

## **Wellington Council**

DEVELOPMENT SERVICING PLAN No. 1 WELLINGTON COUNCIL

345

\$15 \$1

February 2006



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- A Developer Charge Model
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#### **EXECUTIVE SUMMARY**

This Development Servicing Plan (DSP) covers water supply and/or sewerage developer charges in relation to the development areas within the Wellington Council Local Government Area (LGA).

This Development Servicing Plan has been prepared in accordance with the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (2002) issued by the Minister for Land and Water Conservation, pursuant to Section 306(3) of the *Water Management Act 2000*.

The area covered by this DSP is described in Section 2.2 and the existing and proposed works serving the area shown in Section 4.

Timing and expenditures for works serving the area's covered by the DSP are also shown in Section 4.

Standards of service to be provided in the DSP area's are summarised in Section 5.

The water supply and sewerage developer charges for the area's covered by this DSP have been calculated as follows:

DSP	Description	Developer Charge (\$ per ET)
Α	Wellington Water Supply	3,735
В	Geurie Water Supply	8,311
С	Mumbil Water Supply	1,541
D	Wellington Sewerage	1,314
Е	Geurie Sewerage	3,467
F	Mumbil Sewerage	3,035

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

in the period between any reviews, developer charges will be adjusted annually on the basis of the movements in the CPI for Sydney, excluding the impact of GST.

The developer shall be responsible for the full cost of the water supply and/or sewerage design and construction of reticulation works to and within subdivisions.



### 1. INTRODUCTION

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

A Development Servicing Plan (DSP) is a document that details the developer charges to be levied on development areas utilising Wellington Shire Council's water and sewer infrastructure.

This DSP covers water supply and sewerage developer charges in regard to development areas served by Wellington Shire Council (WSC).

This DSP has been prepared in accordance with the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (December 2002) issued by the Minister for Land and Water Conservation, pursuant to section 306 (3) of the *Water Management Act 2000*.

This DSP supersedes any other requirements related to water supply and/or sewerage developer charges for the area covered by the DSP. This DSP takes precedence over any of Councils Codes or Policies where there are any inconsistencies relating to water supply and/or sewerage developer charges.



### 2. ADMINISTRATION

#### 2.1 Name of Development of Servicing Plan

This DSP is known as Wellington Council Development Servicing Plan No.1.

#### 2.2 Land to Which This Plan Applies

This DSP applies to all land within the Wellington Council LGA that is within the existing and proposed service areas of the urban areas of Wellington, Geurie and Mumbil as illustrated in **Figure 1** (LGA Area) and **Figures 2 – 7** (Wellington, Geurie & Mumbil water and sewer areas).

#### 2.3 Date of Commencement of Plan

Council adopted this DSP on the	_ 2006
The DSP came into effect on the	2006

This Plan will apply to all Development Applications determined on or after the date the Plan came into effect.

This Plan will also apply to existing development approvals that have water supply and/or sewerage developer charges outstanding.

#### 2.4 How will the DSP be applied?

In determining a Development Application, Council may impose a condition of consent requiring payment of a monetary contribution in accordance with the provisions of this DSP, known as a developer charge.

The condition of development consent will outline the developer charge amount payable in monetary terms at the time the consent is issued. However, conditions of consent shall advise that the Developer Contributions will be at that rate which applies at the time of payment. Therefore the rate may increase from time of issue of the development consent through indexation or through the replacement or review of this DSP.

The developer charge is the cost per Equivalent Tenement (ET) within the relevant water and/or sewerage infrastructure. An ET is the equivalent demand or loading from a standard residential dwelling.

The developer charge payable for connection to the respective water and/or sewerage system is thus:

## Assessed Demand or Loading (ET) x Developer Charge (\$/ET)

In order to assess the developer charge applicable to a specific development, it is necessary to assess the demand/loading (in ET terms) that the proposed development will place on the relevant water and/or sewerage systems.

For the case of a development involving the creation of additional residential lots, this is a relatively simple process. The additional demand or loading created by the development is the number of additional lots. The process is illustrated in the following example.



#### Example A

The developer charge for a water supply system is determined to be \$2,000/ET, and for sewerage \$4,500/ET. Council receives an application to connect a proposed subdivision, which will create an additional 15 residential lots.

The developer charge for water is: 15 ET x \$2,000/ET = \$30,000The developer charge for sewerage is: 15 ET x \$4,500/ET = \$67,500Total Section 64 developer charge is \$97,500

The process of assessing the demand or loading of a potential development can be more complex if the development contains non-residential elements. For this case it is necessary to estimate the number of standard residential dwellings required to generate an equivalent demand or loading to the proposed non-residential development.

In order to assist with the assessment of water and/or sewer demand, general guidelines can be obtained from the Water Supply Investigation Manual (1986) and the Manual of Practice: Sewer Design (1984). Both documents were originally prepared by the Public Works Department of NSW and are now managed by Department of Energy, Utilities and Sustainability (DEUS) of NSW.

The process of determining a developer charge for a non-residential development, using these guidelines is illustrated in the following example.

#### Example B

The developer charge for a water supply system is determined to be \$2,000/ET, and for sewerage \$4,500/ET. Council receives an application to connect a proposed office building to the water and sewerage systems.

The expected annual water demand for the proposed office building is 2,000 kL. The average annual demand for a standard residential lot is 200 kL. Hence the assessed water demand for the restaurant is 2,000/200 = 10 ET.

The proposed office building will be a single floor building with a floor area of  $500 \text{ m}^2$  (0.5 Ha). The assessed loading for a commercial development is 10 ET/built-up Ha. Hence the assessed sewerage loading for the office building is 5 ET.

The developer charge for water is: 10 ET x \$2,000/ET = \$20,000
The developer charge for sewerage is: 5 ET x \$4,500/ET = \$22,500
Total Section 64 developer charge is \$44,500



Wellington Shire Council recognises that the guidelines are general and cannot practically be applied to all development applications. Some developments will not 'fit' a category in the guidelines. Also data required to assess the demands/loadings will not always be available at the time of application (i.e. the expected annual water consumption).

For this reason Council accepts that a proportion of applications will be assessed on individual merit. Council will determine a demand/loading for the development using the best available data. The Engineer retains discretion to assess an application on its merits and in situations requiring conflict resolution; discretion also remains with the Director of Technical Services.

With some industrial and commercial development there is an option of metering consumption and discharge for a period of time after calculating charges and later adjusting the charge once actual consumption and discharge is known.

If a Developer disagrees with Council's assessment, it is the responsibility of the Developer to demonstrate that there is an improved assessment.

#### 2.5 Reviewing/Updating of Calculated Developer Charges

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted on 1 July each year on the basis of movements in the CPI for Sydney, in the preceding 12 months to December, excluding the impact of GST.

Developer charges will be those charges determined by Council from time to time and will be published in Council's Annual Fees and Charges.

#### 2.6 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply and/or sewerage reticulation works from the existing reticulation pattern, to and within subdivisions.

#### 2.7 Payment for Developer Charges

Payment of development charges must be finalised at the following stages

- Development consents involving subdivisions prior to issue of the Subdivision Certificate;
- Development consents involving building work prior to issue of the Construction Certificate; and
- Development consents where no Construction Certificate is required at the time of consent, or prior to the commencement of the approved development as a maybe determined by Council.

#### 2.8 Refunds

Wellington Council does not anticipate that refunds of developer charges will be made unless the developer charges have been paid in respect of a development consent that has lapsed and the funds have not been allocated/expended on the projects identified in the DSP's work schedule.



#### 2.9 Works in Kind

"Works in kind" involves the construction or provision of infrastructure that has been identified in the works schedule contained in the DSP in lieu of full or part payment of a contribution relating to that section of the plan.

The decision to accept "works in kind" contributions will be at the discretion of Council. Factors that Council will take into consideration include:

- The extent to which the "works in kind" satisfies an item identified on the works program;
- Whether the payment of contribution in accordance with the provisions of the DSP is unreasonable or unnecessary in the circumstances of the case;
- Whether the "works in kind" contribution will prejudice the timing or manner of the provision of the services for which the contribution is required; and
- The value of "works in kind."

#### 2.10 Developments Outside the Development Servicing Areas

Development areas outside the identified DSP Areas, which are to be developed during the term of this policy and have no detailed DSP (and require water supply and/or sewerage services), will be subjected to a separate DSP. The developer shall be responsible for the preparation cost of this DSP.



## 3. DEMOGRAPHIC AND LAND USE PLANNING INFORMATION

#### 3.1 Growth Projections

Growth projections for population and number of Equivalent Tenements (ET's) are shown Tables 1 - 3 below. These projections are from the present year to 2036, which is Council's current planning horizon.

TABLE 1 - GROWTH PROJECTIONS FOR WELLINGTON COVERED BY DSP

Period	Total Population at end of period	Increase in Equivalent Tenements	Total Number of ET's at end of period
2006-2011	5,000	150	2,500
2011-2016	5,402	228	2,728
2016-2021	5,672	137	2,865
2021-2026	5,956	174	3,039
2026-2031	6,253	151	3,190
2031-2036	6,566	160	3,350

TABLE 2 - GROWTH PROJECTIONS FOR GEURIE COVERED BY DSP

Period	Total Population at end of period	Increase in Equivalent Tenements	Total Number of ET's at end of period
2006-2011	850	38	338
2011-2016	936	42	380
2016-2021	963	48	428
2021-2026	1,012	54	482
2026-2031	1,058	60	542
2031-2036	1,105	69	611



TABLE 3 - GROWTH PROJECTIONS FOR MUMBIL COVERED BY DSP

Period	Total Population at end of period	Increase in Equivalent Tenements	Total Number of ET's at end of period
2006-2011	225	5	114
2011-2016	235	5	119
2016-2021	250	6	125
2021-2026	257	5	130
2026-2031	269	6	136
2031-2036	280	7	143

Projected ET growth for the areas covered by individual DSP's are provided in Appendix A and B as part of the calculations of the capital charge.

#### 3.2 Land Use Information

This Development Servicing Plan should be read in conjunction with *Wellington Local Environment Plan* 1995.



## WATER SUPPLY AND SEWERAGE INFRASTRUCTURE

This Plan levies developer charges towards the cost of providing water supply and/or sewerage infrastructure to service new development. This infrastructure includes the value of both existing and future assets servicing the development areas.

Works covered by this DSP include but are not limited to:

#### Water

- Distribution of Trunk Mains;
- Water Pumping Stations;
- Water Reservoirs; and
- Water Treatment.

#### Sewerage

- Distribution of Trunk Mains;
- Sewerage Pumping Stations
- Sewerage Treatment Work; and
- Wastewater Disposal including reclaimed water disposal.

The existing and proposed water supply infrastructure serving the areas covered by this DSP is shown in **Figures 2 – 4**.

The existing and proposed sewerage infrastructure serving the areas covered by this DSP is shown in Figures 5 – 7.

#### 4.1 Estimates of Capital Costs

The estimated cost of works serving the area covered by this DSP is shown in **Appendix A** (Water Supply) and **Appendix B** (Sewerage).

#### 4.2 Timing of Works & Expenditure

The timing and expenditure for work serving the areas covered by this DSP is shown in Appendix A (Water Supply) and Appendix B (Sewerage).



## STANDARDS OF SERVICE

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

#### 5.1 WATER SUPPLY

- Treated water to 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines 98% of the time.
- Minimum water pressure of 12 metres at the property boundary for at least 90% of properties.
- Water quality complaints less than 10 per 1,000 connected properties per annum.
- Nil unplanned interruptions greater than 6 hours.
- Nil programmed interruptions greater than 12 hours.
- Water restrictions applying for not greater than 10% of the time on average.

#### 5.2 SEWERAGE

- Sewerage effluent meeting Department of Environment and Conservation (formerly the EPA) 90 Percentile License Limits (BOD, SS Total N, NH3N, Oil and Grease, Total P, Faecal Coliforms).
- All sewer chokes removed and service restored within 8 hours.
- ▶ Sewer overflows to the environment less than 5 per 100km of mains per year.
- Odour complaints less than 1 per 1000 properties per year.



## 6. DESIGN PARAMETERS

#### 6.1 Water Supply

Investigation and design of water supply system components is based on the *Water Supply Investigation Manual (1986)*. This Manual was prepared by NSW Public Works and is now managed by DEUS.

#### 6.2 Sewerage

Investigation and design of sewerage system components is based on the *Manual of Practice: Sewer Design* (1994) and the *Manual of Practice: Sewage Pumping Station Design* (1986). These manuals were prepared by NSW Public Works and now managed by the DEUS.



## CALCULATED DEVELOPER CHARGES

#### 7.1 Background

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

The basic developer charge calculation formula is thus:

#### DEVELOPER CHARGE = CAPITAL CHARGE - REDUCTION AMOUNT

The calculation of the capital charge and the reduction amount are further discussed in Sections 7.4 and 7.5.

#### 7.2 Service Areas

Developer charges were initially calculated for a number of different services within the Wellington Shire Council. As a guideline to determine different services separate small towns and villages should be considered a separate service area.

The results in the adoption of these service areas are detailed in the Table 4 below.

**TABLE 4. SERVICE AREA** 

DSP	Service Area	Figure
Α	Wellington Water Supply	2
В	Geurie Water Supply	3
С	Mumbil Water Supply	4
- D	Wellington Sewerage	5
Е	Geurie Sewerage	6
F	Mumbil Sewerage	7



#### 7.3 Summary

The developer charges for the area covered by this DSP are summarised in Table 5:

#### **TABLE 5 DEVELOPER CHARGES**

DS.P	Description	Capital Charge (\$ per ET)	Reduction Amount (\$ per ET)	Calculated Developer Charge (\$ per ET)	Adopted Developer Charge (\$ per ET)
А	Wellington Water Supply	8,647	1,176	7,470	3,735
В	Geurie Water Supply	12,764	-3,858	16,622	8,311
С	Mumbil Water Supply	443	-2,638	3,082	1,541
D	Wellington Sewerage	3,581	953	2,628	1,314
E	Geurie Sewerage	3,552	-3,382	6,934	3,467
F	Mumbil Sewerage	7,340	1,270	6,069	3,035

These amounts (rounded to the nearest dollar) have been calculated on the basis of the capital charges and reduction amounts as shown in Section 7.3 – 7.4 less a 50% reduction as directed by WSC.

#### 7.4 Capital Charge

The capital charge is calculated in a spreadsheet model comprising a number of separate but linked worksheets.

The initial pro-rata of asset costs occurs in the 'Existing Asset' and 'Future Asset' worksheets, where the assets constructed in each year, and their costs, are tabulated prior to being referred to the 'Asset Schedule' spreadsheet. The 'Asset Schedule' spreadsheet separates the total asset costs for each year into pre-1996 assets and post-1996 assets. The separated total costs are then referred to the 'Capital Charge' spreadsheet. The following formula is then applied to the pre 1996-assets and post-1996 assets to calculate the net present value charge:

#### NPV(CAPITAL CHARGE) = NPV(SUM OF ASSET COSTS) / NPV(SUM OF INCREMENTAL ETS)

The developer charges have been calculated with a proposed capital works cut-off year of 2011 and real discount rates of 3%, 7% and 7% for pre 1996 assets, post 1996 assets (including future works) and the reduction amount respectively. The capital charge calculations are contained in Appendix A (Water Supply) and Appendix B (Sewerage).



#### 7.5 Reduction Amount

Council has adopted the NPV of Annual Charges method to calculate the Reduction Amount. The reduction amount (or operating surplus) is determined as the difference between the operating revenue arising from a DSP area and the operating, maintenance and administration costs for that area per ET. Current total revenues and costs for each system were used to project values for the 30-year forecast horizon (i.e. until 2036). The reduction amount calculations are contained in Appendix A (Water Supply) and Appendix B (Sewerage).

#### 7.6 Reviewing/Updating of Calculated Developer Charges

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted on 1 July each year on the basis of movements in the CPI for Sydney, in the preceding 12 months to December, excluding the impact of GST.

#### 7.7 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply and/or sewerage reticulation works to and within subdivisions.

#### 7.8 Cross-subsidy

The cross subsidy will be determined following the adoption of the developer charge for each DSP area.



## 8. REFERENCE DOCUMENTS

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

- Department of Land Water Conservation, 2002, Developer Charges Guidelines for Water Supply, Sewerage and Stormwater;
- Wellington Council, 2005, Wellington Section 94 Contributions Plan 2005;
- Department of Energy, Utilities and Sustainability, 2004, Best-Practice Management of Water Supply and Sewerage.

These documents contain detailed calculations for the capital charge and reduction amount, including asset commissioning dates, size/length of assets, MEERA valuation of assets, and financial modelling for calculation of reduction amounts. These documents can be reviewed in Councils offices by appointment.

To review the documents, please contact Council's Technical Services Department on 02 68401729.



## 9. OTHER DSPs AND RELATED PLANS

#### 9.1 Development Servicing Plans

DSP No. 1 - Wellington Shire Council

#### 9.2 Section 94 Plans

Wellington Shire Council - Section 94 Contributions Plans 2005



# Appendix A Developer Charge Model

Water Supply System

#### **GHD**

Wellington Shire Council Developer Services Charge - Geurie Water 22/12629 www.ghd.com.au

Tel. Fax.

# Summary of Charges Catchment

Geurie Water System

1.0 INPUT DATA

YEAR OF CALCULATION

2006

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996 ; DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996 ;

3% 7%

DISCOUNT RATE (pa) FOR EXPECTED NET REVENUES AND COSTS:

7%

2.0 RESULTS

CAPITAL CHARGES - TREATMENT (per ET)

\$12,764

**OPERATING SURPLUS (per ET)** 

-\$3,858

TOTAL DEVELOPER CHARGE per ET

\$16,622

Tel. Fav.

#### Calculation of Capital Cost

Catchment

Geurie Water System

Year of Calculation

2006

#### Assumptions

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996 : DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996 : DISCOUNT RATE (pa) FOR PROPOSED FUTURE ASSETS :

Year	Recoupable	Annual ET
	Capital	Take-up
	Expenditure	
	(MEERA \$)	(ET)
1996	2,427,133	79
1997	2,721,100	6
1998		6
1999		6
2000		Ď
2001		7
2002		16
2003		1 17
2004		19
2005		20
2006		22
2007		7
2008		7
2009		8
2010		8
2011		8
2012		8
2013		8
2014		8
2015		9
2016		9
2017		9
2018		9
2019		10
2020		10
2021		10
2022		10
2023		11
2024 2025		11
2025		11
2026		11
2028		12
2029		12
2030		12
2031		13
2032		13
2033		13
2034		14
2035		14
2036		14

Year	Recoupable Capital Expenditure	Annual ET Take-up
	(\$)	(ET)
1996	0	79
1997	0	6
1998	0	6
1999	0	6
2000	0	6
2001	0	7
2002	0	16
2003	0	17
2004	. 0	19
2005	0	20
2006	0	22
2007	0	7
2008	0	7
2009	O	8
2010	0	8
2011	0	8
2012	0	8
2013	0	8
2014	0	8
2015	0	9
2016	0	9
2017	a	9
2018	0	9
2019	0	10
2020	C	10
2021	0	10
2022	0	10
2023	0	11
2024	0	11
2025	. 0	11
2026	0	11
2027	0	12
2028	0	12
2029	0	12
2030	0	12
2031	0	13
2032	0	13
2033	0	13
2034	0	14
2035	0	14
2036	0 NPV CHARGE (\$/ET)	14

Year	Recoupable Capital Expenditure	Annual ET Take-up	
	(\$)	(ET)	
1996	0		
1997	0		
1998	0		
1999	0		
2000	0		
2001	0		
2002	0		
2003	0		
2004	0		
2005	0		
2006	0	22	
2007	0	7	
200B	0	7	
2009	0	8	
2010	0	8	
2011	2,000,000	8	
2012	0	8	
2013	0	8	
2014	0	8	
2015	0	8	
2016	0	8	
2017	0	9	
2018	0	9	
2019	0	10	
2020	0	10	
2021	0	10	
2022	0	10	
2023	0	11	
2024	0	11	
2025	0	11	
2026	0	11	
2027	C .	12	
2028	0	12	
2029	0	12	
2030	Ċ	12	
2031	0	13	
2032	0	13	
2033	0	13	
2034	0	14	
2035	0	14	
2036	0 NPV CHARGE (\$/ET)	14 5310	

TOTAL NPV CAPITAL WORKS CHARGE per ET

NPV CHARGE (\$/ET)

\$12,764

GHD
Wellington State Council
Developer Services Chargo - Geurie Water
22/12829

YEAR OF CALCULATION

ET PROFILE (1971-2036)

542 2.4 2.4 ហ 2.4 482 2.4 428 2.4 ιO 380 2.4 2.4 2.4 ro 300 7.9 7.9 3.24 2.68 1.00 205 3.3 ю 2.53 2.67 0.97 174 3.2 5 5.43 2.75 1.04 149 4.9 5 1.80 2.64 0.99 117 2.0 **98**1 0.65 2.66 0.98 **981** 1.0 0.65 2.71 0.98 **976** 101 1.0 96 0.6 0.65 2.76 1.00 Historical Population data GR % p.a Population density (Occupancy Rate) Increase/Decrease in density ET Projections Regression Analysis Year Adopted Total ETs Growth Rate (%p.a) Time step (years)

ın

2.4

13/02/2006 1;24 PM

GHD
Wellington Shire Council
Developer Services Charge - Geurie Water
22/12629

www.ghd.com.au Tel, Fax.

300 780 0.38 Calculation Year ET EP Ratio

71000 179000 total income total cost

Total Cost (\$) Income per ET (\$) Cost per ET (\$) 179000 237 597

Total Income (\$) 71000

Calculation of Operating Surplus

Year	Incremental Demand (ET)	Cum. Total Demand (ET)		Income	Cost		Surplus
2006	22	300	<del>69</del>	5,198 \$	13,106 -\$		206'2 \$-
2007	7	307	છ	1,704 \$	4,296 -\$		10,499
2008	7	314	↔	1,745 \$	4,399 -\$	2,654 -\$	13,154
2009	83	322	<del>(S)</del>	1,787 \$	4,505 -\$	2,718 -\$	15,871
2010	83	330	ь	1,830 \$	4,613 -\$	2,783 -\$	18,655
2011	80	338	43	1,874 \$	4,724 -\$	2,850 -\$	21,505
2012	80	346	<del>69</del>	1,919 \$	4,837 -\$	2,918 -\$	24,423
2013	80	354	<del>63</del>	1,965 \$	4,953 -\$	2,988 \$	27,411
2014	80	362	₩	2,012 \$	5,072 -\$	3,060 -\$	30,471
2015	0	371	↔	2,060 \$	5,194 \$	3,134 -\$	33,605
2016	0	380	69	2,109 \$	5,318 -\$	3,209 -\$	36,814
2017	6	389	₩	2,160 \$	5,446 -\$	3,286 -\$	40,099
2018	6	388	<del>63</del>	2,212 \$	5,577 -\$	3,365 -\$	43,464
2019	10	408	↔	2,265 \$	5,710 -\$	3,445 -\$	46,909
2020	10	418	<del>69</del>	2,319 \$	5,847 -\$	3,528 -\$	50,437
2021	10	428	€9	2,375 \$	5,988 -\$	3,613 -\$	54,050
2022	5	438	<del>()</del>	2,432 \$	6,131 -\$	3,699 -\$	57,749
2023		449	<del>69</del>	2,490 \$	6,279 -\$	3,788 -\$	61,538
2024	11	459	<del>43</del>	2,550 \$	6,429 -\$	3,879 -\$	65,417
2025	11	471	<del>63</del>	2,611 \$	6,584 4	3,972 -\$	69,389
2026	11	482	69	2,674 \$	6,742 -\$	4,068 -\$	73,457
2027	12	493	69	2,738 \$	6,903 -\$	4,165 -\$	77,622
2028	12	505	<del>ss</del>	2,804 \$	\$- 690'Z	4,265 -\$	81,887
2029	12	517	<b>63</b>	2,871 \$	7,239 -\$	4,368 -\$	86,254
2030	12	530	69	2,940 \$	7,412 -\$	4,472 -\$	90,727
2031	13	542	₩	3,011 \$	2,590 -\$	4,580 -\$	95,306
2032	13	555	₩	3,083 \$	7,773 -\$	4,690 -\$	966'66
2033		569	↔	3,157 \$	\$~ 656'2	4,802 -\$	104,798
2034	14	582	မာ	3,233 \$	8,150 -\$	4,917 -\$	109,716
2035	14	596	G	3,310 \$	8,346 -\$	5,035 -\$	114,751
2036	14	611	<del>(A</del>	\$ 068'8	8,546 -\$	5,156 -\$	119,907

NPV Operating Profit (Loss) per ET

+Operating Surplus G:\22\12629\Excel\Geurle water model.xls

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W

**Existing Assets** 

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Developer Services Charge - Geurie Water
22/12629

Catchment Geurie Water System

Year of Calculation 2006

1994 1994 1994 1994 17,803 1,840,061 437,014 57,502 28,751 100.00 100.00 100.00 100.00 Asset Type Asset Status Date Capitalised Capital Cost MEERA Value Augment 01-Jan-94 \$25,000.00 \$28,750.95 Upgrade 01-Jan-94 \$360,000.00 \$414,013.71 Augment 01-Jan-94 \$1,800,000.00 \$1,840,060.93 Augment 02-Jan-94 \$580,000.00 \$437,014,47 Augment 03-Jan-94 \$50,000.00 \$67,501.90 200mm trunk rising main filtration plant Reservoirs Geurie St (1ML) Booster pump Narroogal St River Intake (1.2ML) Geographic

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Developer Services Charge - Geurie Water
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**Future Works** 

Catchment

Geurie Water System

2006 Year of Calculation

AREA	PROJECT			ASSET	ASSET	CONSTRUCTION	ASSET	%	RECOVERABLE
		SIZE	LENGTH	TYPE	STATUS	DATE	COST	RECOVERABLE	COST
	Pipework, filter capacity and new reservoir			Report	Augment	2011	\$2,000,000	⊢	\$2,000,000.00
			-	Report	Augment	2008			\$0.00
				Report	Augment	2007		20%	\$0.00
				Report	Augment	2010		20%	\$0.00
				Report	Augment	2012		20%	\$0.00
				Report	Augment	2013		20%	\$0.00
				Report	Augment	2017		50%	\$0.00

2036

Cut-off Year

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#### **Summary of Charges**

Catchment

Mumbil Water System

1.0 INPUT DATA

YEAR OF CALCULATION

2006

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996 : DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996 :

3% 7%

DISCOUNT RATE (pa) FOR EXPECTED NET REVENUES AND COSTS:

7%

2.0 RESULTS

CAPITAL CHARGES -TREATMENT (per ET)

\$443

**OPERATING SURPLUS (per ET)** 

-\$2,638

**TOTAL DEVELOPER CHARGE per ET** 

\$3,082

Calculation of Capital Cost

Catchment

Mumbil Water System

Year of Calculation

2006

Assumptions

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996 :
DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996 :
DISCOUNT RATE (pa) FOR PROPOSED FUTURE ASSETS :

Year	Recoupable	Annual ET
	Capital	Take-up
	Expenditure	
	(MEERA \$)	(ET)
,ano	00.004	١.,.
1996	23,001	33
1997		0
1999		l ő
2000		"
2000		l ő
2002		0
2002		0
2003		0
2004		0
2006		0
2007		ľ
2008		i
2009		1 1
2010		1 1
2011		1 1
2012		;
2013		i
2014		1
2015		i
2016		i
2017		i
201B		i
2019		i
2020		1 1
2021		l i
2022		l î
2023		l i
2024		l í
2025		1 1
2026		i
2027		l i
2028		i
2029		l i
2030		l î
2031		l i
2032		l i
2033		l i
2034		1 i
2035		l i
2036		1 i

	Recoupable Capital Expenditure	Annuel E1 Take-up
	(\$)	(ET)
1996	0	33
1997	o	0
1998	0	0
1999	0	0
2000	0	0
2001	0	0
2002	0	0
2003	0 [	0
2004	0	0
2005	0	0
2006	0	o
2007	0	1
200B	0	1
2009	0	1
2010	0	1
2011	a	1
2012	0	1
2013	0	í
2014	0	1
2015	0	1
2016	0	1
2017	O	1
2018	0	1
2019	D	1
2020	0	1
2021	0	1
2022	0	1
2023	0	1
2024	0	1
2025	o ì	1
2026	0	1
2027	0	1
2028	0	1
2029	0	1
2030	0	1
2031	0	1
2032	0	1
2033	0	1
2034	0	1
2035	٥	1
2036	0 NPV CHARGE (\$/ET)	1

Future Asse Year	Recoupable	Annual ET
rear	Capital	Take-up
	Expenditure	raka-ap
	(\$)	(ET)
-	197	1511
1996	0 1	
1997	ō	
1998	ŏ	
1999	ů .	
2000	ā	
2001	ō	
2002	ů	
2003	ū	
2004	ā	
2006	Ö	
2006	ŏ	О
2007	ŏ	1
2008	õ	1
2009	o	i
2010	ò	1
2011	o	1
2012	Ö	1
2013	ò	1
2014	0	1
2015	0	1
2016	o l	1
2017	o l	1
2018	0	1
2019	0	1
2020	ō	1
2021	o l	1
2022	o !	1
2023	o	1
2024	o l	1
2025	0	1
2026	0	1
2027	0	1
2028	0	1
2029	o l	1
2030	0	1
2031	0	1
2032	0	1
2033	0	1
2034	0	1
2035	0	1
2036	0	1
	NPV CHARGE (\$/ET)	0

TOTAL NPV CAPITAL WORKS CHARGE per ET

NPV CHARGE (\$/ET)

\$443

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YEAR OF CALCULATION

2006

ET PROFILE (1971-2036)

Time step (years)	1969	1971	1976 5	1981 5	1986 5	1991 5	1996 5	2001	2006	2011	<b>2016</b> 5	<b>2021</b> 5	<b>2026</b> 5	2031 5	2036 5
Historical Population data GR % p.a	204	207	214	221	227	219	.3.32	171-	220 5.17	0.9	6:0	6.0	6.0	6.0	6.0
Population density (Occupancy Rate)	2.76	2.25	2.20	2.15	2.16	2.11	1.73	1,58	2.02					•	
Increase/Decrease in density ET		0.81	0.98	0.98	1.01	0.97	0.82	0.92	1.27						
Projections									109	114	119	125	130	136	143
Regression Analysis	22	8	92	101	103	102	105	107							
Year	1969	1971	1976	1981	1986	1991	1996	2001	2006	2011	2016	2021	2026	2031	2036
Adopted Total ETs	73	06	95	101	103	102	105	107	109	114	119	125	130	136	143
Growth Rate (%p.a)		11.6		<del>-</del> -	0.4	-0.2	0.7	0.2	9.0	6.0	0.9	6.0	0.9	0.9	0.9
(bullet) con interior						270	3	3	2	6.0	- 1	2		610	6.0

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Total Cost (\$) Income per ET (\$) Cost per ET (\$) 61000 312 560 Total Income (\$) 34000 109 220 0.50 34000 61000 Calculation Year ET EP Ratio total income total cost

Calculation of Operating Surplus

2006 2007 2008 2009 2010 2011 2014 2016 2016 2019 2020			Ţ	Income	Cost	Surplus Cum Surplus	Surplus
2007 2008 2009 2010 2011 2013 2014 2016 2016 2019 2020	0	109	<del>69</del>	153 \$		122 -\$	122
2008 2009 2010 2011 2012 2014 2015 2016 2017 2018 2020	-	110	69	\$ 306			365
2009 2010 2011 2012 2013 2016 2017 2018 2020 2020	~	111	69	\$ 608	554 -\$	245 -\$	610
2010 2011 2012 2013 2014 2016 2016 2019 2020 2021	•	112	69	312 \$	•		857
2011 2012 2013 2014 2015 2016 2017 2019 2020		113	69	314 \$			1,107
2012 2013 2014 2015 2016 2017 2018 2020 2021		114	69	317 \$	269 -\$	252 -\$	1,359
2013 2014 2015 2016 2017 2019 2020 2021	•	115	€	320 \$		•	1,613
2014 2015 2016 2017 2018 2020 2021	•	116	₩	323 \$		256 -\$	1,869
2015 2016 2017 2018 2020 2021	-	117	₩	326 \$		•	2,128
2016 2017 2018 2019 2020 2021	•	118	₩	329 \$	\$ 260 ₹	-	2,389
2017 2018 2019 2020 2021	~	119	↔	332 \$			2,653
2018 2019 2020 2021	_	120	↔	335 \$		-	2,918
2019 2020 2021	-	121	G	338 \$	909	-	3,186
2020 2021	-	122	↔	341 \$		271 -\$	3,457
2021	~	124	<del>69</del>	344 \$	617 -\$	-	3,730
	-	125	↔	347 \$			4,006
2022	-	126	69	350 \$	628 -\$	278 -\$	4,284
2023	~	127	છ	353 \$	634 -\$		4,564
2024	•	128	49	356 \$			4,847
2025	•	129	<del>U)</del>	360 \$			5,132
2026	•	130	69	363 \$			5,421
2027	•	132	6/9	386 \$			5,711
2028	•	133	69	369 \$			6,005
2029	•	134	43	373 \$			6,301
2030	•	135	<del>63</del>	376 \$	675 -\$		6,599
2031	•	136	43	379 \$	•		6,900
2032		138	↔	383 \$			7,204
2033		139	₩	386 \$	693 -\$		7,511
2034	•	140	69	\$ 068	\$- 669	310 🚓	7,821
2035	•	141	₩	383 \$	\$- 90.∠		8,133
2036	~	143	↔	\$ 268	712 -\$	315 🚓	8,448

NPV Operating Profit (Loss) per ET

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+Operating Surplus G:\22\12629\Exce\\Mumbil water model.xls

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Developer Services Charge - Mumbil Water
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**Existing Assets** 

Mumbil Water System

Catchment

Year of Calculation 2006

 
 Asset Status
 Date Capitalised
 Capital Cost
 MEERA Value
 % Recoverable
 Recoverable
 Recoverable
 Recoverable
 Calcudar Year

 Augment
 01-Jan-94
 \$20,000.00
 \$23,000.76
 100.00
 0
 0
 0

 100.00
 100.00
 0
 0
 0
 0
 0
 0

 100.00
 100.00
 0
 0
 0
 0
 0
 0

 100.00
 100.00
 0
 0
 0
 0
 0
 0
 Telemetry Geographic

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Developer Services Charge - Mumbil Water
22/12629

**Future Works** 

Catchment

Year of Calculation

Mumbil Water System

2006

VERABLE	COST	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
RECC	_						-	
%	RECOVERABLE	20%	20%	20%	20%	%09	20%	
	COST					:		
CONSTRUCTION	DATE	2006	2008	2007	2010	2012	2013	3
ASSET	STATUS	Augment	Augment	Augment	Augment	Augment	Augment	
ASSET	TYPE	Report	Report	Report	Report	Report	Report	
PIPE	ENGTH!							
뮖	_							
PROJECT								
AREA								

2036

Cut-off Year

#### **GHD**

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## Summary of Charges

Catchment

Wellington Water System

1.0 INPUT DATA

YEAR OF CALCULATION

2006

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996 :

3%

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996 :

7%

DISCOUNT RATE (pa) FOR EXPECTED NET REVENUES AND COSTS:

7%

2.0 RESULTS

CAPITAL CHARGES - TREATMENT (per ET)

\$8,647

**OPERATING SURPLUS (per ET)** 

\$1,176

**TOTAL DEVELOPER CHARGE per ET** 

\$7,470

#### Calculation of Capital Cost

Wellington Water System

Year of Calculation

2006

Assumptions

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996 : DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996 : DISCOUNT RATE (pa) FOR PROPOSED FUTURE ASSETS :

Existing Assets Year	Recoupable	Annual ET
	Capital	Take-up
i	Expenditure	
	(MEERA \$)	(ET)
1996	9,438,201	489
1997		8
1998		8
1999		8
2000		8
2001		R
2002	!	12
2003		12
2004		12
2005		12
2006		12
2007		29
2008		30
2009		30
2010	ì	30
2011		31
2012		3.3
2013	i	33
2014		33
2015		34
2016		34
2017		35
2018		35
2019		36
2020		36
2021		37
2022		37
2023		37
2024		38
2026		38
2026		39
2027		39
2028		40
2029		40
2030		41
2031		42
2032	J	42
2033		43
2034	Į.	43
2035		44
2036	NPV CHÁRGE (\$/ET)	44
	MEV CHARGE (\$/E1)	8647

Year	Recoupable Capital Expenditure	Annual E1 Take-up
	(\$)	(ET)
1996	0	489
1997	0	8
1998	0	8
1999	0	8
2000	0	8
2001	0	8
2002	0	12
2003	0	12
2004	0	12
2005	0	12
2006	0	12
2007	0	29
2008	0	30
2009	0	30
2010	ប	30
2011	0	31
2012	0	33
2013	0	33
2014	0	33
2015	0	34
2016	Ċ	34
2017	Ö	35
2018	Ö	35
2019	ō	36
2020	Ö	36
2021	Ö	37
2022	Ö	37
2023	ŏ	37
2024	õ	38
2025	Ó	38
2026	ŏ	39
2027	Ö	39
2028	ŏ	40
2029	Ö	40
2030	Ö	41
2031	ŏ	42
2032	ŏ	42
2033	Ö	43
2034	ő	43
2035	0	44
2036	ő	44
	NPV CHARGE (\$/ET	

Year	Recoupable Capital Expenditure	Annual ET Take-up
	(\$)	(ET)
		1
1996	0	
1997	0	
1998	0	
1999	0	
2000	O	
2001	0	
2002	a	
2003	0	
2004	0	
2005	0	
2006	0	12
2007	0	29
2008	0	30
2009	0	30
2010	0	30
2011	0	31
2012	0	33
2013	0	33
2014	0	33
2015	Ð	34
2016	0	34
2017	0	35
2018	0	35
2019	0	36
2020	Q	36
2021	0	37
2022	0	37
2023	0	37
2024	0	38
2025	0	38
2026	0	39
2027	0	39
2028	G	40
2029	0	40
2030	0	41
2031	0	42
2032	0	42
2033	0	43
2034	0	43
2035	0	44
2036	0 NPV CHARGE (\$/E	144 (1) 0

TOTAL NPV CAPITAL WORKS CHARGE per ET

\$8,647

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Developer Services Charge - Wellington Water
22/12629

2006 YEAR OF CALCULATION

ET PROFILE (1971-2036)

Time step (years)	1969	1971 2	1976 5	1981 5	1986 5	1991 5	1996 5	2001 5	2006 5	2011	2016 5	2021 5	<b>2026</b> 5	2031 5	2036 5
Historical Population data GR % p.a	4885	4949	5112	5280	5277	5440	4947	4556 -1.63	4700	1.3	6.	<u>6.</u>	£.	6.	6.
Population density (Occupancy Rate) increase/Decrease in density	2.76	2.79	2.74 0.98	2.69	2.53 0.94	2.49	2.19 0.88	1.99	2.00						
E I Projections Regression Analysis	1763	1766	1858	1955	2079	2178	2252	2290	2350	2501	2867	2845	3035	3238	3454
Year	1969	1971	1976	1981	1986	1991	1996	2001	2006	2011	2016	2021	2026	2031	2036
Adopted Total ETs Growth Rate (%p.a)	1763	1766 0.1	1858	1955 1.0	2079	2178 0.9	2252 0.7	2290 0.3	2350	1.3	2667 1.3	2845 1.3	3035 1.3	3238 1.3	3454 1.3

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1655000 1392000 2350 4700 0.50 Calculation Year ET EP Ratio total income total cost

Cost per ET (\$) 592

Total Cost (\$) Income per ET (\$) 1392000

Total Income (\$) 1655000

Calculation of Operating Surplus

Year	Incremental Demand (ET)	Cum. Total Demand (ET)		Income	Cost	Ŝ	urplus (	S EIN	Cum Surplus
2006	12	2350	69	8,603 \$	7,236 \$	•		G	1,367
2007	29	2379	<del>()</del>	20,688 \$	17,400 \$			₩	4,655
2008	30	2409	ω	20,946 \$	17,618 \$	••	3,329	₩	7,983
2009	30	2439	<del>()</del>	21,208 \$	17,838 \$		3,370	69	11,353
2010	30	2470	63	21,473 \$	18,061 \$	•	3,412	69	14,766
2011	31	2501	₩	21,741 \$	18,286 \$	•	3,455	↔	18,221
2012	33	2533	ω	22,894 \$	19,256 \$	•	3,638	₩	21,859
2013	33	2566	69	23,191 \$	\$ 905'61	.,	3,685	<del>69</del>	25,544
2014	33	2599	↔	23,493 \$	19,760 \$	•••	3,733	64)	29,278
2015	34	2633	છ	23,798 \$	20,016 \$		3,782	69	33,059
2016	34	2667	↔	24,108 \$	20,277 \$	.,	3,831	69	36,890
2017	35	2702	₩.	24,421 \$	20,540 \$		3,881	€	40,771
2018	35	2737	₩	24,738 \$	20,807 \$		3,931	69	44,702
2019	36	2773	↔	25,060 \$	21,078 \$	,	3,982	69	48,685
2020	36	2809	<del>69</del>	25,386 \$	21,352 \$	•	4,034	₩	52,719
2021	37	2845	<del>69</del>	25,716 \$	21,629 \$	•	4,087	<del>63</del>	56,805
2022	37	2882	<del>63</del>	26,050 \$	21,910 \$	•	4,140	€>	60,945
2023	37	2920	<del>⇔</del>	26,389 \$	22,195 \$	•	4,194	↔	65,139
2024	38	2958	₩	26,732 \$	22,484 \$	•	4,248	<del>G</del>	69,387
2025	38	2996	↔	27,079 \$	22,776 \$	•	4,303	<del>(S</del>	73,690
2026	39	3035	↔	27,431 \$	23,072 \$	•	4,359	<del>69</del>	78,049
2027	39	3075	७	27,788 \$	23,372 \$	•	4,416	<del>ss</del>	82,465
2028	40	3115	ω	28,149 \$	23,676 \$	•	4,473	₩	86,938
2029	40	3155	<del>()</del>	28,515 \$	23,984 \$	•	4,531	₩	91,470
2030	41	3196	G)	28,886 \$	24,296 \$	•	4,590	69	090'96
2031	42	3238	<del>69</del>	29,261 \$	24,611 \$	•	4,650	€9	100,710
2032	42	3280	↔	29,642 \$	24,931 \$	•	4,710	₩	105,421
2033	43	3322	6 <del>9</del>	30,027 \$	25,256 \$	•	4,772	€9	110,192
2034	43	3366	<del>(/)</del>	30,418 \$	25,584 \$	•	4,834	69	115,026
2035	44	3409	<del>()</del>	30,813 \$	25,916 \$	•	4,897	69	119,922
2036	44	3454	<del>67)</del>	31,214 \$	26,253 \$	`	4,960	69	124,883

NPV Operating Profit (Loss) per ET

+Operating Surplus G:\22\12629\Exce\Wellington water model.xls

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Developer Services Charge - Wellington Water
22/12629

**Existing Assets** 

Wellington Water System

Catchment

2006 Year of Calculation  
 % Recoverable
 Recoverable MEERA Value
 Calendar Year

 100.00
 6,395
 1994

 100.00
 8,487,281
 1994

 100.00
 908,530
 1994

 100.00
 2,284
 1994

 100.00
 2,741
 1994

 S Date Capitalised
 Capital Cost
 MEERA Value
 4

 01-Jan-94
 \$740,000.00
 \$161,005.33
 01-Jan-94
 \$7,380,000.00
 \$8,487,281.04

 01-Jan-94
 \$790,000.00
 \$908,530.08
 00-Jan-94
 \$60,000.00
 \$57,501.90

 02-Jan-94
 \$60,000.00
 \$67,501.90
 930.02.28
 00-Jan-94
 Asset Type | Asset Status upgrade
Augment
Augment
upgrade
upgrade Montflores storage (3.6ML) Golbolion Str Booster pump Cadonia booster Pump Macquarie River Intake Pumps Filtration works (14.6ML/d) Geographic

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Developer Services Charge - Wellington Water
22/12629

## **Future Works**

Catchment

Wellington Water System

Year of Calculation

rear of Calculation	2006				Cut-off Year	2036		
AREA	PROJECT	PIPE PIPE SIZE LENGTH	ASSET TYPE	ASSET	CONSTRUCTION	ASSET COST	% RECOVERABLE	RECOVERABLE COST
			Report	Augment			100%	\$0.00
			Report	Augment			20%	\$0.00
			Report	Augment			20%	\$0.00
			Report	Augment			20%	\$0.00
			Report	Augment			20%	\$0.00
			Report	Augment			20%	\$0.00
			Report	Augment			20%	\$0.00



### Appendix B Developer Charge Model

Sewerage System

### **GHD**

Wellington Shire Council Developer Services Charge - Geurie Sewer 22/121629

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### **Summary of Charges**

Catchment

Geurie Sewer System

1.0 INPUT DATA

YEAR OF CALCULATION

2006

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996:

3%

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996:

7%

DISCOUNT RATE (pa) FOR EXPECTED NET REVENUES AND COSTS:

7%

2.0 RESULTS

CAPITAL CHARGES -TREATMENT (per ET)

\$3,552

OPERATING SURPLUS (per ET)

\$3,382

TOTAL DEVELOPER CHARGE per ET

\$6,934

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22/121629

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### **Calculation of Capital Cost**

Catchment

Geurie Sewer System

Year of Calculation

2006

Assumptions

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996 : DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996 : DISCOUNT RATE (pa) FOR PROPOSED FUTURE ASSETS :

Existing Assets		
Year	Recoupable	Annual ET
[	Capital	Take-up
	Expenditure	
	(MEERA \$)	(ET)
4000	0	
1996 1997	١	0
1998		0 0
1999		0
2000		u u
2001		n
2002		a
2002		0
2004		0
2005		i)
2006	ì	300
2007		7
2008		7
2009		8
2010		×
2011		8
2012		8
2012		8
2014		8
2015		9
2016		ģ
2017		ý
2018		ģ
2019		10
2020		10
2021		10
2022		10
2023		11
2024		11
2025		ii
2026		ii
2027		12
2028		12
2029		12
2030		12
2031		13
2032		13
2033		13
2034		14
2035		14
2036		14
	NPV CHARGE (\$/ET)	0

Year	Recoupable Capital Expenditure	Annual El Take-up
	(\$)	(ET)
1996	0	0
1997	0	0
1998	0	0
1999	0	0
2000	0	0
2001	0	0
2002	0	0
2003	0	0
2004	0	0
2005	0	Q
2006	0	300
2007	0	7
2008	0	7
2009	0	8
2010	0	8
2011	0	8
2012	0	8
2013	0	8
2014	0	8
2015	0	9
2016	0	9
2017	0	9
2018	0	9
2019	0	10
2020	0	10
2021	0	10
2022	0	10
2023	0 1	11
2024	a	11
2025	0	11
2026	C	11
2027	0	12
2028	0	12
2029	C	12
2030	0	12
2031	0	13
2032	0	13
2033	ō	13
2034	Ö	14
2035	0	14
2036	0	14
	NPV CHARGE (\$/ET)	0

Year	Recoupable Capital Expenditure	Annual E1 Take-up
	(\$)	(ET)
	1.7	
1996	0	
1997	0	
1998	D	
1999	0	
2000	0	
2001	D	
2002	0	
2003	0	
2004	0	
2005	0	
2006	2.540,000	300
2007	0	7
2008	0	7
2009	0	8
2010	0	8
2011	500,000	8
2012	0	8
2013	0	8
2014	0	8
2015	0	9
2016	0	9
2017	0	9
2018	0	9
2019	0	10
2020	О	10
2021	0	10
2022	0	10
2023	0	11
2024	0	11
2025	0	11
2026	0	11
2027	0	12
2028	0 1	12
2029	0	12
2030	0	12
2031	0	13
2032	0	13
2033	C	13
2034	0	14
2035	0	14
2036	0	14
	NPV CHARGE (\$/ET)	3552

TOTAL NPV CAPITAL WORKS CHARGE per ET

\$3,552

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YEAR OF CALCULATION

ET PROFILE (1971-2036)

542 2.4 ιΩ 2.4 482 2.4 ŝ 2,4 1 428 2.4 цŋ Ŋ 2.4 2,4 2.4 w 7.9 3.24 2.68 1.00 3.3 2.53 2.67 0.97 3.2 149 4.9 5 5.43 2.75 1.04 1.80 2.64 0.99 117 2.0 5 0.65 2.66 0.98 106 1.0 5 0.65 2.71 0.98 101 0.6 0.65 2.76 1.00 2.76 **969** Historical Population data GR % p.a Population density (Occupancy Rate) Increase/Decrease in density ET Projections Regression Analysis Year Adopted Total ETs Growth Rate (%p.a) Time step (years)

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т Ж <u>j</u>e

300 780 0.38 Calculation Year ET Ratio 89000 total income total cost

Cost per ET (\$)

Total Cost (\$) Income per ET (\$) 170000

Total Income (\$)

Cafculation of Operating Surplus

81,049 82,993 84,983 87,022 89,109 91,246 95,676 112,946 115,656 118,430 121,271 93,435 97,972 100,322 102,728 105,193 107,716 110,300 ዏ 47 ę 47 2,350 2,646 2,710 2,087 2,189 2,241 2,295 2,464 2,584 2,407  $\varphi \varphi \varphi \varphi$ 4,178 4,080 Income 89,053 2,136 2,136 2,136 2,137 2,240 2,240 2,240 2,240 2,264 4,277 3,273 2,297 7,3 2,977 3,297 3,122 3,137 3,598 3,598 3,598 3,598 3,598 3,598 3,598 3,598 3,598 Cum. Total Demand (ET) 300 307 314 322 330 338 346 354 362 371 380 389 389 389 Incremental Demand (ET) 

NPV Operating Profit (Loss) per ET

-\$3,382

124,181 127,160 130,211 133,334 136,533 139,809 143,163

t? 47

ዏ Ŷ

2,841

2,909

146,598 150,115 153,717

3,051 3,124 3,139 3,276 3,354 3,435 3,517 3,602 3,688 3,777 3,867

6,875 7,040 7,209 7,382 7,559 7,740 7,740 7,926 8,116

3,774 3,865 3,957 4,052 4,150 4,249

157,405 161,181 165,048

+Operating Surplus G:\22\12629\Excel\Geurie sewer model.x\s

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22/12/1629

## **Future Works**

Catchment

Geurie Sewer System

Year of Calculation

2006

Cut-off Year

2036

ABEA		1000		THOOK	THOOK	INCITOLICATION	ACCET	ò	L
ָ כ		֓֡֝֡֜֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֡		1225	1000		1000	0/	
		SIZE	LENGTH	TYPE	STATUS	DATE	COST	RECOVERABLE	COST
	Pump station			Construct	Augment	2006	\$230,000	100%	
	rising main			Construct	Augment	2006	\$540,000	100%	\$540,000.00
	treatment works			Construct	Augment	2006	\$1,670,000	100%	\$1,670,000.00
	oxidation ponds			Construct	Augment	2006	\$100,000	100%	\$100,000.00
	augmentation of treatment works			Construct	Augment	2011	\$500,000	100%	\$500,000.00
					٠			100%	
								100%	

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**Existing Assets** 

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Developer Services Charge - Geune Sewer
22/12/629

Geurie Sewer System Catchment

Year of Calculation 2006

 
 % Recoverable
 Recoverable MEERA Value
 Catendar Year

 100.00
 0
 0

 100.00
 0
 0

 100.00
 0
 0

 100.00
 0
 0

 100.00
 0
 0

 100.00
 0
 0
 Asset Type | Asset Status | Date Capitalised | Capital Cost | MEERA Value \$0.00

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# Catchment Mumbil Sewer System 1.0 INPUT DATA YEAR OF CALCULATION 2006 DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996: 3% DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996: 7% DISCOUNT RATE (pa) FOR EXPECTED NET REVENUES AND COSTS: 7%

### 2.0 RESULTS

CAPITAL CHARGES TREATMENT (per ET)

OPERATING SURPLUS (per ET)

\$1,270

\$7,340

### TOTAL DEVELOPER CHARGE per ET

\$6,069

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### **Calculation of Capital Cost**

Mumbil Sewer System

Year of Calculation

2006

Assumptions

DISCOUNT RATE (pe) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996 : DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996 : DISCOUNT RATE (pa) FOR PROPOSED FUTURE ASSETS :

3% 7% 7%

Year	Recoupable Capital Expenditure	Annual El Take-up
	(MEERA \$)	(ET)
1996	869,429	0
1997		0
1998		106
1999		0
2000		0
2001		0
2002		0
2003		0
2004		(F
2005		0
2006		n
2007		1
2008		1
2009	. 1	1
2010	i	1
2011		1
2012		1
2013		1
2014	1	1
2015	i	1
2016		1
2017		1
2018		1
2019		1
2020		1
2021		1
2022		1
2023		ı
2024		1
2025		1
2026		- 1
2027		1
2028		- 1
2029		1
2030		1
2031	ſ	1
2032		1
2033		1
2034	1	i
2035	ì	i
2036		ī

Year	Recoupable Capital Expenditure	Annual ET Take-up
	(\$)	(ET)
1996	0	0
1997	0	0
1998	0	106
1999	0	0
2000	0	0
2001	0	0
2002	0	0
2003	0	0
2004	0	0
2005	G	0
2006	0	0
2007	0	1
2008	0	1
2009	0	1
2010	0	1
2011	0	t
2012	0	1
2013	0	1
2014	0	1
2015	0	1
2016	0	1
2017	0	1
2018	0	1
2019	0	1
2020	0	1
2021	0	1
2022	-0	1
2023	0	1
2024	Ó	1
2025	0	1
2026	0	1
2027	0	1
2028	0	1
2029	0	1
2030	0	1
2031	0	1
2032	0	1
2033	0	1
2034	0	1
2035	0	1
2036	0 NPV CHARGE (\$/ET)	<u>1</u> _

1996 0 0 1997 0 1998 0 0 2000 0 0 2001 0 0 2002 0 0 2001 0 2001 0 2001 0 0 2001 0 0 2001 0 0 2001 0 0 2001 0 0 2001 0 0 2001 0 0	ual E? ke-up
1996 0 0 1997 0 1998 0 0 2000 0 0 2001 0 0 2002 0 0 2001 0 2001 0 2001 0 0 2001 0 0 2001 0 0 2001 0 0 2001 0 0 2001 0 0 2001 0 0	ET)
1997 0 1 1998 0 1 1998 0 1 1998 0 1 1999 0 2 2000 0 0 2 2001 0 2 2002 0 2 2 2 2	
1998 0 0 1998 0 0 1998 0 0 1998 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
1999 0 0 2000 0 0 2001 0 0 2001 0 0 2002 0 0 2001 0 2001 0 0 2001	
2000	
2001 0 0 2002 0 0 2004 0 0 2004 0 0 2005 0 0 2006 0 0 2007 0 0 0 2001 0 2001 0 0 200	
2002 0 0 2003 0 0 2004 0 0 2005 0 0 0 2007 0 0 2006 0 0 2007 0 2007	
2003 2004 2004 2005 0 2006 0 2006 0 2007 2008 0 2010 2011 0 2011 0 2011 0 2014 0 2014 0 2015 0 2016 0 2017 2018 0 2019 0 2020 0 2021 0 2022 0 2023 0 2026 0 2026 0 2026 0 2027 2028 0 2029 0 2020 0 2021 0 2021 0 2021 0 2022 0 2023 0 2023 0 2026 0 2026 0 2027 2028 0 2020 0 2031 0 2031 0 2031	
2004 0 2005 0 2006 0 2007 0 2008 0 2009 0 2010 0 2011 0 2012 0 2014 0 2014 0 2015 0 2016 0 2017 0 2018 0 2019 0 2019 0 2019 0 2011 0 2010 0 2011 0 2012 0 2014 0 2016 0 2017 0 2018 0 2019 0 2020 0 2021 0 2020 0 2021 0 2022 0 2023 0 2024 0 2026 0 2026 0 2027 0 2028 0 2027 0 2028 0 2031 0 2031 0 2031 0	
2005 0 0 2006 0 0 2007 0 0 2008 0 0 2001 0 0 2011 0 0 2015 0 0 2015 0 0 2016 0 0 2017 0 0 2018 0 2018 0 0 2018	
2006 0 0 2007 0 0 0 2008 0 0 2009 0 0 2001 0 2011 0 0 2011 0 2011 0 2014 0 0 2014 0 0 2018 0 0 2018 0 0 2018 0 0 2018 0 0 2018 0 0 2019 0 0 2021 0 2020 0 2021 0 2022 0 20	
2007 0 0 2008 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
2008 2009 2010 2011 2011 2011 2012 2012 2013 2014 2015 2016 2017 2018 2020 2021 2022 2022 2023 2022 2024 2026 2026 2026 2026 2026 2027 2028 2029 2029 2029 2029 2029 2029 2029	0
2009	1
2010 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1
2011 0 0 2 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2	1
2012 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1
2014 0 0 2014 0 0 2014 0 0 2016 0 0 2017 0 0 2018 0 0 2020 0 0 2021 0 0 2022 0 0 2026 0 0 2026 0 0 2026 0 0 2026 0 0 2027 0 2028 0 0 2020 0 2021 0 2021 0 202	1
2014 0 2015 0 2016 0 2017 0 2018 0 2019 0 2020 0 2021 0 2022 0 2022 0 2023 0 2024 0 2026 0 2026 0 2026 0 2027 0 2028 0 2028 0 2039 0 2031 0 2031 0 2031 0	1
2015 0 0 2016 0 0 2017 0 0 2018 0 0 2020 0 0 2021 0 0 2025 0 0 2026 0 0 2026 0 0 2027 0 2028 0 0 2029 0 2029 0 2029 0 2029 0 2029 0 2029 0 2029 0 2029 0 2029 0 2029 0 2029 0 2029 0 2029 0 2031 0 0 2031 0 0 2031 0 0 2031	1
2016 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1
2017 0 2018 0 2019 0 2020 0 2020 0 2021 0 2022 0 2023 0 2024 0 2025 0 2026 0 2026 0 2027 0 2028 0 2028 0 2029 0 2030 0 2031 0 2031 0	1
2018 0 0 2019 0 0 2021 0 0 2021 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2022 0 2023 0 0 2031 0 2031 0 2031 0 2031 0 2031 0 2031 0 2031 0 2031	1
2019 0 2020 0 2021 0 2022 0 2023 0 2024 0 2025 0 2026 0 2027 0 2028 0 2028 0 2029 0 2030 0 2031 0 2031 0 2031 0	1
2020 0 0 2021 0 0 2022 0 0 2023 0 0 2023 0 0 2026 0 0 2026 0 2026 0 2027 0 2028 0 0 2028 0 0 2030 0 0 2031 0 0 2031 0 0 2031 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 2032 0 0 0 0	1
2021 0 0 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1
2022 0 2023 0 2024 0 2025 0 2026 0 2027 0 2028 0 2029 0 2030 0 2031 0 2031 0	1
2023 0 0 2024 0 0 2025 0 0 2026 0 0 2026 0 0 2027 0 0 2028 0 0 2029 0 0 2031 0 0 0 2031 0 0 0 2031 0 0 0 2031 0 0 0 2031 0 0 0 0 0 0 0 0 0	1
2024 0 2025 0 2026 0 2027 0 2028 0 2028 0 2030 0 2031 0 2031 0	1
2025 0 2026 0 2027 0 2028 0 2028 0 2029 0 2030 0	1
2026	1
2027 0 2028 0 2028 0 2029 0 2030 0 2031 0 2032 0	1
2028 0 2029 0 2030 0 2031 0 2032 0	1
2029 0 2030 0 2031 0 2032 0	1
2030 0 2031 0 2032 0	1
2031 0 2032 0	1
2092 0	1
	1
	1
2033 0	1
2034 0	1
2035 0	1
2036 0 NPV CHARGE (\$/ET)	1

TOTAL NPV CAPITAL WORKS CHARGE per ET

\$7,340

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YEAR OF CALCULATION

ET PROFILE (1971-2036)

ιΩ 0.9 0.9 0.9 ιO 130 0.9 6.0 125 0.9 6.0 119 0.9 6.0 0.9 5.17 2.02 1.27 109 0.5 -1.56 1.58 0.92 107 0.2 -3.32 1.73 0.82 **996** 105 0.7 -0.71 2.11 0.87 102 -0.2 5 0.54 2.16 1.01 103 0.4 **98**1 0.**65** 2.15 0.98 10 11 0.65 2.20 0.98 95 1.1 0.65 2.25 0.81 90 11.6 **97**1 2.76 Historical Population data
GR % p.a
Population density (Occupancy Rate)
Increase/Decrease in density
ET
Projections
Regression Analysis Year Adopted Total ETs Growth Rate (%p.a) Time step (years)

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Calculation Year ET EP Ratio

109 220 0.50 50000 37000 total income total cost

 Total Cost (\$)
 Income per ET (\$)
 Cost per ET (\$)

 37000
 459
 339

Total Income (\$) 50000

Calculation of Operating Surplus

Year	Incremental Demand (ET)	Cum. Total Demand (ET	E	Іпсоте	Cost	Surplus Cu	Cum Surplus
2006	0	109	₩	225 \$	167 \$		59
2007	-	110	69	450 \$	333 \$	117 \$	176
2008	•	111	↔	454 \$	336 \$	118 \$	294
2003		112	₩	458 \$	339 \$	119 \$	413
2010	***	113	↔	462 \$	342 \$	120 \$	533
2011	-	114	<del>ss</del>	466 \$	345 \$	121	654
2012	-	115	₩	471 \$	348 \$	122 \$	1111
2013	_	116	€>	475 \$	351 \$	123 \$	006
2014	_	117	6-3	479 \$	355 \$	125 \$	1,025
2015	_	118	€9	483 \$	358 \$	126 \$	1,150
2016	_	119	69	488 \$	361 \$	127 \$	1,277
2017	_	120	ક્ક	492 \$	364 \$	128 \$	1,405
2018	-	121	क	497 \$	\$ 292	129 \$	1,534
2019	_	122	s	501 \$	377 \$	130 \$	1,665
2020	-	124	<del>69</del>	\$ 909	374 \$	131 \$	1,796
2021	_	125	<del>s)</del>	510 \$	378 \$	133 \$	1,929
2022	_	126	€Э	515 \$	381 \$	134 \$	2,062
2023	_	127	69	519 \$	384 \$	135 \$	2,197
2024	-	128	s)	524 \$	388 \$	136 \$	2,334
2025	-	129	es.	529 \$	391 \$	137 \$	2,471
2026	-	130	ક્ક	534 \$	395 \$	139 \$	2,610
2027	•	132	<del>G</del>	538 \$	398 \$	140 \$	2,750
2028	•	133	G	543 \$	402 \$	141 \$	2,891
2029		134	₩.	548 \$	406 \$	142 \$	3,034
2030	_	135	₩	553 \$	409 \$	144 \$	3,177
2031	-	136	₩	558 \$	413 \$	145 \$	3,322
2032	_	138	₩	563 \$	417 \$	146 \$	3,469
2033	_	139	eσ	568 \$	420 \$	148 \$	3,616
2034	_	140	₩	573 \$	424 \$	149 \$	3,766
2035	_	141	ω	578 \$	428 \$	150 \$	3,916
2036	-	143	ь	584 \$	432 \$	152 \$	4,068

NPV Operating Profit (Loss) per ET

+Operating Surplus G:\22\12629\Exce\Mumbil sewer model.xls

## GHD Wellington Shire Council Developer Services Charge - Mumbil Sewer 22/12629

**Existing Assets** 

Mumbil Sewer System

Cafchment

Year of Calculation 2006

.

	:								
Geographic	Description	Asset Type	Asset Status	Date Capitalised   Capital Cost	Capital Cost	MEERA Value	Recoverable	Recoverable MEERA Value	Calendar Year
:	Sewer Pump station			01-Jan-98	160000	\$184,006	100.00	184,006	1998
	rising main		Augment	01-Jan-98	78000	\$89,703	100.00	89,703	1998
į	oxidation ponds		Augment	02-Jan-98	237000	\$272,559	100.00	272,559	1998
	trunk gravity main		Augment	03-Jan-98	111000	\$127,654	100.00	127.654	8661
	evaporation ponds		Auament	04-Jan-98	170000	\$195,508	100 00	195 506	1998

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Developer Services Charge - Mumbil Sewer
22/12629

## **Future Works**

Catchment

Mumbil Sewer System

Year of Calculation

2006

Cut-off Year

**ar** 2036

					•			
RECOVERABLE	COST	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
%	RECOVERABLE	20%	20%	20%	20%	20%	20%	20%
	COST							
CONSTRUCTION	DATE	2006	2008	2007	2010	2012	2013	2017
ASSET	STATUS	Augment						
ASSET	TYPE	Report						
PIPE	LENGTH							
PIPE	SIZE							
PROJECT								
AREA								

### **GHD**

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### **Summary of Charges**

Catchment

Wellington sewer System

1.0 INPUT DATA

YEAR OF CALCULATION

2006

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996 :

3%

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996 :

7%

DISCOUNT RATE (pa) FOR EXPECTED NET REVENUES AND COSTS:

7%

2.0 RESULTS

CAPITAL CHARGES -TREATMENT (per ET)

\$3,581

OPERATING SURPLUS (per ET)

\$953

TOTAL DEVELOPER CHARGE per ET

\$2,628

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### Calculation of Capital Cost

Catchment

Wellington sewer System

Year of Calculation

2006

Assumptions

DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED BEFORE 1 JANUARY 1996 :
DISCOUNT RATE (pa) FOR ASSETS CONSTRUCTED ON OR AFTER 1 JANUARY 1996 ;
DISCOUNT RATE (pa) FOR PROPOSED FUTURE ASSETS :

3% 7% 7%

Existing Asse		
Year	Recoupable	Annual ET
	Capital	Take-up
	Expenditure	-
	(MEERA \$)	(ET)
1996	2 106 203	489
1997		8
1998		Ŗ
1999		8
2000		8
2001		ĸ
2002		12
2003		12
2004		12
2005		12
2006		12
2007	Į.	29
2008		30
2009		30
2010	1	30
2011		31
2012		33
2019		33
2014		33
2015		34
2016		34
2017		35
2018		35
2019	1	36
2020		36
2021		37
2022		37
2023		37
2024		38
2025		38
2026		39
2027		39
2028 2029		40 40
2030 2031		41
		42
2032		42
2033		43
2034		43
2035 2036		44
2036	NPV CHARGE (\$/ET)	44 1930
<del></del>	NEV CHARGE (\$/E1)	1990

Year	Recoupable Capital Expenditure	Annual ET Take-up
	(\$)	(ET)
	3-7	<u> </u>
1996	0	489
1997	0	8
1998	0	8
1999	0	8
2000	0	8
2001	0	8
2002	0	12
2003	0	12
2004	0	12
2005	0	12
2006	0	12
2007	0	29
2008	0	30
2009	0	30
2010	0	30
2011	0	31
2012	0	33
2013	0	33
2014	0	33
2015	0	34
2016	0	34
2017	0	35
2018	0	35
2019	0	36
2020	C	36
2021	0	37
2022	0	37
2023	0	37
2024	0	38
2025	G	38
2026 0 2027 0 2028 0 2029 0		39
		39
		40
		40
2030	0	41
2031	0	42
2032	0	42
2033	0	43
2034	0	43
2035	0	44
2036	0 NPV CHARGE (\$/ET)	44

Future As Year	Recoupable	Annual EY
	Capital	Take-up
	Expenditure	I ake-up
	(\$)	(ET)
		(E-1)
1996	0	
1997	o o	
1998	o o	
1999	ŏ	
2000	o o	
2001	ō	
2002	ŏ	
2003	D	
2004	ō	
2005	l o	
2006	1.424.866	12
2007	0	29
2008	l ő	30
2009	ō	30
2010	l ō	30
2011	l o	31
2012	o	33
2013	Ō	33
2014	o o	33
2015	Ī	34
2016	o o	34
2017	0	35
2018	ō	35
2019	o	36
2020	0	36
2021	О	37
2022	0	37
2023	o	37
2024	0	38
2025	0	38
2026	o	39
2027	0	39
2028	0	40
2029	0	40
2030	0	41
2031	0	42
2032	0	42
2033	0	43
2034	C	43
2035	0	44
2036	0	44
	NPV CHARGE (\$/ET)	1651

TOTAL NPV CAPITAL WORKS CHARGE per ET

\$3,581

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YEAR OF CALCULATION

ET PROFILE (1971-2036)

1.3 ιΩ 3035 1.3 ιΩ 2845 1.3 ų) 2667 1.3 2501 1.3 <u>~</u> 0.62 2.00 1.01 2350 0.5 -1.63 1.99 0.91 2290 0.3 -1.88 2.19 0.88 2252 0.7 5 0.61 2.49 0.98 **991** 2178 0.9 -0.01 2.53 0.94 2079 1.2 1955 1.0 0.65 2.69 0.98 **976** 1858 1.0 0.65 2.74 0.98 **0.65** 2.79 1.01 1766 0.1 2.76 Historical Population data
GR % p.a
Population density (Occupancy Rate)
Increase/Decrease in density
ET
Projections
Regression Analysis Year Adopted Total ETs Growth Rate (%p.a) Time step (years)

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2350 4700 0.50 Calculation Year'ET EP Ratio

Calculation of Operating Surplus

total income total cost

Cost per ET (\$) 465

Total Cost (\$) Income per ET (\$) 1093000 556

**Total Income (\$)** 1306000

1306000 1093000

Year	Incremental Demand (ET)	Cum. Total Demand (ET)		Income		Cost	Surplus	Cum	Cum Surplus
2006	12	2350	<del>69</del>	6,789	↔	5,682 \$	1,107	€9-	1,107
2007	29	2379	<b>↔</b>	16,325	↔	13,663 \$	2,663	69	3,770
2008	30	2409	<del>63</del>	16,529	<del>69</del>	13,833 \$	2,696	€	6,465
2009	30	2439	↔	16,736	₩	14,006 \$	2,729	<del>63</del>	9,195
2010	30	2470	₩	16,945	↔	14,181 \$	2,764	₩	11,959
2011	31	2501	69	17,157	↔	14,359 \$	2,798	₩	14,757
2012	33	2533	↔	18,066	<del>()</del>	15,120 \$	2,946	↔	17,703
2013	33	2566	↔	18,301	₩	15,316 \$	2,985	<del>69</del>	20,688
2014	33	2599	₩	18,539	€9	15,515 \$	3,024	↔	23,711
2015	34	2633	<del>69</del>	18,780	↔	15,717 \$	3,063	<del>G)</del>	26,774
2016	34	2667	₩	19,024	69	15,921 \$	3,103	↔	29,877
2017	35	2702	₩	19,271	↔	16,128 \$	3,143	ω	33,020
2018	35	2737	€	19,522	ω	16,338 \$	3,184	₩.	36,204
2019	36	2773	G	19,776	<b>63</b>	16,550 \$	3,225	69	39,429
2020	36	2809	<del>()</del>	20,033	69	16,765 \$	3,267	↔	42,696
2021	37	2845	<del>()</del>	20,293	₩	16,983 \$	3,310	<del>U)</del>	46,006
2022	37	2882	₩	20,557	69	17,204 \$	3,353	↔	49,359
2023	37	2920	<del>()</del>	20,824	↔	17,428 \$	3,396	₩	52,755
2024	38	2958	69	21,095	€9	17,654 \$	3,440	€9	56,195
2025	38	2996	क	21,369	₩	17,884 \$	3,485	69	59,680
2026	39	3035	<del>(s)</del>	21,647	<del>69</del>	18,116 \$	3,530	↔	63,211
2027	38	3075	63	21,928	€9	18,352 \$	3,576	<del>63</del>	66,787
2028	40	3115	€>	22,213	↔	18,590 \$	3,623	₩	70,410
2029	40	3155	↔	22,502	↔	18,832 \$	3,670	<del>69</del>	74,080
2030	41	3196	69	22,795	Θ	19,077 \$	3,718	<del>69</del>	77,798
2031	42	3238	↔	23,091	↔	19,325 \$	3,766	64)	81,564
2032	42	3280	<del>(/)</del>	23,391	<del>69</del>	19,576 \$	3,815	₩.	85,379
2033	43	3322	↔	23,695	<del>(/)</del>	19,831	3,865	↔	89,243
2034	43	3366	₩	24,003	ω	20,088 \$	3,915	₩	93,158
2035	44	3409	↔	24,315	↔	20,350 \$	3,966	↔	97,124
2036	44	3454	69	24,631	<del>()</del>	20,614 \$	4,017	69	101,141

NPV Operating Profit (Loss) per ET

+Operating Surplus G:\22\12629\Excel\Wellington sewer model.xls

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**Existing Assets** 

Catchment

Year of Calculation 2006

Wellington sewer System

Geographic	Description	Asset Type	Asset Status	Date Capitalised	Capital Cost	MEERA Value	% Recoverable	Asset Type   Asset Status   Date Capitalised   Capital Cost   MEERA Value   % Recoverable   Recoverable MEERA Value   Calendar Year	Calendar Year
	Paringa place pump station		Augment	01-Jan-85	\$93,000.00	\$106,953.54	100.00	106,954	1985
	fire brigade park pump station		Augment	01-Jan-72	\$98,000.00	\$112,703.73	100.00	112,704	1972
	Montefiores No 1 Pump Station		Augment	01-Jan-94	\$617,000.00	\$709,573.50	100.00	709,573	1994
	Gipos St Pump Station		Augment	01-Jan-85	\$199,000.00	\$228,857.58	100.00	228,858	1985

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**Future Works** 

Catchment

Wellington sewer System

Year of Calculation

2006
SIZE LENGTH



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### **Document Status**

Rev	Author	Reviewer		Approved for	Approved for Issue		
No.	Author	Name	Signature	Name	Signature	Date	
0	A Daintith	Thopman -	THY	A Daintith		Feb 06	
		Wartiker	/				