5	5	5	5	1	1	1	1	6	6	6	6	
2	2005 / 2006			561	6	11		5	10	5	10	1	2	1	2	6	11	6	11	
3	2006 / 2007			567	6	17		5	14	5	14	1	2	1	2	6	17	6	17	
4	2007 / 2008			572	6	22		5	19	5	19	1	3	1	3	6	22	6	22	
5	2008 / 2009			578	6	28		5	24	5	24	1	4	1	4	6	28	6	28	
6	2009 / 2010			584	6	34		5	29	5	29	1	5	1	5	6	34	6	34	
7	2010 / 2011			590	6	40		5	34	5	34	1	5	1	5	6	40	6	40	
8	2011 / 2012			596	6	46		5	39	5	39	1	6	1	6	6	46	6	46	
9	2012 / 2013			602	6	52		5	45	5	45	1	7	1	7	6	52	6	52	
10	2013 / 2014			608	6	58		5	50	5	50	1	8	1	8	6	58	6	58	
11	2014 / 2015			614	6	64		5	55	5	55	1	9	1	9	6	64	6	64	
12	2015 / 2016			620	6	70		5	60	5	60	1	10	1	10	6	70	6	70	
13	2016 / 2017			626	6	76		5	66	5	66	1	10	1	10	6	76	6	76	
14	2017 / 2018			632	6	82		5	71	5	71	1	11	1	11	6	82	6	82	
15	2018 / 2019			639	6	89		5	76	5	76	1	12	1	12	6	89	6	89	
16	2019 / 2020			645	6	95		6	82	6	82	1	13	1	13	6	95	6	95	
17	2020 / 2021			651	6	101		6	88	6	88	1	14	1	14	6	101	6	101	
18	2021 / 2022			658	7	108		6	93	6	93	1	15	1	15	7	108	7	108	
19	2022 / 2023			664	7	114		6	99	6	99	1	16	1	16	7	114	7	114	
20	2023 / 2024			671	7	121		6	105	6	105	1	17	1	17	7	121	7	121	
21	2024 / 2025			678	7	128		6	110	6	110	1	17	1	17	7	128	7	128	
22	2025 / 2026			685	7	135		6	116	6	116	1	18	1	18	7	135	7	135	
23	2026 / 2027			691	7	141		6	122	6	122	1	19	1	19	7	141	7	141	
24	2027 / 2028			698	7	148		6	128	6	128	1	20	1	20	7	148	7	148	
25	2028 / 2029			705	7	155		6	134	6	134	1	21	1	21	7	155	7	155	
26	2029 / 2030			712	7	162		6	140	6	140	1	22	1	22	7	162	7	162	
27	2030 / 2031			720	7	170		6	146	6	146	1	23	1	23	7	170	7	170	
28	2031 / 2032			727	4	174		4	150	4	150	1	24	1	24	5	174	5	174	
29	2032 / 2033			734	0	174		0	150	0	150	1	25	1	25	1	175	1	175	
30	2033 / 2034			741	0	174		0	150	0	150	1	26	1	26	1	176	1	176	

Table 4 (Water Assets - Existing and Future)

Water Asset ID No	Pipe Mat'l Type	U/S Node No	D/S Node No	Locality	Inside Dia (MM)	Length (M)	Year Constr'd	Replacement Cost (Assumed CPI increase of 3.0% 6/03 to 6/04)	Comment
From "WATER.DB"									
ALL AREAS PAY A SHARE								\$ 27,925,535.94	Total
Existing No Of Lots =		7044	Future Lots =		2870	Total =		9914	
Existing Assets								\$ 25,141,164.44	Sub-Total
Raw Water Pipeline - Glennies Creek Dam To Singleton (WTP & Into Gardner Circuit)								\$ 10,398,715.20	
600 DI CL (Dam to WTP)					600	19,528	1988	\$	8,146,105.20
600 DI CL (WTP into Gardner Cct)					600	5,400	1988	\$	2,252,610.00
Trunk Mains - From end of 600mm To Rix's Creek Res And Control Valvework (inc 5410)								\$ 478,805.30	
DI CL					450	1187	1988	\$	360,669.95
DI CL					375	27	1988	\$	6,535.35
9041	Est cost=	\$35,000.00	CV1	CCF=	1.24		1988	\$	43,400.00
9042	Est cost=	\$25,000.00	CV2	(1995)			1988	\$	31,000.00
9043	Est cost=	\$30,000.00	CV3				1988	\$	37,200.00
Obanvale WTP - Land Matters (9039)								\$ -	\$245,305.30
Obanvale Water Treatment Plant (WTP)								\$ 11,391,800.00	
Water Treatment Works (Estimate Direct Filtration has 10% less civil component as compared to conventional = 10% of 60%=6%)							1993	\$	11,134,300.00
Land Acquisition (estimated)							1993	\$	164,800.00
Access Road (estimated)							1993	\$	61,800.00
Power To Site (estimated)							1993	\$	30,900.00
Rix's Creek Hill Reservoir								\$ 1,884,488.00	
13.8 ML Steel Reservoir								\$	1,719,688.00
Control Valve (estimated)							1988	\$	10,300.00
Land Acquisition (estimated)							1988	\$	103,000.00
Access Road (estimated)							1988	\$	51,500.00
Distribution Main Below the 450mm Main From Rix's creek Res To CV2								\$ 399,805.83	
5371	AC	N77	N258	SHTS	375	1,612	1982	\$	378,562.08
5369	AC	N76	N77	SHTS	375	75	1982	\$	17,613.00
6020	DI CL	N906	N907	SHTS	375	15	1982	\$	3,630.75
Distribution Main From CV2 To White Avenue								\$ 132,449.76	
5367	AC	N27	N74	SHTS	300	244	1982	\$	38,200.64
5368	AC	N74	N75	SHTS	375	340	1982	\$	79,845.60
5031	UPVC	N27	N28	SHTS	300	92	1980	\$	14,403.52
Distribution Main In Northcott Avenue And extended To Interconnect Rix's Ck Main								\$ 75,050.95	
5032	AC	N28	N29	SHTS	200	20	1965	\$	1,957.00
5040	AC	N40	N72	SHTS	200	155	1965	\$	15,166.75
5041	AC	N72	N73	SHTS	200	140	1965	\$	13,699.00
5042	AC	N73	N30	SHTS	200	82	1965	\$	8,023.70
5043	AC	N29	N30	SHTS	200	10	1965	\$	978.50
5370	AC	N77	N78	SHTS	375	35	1986	\$	8,219.40
5372	AC	N78	N40	SHTS	375	115	1965	\$	27,006.60
Distribution Main In Blaxland Avenue								\$ 143,350.25	
5050	AC	N40	N84	SHTS	200	120	1968	\$	11,742.00
5084	AC	N84	N41	SHTS	200	50	1975	\$	4,892.50
5091	AC	N41	N91	SHTS	200	75	1968	\$	7,338.75
5108	AC	N91	N97	SHTS	200	95	1968	\$	9,295.75
5109	AC	N97	N98	SHTS	200	100	1968	\$	9,785.00
5110	AC	N98	N99	SHTS	200	150	1968	\$	14,677.50
5111	AC	N99	N112	SHTS	200	60	1968	\$	5,871.00
5120	AC	N112	N119	SHTS	200	100	1968	\$	9,785.00
5121	AC	N119	N118	SHTS	200	85	1968	\$	8,317.25
5127	AC	N118	N120	SHTS	200	45	1968	\$	4,403.25
5128	AC	N121	N120	SHTS	200	50	1968	\$	4,892.50
5129	AC	N121	N122	SHTS	200	55	1968	\$	5,381.75
5132	AC	N122	N127	SHTS	200	25	1968	\$	2,446.25
5133	AC	N127	N129	SHTS	200	30	1968	\$	2,935.50
5136	AC	N129	N130	SHTS	200	50	1968	\$	4,892.50
5138	AC	N130	132	SHTS	200	85	1968	\$	8,317.25
5140	AC	N132	N135	SHTS	200	115	1968	\$	11,252.75
5149	AC	N135	N245	SHTS	200	170	1968	\$	16,634.50
5155	UPVC	N244	N245	SHTS	200	5	1968	\$	489.25
Distribution Main In Bridgman Rd - From Gardner Cct To Blaxland Ave								\$ 236,699.15	
5411	AC	N334	N345	RETR	375	10	1986	\$	2,348.40

Table 4 (Water Assets - Existing and Future)

Water Asset ID No	Pipe Mat'l Type	U/S Node No	D/S Node No	Locality	Inside Dia (MM)	Length (M)	Year Constr'd	Replacement Cost (Assumed CPI increase of 3.0%, 6/03 to 6/04)	Comment
From "WATER.DB"									
5412	AC	N345	N233	SHTS	375	45	1986	\$	10,567.80
5413	AC	N344	N345	RETR	200	15	1986	\$	1,467.75
5351	AC	N326	N325	HUNT	375	45	1986	\$	10,567.80
5352	AC	N326	N333	HUNT	375	820	1986	\$	192,568.80
5353	AC	N325	N327	HUNT	375	40	1982	\$	9,393.60
5354	AC	N327	N245	SHTS	200	100	1982	\$	9,785.00
Future Assets								\$ 2,784,371.50	Sub-Total
Glennies Creek Dam Booster Pump Station: Installed Power for 379 L/s to 70 m = 365 kW (where kW = (379 x 70 x 1.1)/(100 x 0.8) = 365) (for delivering 30ML/day over 22 hours) Land Acquisition (estimated) Access Road (estimated) Power To Site (estimated)							2011	\$ 765,547.50	\$ 518,347.50
Obanvale Concrete Balance Tank							2011	\$ 250,000.00	
Hunterview Reservoir (5ML): 5.0 ML Steel Standpipe Reservoir Control Valve (estimated) Land Acquisition (estimated) Access Road (estimated) UPVC							2007	\$ 1,243,725.00	\$ 1,019,700.00 \$ 7,725.00 \$ 206,000.00 \$ 10,300.00
200mm Valve in Hunterview (CV4) in Acacia Circuit							2007	\$ 60,000.00	
Valve On 375mm Main - AICV For Hunterview Reservoir							2007	\$ 60,000.00	
ALL AREAS PAY A SHARE									
EXCEPT FOR RETREAT ESTATE, SINGLETON HTS UPPER ZONE & HUNTERVIEW								\$ 3,525,136.89	Total
Existing No Of Lots =		5271	Future Lots =		2480	Total =		7751	
Existing Assets								\$ 3,525,136.89	Sub-Total
Distribution Main In Bridgman Rd - From Acacia Cct To New England Highway (5359) AC N326 N339 DUNO 375 945 1986							\$ 221,923.80	\$ 221,923.80	
Distribution Main In Bridgman Rd - From New England Highway To Dunolly Road (5394) DICL N367 N371 DUNO 250 105 1990 5395 DICL N371 N372 DUNO 250 140 1990 5393 DICL N339 N367 DUNO 250 140 1990							\$ 61,465.25	\$ 16,763.25 \$ 22,351.00 \$ 22,351.00	
Distribution Main In Dunolly Road/White Ave -From Newton St To Northcott Ave (5057) AC N28 N52 SHTS 200 100 1965 5058 AC N52 N51 SHTS 200 90 1965 5059 AC N51 N53 SHTS 200 100 1965 5365 AC N53 N380 DUNO 200 625 1965 5403 AC N380 N378 DUNO 200 150 1965 5404 AC N378 N375 DUNO 200 130 1965 5396 DICL N372 N373 DUNO 300 30 1995 5398 DICL N372 N374 DUNO 375 30 1992 6291 DICL N373 N248 DUNO 300 295 1995							\$ 185,451.50	\$ 9,785.00 \$ 8,806.50 \$ 9,785.00 \$ 61,156.25 \$ 14,677.50 \$ 12,720.50 \$ 5,654.70 \$ 7,261.50 \$ 55,604.55	
Distribution Main In Newton St - From Bank St North To New England Highway (6306) DICL N336 N248 DUNO 375 15 1986 5360 AC N339 N336 DUNO 375 330 1986							\$ 81,127.95	\$ 3,630.75 \$ 77,497.20	
Distribution Main In Simpson Tce & Extended -From Darlington Rd To White Ave (5002) UPVC N2 N3 DARL 300 12 1980 5006 UPVC N3 N26 DARL 300 82 1980 5007 UPVC N26 N16 DARL 300 80 1980 5008 UPVC N15 N16 DARL 300 120 1980 5009 UPVC N15 N20 DARL 300 130 1980 5010 UPVC N20 N21 DARL 300 90 1980 5011 UPVC N21 N23 DARL 300 85 1980 5012 UPVC N23 N25 DARL 300 115 1980 5030 UPVC N2 N27 DARL 300 189 1980							\$ 141,373.68	\$ 1,878.72 \$ 12,837.92 \$ 12,524.80 \$ 18,787.20 \$ 20,352.80 \$ 14,090.40 \$ 13,307.60 \$ 18,004.40 \$ 29,589.84	
Distribution Main In Darlington Rd -From Dunolly Rd To Northern Railway (5409) DICL N25 N374 DUNO 375 780 1992 6327 DICL N25 N1123 DARL 450 35 1991 6328 AC N1123 N680 DARL 450 95 1985							\$ 228,299.50	\$ 188,799.00 \$ 10,634.75 \$ 28,865.75	
Distribution Main From Darlington Rd To Gowrie Reservoir (6329) AC N680 N1131 GOWR 450 1,085 1985 6327 DICL N25 N1123 DARL 450 35 1991							\$ 369,177.75	\$ 329,677.25 \$ 10,634.75	

Table 4 (Water Assets - Existing and Future)

Water Asset ID No	Pipe Mat'l Type	U/S Node No	D/S Node No	Locality	Inside Dia (MM)	Length (M)	Year Constr'd	Replacement Cost (Assumed CPI increase of 3.0% 6/03 to 6/04)	Comment
From "WATER.DB"									
6328	AC	N1123	N680	DARL	450	95	1985	\$	28,865.75 )
Gowrie Reservoirs:							1940	\$ 1,245,064.00	
5.1 ML concrete Reservoir								\$	1,031,030.00
Control Valve (estimated)								\$	15,450.00
Land Acquisition (estimated)								\$	180,250.00
Access Road (estimated)								\$	10,300.00
(6330)	DICL	N1128	N1127	GOWR	375	20	1990	\$	5,356.00
6331	RC	N1128	N1127	GOWR	150	20	1920	\$	2,678.00
Distribution Main From Intersection With Rix's Ck Main To McDougall Hill Reservoir								\$ 44,384.76	
(5373)	AC	N78	N340	MCDO	200	240	1965	\$	23,484.00
6026	AC	N894	N909	MCDO	200	100	1965	\$	9,785.00
6082	AC	N909	N960	MCDO	300	15	1965	\$	2,348.40
6083	AC	N959	N960	MCDO	300	15	1965	\$	2,348.40
6084	AC	N909	N958	MCDO	300	15	1965	\$	2,348.40
6085	AC	N960	N962	MCDO	300	5	1965	\$	782.80
6086	AC	N961	N909	MCDO	300	21	1965	\$	3,287.76 )
McDougall Hill Reservoir & Pump Station:								\$ 946,868.70	
McDougall Hill Reservoir:							1965		
2.3 ML Concrete Reservoir								\$	631,647.50
Control Valve (estimated)								\$	20,600.00
Land Acquisition (estimated)								\$	206,000.00
Access Road (estimated)								\$	5,150.00
McDougall Hill Pump Station:							1995		
Installed Power for 8.0 L/s to 60 m = 13.2kW (where kW = (8.0 x 60 x 1.1)/(100 x 0.8) = 6.6) (For 2-pump, kW = 2 x 6.6 kW = 13.2 kW)								\$	52,571.20
Land Acquisition (estimated)								\$	-
Access Road (estimated)								\$	5,150.00
Power To Site (estimated):								\$	25,750.00
RETREAT ESTATE (includes EAST OF RETREAT with 50 Future Lots)								\$ 2,050,262.49	Total
Existing No Of Lots =		286	Future Lots =		197	Total =		483	
Existing Assets								\$ 1,919,545.49	Sub-Total
	UPVC			RETR	200	10	1994	\$ 1,900.00	Pipe to Retreat PS
				RETR			1994	\$ 79,360.00	Retreat PS
				RETR	250	1,150	2000	\$ 195,500.00	Pipe betw Retr PS & Retreat Res
							2000	\$ 473,662.02	Retreat Reservoir (2.0 ML standpipe)
6087	UPVC	N963	N969	RETR	200	210	1986	\$ 28,119.00	Retreat Road
6088	UPVC	N969	N970	RETR	200	238	1986	\$ 31,868.20	Retreat Road
6089	UPVC	N970	N971	RETR	200	205	1986	\$ 27,449.50	Retreat Road
6096	UPVC	N971	N978	RETR	200	205	1988	\$ 27,449.50	Retreat Road
6097	UPVC	N978	N979	RETR	200	190	1988	\$ 25,441.00	Retreat Road
6098	UPVC	N979	N980	RETR	200	180	1988	\$ 24,102.00	Retreat Road
6099	UPVC	N980	N981	RETR	200	175	1988	\$ 23,432.50	Retreat Road
6100	UPVC	N981	N982	RETR	200	140	1988	\$ 18,746.00	Retreat Road
6102	UPVC	N982	N984	RETR	200	218	1988	\$ 29,190.20	Retreat Road
6103	UPVC	N984	N985	RETR	200	260	1988	\$ 34,814.00	Retreat Road
6104	UPVC	N985	N986	RETR	200	155	1988	\$ 20,754.50	Retreat Road
6107	UPVC	N986	N989	RETR	200	150	1990	\$ 20,085.00	Retreat Road
6108	UPVC	N989	N990	RETR	200	210	1990	\$ 28,119.00	Retreat Road
6111	UPVC	N990	N993	RETR	200	240	1990	\$ 32,136.00	Retreat Road
6112	UPVC	N993	N995	RETR	200	350	1990	\$ 46,865.00	Retreat Road
6113	DICL	N996	N995	RETR	200	270	1990	\$ 44,496.00	Retreat Road
6114	DICL	N646	N996	RETR	200	115	1990	\$ 18,952.00	Retreat Road
6132	UPVC	N1004	N1015	RETR	150	170	1990	\$ 18,385.50	Retreat Road
6133	UPVC	N1015	N1016	RETR	150	160	1990	\$ 17,304.00	Retreat Road
6247	DICL	N1004	N646	RETR	200	245	1990	\$ 40,376.00	Retreat Road
6101	UPVC	N982	N983	RETR	150	140	1988	\$ 15,141.00	Wattle Ponds Road
6207	UPVC	N983	N1089	RETR	150	170	1995	\$ 18,385.50	Wattle Ponds Road
6208	UPVC	N1089	N644	RETR	150	150	1995	\$ 16,222.50	Wattle Ponds Road
6209	UPVC	N1090	N1091	RETR	150	120	1995	\$ 12,978.00	Wattle Ponds Road
6210	UPVC	N1091	N1093	RETR	150	170	1995	\$ 18,385.50	Wattle Ponds Road
6211	UPVC	N1093	N1092	RETR	150	120	1995	\$ 12,978.00	Wattle Ponds Road
6246	UPVC	N1090	N644	RETR	150	100	1995	\$ 10,815.00	Wattle Ponds Road
6393	UPVC	1092	1196	SING	150	166	1998	\$ 17,967.07	Wattle Ponds Road
6394	UPVC	1196	1197	SING	150	147	1998	\$ 15,880.10	Wattle Ponds Road
RNAN001	UPVC			RETR	150	336	2002	\$ 36,338.40	Wattle Ponds Road
6109	UPVC	N990	N991	RETR	150	225	1990	\$ 24,333.75	Brigadier Hammett Rd



Table 4 (Water Assets - Existing and Future)

Water Asset ID No	Pipe Mat'l Type	U/S Node No	D/S Node No	Locality	Inside Dia (MM)	Length (M)	Year Constr'd	Replacement Cost (Assumed CPI increase of 3.0%, 6/03 to 6/04)	Comment
From "WATER.DB"									
6110	UPVC	N992	N991	RETR	150	25	1990	\$ 2,703.75	Brigadier Hammett Rd
RNAN002	UPVC			RETR	150	1,271	2000	\$ 137,458.65	Brigadier Hammett Rd
RNAN003	UPVC			RETR	150	194	2003	\$ 20,981.10	Brigadier Hammett Rd
6122	UPVC	N1004	N1005	RETR	150	230	1990	\$ 24,874.50	Morris Road
6126	UPVC	N1005	N1009	RETR	150	160	1990	\$ 17,304.00	Morris Road
6127	UPVC	N1009	N1010	RETR	150	210	1992	\$ 22,711.50	Morris Road
6128	UPVC	N1010	N1011	RETR	150	200	1992	\$ 21,630.00	Morris Road
6129	UPVC	N1011	N1012	RETR	150	170	1992	\$ 18,385.50	Morris Road
6130	UPVC	N1012	N1013	RETR	150	95	1992	\$ 10,274.25	Nawaday Way
6131	UPVC	N1012	N1014	RETR	150	125	1992	\$ 13,518.75	Nawaday Way
6241	UPVC	N1013	N504	RETR	150	74	1995	\$ 8,003.10	Nawaday Way
RNAN004	UPVC			RETR	150	690	2003	\$ 74,623.50	Nawaday Way
6242	UPVC	N1014	N643	RETR	150	95	1992	\$ 10,274.25	Nawaday Way
6243	UPVC	N507	N526	RETR	150	185	1995	\$ 20,007.75	Nawaday Way
6245	UPVC	N507	N643	RETR	150	25	1995	\$ 2,703.75	Nawaday Way
6248	UPVC	N963	N964	RETR	200	4	1986	\$ 535.60	Bridgman & Retreat Rd Intersect'n
6249	UPVC	N964	N965	RETR	200	6	1986	\$ 803.40	Bridgman & Retreat Rd Intersect'n
6250	UPVC	N965	N346	RETR	200	6	1986	\$ 803.40	Bridgman & Retreat Rd Intersect'n
6251	DICL	N965	N342	RETR	150	15	1986	\$ 2,008.50	Bridgman & Retreat Rd Intersect'n
6252	DICL	N964	N343	RETR	150	15	1986	\$ 2,008.50	Bridgman & Retreat Rd Intersect'n
Future Assets								\$ 130,717.00	Sub-Total
	UPVC			RETR	150	1,040	2005-13	\$ 74,984.00	From Retreat Rd.To Gresham
	UPVC			RETR	150	573	2005-13	\$ 41,313.00	Remainder of Brigadiere Hammett
	UPVC			RETR	150	200	2005-13	\$ 14,420.00	Remainder of Wattle Ponds Road
PINNACLE ESTATE								\$ 580,621.30	Total
Existing No Of Lots =		0	Future Lots =		500	Total =		500	
Existing Assets								\$ 65,075.40	Sub-Total
	UPVC				200	304	2004	\$ 40,705.60	Gardner Cct, Trunk
	UPVC				200	182	2004	\$ 24,369.80	McMahon Way, Trunk
Future Assets								\$ 515,545.90	Sub-Total
	UPVC				250	394	2005-19	\$ 68,989.40	Gardner Cct, Trunk
	UPVC				200	545	2005-19	\$ 72,975.50	Gardner Cct, Trunk
	UPVC				200	2,790	2005-19	\$ 373,581.00	McMahon Way, Trunk
SINGLETON HEIGHTS UPPER ZONE								\$ 328,673.00	Total
Existing No Of Lots =		707	Future Lots =		0	Total =		707	
Existing assets								\$ 328,673.00	Sub-Total
5174	DICL	N160	N211	SHTS	200	150	1981	\$ 24,720.00	Gardner Circuit
5175	DICL	N211	N212	SHTS	200	80	1981	\$ 13,184.00	Gardner Circuit
5186	AC	N224	N223	SHTS	250	143	1981	\$ 25,039.30	Gardner Circuit
5187	AC	N223	N221	SHTS	250	150	1981	\$ 26,265.00	Gardner Circuit
5188	UPVC	N221	N220	SHTS	200	90	1981	\$ 12,051.00	Gardner Circuit
5189	UPVC	N220	N177	SHTS	200	120	1981	\$ 16,068.00	Gardner Circuit
5190	UPVC	N177	N178	SHTS	200	95	1981	\$ 12,720.50	Gardner Circuit
6293	AC	N224	N246	SHTS	250	7	1981	\$ 1,225.70	Gardner Circuit
5185	AC	N228	N224	SHTS	250	60	1981	\$ 10,506.00	Gardner Circuit
5265	DICL	N251	N250	SHTS	375	15	1991	\$ 4,017.00	Gardner Circuit
5266	DICL	N1173	N251	SHTS	300	80	1991	\$ 17,304.00	Gardner Circuit
5267	DICL	N1173	N228	SHTS	300	65	1991	\$ 14,059.50	Gardner Circuit
5268	DICL	N251	N252	SHTS	300	80	1991	\$ 17,304.00	Gardner Circuit
SHUZ001	PVC			SHTS	250	300	2004	\$ 52,530.00	Gardner Circuit
5243	UPVC	N187	N227	SHTS	200	90	1981	\$ 12,051.00	Lachlan Avenue
5244	UPVC	N227	N226	SHTS	200	90	1981	\$ 12,051.00	Lachlan Avenue
5245	UPVC	N226	N224	SHTS	200	140	1981	\$ 18,746.00	Lachlan Avenue
5246	UPVC	N225	N224	SHTS	200	80	1981	\$ 10,712.00	Lachlan Avenue
5235	UPVC	N193	N194	SHTS	200	90	1980	\$ 12,051.00	Lachlan Avenue
5236	UPVC	N194	N186	SHTS	200	70	1981	\$ 9,373.00	Lachlan Avenue
5237	UPVC	N186	N187	SHTS	200	50	1981	\$ 6,695.00	Lachlan Avenue
SINGLETON HEIGHTS MIDDLE ZONE								\$ 125,196.50	Total

Table 4 (Water Assets - Existing and Future)

Water Asset ID No	Pipe Mat'l Type	U/S Node No	D/S Node No	Locality	Inside Dia (MM)	Length (M)	Year Constr'd	Replacement Cost (Assumed CPI increase of 3.0%, 6/03 to 6/04)	Comment
From "WATER.DB"									
Existing No Of Lots =		1028	Future Lots =		0	Total =	1028		
Existing Assets								\$ 125,196.50	Sub-Total
5194	UPVC	N181	N161	SHTS	200	10	1981	\$ 1,339.00	Gardner Circuit
5195	UPVC	N161	N160	SHTS	200	15	1981	\$ 2,008.50	Gardner Circuit
5170	UPVC	N152	N157	SHTS	200	140	1981	\$ 18,746.00	Wilcox Avenue
5172	UPVC	N157	N159	SHTS	200	90	1981	\$ 12,051.00	Wilcox Avenue
5173	UPVC	N159	N160	SHTS	200	90	1981	\$ 12,051.00	Wilcox Avenue
6292	UPVC	N152	N230	SHTS	200	10	1981	\$ 1,339.00	Wilcox Avenue
5161	UPVC	N146	N149	SHTS	200	90	1978	\$ 12,051.00	Wilcox Avenue
5162	UPVC	N149	N170	SHTS	200	5	1978	\$ 669.50	Wilcox Avenue
5163	UPVC	N149	N150	SHTS	200	30	1978	\$ 4,017.00	Wilcox Avenue
5164	UPVC	N150	N151	SHTS	200	100	1981	\$ 13,390.00	Wilcox Avenue
5165	UPVC	N151	N152	SHTS	200	20	1981	\$ 2,678.00	Wilcox Avenue
5157	UPVC	N145	N146	SHTS	200	160	1978	\$ 21,424.00	Wilcox Avenue
5130	AC	N121	N123	SHTS	200	115	1973	\$ 15,398.50	Wilcox Avenue
5131	AC	N123	N145	SHTS	200	60	1975	\$ 8,034.00	Wilcox Avenue
MAISON DIEU INDUSTRIAL ESTATE								\$ 1,059,964.66	Total
Existing No Of Lots =		271	Future Lots =		110	Total =	381		
Existing Assets								\$ 905,165.96	Sub-Total
Apex Lookout Pump Station & Reservoir:								\$ 715,108.40	
Apex Lookout Pump Station:									
Installed Power for 11.5 L/s to 55 m = 17.4kW (where kW = (11.5 x 55 x 1.1)/(100 x 0.8) = 8.7) (For 2-pump, kW = 2 x 8.7 kW = 17.4 kW)							1988	\$ 62,088.40	
Land Acquisition (estimated)							1988	\$ 77,250.00	
Access Road (estimated)							1988	\$ 10,300.00	
Power To Site (estimated)							1988	\$ 25,750.00	
Apex Lookout Reservoir:									
1.0 ML Steel Standpipe Reservoir							1988	\$ 428,480.00	
Control Valve (estimated)							1988	\$ 3,090.00	
Land Acquisition (estimated)							1988	\$ 103,000.00	
Access Road (estimated)							1988	\$ 5,150.00	
Gowrie Pump Station (same as Apex Lookout PS)								\$ -	
9064	Hist Cost=	\$7,000.00	P.S.	CCF=	1-24		1994	\$ 8,680.00	
9065	Hist Cost=	\$5,000.00	P.S.	(1995)			1945	\$ 6,200.00	
9066	Hist Cost=	\$20,000.00	P.S.				1985	\$ 24,800.00	
9067	Hist Cost=	\$20,000.00	P.S.				1985	\$ 24,800.00	
9058	Hist Cost=	\$10,000.00	P.S.				1985	\$ 12,400.00	
6038	UPVC	N913	N914	MAIS	150	100	1977	\$ 10,815.00	Maison Dieu Road
6057	UPVC	N913	N932	MAIS	150	150	1977	\$ 16,222.50	Hambledon Hill Road
6058	UPVC	N932	N933	MAIS	150	140	1977	\$ 15,141.00	Hambledon Hill Road
6059	UPVC	N933	N934	MAIS	150	130	1977	\$ 14,059.50	Hambledon Hill Road
6060	UPVC	N935	N934	MAIS	150	105	1977	\$ 11,355.75	Hambledon Hill Road
6067	UPVC	N935	N944	MAIS	150	100	1977	\$ 10,815.00	Hambledon Hill Road
6068	UPVC	N944	N945	MAIS	150	140	1977	\$ 15,141.00	Hambledon Hill Road
6069	UPVC	N945	N946	MAIS	150	70	1977	\$ 7,570.50	Hambledon Hill Road
6070	UPVC	N947	N946	MAIS	150	90	1977	\$ 9,733.50	Hambledon Hill Road
6071	UPVC	N947	N948	MAIS	200	40	1986	\$ 5,356.00	Lookout Road
6072	UPVC	N949	N948	MAIS	200	80	1986	\$ 10,712.00	Lookout Road
6073	UPVC	N950	N946	MAIS	150	70	1977	\$ 7,570.50	Hambledon Hill Road
6074	UPVC	N950	N951	MAIS	150	130	1977	\$ 14,059.50	Hambledon Hill Road
6075	UPVC	N951	N952	MAIS	150	110	1977	\$ 11,896.50	Hambledon Hill Road
6076	UPVC	N952	N1129	MAIS	150	165	1977	\$ 17,844.75	Hambledon Hill Road
6410	UPVC	1207	948	MAIS	150	109	1998	\$ 11,764.56	Lookout Road
Future Assets								\$ 154,798.70	Sub-Total
UPVC					150	1,697	2007	\$ 122,353.70	Lookout Rd To Magpie, Trunk
UPVC					150	450	2005	\$ 32,445.00	Press Boost Main From McDougalls P.S.
GOWRIE GATES DEVELOPMENT								\$ 166,345.00	Total
Existing No Of Lots =		0	Future Lots =		550	Total =	550		
Future Assets								\$ 166,345.00	Sub-Total



Table 4 (Water Assets - Existing and Future)

Water Asset ID No	Pipe Mat'l Type	U/S Node No	D/S Node No	Locality	Inside Dia (MM)	Length (M)	Year Constr'd	Replacement Cost (Assumed CPI increase of 3.0%, 6/03 to 6/04)	Comment
From "WATER.DB"									
	UPVC				150	300	2007-17	\$ 32,445.00	Trunk
	UPVC				200	1,000	2007-17	\$ 133,900.00	Trunk
HUNTERVIEW ESTATE								\$ 651,620.47	Total
Existing No Of Lots =		713	Future Lots =		187	Total =		900	
Existing Assets								\$ 651,620.47	Sub-Total
5349	AC	N310	N325	HUNT	375	260	1982	\$ 69,628.00	Acacia Circuit
5307	AC	N285	N290	HUNT	300	75	1982	\$ 16,222.50	Acacia Circuit
5308	AC	N290	N291	HUNT	300	105	1982	\$ 22,711.50	Acacia Circuit
5309	AC	N291	N294	HUNT	375	75	1982	\$ 20,085.00	Acacia Circuit
5310	AC	N294	N295	HUNT	375	150	1982	\$ 40,170.00	Acacia Circuit
5311	AC	N295	N309	HUNT	375	60	1982	\$ 16,068.00	Acacia Circuit
5312	AC	N309	N310	HUNT	375	115	1982	\$ 30,797.00	Acacia Circuit
5303	AC	N285	N286	HUNT	300	40	1982	\$ 8,652.00	Acacia Circuit
5304	AC	N286	N287	HUNT	300	30	1993	\$ 6,489.00	Acacia Circuit
5305	AC	N287	N288	HUNT	250	25	1993	\$ 4,377.50	Acacia Circuit
HV001	UPVC	N288	NHV1	HUNT	250	50	2002	\$ 8,755.00	Acacia Circuit
HV002	UPVC	NHV1	NHV2	HUNT	200	83	2002	\$ 11,113.70	Acacia Circuit
HV003	UPVC	NHV2	NHV3	HUNT	200	243	2002	\$ 32,537.70	Acacia Circuit
5313	UPVC	N295	N296	HUNT	200	80	1982	\$ 10,712.00	Burbank Crescent
5314	UPVC	N296	N297	HUNT	200	90	1982	\$ 12,051.00	Burbank Crescent
5328	AC	N291	N292	HUNT	375	100	1982	\$ 26,780.00	Casey Drive
5330	AC	N292	N315	HUNT	375	80	1982	\$ 21,424.00	Casey Drive
5331	AC	N315	N316	HUNT	375	50	1982	\$ 13,390.00	Casey Drive
63674	UPVC	N316	N164	HUNT	250	76	1995	\$ 13,307.60	Casey Drive
6364	UPVC	N316	N1164	HUNT	250	75	1995	\$ 13,132.50	Casey Drive
6365	UPVC	N1164	N1166	HUNT	250	115	1995	\$ 20,136.50	Casey Drive
6366	UPVC	N1166	N1167	HUNT	250	60	1995	\$ 10,506.00	Casey Drive
6392	UPVC	1167	1196	SING	250	103	1998	\$ 17,977.52	Casey Drive
6401	UPVC	1196	1202	SING	250	96	1998	\$ 16,801.62	Casey Drive
6402	UPVC	1202	1203	SING	250	92	1998	\$ 16,104.14	Casey Drive
HV004	UPVC	N1203	NHV4	HUNT	250	316	2002	\$ 55,331.60	Casey Drive
HV005	UPVC	NHV4	NHV5	HUNT	200	115	2003	\$ 15,398.50	Casey Drive
HV006	UPVC	NHV5	NHV6	HUNT	200	67	2003	\$ 8,971.30	Casey Drive
HV007	UPVC	NHV7	NHV8	HUNT	200	83	2002	\$ 11,113.70	Casey Drive
HV008	UPVC	NHV6	NHV3	HUNT	200	351	2004	\$ 46,998.90	Wilkinson Boulevard
HV009	UPVC	NHV3	NHV8	HUNT	200	253	2002	\$ 33,876.70	Wilkinson Boulevard
SINGLETON TOWN (LOWER ZONE, OLD PART OF TOWN)								\$ 2,226,401.65	Total
Existing No Of Lots =		2951	Future Lots =		100	Total =		3051	
Standpipe (equivalent lots):									
Existing No Of Lots =		75	Future Lots =		50	Total =		125	
		3026			150			3176	
Existing Assets								\$ 2,226,401.65	Sub-Total
6009	AC	N419	N831	SING	200	140	1980	\$ 18,746.00	Civic Avenue
6010	AC	N831	N864	SING	200	90	1980	\$ 12,051.00	Civic Avenue
6011	AC	N864	N891	SING	200	75	1980	\$ 10,042.50	Civic Avenue
6012	AC	N891	N892	SING	200	10	1980	\$ 1,339.00	Civic Avenue
6014	UPVC	N864	N865	SING	200	15	1980	\$ 2,008.50	Civic Avenue
6351	AC	N407	N235	SING	375	10	1986	\$ 2,678.00	Queen Street
6263	UPVC	N416	N235	SING	250	70	1986	\$ 12,257.00	Queen Street
5457	AC	N416	N417	SING	250	80	1981	\$ 14,008.00	Queen Street
6290	AC	N417	N243	SING	200	17	1981	\$ 2,276.30	Queen Street
5458	AC	N417	N418	SING	250	65	1981	\$ 11,381.50	Queen Street
5459	AC	N418	N419	SING	250	65	1981	\$ 11,381.50	Queen Street
5897	AC	N419	N784	SING	250	150	1981	\$ 26,265.00	Queen Street
5898	AC	N784	N785	SING	250	45	1981	\$ 7,879.50	Queen Street
5899	AC	N783	N782	SING	200	95	1982	\$ 12,720.50	Queen Street
5909	AC	N783	N785	SING	250	10	1982	\$ 1,751.00	Queen Street
5900	AC	N782	N781	SING	200	125	1982	\$ 16,737.50	Queen Street
6264	AC	N407	N385	SING	300	100	1986	\$ 21,630.00	John Street
6283	AC	N551	N550	SING	250	5	1975	\$ 875.50	John Street
5414	AC	N383	N433	SING	200	80	1981	\$ 10,712.00	John Street
5415	AC	N383	N385	SING	200	115	1981	\$ 15,398.50	John Street
5425	DICL	N349	N348	SING	375	20	1985	\$ 5,356.00	John Street
5426	DICL	N348	N331	SING	375	5	1985	\$ 1,339.00	John Street
5427	DICL	N348	N433	SING	200	30	1981	\$ 4,944.00	John Street
5422	UPVC	N575	N349	CBD	200	60	1985	\$ 8,034.00	John Street

Table 4 (Water Assets - Existing and Future)

Water Asset ID No	Pipe Mat'l Type	U/S Node No	D/S Node No	Locality	Inside Dia (MM)	Length (M)	Year Constr'd	Replacement Cost (Assumed CPI increase of 3.0%, 6/03 to 6/04)	Comment
From "WATER.DB"									
5423	DICL	N351	N350	CBD	300	20	1985	\$ 4,326.00	John Street
5429	DICL	N350	N405	CBD	200	125	1995	\$ 20,600.00	John Street
5433	DICL	N405	N406	CBD	200	135	1995	\$ 22,248.00	John Street
5434	DICL	N543	N406	CBD	200	110	1995	\$ 18,128.00	John Street
5552	DICL	N543	N425	CBD	200	70	1995	\$ 11,536.00	John Street
5553	UPVC	N418	N420	SING	200	120	1981	\$ 16,068.00	Bishopgate Street
5544	DICL	N425	N542	CBD	200	10	1995	\$ 1,648.00	John Street
5550	UPVC	N532	N542	CBD	200	102	1995	\$ 13,657.80	John Street
5549	UPVC	N532	N533	CBD	200	118	1995	\$ 15,800.20	John Street
5609	UPVC	N525	N534	SING	200	155	1995	\$ 20,754.50	John Street
5610	UPVC	N534	N533	SING	200	142	1995	\$ 19,013.80	John Street
5595	DICL	N475	N523	SING	200	130	1940	\$ 21,424.00	John Street
5732	UPVC	N549	N550	SING	200	125	1977	\$ 16,737.50	John Street
6259	AC	N385	N540	SING	200	20	1986	\$ 2,678.00	New England Highway
6258	AC	N412	N540	SING	200	140	1986	\$ 18,746.00	New England Highway
5455	AC	N410	N411	SING	200	95	1985	\$ 12,720.50	New England Highway
5456	DICL	N411	N412	SING	200	15	1985	\$ 2,472.00	New England Highway
6288	AC	N408	N409	SING	200	20	1985	\$ 2,678.00	New England Highway
6289	AC	N410	N409	SING	200	5	1985	\$ 669.50	New England Highway
5466	UPVC	N426	N408	SING	200	105	1983	\$ 14,059.50	New England Highway
5473	UPVC	N426	N426	SING	200	140	1983	\$ 18,746.00	New England Highway
5475	UPVC	N431	N429	SING	200	150	1983	\$ 20,085.00	New England Highway
5477	UPVC	N431	N432	SING	200	10	1983	\$ 1,339.00	New England Highway
5870	UPVC	N689	N688	SING	200	135	1985	\$ 18,076.50	New England Highway
5871	UPVC	N688	N687	SING	200	190	1985	\$ 25,441.00	New England Highway
5853	UPVC	N687	N703	SING	200	30	1985	\$ 4,017.00	New England Highway
5854	UPVC	N703	N804	SING	200	25	1985	\$ 3,347.50	New England Highway
5450	AC	N400	N430	SING	300	110	1985	\$ 23,793.00	New England Highway
5451	AC	N398	N430	SING	300	15	1985	\$ 3,244.50	New England Highway
5452	AC	N398	N397	SING	300	140	1985	\$ 30,282.00	New England Highway
5453	AC	N397	N335	SING	300	130	1985	\$ 28,119.00	New England Highway
5454	DICL	N335	N409	SING	300	25	1986	\$ 5,407.50	New England Highway
5555	AC	N497	N400	SING	300	30	1985	\$ 6,489.00	New England Highway
5772	UPVC	N686	N685	SING	300	90	1985	\$ 19,467.00	New England Highway
5773	UPVC	N683	N685	SING	300	130	1985	\$ 28,119.00	New England Highway
5774	UPVC	N447	N683	SING	300	135	1985	\$ 29,200.50	New England Highway
5775	UPVC	N497	N447	SING	300	110	1985	\$ 23,793.00	New England Highway
6267	UPVC	N237	N854	SING	300	100	1985	\$ 21,630.00	New England Highway
6268	UPVC	N686	N237	SING	300	25	1985	\$ 5,407.50	New England Highway
6319	UPVC	N689	N690	SING	200	10	1985	\$ 1,339.00	New England Highway
5361	DICL	N248	N337	DUNO	375	100	1986	\$ 26,780.00	Newton Street
5362	MS	N337	N338	DUNO	400	85	1986	\$ 25,827.25	Dunolly Bridge
5363	DICL	N331	N338	DUNO	375	65	1986	\$ 17,407.00	Dunolly Bridge
5374	DICL	N335	N331	SING	375	290	1986	\$ 77,662.00	Campbell Street
5416	UPVC	N352	N353	SING	200	115	1985	\$ 15,398.50	Campbell Street
5417	UPVC	N353	N362	SING	200	10	1985	\$ 1,339.00	Campbell Street
5419	UPVC	N362	N408	SING	200	165	1985	\$ 22,093.50	Campbell Street
5776	AC	N497	N691	SING	300	150	1986	\$ 32,445.00	Goulburn Street
5777	AC	N691	N692	SING	300	120	1986	\$ 25,956.00	Goulburn Street
5778	AC	N692	N693	SING	300	150	1986	\$ 32,445.00	Goulburn Street
5780	AC	N693	N694	SING	300	145	1986	\$ 31,363.50	Broughton Street Extended
5782	AC	N694	N695	SING	300	45	1986	\$ 9,733.50	Broughton Street Extended
5783	AC	N695	N696	SING	300	150	1987	\$ 32,445.00	Broughton Street Extended
5785	AC	N696	N698	SING	300	135	1987	\$ 29,200.50	Broughton Street Extended
6269	AC	N238	N698	SING	300	10	1987	\$ 2,163.00	Boonal Street
5789	AC	N723	N698	SING	300	130	1987	\$ 28,119.00	Boonal Street
5819	AC	N723	N761	SING	300	145	1987	\$ 31,363.50	Boonal Street
5820	AC	N761	N758	SING	300	225	1987	\$ 48,667.50	Boonal Street
5915	DICL	N809	N758	SING	200	10	1993	\$ 1,648.00	Boonal Street
5917	DICL	N758	N823	SING	200	115	1993	\$ 18,952.00	Boonal Street
8000	DICL	N828	N823	SING	200	140	1993	\$ 23,072.00	Boonal Street
5479	DICL	N437	N438	SING	200	125	1986	\$ 20,600.00	William Street
5480	AC	N438	N439	SING	300	120	1986	\$ 25,956.00	William Street
5481	AC	N439	N440	SING	300	170	1986	\$ 36,771.00	William Street
5482	AC	N440	N441	SING	300	135	1986	\$ 29,200.50	William Street
5483	AC	N444	N441	SING	300	70	1986	\$ 15,141.00	William Street
5484	AC	N444	N446	SING	300	215	1986	\$ 46,504.50	William Street
5485	AC	N446	N447	SING	300	20	1986	\$ 4,326.00	William Street
5493	AC	N438	N480	SING	300	280	1986	\$ 60,564.00	Bathurst Street
5540	AC	N480	N508	SING	300	180	1986	\$ 38,934.00	Bathurst Street
5541	AC	N508	N522	SING	300	75	1986	\$ 16,222.50	Bathurst Street
5542	AC	N522	N538	SING	300	150	1986	\$ 32,445.00	Bathurst Street
6313	AC	N538	N539	SING	300	10	1986	\$ 2,163.00	Bathurst Street
5637	DICL	N568	N567	SING	200	120	1988	\$ 19,776.00	Bathurst Street
5638	DICL	N567	N538	SING	200	115	1988	\$ 18,952.00	Bathurst Street
5613	AC	N549	N564	SING	200	55	1977	\$ 7,364.50	Harriett Street

Table 4 (Water Assets - Existing and Future)

Water Asset ID No	Pipe Mat'l Type	U/S Node No	D/S Node No	Locality	Inside Dia (MM)	Length (M)	Year Constr'd	Replacement Cost (Assumed CPI increase of 3.0%, 6/03 to 6/04)	Comment
From "WATER.DB"									
5614	AC	N565	N564	SING	200	220	1977	\$ 29,458.00	Harriett Street
5615	AC	N565	N563	SING	200	75	1977	\$ 10,042.50	Harriett Street
6312	AC	N563	N539	SING	200	15	1977	\$ 2,008.50	Harriett Street
5728	AC	N678	N677	SING	200	135	1977	\$ 18,076.50	Harriett Street
5729	AC	N539	N677	SING	200	170	1937	\$ 22,763.00	Harriett Street
5730	AC	NN678	N669	SING	200	120	1977	\$ 16,068.00	Harriett Street
5607	DICL	N525	N527	SING	200	100	1908	\$ 16,480.00	Gowrie Street
5608	UPVC	N728	N527	SING	200	380	1983	\$ 50,882.00	Gowrie Street
6303	AC	N697	N728	SSIN	200	140	1930	\$ 18,746.00	Gowrie Street
6304	AC	N697	N1124	SSIN	200	235	1960	\$ 31,466.50	Gowrie Street
6309	DICL	N524	N525	SING	200	5	1908	\$ 824.00	Gowrie Street
6353	MS	N599	N1124	DARL	300	90	1960	\$ 19,467.00	Gowrie Street (river crossing)
6295	AC	N680	N257	SSIN	250	50	1960	\$ 8,755.00	Gowrie Street Extended
6296	AC	N257	N1124	SSIN	300	176	1960	\$ 38,068.80	Gowrie Street Extended
6298	AC	N340	N1125	SSIN	375	226	1960	\$ 60,522.80	Gowrie Street Extended
6299		N	N332	SSIN	250	275	1981	\$ 48,152.50	Gowrie Street Extended
6333	AC	N1124	N1125	GOWR	300	10	1960	\$ 2,163.00	Gowrie Street Extended
6285	AC	N667	N241	GLEN	250	640	1982	\$ 112,064.00	Waterworks Lane
6300	AC	N332	N895	SSIN	200	5	1960	\$ 669.50	Waterworks Lane
6301		N332	N249	SSIN	250	12	1960	\$ 2,101.20	Waterworks Lane
6302		N113	N249	SSIN	250	20	1960	\$ 3,502.00	Waterworks Lane
GRESFORD ROAD SUB-AREA								\$ 552,516.00	Total
Existing No Of Lots =		0	Future Lots =		150	Total =		150	
Future Assets								\$ 552,516.00	Sub-Total
Land For Elevated Tank							2005	\$ 200,000.00	
Delivery Main From Singleton To Gresford Road Sub-Area									
	UPVC				100	1,070	2007	\$ 77,147.00	
	UPVC				80	1,860	2007	\$ 105,369.00	
Booster Water Pump Station							2007	\$ 45,000.00	
100 KL Elevated Tank (12m High)							2007	\$ 125,000.00	
BRIDGMAN RIDGE								\$ 262,650.00	Total
Existing No Of Lots =		0	Future Lots =		800	Total =		800	
Future Assets								\$ 262,650.00	Sub-Total
	UPVC				250	1,500	2007-15	\$ 262,650.00	Trunk
MT THORLEY, BROKE & BULGA (& ARMY)								\$ 56,074.30	Total
As the following section of main was fully paid by the Army, there will be no charge to the army in using the main.									
Mt Thorley:									
Existing No Of Lots =		76	Future Lots =		14	Total =		90	
Broke:									
Existing No Of Lots =		110 (backlog)	Future Lots =		47	Total =		157	
Bulga:									
Existing No Of Lots =		35 (backlog)	Future Lots =		9	Total =		44	
		221			70			291	Sub - total
Army (equivalent No of lots):									
Existing No Of Lots =		475	Future Lots =		150	Total =		625	
		696			220			916	Grand Total
Thus, Mt Thorley, Broke & Bulga will only have to pay the following % towards the cost of the main: 31.77% (= 291 x 100 / 916).									
Existing Assets								\$ 56,074.30	Sub-Total
Delivery Main From Singleton To Putty Road								\$ 56,074.30	
(ST001	AC	N332	NST1=NMET1	GLEN	250	1,008	1982	\$	56,074.30 )
MT THORLEY, BROKE & BULGA								\$ 1,651,308.75	Total
Mt Thorley:									
Existing No Of Lots =		76	Future Lots =		14	Total =		90	
Broke:									
Existing No Of Lots =		110 (backlog)	Future Lots =		47	Total =		157	
Bulga:									
Existing No Of Lots =		35 (backlog)	Future Lots =		9	Total =		44	

Table 4 (Water Assets - Existing and Future)

Water Asset ID No	Pipe Mat'l Type	U/S Node No	D/S Node No	Locality	Inside Dia (MM)	Length (M)	Year Constr'd	Replacement Cost (Assumed CPI increase of 3.0%, 6/03 to 6/04)	Comment
From "WATER.DB"									
		221			70		291		
Existing Assets								\$ 1,651,308.75	Sub-Total
9101	Hist Cost=	\$148,702.00	Land	CCF=	1-24		1980	\$ 11,595.24	Assumed only 50% of land for T-Nest & Bldg applied.
Mt Thorley	Treated Reservoir:						1980	\$ 516,030.00	
	1.0 ML Steel Standpipe Reservoir								\$ 428,480.00
	Control Valve (estimated)								\$ 2,575.00
	Land Acquisition (estimated)								\$ 82,400.00
	Access Road (estimated)						1980		\$ 2,575.00
9103	Est Cost=	\$490,252.00	Bldg & Site Services				1980	\$ 100,000.00	Assumed reduced value for Bldg & Dosing Equipment
Naleen Pump Station:								\$ 107,120.00	
	Installed Power = 10.0 kW						1998		\$ 45,320.00
	Land Acquisition (estimated)								\$ 51,500.00
	Access Road (estimated)								\$ 5,150.00
	Power To Site (estimated)								\$ 5,150.00
Delivery Main From & Along Putty Road (Singleton) To Mt Thorley								\$ 901,250.00	
(MT001	UPVC	NMT1	NMT2		200	7,000	1998		\$ 684,950.00
MT002	UPVC	NMT2	NMT3		150	3,000	1998		\$ 216,300.00 )
Distribution Main in Thrift Close								\$ 26,908.75	
(6172	UPVC	N1059	N1061	THOR	200	115	1979		\$ 11,252.75
6173	UPVC	N1061	N1073	THOR	200	160	1979		\$ 15,656.00 )
BRIDGMAN RIDGE/HUNTERVIEW								\$ 85,098.60	Total
Bridgman Ridge:									
Existing No Of Lots =		0	Future Lots =		800	Total =		800	
Hunterview:									
Existing No Of Lots =		713	Future Lots =		187	Total =		900	
		713			987			1700	
Future Assets								\$ 85,098.60	Sub-Total
	UPVC				375	290	2006	\$ 68,103.60	Wattle Ponds intersection to Pioneer
	UPVC				250	132	2007	\$ 16,995.00	Pioneer Road to Casey Drive
BROKE								\$ 1,548,317.00	Total
Existing No Of Lots =		110 (backlog)	Future Lots =		47	Total =		157	
Future Assets								\$ 1,548,317.00	Sub-Total
Broke W.S. System (without retic mains, cost = \$1,548,317.00)							2005	\$ 700,000.00	
(Cost derived from MEU's Broke W.S. Report, July 2003)							2006	\$ 848,317.00	
BULGA								\$ 743,000.00	Total
Existing No Of Lots =		35 (backlog)	Future Lots =		9	Total =		44	
Future Assets								\$ 743,000.00	Sub-Total
9,700m of 75mm O.D. poly feeder main (Mt Thorley to Bulga)							2012	\$ 533,000.00	
5,000m of 63 O.D. distribution main (within Bulga)							2012	\$ 210,000.00	
CAMBERWELL								\$ 547,000.00	Total
Existing No Of Lots =		67 (backlog)	Future Lots =		6	Total =		73	
Future Assets								\$ 547,000.00	Sub-Total
9,700m of 63mm O.D. poly feeder main							2020	\$ 407,000.00	
4,000m of 50MM O.D. distribution main							2020	\$ 140,000.00	
JERRY'S PLAINS (A Separate System To Singleton)								\$ 874,732.65	Total
Existing No Of Lots =		58	Future Lots =		28	Total =		86	
Existing Assets								\$ 781,569.15	Sub-Total

Table 4 (Water Assets - Existing and Future)

Water Asset ID No	Pipe Mat'l Type	U/S Node No	D/S Node No	Locality	Inside Dia (MM)	Length (M)	Year Constr'd	Replacement Cost (Assumed CPI increase of 3.0%, 6/03 to 6/04)	Comment
From "WATER.DB"									
	80mm uPVC trunk main (for 90mm poly)					11354	2003	\$ 491,174.04	
	100mm DI/CL trunk main (for 80mm Victaulic Coupled galvanised steel pipe)					620	2003	\$ 52,365.20	
Reservoir	32 KL concrete tank at Plashett (estimated)						2003	10,300	
Section 2.6	Control Valve (estimated)						2003	2,575	
	Land Acquisition (estimated)						2003	0	
	Access Road (estimated)						2003	0	
Underbore	Gully Crossing (80m)						2003	4,759	
Underbore	River Crossing (200m)						2003	72,840	
6214	UPVC N1140	N1135	JERR	100	450	1989	\$	24,565.50	Queen Street
6217	UPVC N1133	N1099	JERR	100	170	1989	\$	9,280.30	Pagan Street
6219	UPVC N1099	N1100	JERR	100	140	1989	\$	7,642.60	Pagan Street
	UPVC		JERR	90	425	1989	\$	23,200.75	Pagan Street
	UPVC N1108	N1231	JERR	100	224	1999	\$	12,228.16	Pagan Street
	UPVC P.S.	N1231	JERR	100	1294	2001	\$	70,639.46	P.S. to Pagan Street
Future Assets								\$ 93,163.50	Sub-Total
Table 3.1	100mm uPVC trunk main					450	2005	\$ 24,565.50	Queen Street
Table 3.1	100mm uPVC trunk main (for 160mm poly)					200	2005	\$ 10,918.00	Queen Street
Reservoir	120 KL concrete tank in Quen St (estimated)						2005	\$ 15,450.00	
Section 2.6	Control Valve (estimated)						2005	\$ 1,030.00	
	Land Acquisition (estimated)						2005	\$ 20,600.00	
	Access Road (estimated, for gate)						2005	\$ 20,600.00	

## Water Technical Report for Development Servicing Plan

[illegible]Table 5  
(Water Capital  
Works)