
Business Case to Connect into the Melbourne Water Supply System

A report prepared for South Gippsland Water for community comment

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A s s o c i a t e s

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TABLE OF CONTENTS

Page

Executive Summary	i
1. Introduction.....	1
1.1. Background	1
1.2. Purpose	2
1.3. Supplementary reports	2
1.4. Consistency with Government Policies	3
1.5. Business Case Format	3
2. Project need	4
2.1. Climate Change and water availability	4
2.2. Population growth and industrial water use	7
2.3. Water quality.....	8
2.4. Dam Safety.....	9
2.5. Overview of existing water supply system	10
2.6. Northern Systems.....	12
2.6.1. Poowong, Loch and Nyora	14
2.6.2. Korumburra.....	17
2.6.3. Leongatha and Koonwarra	20
2.6.4. Northern unserviced towns	24
2.7. Southern System.....	24
2.7.1. Wonthaggi, Inverloch and Cape Paterson	24
2.7.2. Unserviced Towns	28
3. Options assessment	29
3.1. Overview of process	29
3.1.1. Water Supply Demand Strategy	29
3.1.2. Workshops with SGW Board & Executive Team	30
3.1.3. Preliminary option analysis – 2008	31
3.1.4. DSE and Ministerial Briefings	33
3.1.5. 2009 Review	33
3.1.6. 2010 Briefing	34
3.2. Shortlisted Business Case options.....	34
3.2.1. Melbourne System Supply.....	35
3.2.2. Surface Supply	38
4. Value-for-Money	42
4.1. Cost effectiveness assessment.....	42
4.1.1. Modelling Approach and Assumptions	42
4.1.2. Modelling Results	43
4.1.3. Sensitivity Analysis	44
4.2. Preferred Option	45
4.2.1. Supply risk.....	46
4.2.2. Water quality.....	47
4.2.3. Benefits for the agricultural value chain.....	48
4.2.4. Environmental benefits	48
5. Review of planning, approval and implementation phases	50
5.1. Introduction	50
5.2. Planning process	50
5.3. Planning approvals – compliance with legislative & regulatory requirements	50
5.3.1. Planning and development approvals.....	51
5.3.2. Environmental approvals	51
5.3.3. Aboriginal and cultural heritage	52

5.4. Project delivery and procurement.....	54
5.4.1. Development and construction phase	54
5.4.2. Operations phase	54
5.5. Stakeholder management and consultation process	55
5.5.1. Identification of stakeholders	55
5.5.2. Consultative process	55
6. Funding options and customer impacts	57
6.1. Funding options assessed.....	57
6.2. Customer impacts and affordability	58
6.2.1. Customer Impacts	58
6.2.2. Affordability.....	62
6.3. Preferred funding option.....	64
7. Risk assessment	65
7.1. Risk identification, analysis and evaluation	65
7.2. Risk mitigation strategies	66
8. Project implementation.....	71
8.1. Implementation timetable	71
8.2. Project governance	71
9. Conclusions and recommendations	73

LIST OF TABLES

	Page
Table 1: Summary of current and future yields and demand (raw water).....	ii
Table 2: Whole of life costs – Base Case	iv
Table 3: Supplementary reports to the Business Case	2
Table 4: Potential reduction in total inflows for the South Gippsland river systems as a result of climate change (compared with the long-term average).....	6
Table 5: Water Supply Northern Systems.....	12
Table 6: Raw Water Demand Northern Systems.....	13
Table 7: Key Parameters – Water Supply Poowong, Loch and Nyora	14
Table 8: Key Parameters – Water Demand Poowong, Loch and Nyora	15
Table 9: PLN – Summary of current and future yields and demand (raw water).....	16
Table 10: Key parameters – Water Supply Korumburra System.....	17
Table 11: Key Parameters – Water Demand Korumburra.....	19
Table 12: Korumburra – Summary of current and future yield and demand (raw water)	19
Table 13: Key parameters – Water Supply Leongatha System.....	21
Table 14: Key Parameters – Water Demand Leongatha and Koonwarra	22
Table 15: Leongatha – Summary of current and future yield and demand (raw water)	23
Table 16: Key parameters – Water Supply Lance Creek System	25
Table 17: Key Parameters – Water Demand Lance Creek	26
Table 18: Wonthaggi, Inverloch, Cape Paterson – Summary of current and future yield and demand (raw water)	27
Table 19: Unserviced Towns – Summary of estimated current and future demand (raw water)	28
Table 20: Overview strategic options	30
Table 21: Supplementary reports to the Business Case	35
Table 22: Contingency and EPCM allowance.....	36
Table 23: Melbourne System Supply Capex for ViF Demand	37
Table 24: Melbourne System Supply Opex for ViF Demand Scenario.....	38
Table 25: Surface Supply Capex for ViF Demand.....	40

Table 26: Surface Supply Opex for ViF Demand.....	41
Table 27: Whole of life costs – Base Case	43
Table 28: PV costs – Sensitivity Analysis	45
Table 29: Flora & Fauna Assessment Methodology.....	52
Table 30: High priority risks identified in desalination risk workshop.....	66
Table 31: High priority risks identified in surface and groundwater risk workshop	68

LIST OF FIGURES

	Page
Figure 1: Process to date	iii
Figure 2: Average Customer Bill for southern and east/west tariff areas – Impacts with and without State Government funding (balance sheet approach, in 2011 dollars)	vi
Figure 3: SGW’s area of operation	1
Figure 4: Long-term average annual distribution of rainfall across Gippsland	5
Figure 5: Change in annual rainfall for Gippsland over the past 13 years, compared with the long-term record.....	5
Figure 6: South Gippsland Water’s Water Supply Systems	11
Figure 7: Water Demand Northern Systems.....	13
Figure 8: Poowong, Loch and Nyora Supply System	14
Figure 9: Raw Water Supply and Demand for Nyora, Poowong and Loch	16
Figure 10: Korumburra Supply System.....	18
Figure 11: Raw Water Supply and Demand for Korumburra	20
Figure 12: Leongatha Supply System	21
Figure 13: Water Supply and Demand for Leongatha and Koonwarra.....	23
Figure 14: Water Demand Southern System	24
Figure 15: Lance Creek Water Supply System	25
Figure 16: Water Supply and Demand for the Lance Creek System.....	27
Figure 17: Process to date	29
Figure 18: Average Annual Customer Bills of Victorian Water Businesses.....	58
Figure 19: Customer Impacts of Melbourne System and Surface Supply (building block approach, uniform pricing)	59
Figure 20: Customer Impacts of Melbourne System Supply with State Government grant and Surface Supply (building block approach, uniform pricing).....	60
Figure 21: Average Customer Bill for southern and east/west areas – Impacts with and without State Government funding (balance sheet approach, in 2011 dollars)	61
Figure 22: Average Annual Customer Bills of Victorian Water Businesses.....	62
Figure 23: Net Working Capital.....	63
Figure 24: Long-term Financial Viability Indicator (net borrowings / total assets)	63
Figure 25: Immediate Liquidity and Debt Servicing Indicator	64
Figure 26: Risk Evaluation Table	65
Figure 27: Implementation program and timetable	72

Executive Summary

BACKGROUND

South Gippsland Water (SGW) has commissioned Marsden Jacob Associates (MJA) to prepare a *'Business Case to Connect into the Melbourne Water Supply System'* (The *'Business Case'*).

This Business Case presents the justification for investment in a connection to the Melbourne System and related water supply augmentation works for the Northern and Southern parts of SGW's supply system.

SGW is at a critical stage and needs to determine how the future potable water demands of the residential and industrial users of the region will be met. In particular, the ability to supply the townships Poowong, Loch and Nyora is just sufficient to meet South Gippsland Water's current level of service objectives under medium climate change and could face a shortfall in water supply within the next five years.

PROJECT NEED

The need for connecting to the Melbourne System and interconnecting the Southern and Northern Supply Systems of SGW is driven by four main issues:

1. **Increased volatility** associated with stream flows due to the effects of climate change/variability resulting in prolonged and more severe droughts.

Climate modelling undertaken by the Department of Sustainability and Environment shows a reduction in water availability of 17 percent, assuming a medium climate change scenario, or 41 percent, assuming continuation of recent low inflows, i.e. the impacts experienced from 1997 to 2009.

It is important to note that these are potential changes to averages. As such, small changes in averages could 'mask' more significant changes to rainfall variability or extremes and resulting impacts on runoff and streamflow.

2. **Population growth** is placing upward pressure on water demand. Growth is occurring along the coast near Inverloch with likely city-fringe growth centred around Nyora, which is scheduled to be sewered over the next three years.

A critical determinant for future industrial water demand will be the success of water use efficiency projects undertaken by Murray Goulburn. The dairy processing factory accounted for about 70 percent of Leongatha's water demand of 1,511 ML in 2009/10.

3. **Water quality**, especially the occurrence of trihalomethanes (THMs), requiring the upgrade of water treatment plants (WTPs).

Intensive dairy and cattle farming in South Gippsland's open catchments has led to high levels of nutrients and natural organic matter in the raw water reservoirs. Additionally, blue green algae blooms have occurred in all raw water reservoirs of the Northern and Southern systems. These algal blooms can have a significant impact on water quality, customer health as well as plant operation. These are a significant obstacle to achieve future water quality standards both in the Northern and Southern Systems.

4. **Dam safety** deficiencies, necessitating major upgrades of existing reservoirs located in the Northern Systems.

Remedial works, a reduction of hazard category or decommissioning are necessary within the next decade to address deficiencies, such as stability of embankment. Decommissioning would provide a potential benefit of improving environmental flows, especially during summer months or providing water for agricultural needs.

EXISTING WATER SUPPLY SYSTEM

SGW currently operates ten separate supply systems to deliver water to 22 towns:

- **The Northern Systems** comprises
 - Little Bass, which supplies Poowong, Loch and Nyora;
 - Coalition Creek, servicing Korumburra; and
 - Ruby Creek, which supplies Leongatha and Koonwarra.
- The **Southern System** includes the Lance Creek System, which delivers water to the three towns Wonthaggi, Inverloch and Cape Paterson.
- The remaining systems have been grouped as **Eastern Systems**. Those are treated separately and do not form part of this Business Case.

As highlighted in the Corporation's Water Supply Demand Strategy (WSDS), all systems could face water supply shortages within the next 20 years. Table 1 provides a summary of current and future yields under the medium climate change and recent low inflows scenarios and contrasts these with current and future demand under Victoria in Future (ViF) and Local Growth scenarios¹.

Table 1: Summary of current and future yields and demand (raw water)

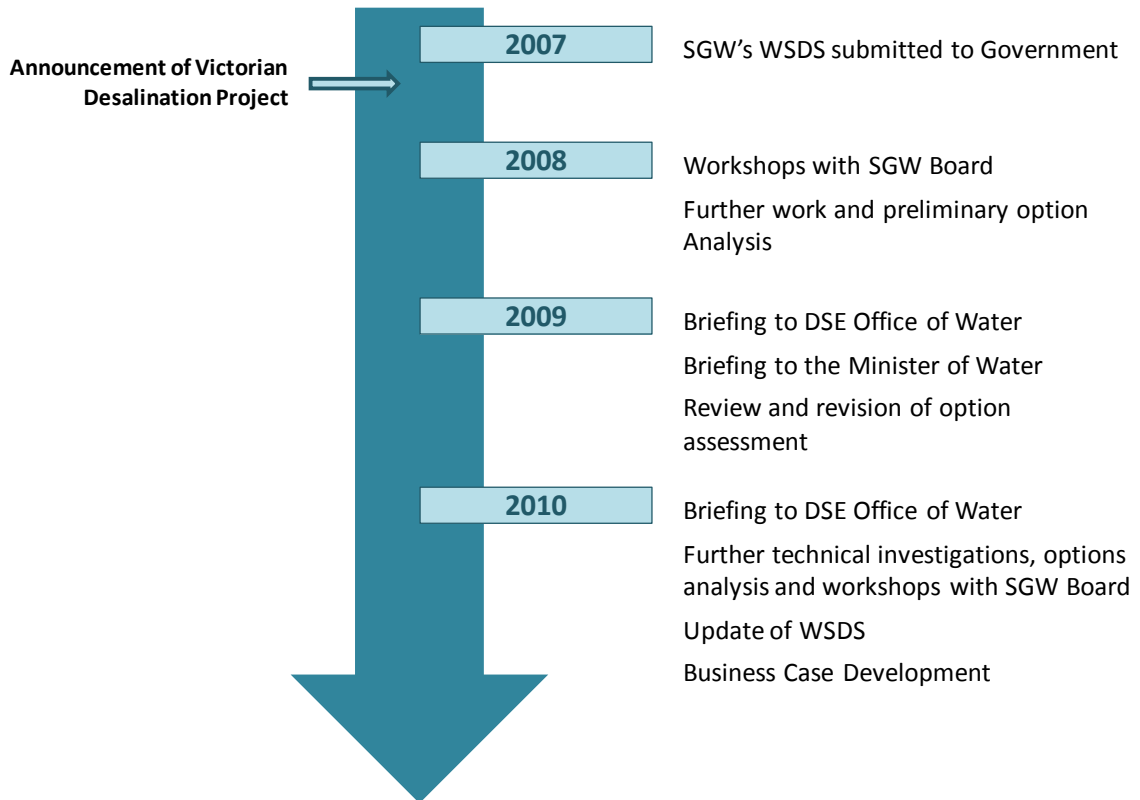
Region	Current Yield ML/a	Medium Climate Change Yield 2058 ML/a	Recent Low Inflows Yield 2058 ML/a	Current Demand ML/a	ViF Demand 2058 ML/a	Local Growth Demand 2058 ML/a
Poowong, Loch, Nyora	274	274	265	264	321	594
Korumburra	741	717	692	621	810	1,079
Leongatha and Koonwarra	1,995	1,833	1,879	1,893	1,692	3,046
Wonthaggi, Inverloch, Cape Paterson	3,426	3,164	2,957	1,734	3,457	4,763
Unserviced Towns	-	-	-	1,200	1,563	1,870

¹ These two demand scenarios have been produced for SGW's WSDS, based on two sets of population projections and future industrial water needs. ViF population forecasts are published by the State Government and based on historical residential trends. The Local Growth scenario was produced by SGW based on consultation with Local Governments and major local industries. It allows for stronger population growth within towns and assumes a greater increase in industrial water needs compared with the ViF forecast.

SUMMARY OF THE OPTIONS AND ALTERNATIVES CONSIDERED

Over the course of the past three years, SGW had undertaken a thorough process of internal workshops, consultations with State Government and use of expert advisors in order to thoroughly assess available options for supply augmentation (Figure 1).

Figure 1: Process to date



The outcomes of the revised assessment and consultations with State Government stakeholders prompted SGW to commission updates of previous studies and additional reports to inform this Business Case. With this information at hand, SGW decided to focus on two options for this Business Case:

- connection of the Northern Systems to the Melbourne System Supply; and
- continued development of existing Surface Supply systems.

The **Melbourne System Supply** option assumes that the Northern and Southern supply systems will be connected to the Melbourne System via Lance Creek. The Northern Systems will source water from the Melbourne System and/or Lance Creek Reservoir. This means all reservoirs and WTPs in the Northern Systems would be decommissioned, once each of the respective systems are connected to Lance Creek Reservoir and the Melbourne System.

Under the **Surface Supply** option existing storage capacities need to be augmented and an additional storage constructed on Ruby Creek to be able to harvest additional winter flows and increase the average annual yield. All WTPs require upgrades for water quality purposes and some for production and capacity purposes. Under ViF demand, Northern Systems are predicted to have sufficient supply capacity thereby avoiding any requirement to connect to Lance Creek and the Melbourne System. However, assuming Local Growth demand, it is *inevitable to connect the Northern Systems to the Melbourne System supply* – resulting in

redundant surface supply assets. There are no other feasible and viable surface augmentation options available to service excess demand.

Both options will utilise the existing transfer pipeline system between the desalination plant and the Lance Creek clear water storage (CWS) to source water from the Melbourne System, when the Wonthaggi Desalination Plant is commissioned in 2012.

THE PREFERRED OPTION

A cost effectiveness assessment was used to analyse the economics of the options. To allow a 'like-with-like' comparison of the options, differences in supply risks and the level of service were addressed by improving supply security of the Surface Supply option. The base case scenario assumes that additional supply augmentations will be implemented to the four systems to cope with two consecutive years of low inflows, similar to the inflows experiences in 2006/07.

Table 2 shows the estimated whole of life or present value costs (PVCs) in 2010/11 dollars, assuming a 5.8 percent real discount rate, for the base case scenario for both the Melbourne System Supply and Surface Supply option under the two demand scenarios, ViF and Local Growth. Under the base case assumptions and ViF Demand, the PVCs are around \$108.2 million for the Melbourne System Supply option and \$118.6 million for the Surface Supply option. That is, the Melbourne System Supply option is about 9 percent less expensive than the Surface Supply option. Under Local Growth demand, PVCs increase to \$152.9 million and \$156.8 million for Melbourne System Supply and Surface Supply, respectively.

Table 2: Whole of life costs – Base Case

	ViF Demand		Local Growth Demand	
	<i>Melbourne System Supply</i>	<i>Surface Supply</i>	<i>Melbourne System Supply</i>	<i>Surface Supply</i>
	\$ million	\$ million	\$ million	\$ million
Northern Systems	71.0	85.6	99.8	115.9
Southern System	37.3	33.0	53.1	40.8
Total	108.2	118.6	152.9	156.8

Source: MJA Analysis

Note: All figures are in 2010/11 dollars

The Melbourne System Supply is the preferred option. The main arguments supporting the preferred option include:

- the Melbourne System Supply option provides a higher level of supply security. Even if augmentations to surface supplies were undertaken to increase the level of service there is still the risk that supply could fail during a sequence of low inflows. The Melbourne System Supply option effectively mitigates the likelihood of future supply failures due to low stream flows into the relatively small storages resulting from climate change/variability and provides greater flexibility to accommodate changes in demand;
- the Melbourne System Supply option avoids the risk of investing in redundant assets – a risk that would prevail if further investment were to be made in augmenting existing surface supply systems. Assuming Local Growth demand, investments to connect all

Northern Systems to the Melbourne System supply are required prior to 2040, regardless of previous surface water augmentations.

- it provides the necessary security to support the future economic growth in the region, including the ability of SGW to service major industrial customers, e.g. Murray Goulburn, a potential industrial shift in the area and/or significant population growth;
- it provides an opportunity for the agricultural sector to use additional flows, offering greater security and the potential for future growth for the agricultural value chain;
- it avoids the need for, and associated impacts of, applying for additional bulk entitlements and the consequential reduction in environmental flows; and
- the cost estimates for the Melbourne System Supply option are considered more reliable given the benefit of the more detailed engineering studies undertaken during 2010.

FUNDING OPTIONS

State Government subsidies are a common funding option for projects, which improve the reliability and security of water supplies in Victoria. Two funding options were assessed using SGW's financial model:

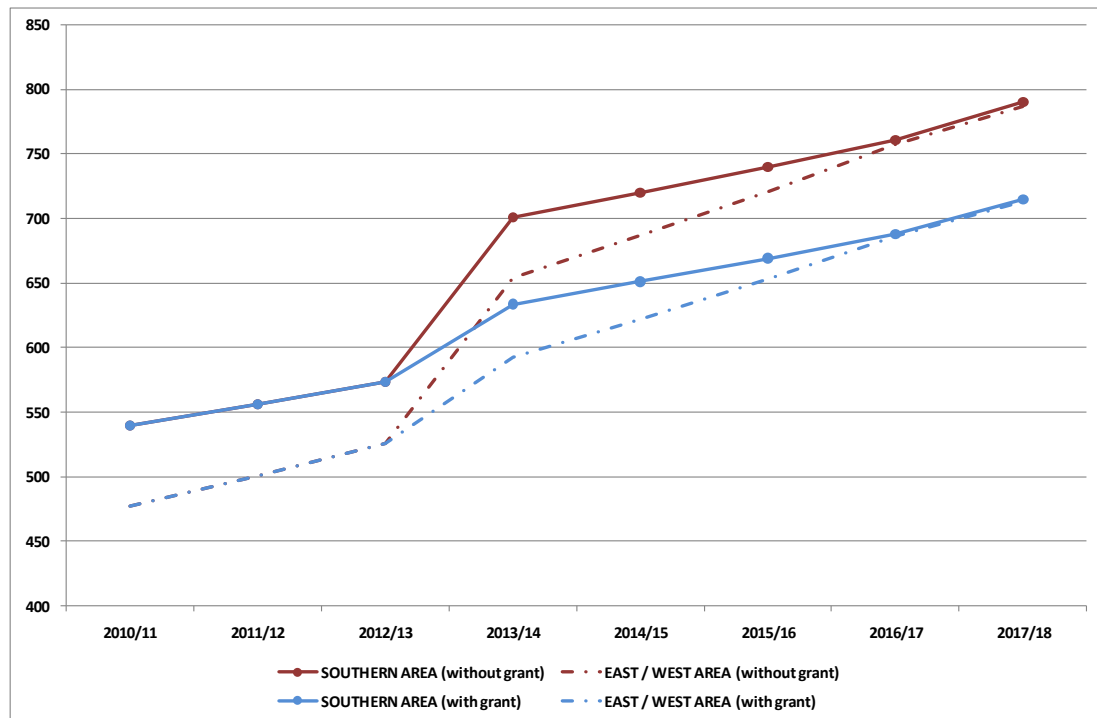
- **'with grant'** – State Government funding is granted for the first stage of the project, i.e. connecting Korumburra and Poowong, Loch, Nyora with the Lance Creek CWS and as such the Melbourne System in 2011/12; and
- **'without grant'** – all stages of the project are fully funded by SGW.

The extent of the grant would be \$18.9 million (in 2010/11 dollars), i.e. the initial infrastructure capital costs to connect Korumburra and Poowong, Loch and Nyora to the Lance Creek Reservoir and the Melbourne System.

Figure 2 below shows the impacts of connecting to the Melbourne System on average customer bills for SGW's southern and east/west areas tariffs². The two red lines show the change estimated in average customer water bills for both areas without State Government funding, whereas the blue lines depict the change in average customers bills with State Government funding.

² Northern Systems are part of the east/west area.

Figure 2: Average Customer Bill for southern and east/west tariff areas – Impacts with and without State Government funding (balance sheet approach, in 2010/11 dollars)



Source: SGW financial analysis

In 2013/14, a substantial increase in real terms in tariffs (about 25 percent rise in average customer bills) would be required to recover the capital expenditure and service associated loans for connecting Korumburra and Poowong, Loch, Nyora to the Melbourne System. This increase would be lessened substantially (by \$75 or 10%), if the capital costs for the first stage of the project, \$18.9 million, were funded through a State Government grant.

Obtaining government funding for this first stage of the project would not only substantially lessen impacts on customers and underwrite the future development of the region, but also support the financial stability of SGW, securing its ability to provide reliable service.

RECOMMENDATION

The Melbourne System Supply is the preferred option, having lower whole-of-life costs of \$108.2 million (in 2010/11 dollars), assuming ViF demand. The option provides:

- a substantially higher level of supply security compared to the Surface Supply option;
- avoids the risk of investing in redundant assets;
- provides the necessary security to support the future economic growth in the region;
- provides an opportunity for the agricultural sector to use additional flows; and
- allows for higher environmental flows.

The Melbourne System Supply option therefore provides security and a basis for the economic prosperity of the region going forward.

The analysis of two funding options shows that impacts on customers could be significantly mitigated with a grant from State Government for the first stage of the project.

Without Government funding water prices are set to rise significantly with the start of the Water Plan 2013 – 2018 to recover the investment of \$18.9 million for the capital works of

connecting the northern towns Korumburra, Poowong, Loch and Nyora to Lance Creek and the Melbourne System. Additionally, funding through the State Government would ensure that SGW remains financially viable.

The SGW Board therefore recommends that State Government provides funding of \$18.9 million (in 2010/11 dollars) to SGW to support the future reliable water supply, and economic growth and prosperity of the region into the future.

1. Introduction

1.1. Background

South Gippsland Water (SGW) has commissioned Marsden Jacob Associates (MJA) to prepare a 'Business Case to Connect into the Melbourne Water Supply System' (The 'Business Case').

The South Gippsland region is located about 2 hours to the south-east of Melbourne. Main towns include Leongatha, Korumburra, Inverloch, Wonthaggi and Foster. The agricultural sector, in particular dairy farming, is an important driver of employment and wealth creation in the region. Murray Goulburn Co-operative and Burra Foods are the major dairy processors the region, located in Leongatha and Korumburra, respectively.

The region has experienced, and is anticipating further, extended population growth along its coastal areas and in the north-west, adjacent to the city fringes of Melbourne.

SGW is the region's water and wastewater service provider and currently operates ten separate water supply systems delivering water to 22 towns:

- The **Northern Systems** comprises:
 - Little Bass, which supplies Poowong, Loch and Nyora;
 - Coalition Creek, servicing Korumburra; and
 - Ruby Creek, which supplies Leongatha and Koonwarra.
- The **Southern System** includes the Lance Creek System, which supplies the three towns Wonthaggi, Inverloch and Cape Paterson.
- The remaining systems have been grouped as **Eastern Systems**. Those are treated separately and do not form part of this business case.

Figure 3: SGW's area of operation



1.2. Purpose

This Business Case presents the justification for investment in a connection to the Melbourne System and related water supply augmentation works for the Northern and Southern parts of SGW's supply system.

SGW is at a critical stage and needs to determine how the future potable water demands of the residential and industrial users of the region will be met. In particular, the ability to supply the townships Poowong, Loch and Nyora is just sufficient to meet South Gippsland Water's current level of service objectives under medium climate change and could face a shortfall in water supply within the next five years.

After record low inflows well below the long-term average, storage levels fell significantly and SGW was forced to implement emergency supplies, such as groundwater bores and a temporary connection to the Tarwin River during the 2006/07 drought.

Going forward, climate change/variability, prolonged droughts and subsequent impacts on run-off and stream flows, together with a growing population necessitate the augmentation and diversification of water supplies.

This Business Case aims at identifying the best value for money option, taking into account not only growth in water demand and potentially reduced water availability, but also other required upgrades and replacements of existing assets. Water quality standards, dam safety requirements and general aging of some assets will necessitate remedial works in the coming decade.

1.3. Supplementary reports

This report draws on information contained in supplementary reports to this Business Case commissioned by SGW. The relevant Supplementary Reports are listed in Table 3.

Table 3: Supplementary reports to the Business Case

<i>Report</i>	<i>Title</i>	<i>Author</i>	<i>Date</i>
Supplementary Report no.1	Water Supply Demand Strategy	Sinclair Knight Merz	March 2011
Supplementary Report no.2	Water Treatment Plant Upgrades Study – South Gippsland Water	Aurecon	August 2010
Supplementary Report no.3	Review of Future Management of Northern Systems Dams	URS	May 2010
Supplementary Report no.4	Connection to Melbourne System Supply via Lance Creek	GHD	July 2010
Supplementary Report no. 5	Cultural Heritage Desktop Assessment – South Gippsland Water Pipeline Alignment	Tim Stone	May 2010

1.4. Consistency with Government Policies

The former Victorian Government's long-term plan for water "*Our Water Our Future*"³, implemented in 2004, outlines actions and measures for sustainable water management with the aim to secure water and sustain growth within the State.

In 2007, the former Government established the *Next Stage* of the plan, which aims at providing long-term solutions to secure Victoria's water supplies. It comprises several infrastructure projects, including the construction of a major desalination plant near Wonthaggi and expanding Victoria's Water System to pipe water around the State. The desalination plant is due to transfer water by the end of 2011. The Next Stage of the plan envisages that towns in the Westernport and South Gippsland region will be serviced through links to the Melbourne System.

Securing future water supplies, in particular in regional Victoria, is also consistent with the *Victorian Liberal Nationals Coalition Plan for Water*, which states that '*water is the lifeblood of regional communities*'.⁴ The strategy and preferred option outlined in this Business Case support the Government's principles and fosters regional growth.

1.5. Business Case Format

Section 2 of this report outlines the project need, and explains the existing supply system and future water supply and demand balance.

Section 3 provides an overview of the process of identification and evaluation of options to date and explains the proposed augmentation options and main assumptions underlying the economic analysis in detail.

Section 4 describes the financial analysis undertaken and outlines the preferred option and its advantages, including lower supply risk, better water quality and environmental benefits.

Section 5 depicts the planning and approval process, including environmental, aboriginal and cultural heritage approvals. It also outlines the process of project delivery, procurement and stakeholder management.

Section 6 assesses possible funding options and customer impacts. It then identifies the preferred funding option.

Section 7 explains the risk assessment process undertaken in preparation of the Business Case and provides an overview of high priority risks.

Section 8 outlines the implementation schedule of the first project stages.

Section 9 provides recommendations regarding the granting of approvals and State Government funding.

³ <http://www.ourwater.vic.gov.au/>

⁴ Liberal Victoria, 2010, *The Victorian Liberal Nationals Coalition Plan for Water*, p. 2

2. Project need

This section of the Business Case outlines the need for connecting to the Melbourne System and interconnecting the Southern and Northern supply systems of SGW. The four main drivers are:

1. Increased volatility associated with stream flows due to the effects of climate change/variability resulting in prolonged and more severe droughts;
2. population growth is placing upward pressure on water demand. Growth is occurring along the coast near Inverloch with likely city-fringe growth centred around Nyora, which is scheduled to be sewered over the next three years;
3. water quality, especially the occurrence of trihalomethanes (THMs), requiring the upgrade of water treatment plants (WTPs); and
4. dam safety deficiencies, necessitating the upgrade of existing reservoirs located in the Northern Systems.

In addition to a description of the abovementioned drivers, this section provides an overview of the existing water supply systems, current levels of demand and supply, and future demand and supply imbalances.

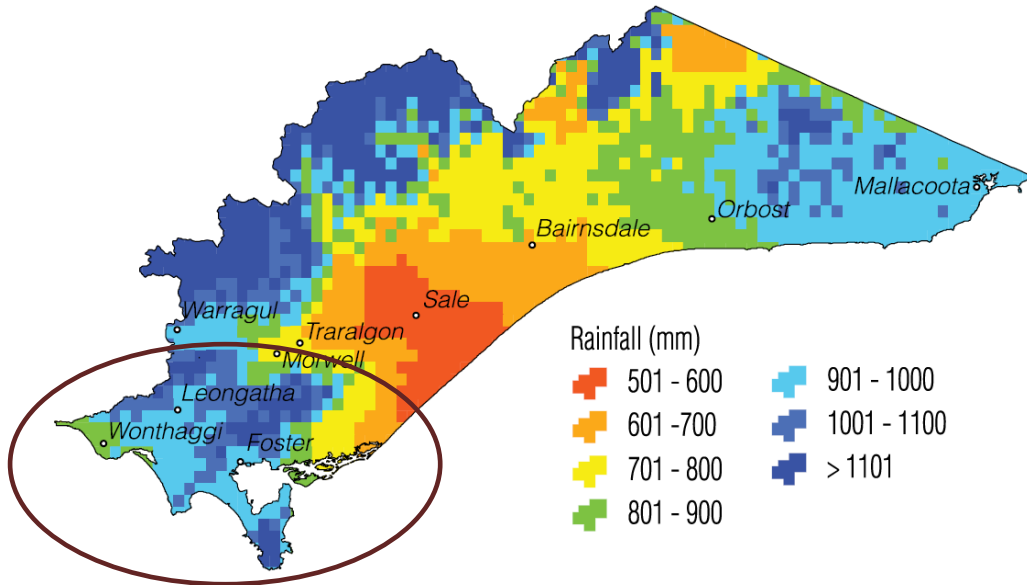
2.1. Climate Change and water availability

Climate change and greater climate variability is emerging as a vital issue for rural and regional communities across Victoria. Although climate variability has always been a fact of life for these communities, the prolonged drought in much of eastern and southern Australia through the 2000s has heightened awareness of the potential for greater variability in the future.

The climate in Victoria is expected to be hotter and drier, with more frequent and severe droughts interspersed by periods of intense rainfall and storms. In conjunction with increasing temperatures, a significant reduction in rainfall, run-off and river flows, is likely.

The South Gippsland region has moderate to high rainfall of 900 – 1100 mm annually (long-term average). However, the region experienced its longest drought on record from 1997 to 2009 and a decline in rainfall of between 10 and 20 percent during this period (Figure 4, Figure 5).

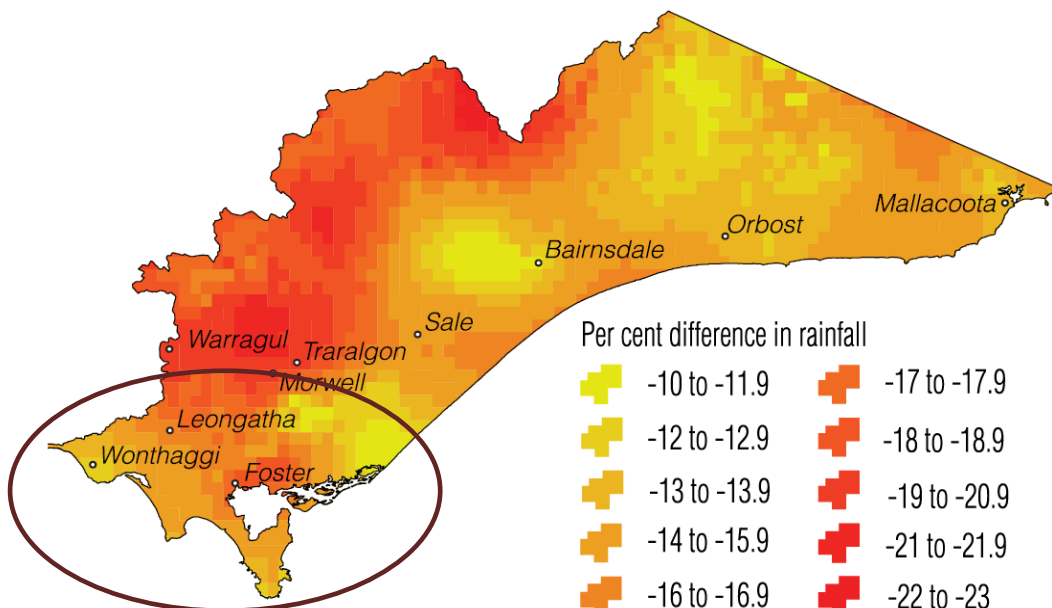
Figure 4: Long-term average annual distribution of rainfall across Gippsland



Source: Department of Sustainability and Environment, 2010

Note: Average annual rainfall calculated over the period from 1900-2009

Figure 5: Change in annual rainfall for Gippsland over the past 13 years, compared with the long-term record



Source: Department of Sustainability and Environment, 2010

Note: Calculated as the percentage difference between the average annual rainfall over the period 1997-2009 and the average annual rainfall over the period 1900-1996

Rainfall projections to 2070 indicate that average annual rainfall will decline by between 6 to 11 percent compared with the historic averages, especially during winter and spring.⁵ Moreover, increased rainfall variability (season to season and year on year) points to an increase in drought frequency. It is also likely that rain will fall in more intense and less

⁵ Department of Sustainability and Environment, 2008, *Climate Change in West Gippsland*, June

frequent bursts. In summary, the future most likely will be drier, warmer, and rainfall will be less reliable and more extreme.

Major reductions in run-off and stream flows are a direct consequence of the decline in rainfall. The relationship between rainfall and surface run-off is not linear. It is expected that, in Victoria, the percentage decrease in run-off is about two to three times greater than the decrease in rainfall.⁶

This relationship between rainfall and run-off may be influenced and possibly exacerbated by a complex set of drivers and interactions. Variables such as seasonality of rainfall, temperature, soil moisture, plant evapo-transpiration rates and relative humidity play a significant role, as does catchment land use, vegetation composition and numbers of farm dams.

Climate modelling was undertaken by the Department of Sustainability and Environment to understand the impacts of climate change/variability on future water availability and reliability of supply. The modelling is based on five future climate scenarios: historic, low climate change, medium climate change, high climate change and recent low inflows.

Overall, the modelling shows a reduction in water availability, impacting on both consumptive users and the environment, under all future climate scenarios (Table 4). The reduction experienced since 1997 is more severe than the projected impacts under the high climate change scenario. It is possible, however, that the prolonged drought and low inflows of the past decade represent a permanent shift in water availability.⁷

Additionally, it is important to note that the data presented in Table 4 provides potential changes to averages. As such, small changes in averages could ‘mask’ more significant changes to rainfall variability or extremes and resulting impacts on runoff and streamflow.

Table 4: Potential reduction in total inflows for the South Gippsland river systems as a result of climate change (compared with the long-term average)

Climate scenario	Inflow impact in 2055
A – Low	-7%
B – Medium	-17%
C – High	-28%
D – Impact experienced since 1997	-41%

Source: CSIRO, cited in DSE, 2010, Sustainable Water Strategy

Note: Reduction of average annual inflows when comparing pre-July 1997 average inflows with post-July 1997 inflows. Reductions shown are calculated to 2008.

Scenario D for Bass, Powlett, Tarwin, Agnes and Tarra systems only. Data sourced from resource allocation modelling.

It should be noted, that Table 4 only accounts for changes due to a decline in rainfall. While climate change/variability is likely to be the main driver of reduced water availability, other factors, such as population growth and changing industrial water needs, also pose a significant risk to water availability. Those factors are discussed in more detail in section 2.2.

⁶ Chiew, F.H.S, 2006, *Estimation of rainfall elasticity of streamflow in Australia*, Hydrological Sciences Journal

⁷ Department of Sustainability and Environment, 2010, *Draft Gippsland Region Sustainable Water Strategy*

While the focus of the *Sustainable Water Strategy* is on the medium climate and the recent low inflows scenarios, the Business Case is centred on the medium climate change scenario.

SGW commissioned SKM to model the average annual yield for all four Northern and Southern Systems up to 2058 as part of its Water Supply Demand Strategy (WSDS). Again, it is important to note that the annual yields are expressed as average only, and therefore significant variations are possible in any given year. That is, the yield in a particular year could be significantly lower than suggested by the modelling. This poses a notable risk to SGW's water supply.

The yield modelling also shows that existing reservoirs are small and designed to fill every year over the winter period. This adds to the abovementioned risk, because no additional water can be stored to buffer reduced water availability during a drought year. Supply augmentation is necessary to increase and secure the reliability of SGW's water supply.

2.2. Population growth and industrial water use

The South Gippsland region is experiencing extended population growth. The two LGAs in the region, Bass Coast Shire and South Gippsland Shire, grew 2.5 and 2.0 percent in 2008/09, respectively – well above the average annual growth of 1.6 percent in regional Victoria.⁸ Future growth is expected to occur particularly in the western towns, such as Nyora, and the coastal areas closer to Melbourne.

Usually, industrial water use is expected to increase with population growth. For SGW, a critical determinant for future industrial water demand will be the success of water use efficiency projects undertaken by Murray Goulburn. The dairy processing factory accounted for about 70 percent of Leongatha's water demand of 1,511 ML in 2009/10. It aims to achieve water savings of around 600 ML/a, almost a third of Leongatha's average long-term demand of 1,893 ML/a.

Demand Forecasts

Drivers of growth in water demand in the region include:

- population growth;
- industrial and commercial expansion; and
- connection of unserviced towns.

Two demand scenarios have been produced for SGW's WSDS, based on two sets of population projections and future industrial water needs. The Business Case utilises these two demand scenarios up to 2058 to determine costs and benefits of shortlisted options.

- *Victoria in Future (ViF)*: ViF population forecasts are published by the State Government and based on historical residential trends. Projections are available for Statistical Local Areas (SLAs). The population growth data for the SLAs South Gippsland Central (covering Leongatha and Koonwarra), South Gippsland West (covering Korumburra, Poowong, Loch and Nyora) and Bass Coast (covering Wonthaggi, Inverloch and Cape Paterson) was used to project future water demand for the WSDS in accordance with Department of Environment and Sustainability (DSE) guidelines.

⁸ Department of Planning and Community Development, 2010, Victorian Population Bulletin

- *Local Growth*: This forecast was produced by SGW based on consultation with Local Governments and major local industries. It allows for stronger population growth within towns and assumes a greater increase in industrial water needs compared with the ViF forecast.

ViF and Local Growth scenarios represent the lower and upper bound of water demand for this Business Case.

Consistent with DSE recommendations, an increase in residential, and stock and domestic demand by about 2.5 percent per year due to medium climate change was incorporated for all growth forecasts. This is based on the assumption that water demand will increase under drier and hotter climatic conditions, e.g. as a result of increased garden watering.⁹

However, this increase in demand is assumed to be offset by various demand reduction measures implemented by both SGW and the State Government. For instance, these measures include community education, more stringent building standards (Five Star Standard) and permanent outdoor water savings measures.¹⁰

2.3. Water quality

In Victoria, water quality is regulated under the *Safe Drinking Water Act 2003* and *Safe Drinking Water Regulations 2005*.

In 2008 and 2010, SGW commissioned Aurecon to examine its current and future water quality issues in detail. Both reports¹¹ found that operational risks associated with Surface Supply option in particular, require upgrades to WTPs and CWSs to meet future customer and regulatory requirements:

*Continuation with the surface water supply option would require major upgrades to the existing water treatment facilities to cater for 50 year demand projections and to meet anticipated tightening of potable water quality standards.*¹²

Intensive dairy and cattle farming in South Gippsland's open catchments has led to high levels of nutrients and natural organic matter in the raw water reservoirs. This is a significant obstacle to achieve future water quality standards both in the Northern and Southern Systems.

Chloramination and chlorination are currently used for water treatment in all four systems. The resulting occurrence of THMs already exceeded regulatory compliance levels in the Lance Creek System for three years (2006-08). The increase in chlorination has also led to taste and odour complaints.

Additionally, local conditions mean that high manganese levels are an issue in both the Northern and Southern Systems. Whilst presenting a low health risk to consumers, it causes a significant amount of customer complaints ('dirty water'). SGW currently oxidises the manganese and then removes it via traditional clarification and filtration, which is often not

⁹ WSDS, 2010

¹⁰ WSDS, 2010

¹¹ Aurecon, 2010, *Water Treatment Plant Upgrades Study – An Update*, prepared for South Gippsland Water, August; and Connell Wagner (now Aurecon), 2008, *Future Desalinated and Surface Water Supply Risk Assessment and Water Treatment Plant Upgrades Study*, August, Melbourne

¹² Connell Wagner (now Aurecon), 2008, *Future Desalinated and Surface Water Supply Risk Assessment and Water Treatment Plant Upgrades Study*, August, Melbourne, p. 2

sufficient to prevent manganese reaching customers. Reticulation pipes are cleaned periodically through air scouring and flushing.

In all raw water reservoirs of the Northern and Southern Systems blue green algae blooms have occurred. These algal blooms can have a significant impact on water quality, customer health as well as plant operation. Blooms are currently controlled with copper sulphate, an algaecide. However, this can lead to increasing copper levels in the sediment and raw water. Increasing copper levels are already occurring in Lance Creek Reservoir. Blue green algae will remain a risk in the systems until advanced treatment is provided at the WTPs.

Upgrades or replacements of SGW's treatment plants are required within the next decade, due to water quality issues, capacity and/or age. The WTPs in Leongatha and Korumburra are both 30 years old and Aurecon recommends a complete replacement by 2020. The Poowong and Wonthaggi treatment plants have the capacity to service ViF demand up to 2058, but upgrades are necessary to meet possible future water quality standards. Aurecon has adopted SGW's view that a tightening of water quality standards could come into force and that 2020 and 2025 would be appropriate timeframes for such increased standards.¹³

The sizing of treatment options is primarily based on future demand requirements. Aurecon based its analysis on ViF and Local Growth scenarios and used peaking factors provided by SGW to estimate peak daily flows and determine the sizing of the treatment plants and CWSs.

The suggested treatment train has been designed to address expected future regulatory requirement with regard to water quality and comprises:

- Dissolved Air Flotation Filtration (DAFF);
- Ozone - Biological Granulated Activated Carbon Filtration (BAC); and
- Microfiltration / Ultrafiltration (MF/UF).

Upgrades would be staged in 2020 (ozone/BAC and DAFF) and 2025 (MF/UF).

2.4. Dam Safety

In 2010, SGW commissioned URS to prepare a review¹⁴ of future management options for the dams in the Northern Systems.

Dam safety deficiencies have been identified for all dams, including:

- stability of embankment, tower and/or upstream and downstream shoulders;
- piping risk due to no filters; and
- excessive seepage.

Remedial works, a reduction of hazard category or decommissioning are necessary within the next decade to address those deficiencies. SGW has decided to decommission dams in the Northern Systems, should they be connected to the Melbourne System via Lance Creek. This provides additional potential benefits of improving environmental flows, especially during summer months, and/or providing water for agricultural services.

¹³ Aurecon, 2010, *Water Treatment Plant Upgrades Study – An Update*, prepared for South Gippsland Water, August. p. 14

¹⁴ URS, 2010, *Review of Future Management of Korumburra System Dams and Little Bass Dam*, prepared for South Gippsland Water, May

2.5. Overview of existing water supply system

SGW currently operates ten separate supply systems to deliver water to 22 towns (Figure 6):

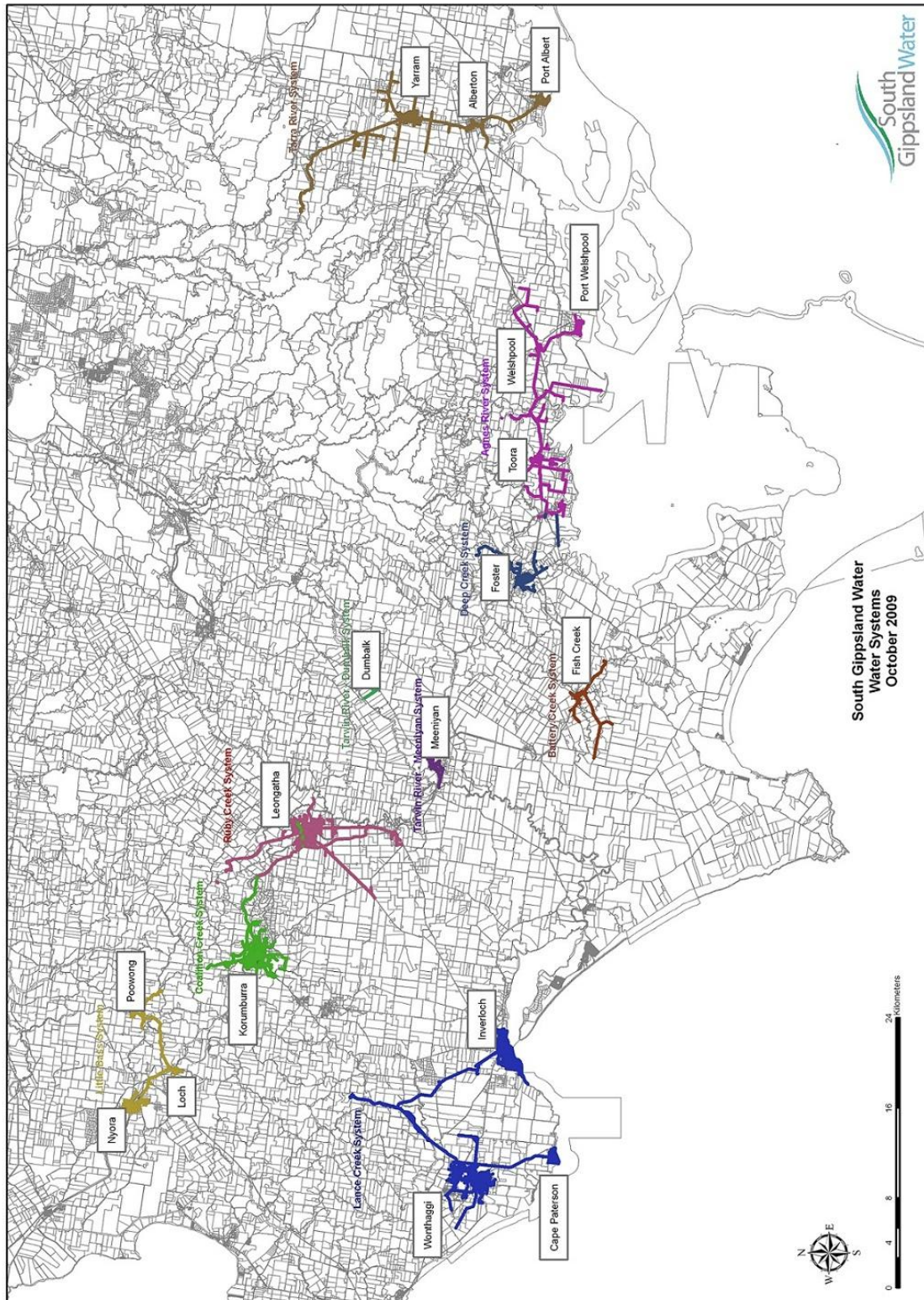
- **The Northern Systems** comprises
 - Little Bass, which supplies Poowong, Loch and Nyora;
 - Coalition Creek, servicing Korumburra; and
 - Ruby Creek, which supplies Leongatha and Koonwarra.
- The **Southern System** includes the Lance Creek System, which delivers water to the three towns Wonthaggi, Inverloch and Cape Paterson.
- The remaining systems have been grouped as **Eastern Systems**. Those are treated separately and do not form part of this Business Case.

The Business Case focuses on the *medium climate change* scenario, which assumes that runoff in the South Gippsland Basin will decrease by 15 percent by 2058 relative to 2009.¹⁵

The demand scenarios are based on the two growth scenarios, ViF and Local Growth, as described in section 2.2. Both scenarios assume that demand reduction measures are in place.

¹⁵ South Gippsland Water, 2011, Water Supply Demand Strategy

Figure 6: South Gippsland Water's Water Supply Systems



2.6. Northern Systems

The following sections provide an overview of the three Northern Systems.

Storage capacity and bulk entitlements

The eight reservoirs of the Northern Systems have a combined capacity of 2,771 ML (Table 5). SGW currently holds bulk entitlements (BEs) totalling 5,696 ML¹⁶ for the Northern Systems, representing the maximum volume that could be harvested in any given year, subject to availability, i.e. maximum diversion rate and minimum passing flows.

Additionally, SGW has now secured an amendment to its Korumburra and Leongatha BE's to allow SGW to access up to 1,800 ML/a (effective 19 October 2010) from Coalition Creek and the Tarwin River West Branch. The diversion rules comprise various seasonal access rules, diversion rates and passing flow requirements. SGW's current diversion infrastructure would not be able to harvest the full entitlement volume. However, river basin caps and sustainable diversion limits, which limit total water use in river basins, restrict SGW's access to new resources and will make it difficult to obtain new BEs.¹⁷

Table 5: Water Supply Northern Systems

	Bulk Entitlements	Storage Capacity	Current Yield
	ML/a	ML	ML/a
Poowong, Loch, Nyora	420	202	274
Korumburra	1,000	658	741
Leongatha	4,276	1,911	1,995
Total – Northern Systems	5,696	2,771	3,010

Source: WSDS and SKM

Demand

Despite residential growth, the long-term average of total raw water demand under the ViF projections is expected to increase only marginal to about 2,823 ML/a in 2058, compared with the current long-term average of 2,778 ML/a (Table 6). This is due to major water savings in the order of 600 ML proposed to be achieved by 2013 at Murray Goulburn's processing plant. Those savings offset the increase in residential and other industrial demand, assuming ViF growth.

¹⁶ WSDS, 2010

¹⁷ WSDS, 2010

Table 6: Raw Water Demand Northern Systems

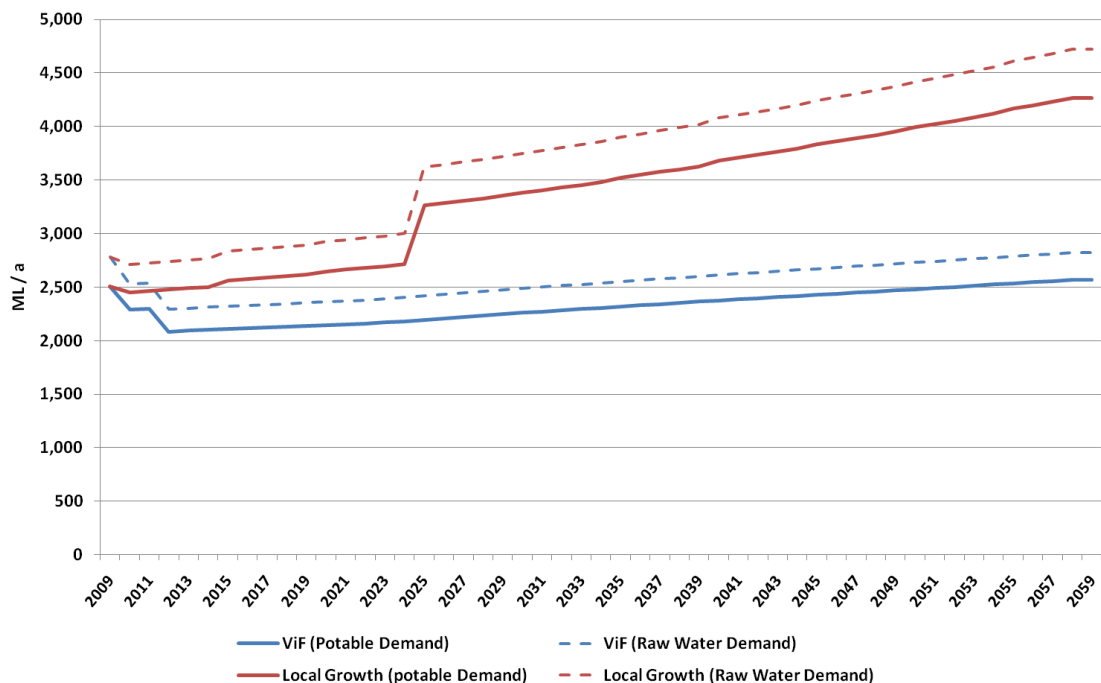
	Annual Demand current	Annual Demand 2058	
	ML	ViF ML	Local Growth ML
Poowong, Loch, Nyora	264	321	594
Korumburra	621	810	1,079
Leongatha	1,893	1,692	3,046
Total – Northern Systems	2,778	2,823	4,719

Source: WSDS and SKM

Note: Annual Demand in 2058 assumes demand reduction measure will be in place.

It should be noted that there are uncertainties surrounding the demand forecasts, in particular the feasibility of water savings for Murray Goulburn and possibly stronger residential growth in urban centres. These are addressed with the Local Growth forecast, which provides an upper bound of 4,719 ML/a in 2058. Figure 7 shows both potable and raw water demand under ViF and Local Growth scenarios, which represent the lower and upper bounds for the Business Case analysis.

Figure 7: Water Demand Northern Systems



A comparison of current average annual demand (2,778 ML/a, Table 6) and capacity of existing storages (2,771 ML, Table 5) illustrates the small size of the storages and the reliance on annual fills. This poses a substantial risk to SGW's water supply. Significant water shortages are highly likely if further dry years and droughts do occur. This was

illustrated in 2006/07 when both Leongatha and Korumburra would have had extreme water shortages without the qualification to the Bulk Entitlements.

2.6.1. Poowong, Loch and Nyora

Supply

The three towns Poowong, Loch and Nyora are supplied with water from the Little Bass River, a tributary of the Bass River. Water is stored in the Little Bass Reservoir, located south-east of Poowong, and treated at the nearby WTP (Figure 8).

Table 7 provides information on the key parameters of the Poowong, Loch and Nyora supply system.

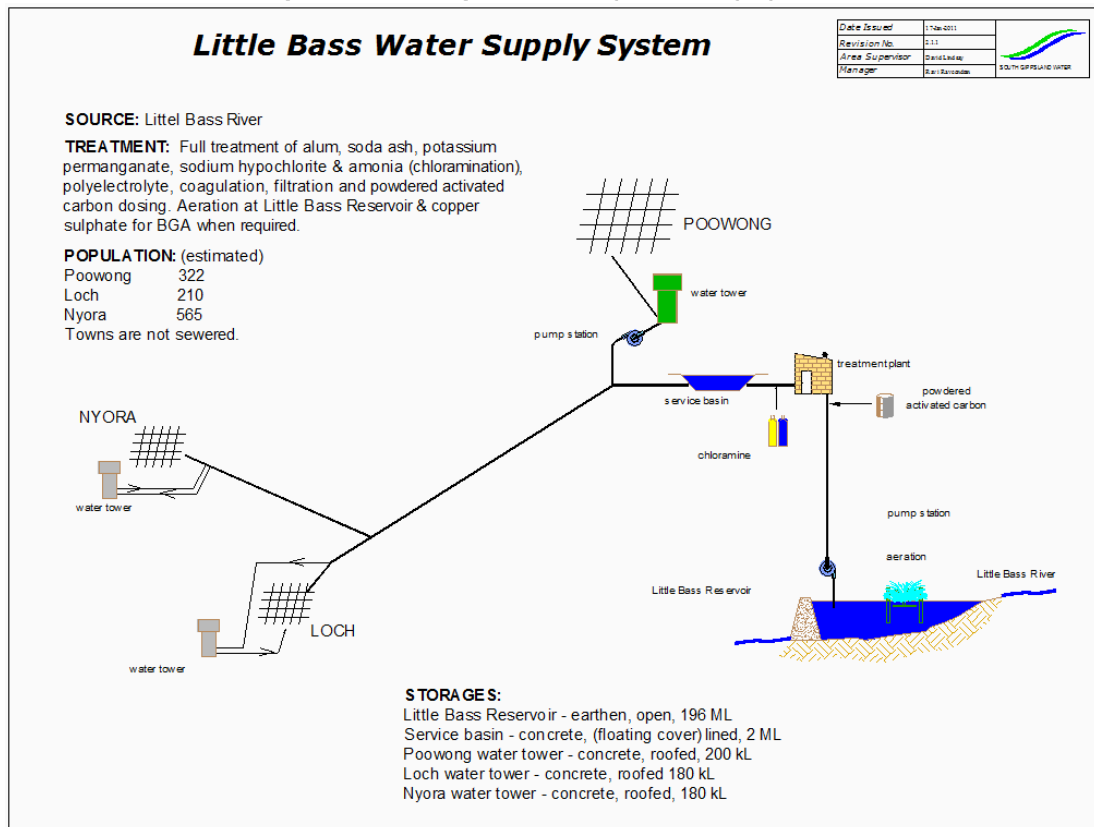
Table 7: Key Parameters – Water Supply Poowong, Loch and Nyora

Bulk Entitlements	Storage Capacity	WTP Capacity	Current Yield
ML/a	ML	ML/d	ML/a
420 ⁽¹⁾	202	2.4	274

Source: WSDS 2010, Aurecon 2010

Note: (1) Diversion subject to minimum passing flows of 0.5 ML/d and a maximum diversion rate of 2.7 ML/d (WSDS, 2010)

Figure 8: Poowong, Loch and Nyora Supply System



Source: SGW

Demand

In 2009/10 SGW serviced about 1,048 residents in the three towns Poowong, Loch and Nyora. Customer numbers (assessments) have increased steadily in recent years to 686 in 2009/10.¹⁸

With increasing population and customer numbers, water demand has been growing over the last decade, except for the period from 2007 to 2009, which saw a significant drop in water demand due to restrictions and an enforced decline in industrial water usage. Table 8 provides information on long-term, three year average (2007-2010) and most recent water demand.

Table 8: Key Parameters – Water Demand Poowong, Loch and Nyora

Estimated Long Term Current Demand				2009/10	2007-2010
Annual Demand (raw)	Annual Demand (potable)	Average Daily Demand (potable)	Peak Day Demand (potable)	Annual Demand (potable)	Annual Demand (potable)
ML/a	ML/a	ML/d	ML/d	ML/a	ML/a
264 ⁽¹⁾	240	0.66	1.64 ⁽²⁾	159	189

Source: WSDS 2010, Aurecon 2010

Note: (1) WTP losses estimated at 9% (WSDS, 2010)

(2) Peak day is calculated using specific peaking factors for each WTP provided by SGW. The peaking factor for the Poowong, Loch and Nyora system is 2.5.

Residential demand, including stock and domestic, accounts for around 70 percent of total water demand.¹⁹ There is no clear seasonal pattern of demand, with variations attributable to the variable water use at the Poowong Abattoir.²⁰

Future demand and supply imbalances

The ViF scenario for Poowong, Loch and Nyora assumes annual growth in residential customers of 0.6 to 1.1 percent per annum with no change in major industrial demand. This results in an average annual demand of 321 ML/a in 2058 (Table 9).

By contrast, the Local Growth scenario assumes a 1.5 to 2.5 percent growth per annum and incorporates an allowance for an increase in industrial demand to 230 ML/a (from currently 89 ML/a). In summary, average annual demand in 2058 under Local Growth is forecasted at 594 ML/a (Table 9).

The higher population growth under the Local Growth scenario is largely attributed to Nyora. The town is within commuting distance to the eastern parts of Melbourne and there is potential for strong ‘city fringe’ growth. Future residential development in the order of 1,000 lots may occur.²¹

¹⁸ South Gippsland Water, 2010, Annual Report 2010, p.2

¹⁹ South Gippsland Water, 2010, Annual Report 2010, p.18

²⁰ WSDS, 2010

²¹ WSDS, 2010

Table 9: PLN – Summary of current and future yields and demand (raw water)

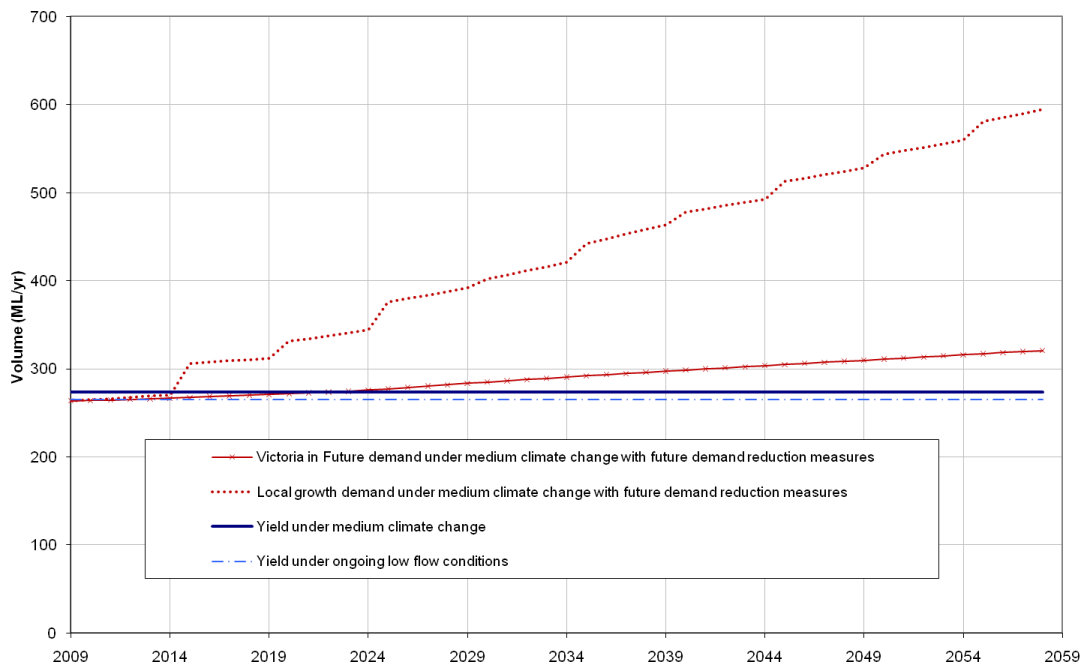
Region	Current Yield ML/a	Medium Climate Change Yield 2058 ML/a	Recent Low Inflows Yield 2058 ML/a	Current Demand ML/a	ViF Demand 2058 ML/a	Local Growth Demand 2058 ML/a
Poowong, Loch, Nyora	274	274	265	264	321	594

Source: WSDS, SKM modelling

Note: 2058 yields do not include any supply augmentations

In Poowong, Loch and Nyora demand will exceed available supply in 2022, assuming a medium climate change scenario and population growth in line with ViF projections. Water shortages could occur as soon as 2012, should the low inflow scenario takes place (Figure 9).

Figure 9: Raw Water Supply and Demand for Nyora, Poowong and Loch



The WSDS concluded that available supply is not sufficient to cater for immediate future demand in Poowong, Loch and Nyora. Potential supply enhancement options for the Little Bass System include connecting to the Melbourne System via Lance Creek and Korumburra or raising the existing reservoir by about 2 metres to harvest additional winter flows. This surface upgrade would increase the storage capacity by about 200 ML and would service Poowong, Loch and Nyora for about 40 years under the Local Growth scenario and over 50 years under the ViF scenario under the medium climate change scenario.

Supply augmentation options considered in this Business Case are discussed in more detail in section 3.2.

Water Quality and Dam Safety

The existing treatment plant in Poowong has sufficient capacity to service ViF Demand, but capacity upgrades are required, should stronger growth in demand occur. Upgrades to meet

expected future water quality standards are required for both demand scenarios starting in 2020.

Dam safety upgrades (under the surface option) or dam decommissioning (under the Melbourne System Supply option) have been scheduled for 2014.

2.6.2. Korumburra

Supply

The Korumburra supply system sources water from Coalition Creek, Ness Creek and Bellview Creek. Raw water is stored in three reservoirs and treated at the Korumburra WTP (Figure 10). Table 10 depicts key parameters of the Korumburra supply system.

Table 10: Key parameters – Water Supply Korumburra System

Bulk Entitlements	Storage Capacity	WTP Capacity	Current Yield
ML/a	ML	ML/d	ML/a
1,000 ⁽¹⁾	658	4.0	741

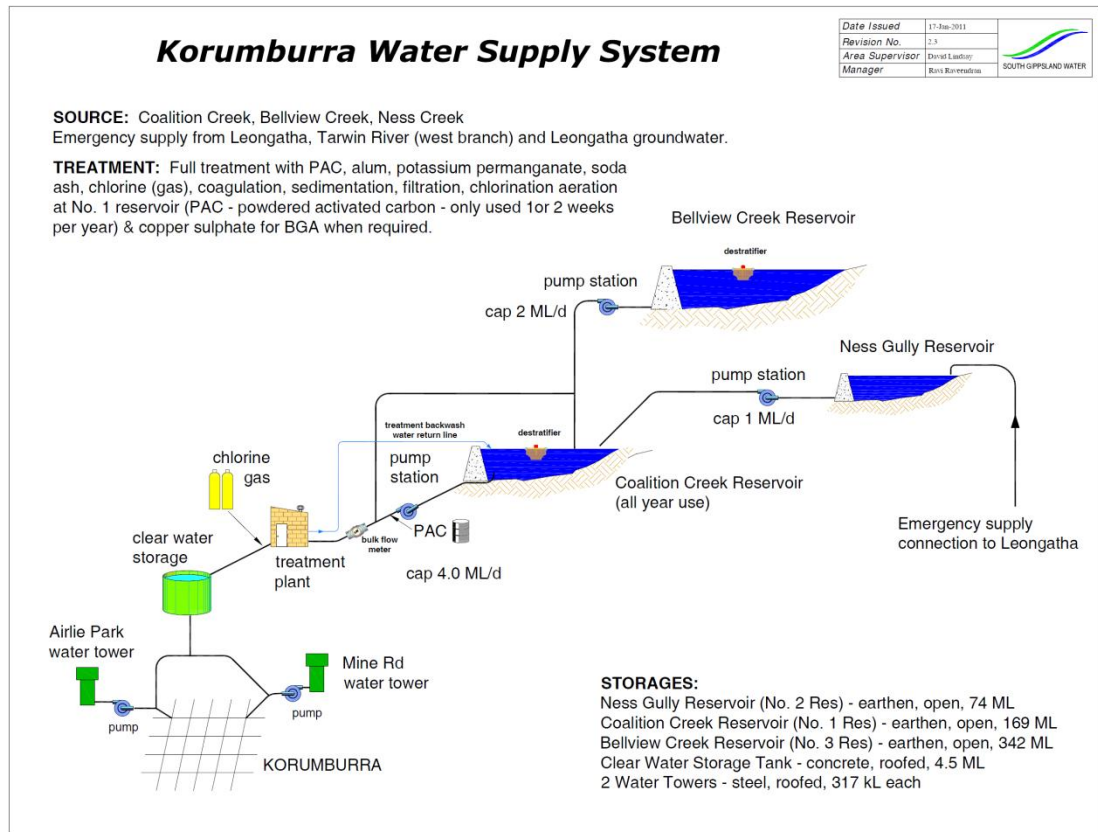
Source: WSDS 2010, Aurecon 2010

Note: (1) Diversions are subject to minimum passing flows and maximum diversion rates (WSDS, 2010)

During the 2006/07, temporary pumping occurred from the Tarwin River West Branch via Leongatha to Korumburra. This was formalised into a qualification of rights through an amendment to the Meeniyan BE in June 2008, allowing SGW to divert up to 1,800 ML/a, subject to storage trigger volumes and cease-to-pump stream flow thresholds.

SGW has now secured an amendment to its Korumburra and Leongatha BE's to allow SGW to access up to 1,800 ML/a (effective 19 October 2010) from Coalition Creek and the Tarwin River West Branch. The diversion rules comprise various seasonal access rules, diversion rates and passing flow requirements. SGW's current diversion infrastructure would not be able to harvest the full entitlement volume.

Figure 10: Korumburra Supply System



Source: SGW

Demand

In 2009/10, a population of 3,266 in Korumburra was serviced by SGW. Population remained relatively constant over the past two decades. Customer numbers (assessments), however, increased consistently since the early 1980s, now amounting to 2,031.²² Despite increasing customer numbers, residential demand decreased significantly over the last few years, largely due to the restrictions²³. Industrial demand has been fairly constant over the last three to four years.

²² South Gippsland Water, 2010, Annual Report 2010, p.2

²³ Stage 4 restrictions were in place in 2006/07

Key parameters of water demand in Korumburra are listed in Table 11.

Table 11: Key Parameters – Water Demand Korumburra

Estimated Long Term Current Demand				2009/10	2007-2010
Annual Demand (raw)	Annual Demand (potable)	Average Daily Demand (potable)	Peak Day Demand (potable)	Annual Demand (potable)	Annual Demand (potable)
ML/a	ML/a	ML/d	ML/d	ML/a	ML/a
621 ⁽¹⁾	602	1.65	3.3 ⁽²⁾	382	402

Source: WSDS 2010, Aurecon 2010

Note: (1) WTP losses estimated at 3% (WSDS, 2010)

(2) Peak day is calculated using specific peaking factors for each WTP provided by SGW. The peaking factor for the Korumburra system is 2.0.

The split of residential and industrial water demand is about 60 and 40 percent, respectively.²⁴ Demand varies seasonally with climate, but base demand in winter is relatively high.

Future demand and supply imbalances

ViF demand projections assume annual growth in residential customers of 0.6 to 1.1 percent per annum with no change in major industrial demand. The Local Growth scenario for Korumburra assumes a 1.5 percent growth per annum, while industrial demand is assumed to grow by 10 percent in 2015 and a further 10 percent in 2040.²⁵

In 2058, ViF and Local Growth demand are expected to amount to 810 ML/a and 1,079 ML/a, respectively (Table 12).

Table 12: Korumburra – Summary of current and future yield and demand (raw water)

Region	Current Yield	Medium Climate Change Yield 2058	Recent Low Inflows Yield 2058	Current Demand	ViF Demand 2058	Local Growth Demand 2058
	ML/a	ML/a	ML/a	ML/a	ML/a	ML/a
Korumburra	741	717	692	621	810	1,079

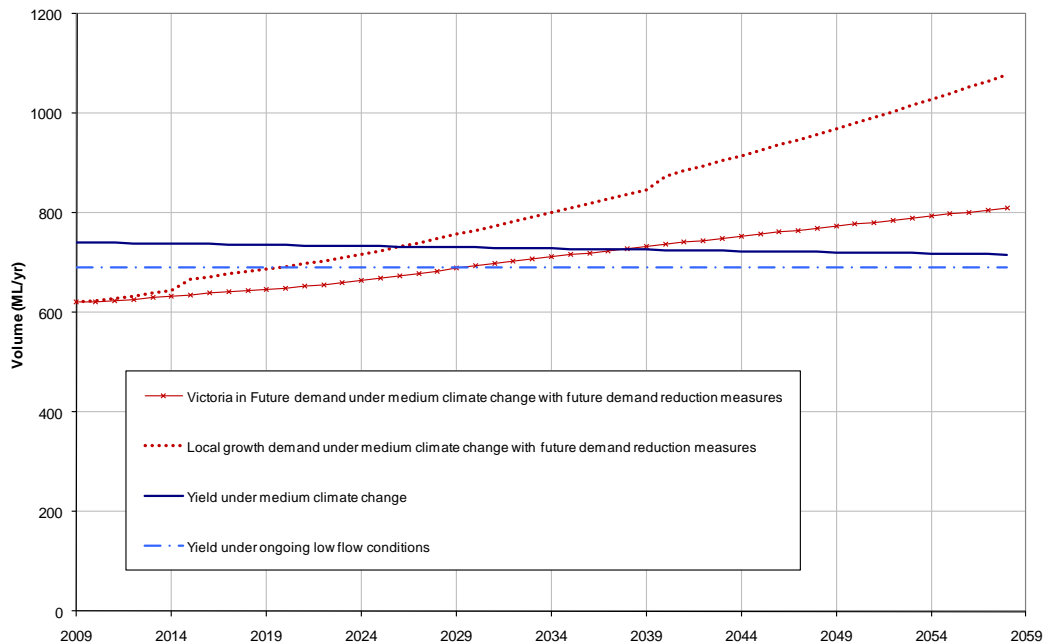
Source: WSDS, SKM modelling

In Korumburra demand will exceed available supply in 2037, assuming a medium climate change scenario and population growth in line with ViF projections. Under the Local Growth scenario, demand will surpass supply in 2026. Water shortages are forecast for 2030 and 2019 under the ViF and Local Growth demand scenarios, respectively, should low inflows occur (Figure 11).

²⁴ South Gippsland Water, 2010, Annual Report 2010, p.18

²⁵ These increases in industrial demand have been assumed for modeling purposes. However, volume and timing of actual increases is uncertain and may not occur.

Figure 11: Raw Water Supply and Demand for Korumburra



The current yield under both the medium climate change and ongoing low inflow scenario is not sufficient to cater for future demand. The system therefore requires supply augmentation. Supply enhancement options for the system would comprise a connection between Little Bass Reservoir and Bellview Creek to transfer water from the Poowong, Loch and Nyora system and/or the raising of dam walls of existing reservoirs, Coalition Creek and Bellview Creek. This would increase the storage capacity by about 200ML and allow harvesting of winter flows, provided sufficient rainfall and runoff. However, further augmentation would again be necessary in 15 to 20 years under the Local Growth scenario.

Alternatively, supply could be sourced from the Melbourne System via Lance Creek.

Supply augmentation options considered in this Business Case are discussed in more detail in section 3.2.

Water Quality and Dam Safety

The Korumburra treatment plant is approximately 30 years old. Aurecon proposed a complete replacement of the plant in 2020, with subsequent water quality upgrades in 2025.

Dam safety upgrades would be required between 2012 and 2018 for the three reservoirs, Coalition Creek, Ness Gully and Bellview Creek.

2.6.3. Leongatha and Koonwarra

Supply

Water for the towns Leongatha and Koonwarra is supplied from and stored in four reservoirs on Ruby Creek. Treatment occurs in the Leongatha WTP (Figure 12).

Table 13 depicts the key parameters of the Leongatha supply system.

Table 13: Key parameters – Water Supply Leongatha System

Bulk Entitlements	Storage Capacity	WTP Capacity	Current Yield
ML/a	ML	ML/d	ML/a
4,276 ⁽¹⁾	1,911	8.7	1,995

Source: WSDS 2010, Aurecon 2010

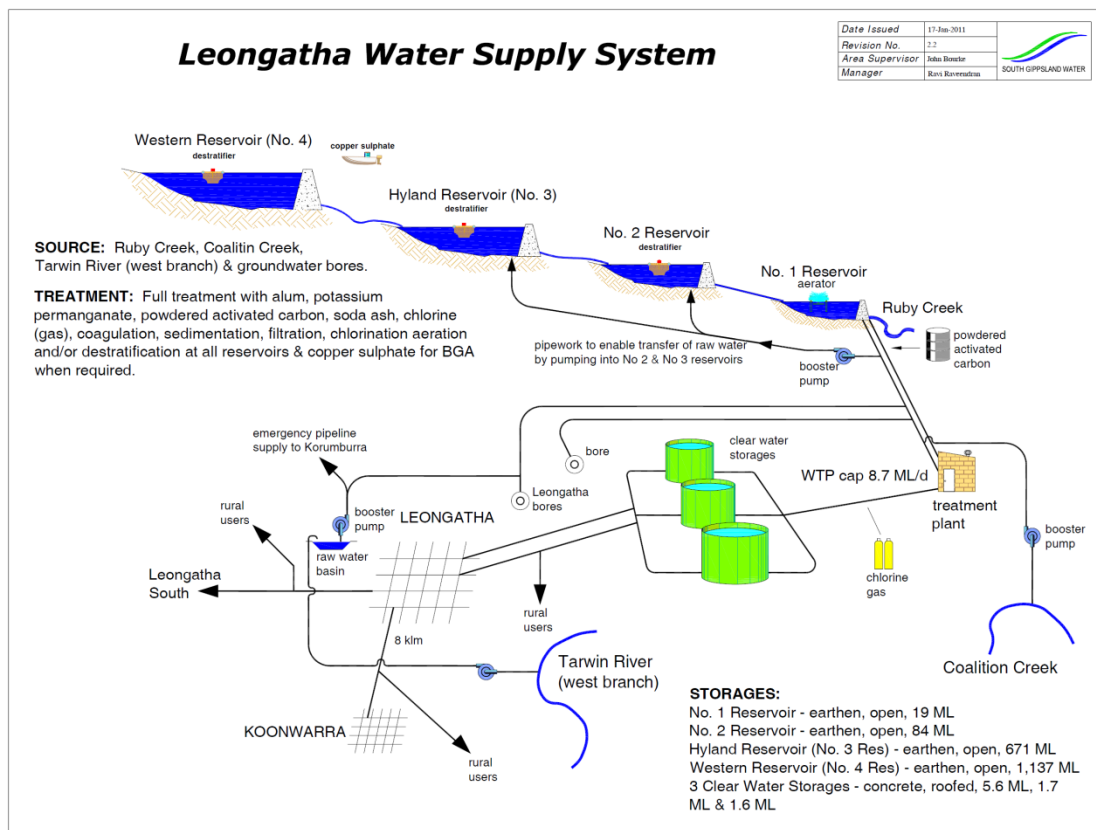
Note: (1) Diversions are subject to minimum passing flows, maximum diversion rates and storage capacity triggers (WSDS, 2010)

As outlined in section 2.6.2, water was pumped from the Tarwin River West Branch to Korumburra and Leongatha during the 2006/07 drought.

SGW has now secured an amendment to its Korumburra and Leongatha BE to allow SGW to access up to 1,800 ML/a (effective 19 October 2010) from Coalition Creek and the Tarwin River West Branch. The diversion rules comprise various seasonal access rules, diversion rates and passing flow requirements. SGW's current diversion infrastructure would not be able to harvest the full entitlement volume. An upgrade of the Tarwin River West Branch connection and an additional 1,000 ML reservoir on Ruby Creek would be required.

There are several groundwater bores in the Leongatha area. The Current Management and Infrastructure rules incorporate the licence conditions on the groundwater licence issued by Southern Rural Water in 2010, but conservatively assume that only 1.0 ML/d can be sustained from the bores rather than the 2.1 ML/d that has been licensed.

Figure 12: Leongatha Supply System



Source: SGW

Demand

Both the population and the number of customers have increased steadily over the last two decades. In 2009/10, SGW serviced a population of 4,794 in Leongatha and Koonwarra, this equates to 2,990 customers (assessments).²⁶

Leongatha has regularly experienced restrictions in the last decade, including stage 4 restrictions in 2006/07. These have moderated demand in recent years.

Key parameters of water demand in Leongatha and Koonwarra are listed in Table 14.

Table 14: Key Parameters – Water Demand Leongatha and Koonwarra

Estimated Long Term Current Demand				2009/10	2007-2010
Annual Demand (raw)	Annual Demand (potable)	Average Daily Demand (potable)	Peak Day Demand (potable)	Annual Demand (potable)	Annual Demand (potable)
ML/a	ML/a	ML/d	ML/d	ML/a	ML/a
1,893 ⁽¹⁾	1,668	4.57	6.85 ⁽²⁾	1,511	1,550

Source: WSDS 2010, Aurecon 2010

Note: (1) WTP losses estimated at 12% (WSDS, 2010)

(2) Peak day is calculated using specific peaking factors for each WTP provided by SGW. The peaking factor for the Leongatha system is 1.5.

Demand from the Murray Goulburn milk processing factory has accounted for approximately 70 percent of the total Leongatha raw water demand in recent years.

Future demand and supply imbalances

The ViF forecast assumes annual growth in residential customers of 0.5 to 1.0 percent per annum for the two towns. It is assumed that Murray Goulburn's demand reduces by around 370ML/a in 2010 and a further 220ML/a by 2013, as a result of the company implementing water efficiency upgrades at its plant near Leongatha. Overall, ViF demand in 2058 has been estimated at 1,692 ML/a, some 200 ML lower than the current raw water demand (Table 15).

While reductions in consumption have been made by Murray Goulburn, the anticipated reduction of 370ML/yr in 2009/10 was not achieved. Uncertainty around the water efficiency upgrades of Murray Goulburn are reflected in the Local Growth scenario. It assumes that Murray Goulburn demand is reduced by only 67 ML/a. For the purpose of the scenario, an additional industrial demand of 500 ML per year is assumed to occur in 2025²⁷. Residential growth of 1.5 percent per annum is expected under this scenario. This leads to a total raw water demand of 3,046 ML/a in 2058 (Table 15).

²⁶ South Gippsland Water, 2010, Annual Report 2010, p.2

²⁷ These increases in industrial demand have been assumed for modeling purposes. However, volume and timing of actual increases is uncertain and may not occur.

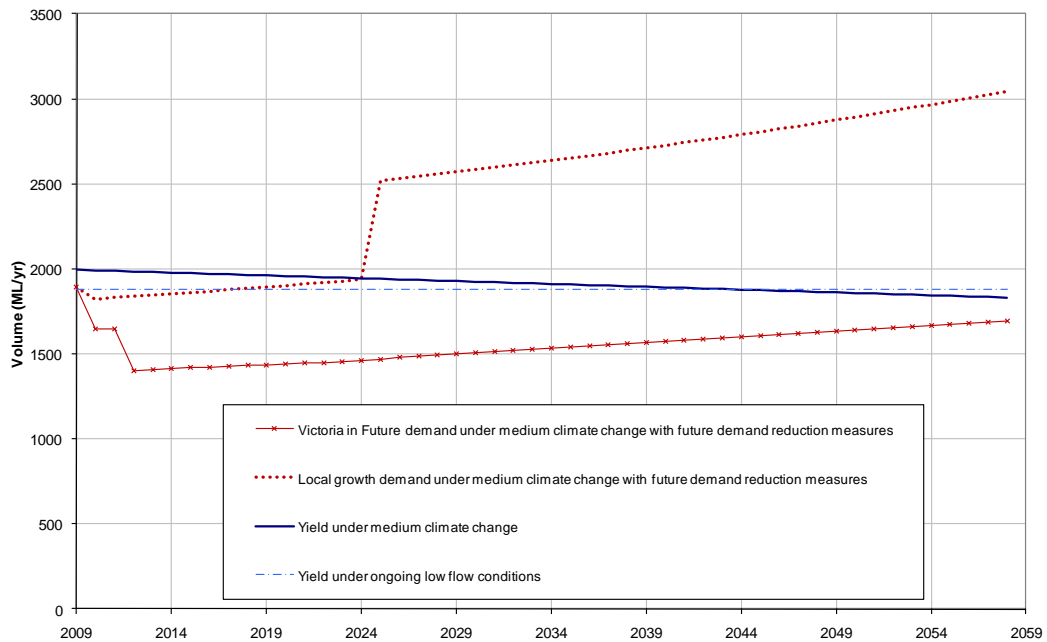
Table 15: Leongatha – Summary of current and future yield and demand (raw water)

Region	Current Yield ML/a	Medium Climate Change Yield 2058 ML/a	Recent Low Inflows Yield 2058 ML/a	Current Demand ML/a	ViF Demand 2058 ML/a	Local Growth Demand 2058 ML/a
Leongatha and Koonwarra	1,995	1,833a	1,879	1,893	1,692	3,046

Source: WSDS, SKM modelling

Figure 13 shows that supply augmentation will not be required provided Murray Goulburn successfully implements its demand reduction measures. Should Murray Goulburn not be able to implement all of its water saving measures as planned or population growth occurs as anticipated in the Local Growth scenario, supply augmentation would be required within the next 15 years, assuming the medium climate change scenario.

Figure 13: Water Supply and Demand for Leongatha and Koonwarra



Options for augmentation include upgrading the Tarwin River West Branch supply and/or constructing an additional 1,000 ML reservoir on Ruby Creek. Similar to the other Northern Systems, supply from Lance Creek and/or connection to the Melbourne System is an alternative.

As noted, supply augmentation options considered in this Business Case are discussed in more detail in section 3.2.

Water Quality and Dam Safety

The Leongatha treatment plant is approximately 30 years old. Aurecon proposed a complete replacement of the plant in 2020, with subsequent water quality upgrades in 2025.

Dam safety upgrades would be required between 2018 and 2020 for the four reservoirs on Ruby Creek.

2.6.4. Northern unserved towns

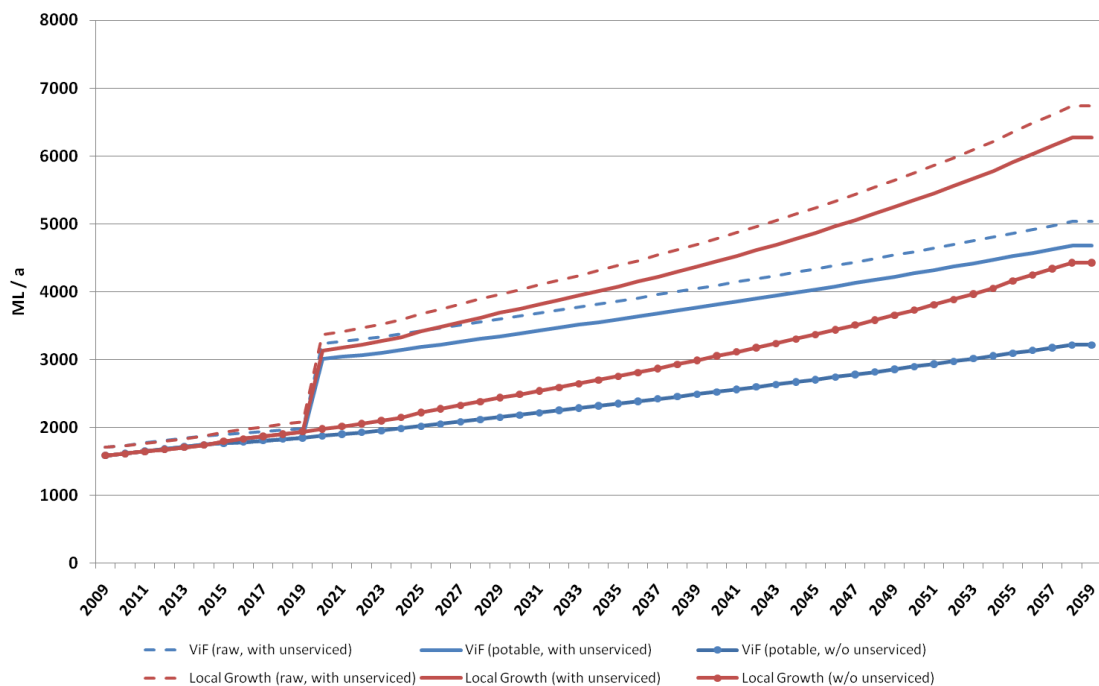
A number of small towns in the northern parts of South Gippsland region are not currently connected to water or sewerage services. These include Bena and Tarwin, which are currently considered too small to feasibly connect to the supply system.

2.7. Southern System

Lance Creek Reservoir, located north of Wonthaggi, is the main supply source for the Southern System. It currently services the major towns Wonthaggi, Inverloch and Cape Paterson.

At present the villages of Venus Bay and Tarwin Lower are not connected to the mains supply and depend on rainwater tanks. However, these townships and future residential developments could require connection to the Lance Creek supply system in the future. This would significantly increase the future water demand for the Southern System, as illustrated by Figure 14, which shows water demands under two growth scenarios (ViF and Local Growth) including and excluding the forecast demand from these unserved towns.

Figure 14: Water Demand Southern System



2.7.1. Wonthaggi, Inverloch and Cape Paterson

Supply

Water is stored in the Lance Creek Reservoir and treated in the nearby WTP (Figure 15). Table 13 depicts key parameters of the Lance Creek supply system.

The Bulk Entitlement for Wonthaggi/Inverloch allows South Gippsland Water to divert up to a maximum of 3,800 ML/yr from Lance Creek and 1,800 ML/yr from the Powlett River.

South Gippsland Water also has a Bulk Entitlement to access up to 1,000 ML/yr from the Melbourne System to potentially supply Wonthaggi, Inverloch and Cape Paterson when the

desalination plant at Wonthaggi has been commissioned. A physical connection of 10 ML/d between Wonthaggi and the Melbourne System has been constructed and can be used to access the Melbourne System via the first tranche of 1,000 ML/a of the Melbourne System BE.

Table 16: Key parameters – Water Supply Lance Creek System

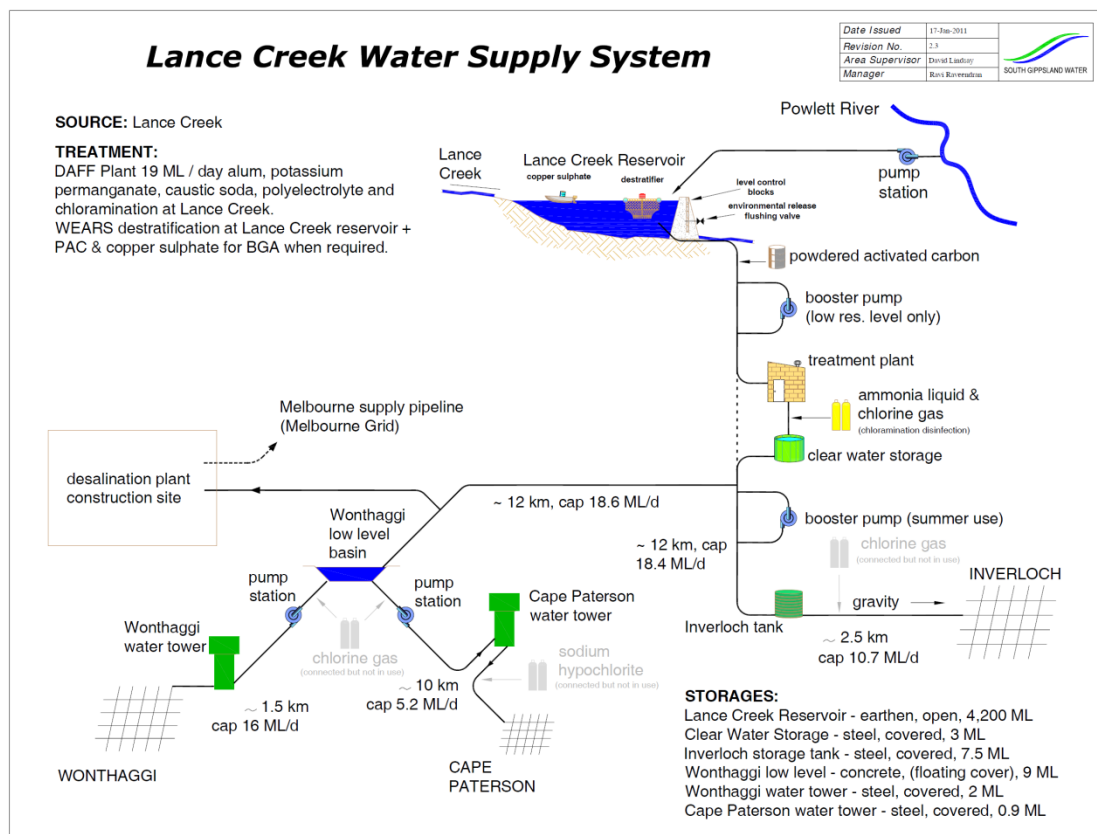
Bulk Entitlements	Storage Capacity	WTP Capacity	Current Yield
ML/a	ML	ML/d	ML/a
5,600 ⁽¹⁾	4,200	19.0	3,426
+ 1,000 ⁽²⁾			

Source: WSDS 2010, Aurecon 2010

Note: (1) Diversions are subject to maximum diversion rates (WSDS, 2010)

(2) first tranche of Melbourne System BE, capped at 5,000 ML

Figure 15: Lance Creek Water Supply System



Source: SGW

Demand

The towns Wonthaggi, Inverloch and Cape Paterson had a population of 12,165 residents serviced by SGW in 2009/10²⁸, with an additional 4,000 to 5,000 visitors during the summer months. SGW recorded 9,386 customers (assessments) in the three towns.

The population for all three towns has grown significantly over the last two decades, although a marginal decline was experienced from 2001 to 2006 due to a decrease in residents at Inverloch. Nevertheless, the number of customers increased steadily during this time period. It is anticipated that sea change investment around Wonthaggi and Inverloch will continue to be an important driver for growth in the region.

Key parameters of water demand of the Lance Creek System are listed in Table 17.

Table 17: Key Parameters – Water Demand Lance Creek

Estimated Long Term Current Demand				2009/10	2007-2010
Annual Demand (raw)	Annual Demand (potable)	Average Daily Demand (potable)	Peak Day Demand (potable)	Annual Demand (potable)	Annual Demand (potable)
ML/a	ML/a	ML/d	ML/d	ML/a	ML/d
1,706 ⁽¹⁾	1,587	4.35	8.70 ⁽²⁾	1,384	1,388

Source: WSDS 2010, Aurecon 2010

Note: (1) WTP losses estimated at 7% (WSDS, 2010)

(2) Peak day is calculated using specific peaking factors for each WTP provided by SGW. The peaking factor for the Lance Creek System is 2.0.

The Lance Creek supply system did not require restrictions prior to 2006. Level 4 restrictions were implemented during 2007, although this was largely due to the provision of water to the Western Port region as a result of the severe drought conditions. Demand varies seasonally with climate and the influx of tourists during summer, with peak summer demands being about double the winter demands.²⁹

Future Demand and Supply Balance

The ViF scenario includes a growth in residential customers of between 1.6 to 3.3 percent per annum. Stronger growth in the order of 3.0 to 3.3 percent is assumed to occur between 2010 and 2014, thereafter decreasing to about 2 percent per annum for the next 20 years and then declining to 1.6 percent. Industrial demand is assumed to stay constant. Based on these assumptions ViF demand totals to 3,457 ML/a by 2058.

By contrast, under the Local Growth scenario total demand at 2058 is estimated at 4,763 ML/a (Table 18). This assumes residential growth of 3.0 percent per year, decreasing to 2.5 percent per annum after 2030. Industrial demand is assumed to increase by 10 percent in 2015 and 2025, respectively. Total demand at 2058 is estimated at 4,763 ML/a.

²⁸ South Gippsland Water, 2010, Annual Report 2010, p.2

²⁹ WSDS, 2010

Table 18: Wonthaggi, Inverloch, Cape Paterson – Summary of current and future yield and demand (raw water)

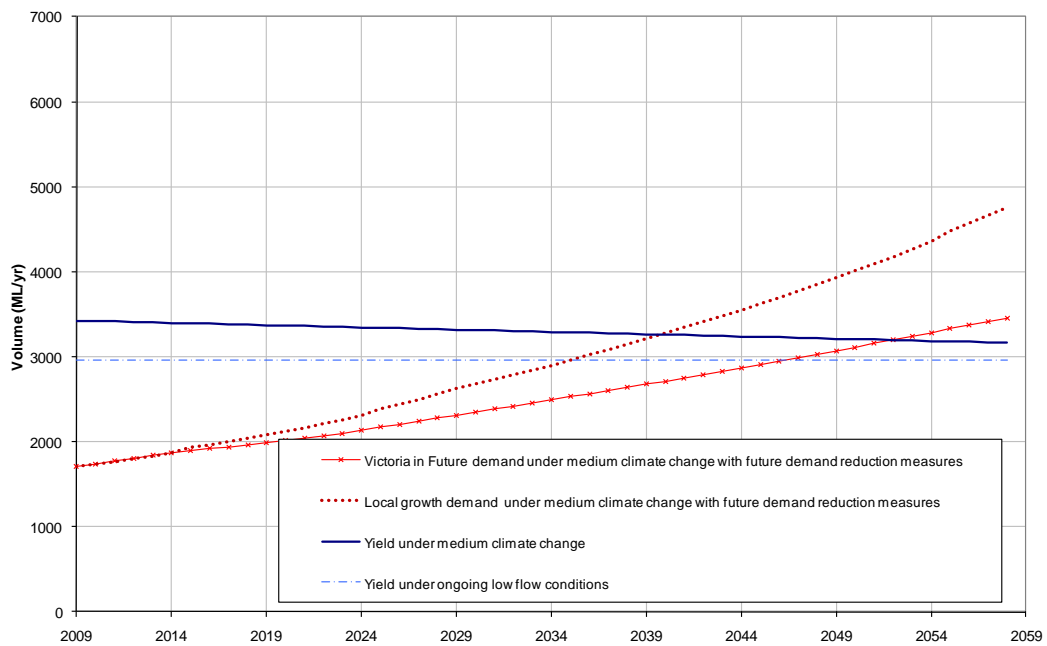
Region	Current Yield ML/a	Medium Climate Change Yield 2058 ML/a	Recent Low Inflows Yield 2058 ML/a	Current Demand ML/a	ViF Demand 2058 ML/a	Local Growth Demand 2058 ML/a
Wonthaggi, Inverloch, Cape Paterson	3,426 ⁽¹⁾	3,164	2,957	1,734	3,457	4,763

Source: WSDS, SKM modelling

Note: (1) Current Yield for Lance Creek supply only, does not include supplies from Melbourne System

Under the medium climate change and ViF demand scenario, it is expected that a new water resource would be required by around 2050, provided unserviced towns are not connected to SGW’s supply system. Under the Local Growth scenario, supply augmentation would be required in 2040. These water shortages would occur five years earlier, assuming the low inflow scenario (Figure 16).

Figure 16: Water Supply and Demand for the Lance Creek System



Although the current system is sufficient to cater for future demand in the coming decades, stronger than expected residential and industrial growth, and the possible connection of unserviced towns may necessitate augmentation. A pipeline connecting Lance Creek and the Melbourne System already exists, as SGW is supplying water to the construction site of the desalination plant.

The only other supply enhancement option would be from Foster Creek.

Supply augmentation options considered in this Business Case are discussed in more detail in section 3.2.

Water Quality and Dam Safety

The Lance Creek WTP, with the 10ML/d connection to the Melbourne System, has sufficient capacity to service future demand. Upgrades to meet expected future water quality standards are required under both scenarios in 2020 and 2025.

2.7.2. Unserviced Towns

Venus Bay and Tarwin Lower have sufficient demand for water and are in close proximity to the Lance Creek System to make their supply by SGW financially feasible. This could result in additional demand of around 1,200 ML/a for SGW, if unserviced towns were to be connected in the immediate future.

Table 19: Unserviced Towns – Summary of estimated current and future demand (raw water)

Region	Current Demand ML/a	ViF Demand 2058 ML/a	Local Growth Demand 2058 ML/a
Unserviced Towns	1,200	1,563	1,870

Source: WSDS, SKM modelling

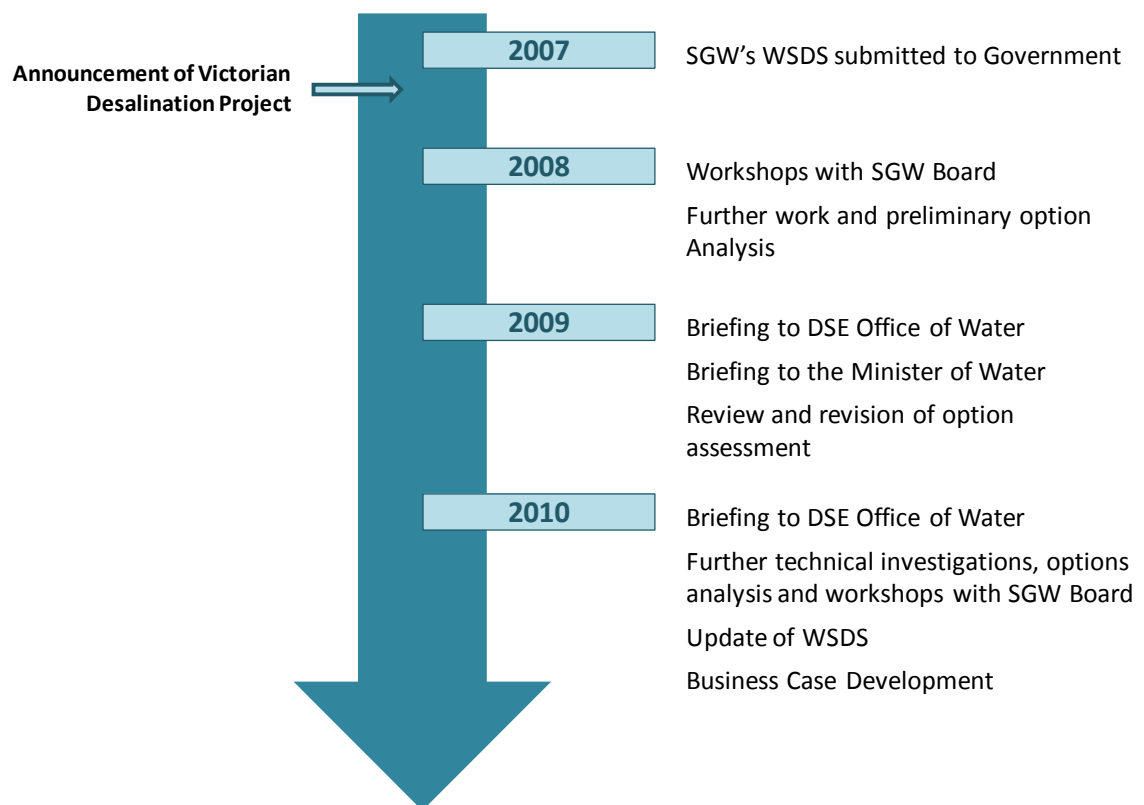
3. Options assessment

This chapter describes the comprehensive process of identification, analysis and evaluation of supply options undertaken by SGW (Figure 17). It explains the shortlisted options in detail and also briefly outlines options, which have been investigated, but subsequently dismissed or amended.

3.1. Overview of process

Over the course of the past three years, SGW had undertaken a thorough process of internal workshops, consultations with State Government and use of expert advisors in order to thoroughly assess available options for supply augmentation (Figure 17).

Figure 17: Process to date



The steps of this process are outlined in the following sections.

3.1.1. Water Supply Demand Strategy

In June 2007, SGW submitted its WSDS to the Victorian Government. The WSDS is a 50 year plan identifying actions to maintain the long-term balance between demand for water and available supply, focussing on both supply and demand side measures. It established a timetable for completion of planning and investigation of contingency supply options and also developed a consultation plan. The WSDS has subsequently been updated (March 2011) to reflect new findings and conditions.

Projections for water availability are based on medium term climate change conditions as well as a continued low flow scenario (see also section 2.1). Forecasts of population growth for Statistical Local Areas (SLAs) are based on *ViF* forecasts. This has later been expanded to include *Local Growth* forecasts (refer to section 2.2).

Shortly after the publication of SGW’s WSDS, the Victorian Government announced plans for the development and construction of a desalination plant located near Wonthaggi. From early 2012, this desalination plant will provide drinking water for Melbourne and surroundings. The then Minister for Water, the Hon. John Thwaites stated that “*South Gippsland will also be connected to the desalination pipeline to secure water for towns like Wonthaggi.*”³⁰

SGW has since been investigating options to access the Melbourne System for water supply, in particular leveraging off the newly build Lance Creek connection to the desalination plant. Other augmentation options of existing surface and groundwater sources have also been examined.

3.1.2. Workshops with SGW Board & Executive Team

From July to November 2008, the SGW Board conducted a series of monthly workshops to identify strategic issues impacting on future water supply as well as to evaluate a range of possible options and scenarios for future water supply augmentation. The initial set of options considered by the Board included surface augmentation, Melbourne System supply and a combination of both (Table 20).

Table 20: Overview strategic options

System	Options
Northern Systems	Surface, Enhanced Surface & Desalination
Southern System	Surface and Desalination
Eastern System	Surface and Desalination

Strategic Issues

During the workshops, the Board identified and defined the following strategic issues, which have to be taken into account in water supply augmentation planning: The main issues included:

- **reliability of surface storages**
SGW’s surface storages are small and rely on annual fill with no significant carry over of supply. This increases SGW’s vulnerability to a repeat of low inflows similar to 2006 and the risk of failure under adverse climate change outcomes.
- **limited ability to increase yield of surface storage**
SGW faces difficulties in securing additional Bulk Entitlements (BEs). Furthermore, an increase in yield is expected to entail high costs, both financial and environmental.
- **level of service objectives**
SGW has defined level of service objectives for maintaining adequate supply to customers. In particular, water restriction should not occur more frequently than 1 in 10 years and more severe restrictions, i.e. level 3 and 4, should not occur more frequently than 1 in 15 years.

³⁰ Media Release, 2007, *Desalination and Pipelines to Secure Water Supplies*, 19 June, available at: http://thesource.melbournewater.com.au/content/media_releases/media_releases/20070619.asp [accessed: 12th April 2010]

The ability to provide an assured supply (level of service) is a crucial criterion for SGW Board.

- **impact of grazing on water quality**

Highly productive grazing and dairying activities affect SGW's water quality through increased nutrient flows, exacerbating the risk of THMs, cryptosporidium and giardia. WTP quality upgrades will be required.

- **new and excavated farm dams** in the Ruby Creek catchment have increased significantly in the last decade, increasing the competition for water within SGW's catchments.

- **significant residential growth**

Population growth forecasts suggest potential city fringe growth around Nyora and sea change investment around Wonthaggi and Inverloch. Potential connection of unserviced towns and new developments to the reticulated supplies could place another strain on water supplies.

- **uncertainties around industrial growth**

Murray Goulburn's water usage accounts for a significant proportion of water demand in the Northern Systems. The company is currently undertaking significant upgrades in its processing plant to improve water use efficiency and reduce water demand. At this stage, it has not been able to deliver the envisaged savings and the risk remains that Murray Goulburn will require supplementary supply.

Further growth in water demand is anticipated due to relocation of industries with more stringent EPA policies (e.g. saline treatment and/or disposal).

3.1.3. Preliminary option analysis – 2008

In 2008, MJA undertook a high level assessment of the potential cost impacts of increasing resilience of supply from surface storages over a 50 year period. Alternative supply options, such as connecting to the Melbourne System, were also costed. Customer impacts of supply augmentations were assessed using building block regulatory models for all scenarios. Sensitivity analysis included variations in growth scenarios, such as city fringe growth in the Northern Systems, connection of unserviced towns to the Southern System and higher industrial demand of Murray Goulburn.

Northern Systems

The options examined included the costs for WTP upgrades, either as planned, i.e. in 2015, or delayed for 10 years:

- *current surface supply* system with upgrades of WTPs;
- *enhanced surface supply* system, e.g. expanding current system to a two year supply capacity, with upgrades of WTPs; and
- supply from the *Melbourne System* to all towns.³¹

The main conclusions drawn from the strategic analysis included:

³¹ Pricing for this option was based on a levelised volumetric charge with three prices: \$2,500/ML, \$1,900/ML or \$1,300/ML

- the Melbourne System Supply option has lower expected capital costs than the surface option, but higher operating costs would be incurred under the Melbourne System Supply option;
- at a medium bulk water price, the Melbourne System Supply option has overall lower present value costs (PVC) compared with the current surface supply option (including upgrades of WTPs in 2015); and
- augmentation of the surface supply to provide for a two year supply capacity and improve supply security would have significantly higher whole-of-life cost than connecting to the Melbourne System.

Southern System

The base case assumed supply to unserved coastal towns. The upgrade options for WTPs and related costs are included in economic analysis of the following options:

- *immediate* supply from Melbourne System;
- *Delayed Hybrid* with deferred connection to Melbourne System, i.e. after full utilisation of Lance Creek System; and
- *Early Hybrid* with immediate connection but reduced supply from Melbourne System (e.g. 25 percent). This option leverages the government funded pipeline to the desalination plant construction site.

The main findings from the strategic analysis were:

- the *delayed hybrid* option had the lowest PVC;
- the *early hybrid* option had slightly higher PVC, but underpins system security and enhances the ability to services growth and unserved towns; and
- an *immediate connection* to, and exclusive use of, the Melbourne System, would result in the highest PVC costs for the Southern System.

Eastern System

For the Eastern System, both a connection to the Melbourne System and surface supply augmentation were analysed. The results of the preliminary analysis indicated that a connection to the Melbourne System would be cost-intensive, both in terms of capital and operating costs, with PVC approximately twice as high as those for augmentation of surface supply sources, leading to a significant increase in customer bills. Further analysis of the Eastern System was deferred and, as noted, does not form part of the Business Case.

Preferred Option – Packaged Solution

The option analysis for both the Northern and Southern Systems indicated that supply from the Melbourne System was the preferred option based on preliminary cost assumptions, in particular when taking into account the value of supply security under adverse climate change/variability impacts.

Therefore, SGW's preferred option has been a 'packaged solution' for both systems, with the Melbourne System Supply option for the Northern Systems and the Early Hybrid option for the Southern System, which allows an immediate partial supply from the Melbourne System.

3.1.4. DSE and Ministerial Briefings

During the course of developing and assessing future water resource options, SGW has undertaken extensive consultations with Government stakeholders, informing them of the strategic water supply options available to SGW, the magnitude of relating costs and resulting impacts on customers. SGW has provided briefings to:

- the Office of Water (30 October 2008);
- the Secretary of the Department of Environment and Sustainability (DSE) (19 January 2009); and
- the Minister for Water (27 February 2009).

At all three briefings the options and analysis results outlined above were presented and in principle support for the 'Packaged Solution' as the water supply solution for South Gippsland sought. Further, SGW intended to confirm integration with government policy on desalination and an indicative price range for Melbourne System water to incorporate in the financial modelling and evaluation of customer impacts.

3.1.5. 2009 Review

Arising out of the briefings, the Victorian Government provided \$5 million funding for a two-way pipeline from the Lance Creek Reservoir to the desalination plant in order to supply the construction site with potable water during construction and commissioning.

This connection between Lance Creek and the desalination plant led to a revision of the assumption underlying the Melbourne System Supply option for the Southern System. In particular, the pipeline reduced the cost of connecting the Southern System to the Melbourne System and provided the opportunity to utilise the Lance Creek System to supply the Northern Systems. Additionally, more information regarding possible connection and volumetric charges for the Melbourne System became available from DSE.

As a result of this information, SGW commissioned further studies to refine and enhance the option analysis. These included:

- demand forecasts as well as system yields for the WSDS have been revised and updated by SKM;
- GHD was commissioned to assess the technical feasibility of connection options and routes from the Melbourne System using the Lance Creek pipeline. The associated report³² also provides more detailed and consistent cost estimates; and
- the economics of supply options and resulting customer impacts were updated and revised by MJA. In particular, Melbourne System Supply options, utilising the newly constructed Lance Creek pipeline, have been revised. The outcomes were subsequently workshopped with the SGW Board to determine the best possible option for SGW, taking into account risks and uncertainties.

Revised Assessment

The revised assessment includes new information and leverages off the Lance Creek pipeline to the desalination site. The options examined focussed on the Northern Systems and included:

³² GHD, 2009, *Connection to Desalination Supply – Report on Connection Options*, September, Melbourne

- **Surface supply to northern towns**

Surface storages servicing Poowong, Loch and Nyora as well as Korumburra would be upgraded, including a future connection to the Tarwin River. Leongatha and Koonwarra supply will be secured from the Tarwin River. WTP upgrades would be staged in 2015, 2025 and 2035.

- **Melbourne System supply via Lang Lang**

This supply would either occur as *full Melbourne System supply* to all towns and Murray Goulburn, or as a *hybrid supply* with Melbourne System supply for Poowong, Loch, Nyora and Korumburra and surface supply for Leongatha and Murray Goulburn.

- **Melbourne System supply via Lance Creek**

As in the previous option, this consists of either a *full Melbourne System supply* for all towns and Murray Goulburn or a *hybrid supply* with surface supply for the Leongatha system and Melbourne System supply for the remaining towns.

All options assumed ViF demand, including reduced water demand from Murray Goulburn, and a connection to the Tarwin River for Leongatha and related WTP upgrades.

Preferred Option – full Melbourne System supply

The preferred solution resulting from the revised assessment was:

- an immediate connection to the Melbourne System for the Southern System via the newly constructed pipeline to supply potable water to the desalination site; and
- subsequent connection to the Melbourne System for the Northern Systems via Lance Creek.

The preferred solution was based on it having:

- the lowest PVC (whole-of-life cost) of the options assessed;
- provided a substantially improved level of supply security through effectively mitigating the effects of climate change/variability, i.e. the preferred solution avoided the risk of water shortages due to reduced stream flows as a result of climate change/variability;
- avoided the risk of investing in redundant assets – a risk that would prevail if further investment were to be made in augmenting existing surface supply systems; and
- avoided the need for, and associated impacts of, applying for additional bulk entitlements and the consequential reduction in environmental flows.

3.1.6. 2010 Briefing

A briefing to the Office of Water was held in February 2010, which provided an update on the additional work undertaken and the revised assessment of water supply options available to SGW.

The estimated costs and customer impacts were presented and in principle support was sought for the preferred water supply solution for South Gippsland.

3.2. Shortlisted Business Case options

The outcomes of the revised assessment and consultations with State Government stakeholders prompted SGW to commission updates of previous studies and additional

reports to inform this Business Case (Table 25). In particular, the supplementary reports no. 2, 3 and 4 provide detailed capital and operating costs for the cost effectiveness assessment conducted as part of this Business Case.

Table 21: Supplementary reports to the Business Case

<i>Report</i>	<i>Title</i>	<i>Author</i>	<i>Date</i>
Supplementary Report no.1	Water Supply Demand Strategy	Sinclair Knight Merz	March 2011
Supplementary Report no.2	Water Treatment Plant Upgrades Study – South Gippsland Water	Aurecon	August 2010
Supplementary Report no.3	Review of Future Management of Northern Systems Dams	URS	May2010
Supplementary Report no.4	Connection to Melbourne System Supply via Lance Creek	GHD	July 2010
Supplementary Report no. 5	Cultural Heritage Desktop Assessment – South Gippsland Water Pipeline Alignment	Tim Stone	May 2010

With this information at hand, SGW decided to focus on two options for this Business Case:

- connection of the Northern Systems to the Melbourne System Supply; and
- continued development of existing Surface Supply systems.

The options outline supply augmentation for the Southern and Northern Systems and have common features: under both options, SGW will have a transfer pipeline system to transfer water from the Melbourne System pipeline to the Lance Creek clear water storage (CWS), when the Wonthaggi Desalination Plant is commissioned in late 2011.

The section of the pipeline between the Wonthaggi supply pipeline at the Powlett River and the desalination plant is currently used for supply of potable water to the plant during its construction. After commissioning of the desalination plant, the pipeline will be used to transfer Melbourne System water to SGW's supply systems.

This existing pipeline has a capacity to transfer 10 ML/d of water from the Melbourne System to the Lance Creek CWS. The pipeline will require a pump station to be installed near the Powlett River and a disinfection plant to be constructed before it can be used to transfer Melbourne System water to the Lance Creek CWS.

The section of the pipeline, from the Powlett River to Lance Creek, is currently used to transfer water from Powlett River to Lance Creek Reservoir during the winter months. This section of the transfer pipeline will have two future operational capacities. Its primary use is to transfer water from the Melbourne System, but it can also be used to transfer water from Powlett River to the Lance Creek Reservoir during the winter months.

3.2.1. Melbourne System Supply

The Melbourne System Supply option assumes that the Northern and Southern supply systems will be connected and the Northern Systems will source water from the Melbourne System and Lance Creek Reservoir.

This means all reservoirs and WTPs in the Northern Systems would be decommissioned, once each of the respective systems are connected to Lance Creek Reservoir and the Melbourne System. CWSs will be in operation in Poowong, Korumburra and Leongatha and have a capacity matched to peak day demands.

Under this option, connections to the Lance Creek / Melbourne System are scheduled for 2012 for Korumburra and Poowong and 2020 for Leongatha. Dams will be decommissioned about 2 to 3 years after the commissioning of the pipelines to allow for the lowering of water levels in the reservoirs to an acceptable safety level.

The transfer pipelines from the Melbourne System and the Lance Creek WTP are sized to deliver average daily demand in the event of disruption of supply from either the Lance Creek WTP or the Melbourne System. The combination of the treatment plant and the transfer system from the Melbourne System operating at average daily demand will provide sufficient capacity to provide supply for peak day demand for both demand forecast scenarios. Peak day demand for the combined system is estimated at around 1.9 times the average daily demand.

Capital Expenditure

The main capital cost components for the Melbourne System option are:

- construction cost of a pipeline and pumping station from Lance Creek outlet main to Korumburra CWS;
- construction of a pipeline between the Korumburra CWS and the CWS near Poowong;
- construction of a pipeline between the Korumburra CWS and the CWS near Leongatha;
- upgrade of the Lance Creek WTP and all CWSs; and
- additional works, such as decommissioning of all Northern Systems reservoirs.

All capital costs include contingencies and an allowance for 'Engineering, Procurement and Construction Management' (EPCM). Contingencies reflect that cost estimates for the options presented in the Business Case are based on high level conceptual design work that does not include any field inspections. For instance, construction costs for pipelines might be impacted due to ground conditions (e.g. rock or steep terrain) and/or removal of vegetation and offset plantings.

Table 22 presents the contingencies and project management allowances assumed for the analysis as a percentage of capital costs of capital works. The difference in contingencies for separate types of work reflects the detail and complexity of the planning work undertaken.

Table 22: Contingency and EPCM allowance

	Contingency	Project Management
Pipelines & Pump stations	50%	25%
WTPs	20%	20%
Storage Decommissioning ¹	40%	--

Note: (1) The 40% contingency covers both contingency and project management.

The total capital expenditure required for the Melbourne System Supply option, assuming the ViF Demand scenario, is estimated at \$86.1 million, comprising \$39.6 million for the Southern System and \$46.5 million for the Northern Systems.

Table 23 sets out the capital expenditures, including allowances for contingencies and project management, for the Melbourne System Supply option for the Northern and Southern Systems.

Table 23: Melbourne System Supply Capex for ViF Demand

	Storage Decomm.	WTPs	Pipelines	Pump Stations	Other	Total
	\$000s	\$000s	\$000s	\$000s	\$000s	\$000s
Southern System	-	26,665	10,500	2,063	375	39,603
Northern Systems	12,978	10,758	18,731	2,953	1,125	46,545
Total Capex	12,978	37,157	29,231	5,016	1,500	86,148

Source: Business Case Analysis

Note: 1. All figures are in 2010/11 dollars

2. Costs include expenditures for Planning & Design, Contingencies and Renewals.

3. WTPs include the cost of Clear Water Storages.

Operating Expenditure

The main operating cost components for the Melbourne System Supply option are:

- service (fixed) and usage (variable) bulk water costs for the Melbourne System supply;
- maintenance and operating costs (for pipelines, pump stations, and storages);
- Lance Creek WTP operating costs; and
- energy costs (e.g. pumping costs).

Avoided costs, such as overhead costs, have been accounted for in the economic and financial analysis. These represent savings in operating costs due to decommissioning of dams or WTPs.

Table 24 sets out the operating expenditures for the Melbourne System Supply option under the ViF Demand scenario.

Table 24: Melbourne System Supply Opex for VIF Demand Scenario

Cost	Southern System	Northern Systems
Storage Maintenance (\$/a)	238,000	-
WTP Variable (\$/ML)	340	-
WTP Fixed (\$/a)	279,800	-
WTP & CWS Maintenance (\$/a)	206,332	107,576
Pumping (\$/ML) ⁽¹⁾	49	137 23
Pipeline Maintenance (\$/a)	56,000	100,000
Pump Maintenance (\$/a)	55,000	78,800
Melb System Bulk Entitlement (\$/ML) ⁽²⁾	370	370
Melb System Fixed (\$/ML/a) ⁽³⁾	266	266
Melb System Variable (\$/ML) ⁽⁴⁾	1,100	1,100
Avoided Costs	-	(245,500)

Note: All figures are in 2010/11 dollars

(1) Pumping costs assume energy costs of \$0.16 per kWh; Pumping costs for the section Lance Creek to Korumburra amount to \$137 per ML, pumping costs for the section Korumburra to Poowong amount to \$23 per ML

(2) Melbourne System Bulk Entitlement is a once only payment of \$370 per ML of entitlement

(3) Melbourne System fixed operating cost is an annual cost of \$266 per ML of entitlement

(4) Melbourne System variable cost is a \$1,100 per ML actually delivered

3.2.2. Surface Supply

This option assumes that each of the Northern and Southern Systems utilises surface and to some extent ground water as the primary supply source.

Northern Systems

As noted earlier, reservoirs in the Northern Systems require upgrading to address dam safety deficiencies. Storage capacities need to be augmented to be able to harvest additional winter flows and increase the average annual yield. All reservoir upgrades and storage increases are scheduled between 2012 and 2020. This is triggered by the need to meet dam safety requirements.

To improve the supply security of the Leongatha system to a similar level as under the Melbourne System Supply option, an upgrade of the connection to the Tarwin River West Branch and an additional 1,000 ML reservoir on Ruby Creek need to be in place by 2020 (see also section 4.2.1). These augmentations would reduce the vulnerability of the system to

sequences of low inflows, similar to the inflows experienced in 2006/07. The additional storage and upgraded Tarwin River connection also allow harvesting of additional flows from Coalition Creek and the Tarwin River West Branch under the amendment to SGW's Korumburra and Leongatha BE. Further a connection between Little Bass Reservoir and Bellview Reservoir is required to supply additional water from the Poowong, Loch and Nyora to the Korumburra system, assuming Local Growth demand.

All WTPs require upgrades for water quality purposes and some for production and capacity purposes. The Northern WTPs need to be sized to provide peak day demand of the towns serviced by the plants. Upgrades and refurbishments are planned for 2020, 2025, 2035, 2040, 2050 and 2055.

Under ViF demand, Northern Systems are predicted to have sufficient supply capacity thereby avoiding any requirement to connect to Lance Creek and the Melbourne System. However, assuming Local Growth demand, it is ***inevitable to connect the Northern Systems to the Melbourne System supply*** – resulting in redundant surface supply assets. There are no other feasible and viable surface augmentation options available to service excess demand. Additional transfer capacity to the Northern Systems of average daily demand less yield of surface and ground water will then be required.

Southern System

The Southern System is effectively a hybrid system, utilising the existing pipeline between the Lance Creek CWS and the desalination plant. Therefore, capacity upgrades of the Lance Creek Reservoir and the WTP will not need to be undertaken. The Lance Creek WTP has a current capacity of 19 ML/d, which provides sufficient supply to meet both growth scenarios.

The transfer system between the Melbourne System and the Lance Creek CWS is sized to meet the average daily demand of the Lance Creek System thereby covering an event where supply from the Lance Creek Reservoir or the Melbourne System is disrupted.

The combination of the treatment plant and the transfer system from the Melbourne System operating at average daily demand will provide sufficient capacity to supply peak day demand for both demand forecast scenarios. For this option, peak day demand for the Lance Creek is about twice the average daily demand.

Capital Expenditure

The main capital cost components for the surface supply option are:

- Dam safety upgrades for all reservoirs;
- Storage capacity increases for Coalition Creek, Bellview Creek and Little Bass Reservoirs;
- Construction of the Tarwin River connection and an additional 1,000 ML reservoir on Ruby Creek;
- upgrades of WTPs and CWSs; and
- in the case of Local Growth demand, construction of pipelines to successively connect all Northern Systems to Lance Creek and the Melbourne System.

Allowances for contingencies and project management are the same as under the Melbourne System Supply option (Table 22).

The total capital expenditure required under the Surface Supply option, assuming ViF Demand scenario, is estimated at \$140.8 million, comprising \$25.8 million for the Southern System and \$115.0 million for the Northern Systems.

Table 25 sets out the total capital costs, including allowances for contingencies and project management, for the Surface Supply option under ViF demand for each system.

Table 25: Surface Supply Capex for ViF Demand

	Tarwin River Connection	1,000 ML Storage	Storage Upgrades	WTPs	Total
	\$000s	\$000s	\$000s	\$000s	\$000s
<i>Total Southern System</i>	-	-	-	25,771	25,771
<i>Poowong, Loch, Nyora</i>		-	5,979	6,169	12,148
<i>Korumburra</i>		-	17,286	24,503	41,789
<i>Leongatha</i>	3,720	19,751	5,432	32,212	61,115
<i>Total Northern Systems</i>	3,720	19,751	28,697	62,885	115,051
Total Capex	3,720	19,751	28,697	88,656	140,823

Source: Business Case Analysis

Note: All figures are in 2010/11 dollars

Costs include expenditures for Planning & Design, Contingencies and Renewals

Operating Expenditure

The main operating cost components for the Surface Supply option are:

- WTP operating costs;
- maintenance and operating costs (for pipelines, pump stations and storages);
- bulk water costs for Melbourne System supply under the Local Growth scenario; and
- energy costs (e.g. pumping costs).

Compared to the Melbourne System Supply option, avoided costs do not occur under the Surface Supply option.

Table 26 sets out the operating expenditures for the Surface Supply option.

Table 26: Surface Supply Opex for VIF Demand

	Southern System	Korumburra	Leongatha	Poowong
Storage Maintenance (\$/a)	238,000	91,000	132,500	72,000
WTP Variable (\$/ML)	340	658	428	790
WTP Fixed (\$/a)	268,400	91,300	106,200	68,700
WTP Maintenance (\$/a)	201,726	191,800	250,054	47,004
Pumping (\$/ML)	49	-	-	68.6
Pump Maintenance (\$/a)	30,000	-	-	30,000
Pipeline Maintenance (\$/a)	-	-	-	11,800
Melb System BE ⁽¹⁾ (\$/ML entitlement)	370	-	-	-
Melb System Fixed ⁽²⁾ (\$/ML/a)	266	-	-	-
Melb System Variable ⁽³⁾ (\$/ML)	1,100	-	-	-

Notes: All figures are in 2010/11 dollars

(1) Melbourne System Bulk Entitlement is a once only payment of \$370 per ML of entitlement

(2) Melbourne System fixed operating cost is an annual cost of \$266 per ML of entitlement

(3) Melbourne System variable cost is a \$1,100 per ML actually delivered.

4. Value-for-Money

4.1. Cost effectiveness assessment

A cost effectiveness assessment identifies the option that achieves a target outcome at the least net cost. It offers a priority ranking of options on the basis of comparative 'cost per unit of effectiveness'.

A cost effectiveness analysis was selected because the primary benefits of the supply options are essentially the same, i.e. the supply of potable water to meet the growing demands within the Northern and Southern Systems. The economically preferred option, all other things being equal, is the option having the least whole of life cost (i.e. present value cost of the capital and operating expenditure).

Therefore, differences in supply risks and the level of service between the two options need to be addressed to allow a 'like-with-like' comparison of the options. The Melbourne System Supply option, with interconnections between all systems and the Melbourne Supply, provides a higher level of security compared with the Surface Supply option. To improve the level of service of the Surface Supply option, it was assumed that additional supply infrastructure and upgrades will be implemented to the four systems to cope with two consecutive years of low inflows, similar to the inflows experienced in 2006/07, with the upgrade of the Tarwin River connection and an additional 1,000 ML storage on Ruby Creek being the main augmentation.

Costs avoided through the supply of water from the Melbourne System, including water treatment costs, reservoir maintenance costs and direct administration costs, are taken into account as part of the Melbourne System Supply option.

4.1.1. Modelling Approach and Assumptions

The economic analysis sets out the flow of capital and operating costs in 2010/11 dollars over time associated with the two options and then, utilising the principles of discounting,³³ reduces these costs to a single present value for each option. The option with the lowest present value cost (PVC) would generally be considered the preferred option, other things being equal.

For the purpose of the base case analysis, a real pre-tax discount rate of 5.8 percent has been adopted as this is the Weighted Average Cost of Capital (WACC) derived by the ESC³⁴ for regional urban water authorities. The sensitivity of the results to changes in discount rates was undertaken using a lower estimate of 4 percent and an upper estimate of 8 percent.

A 50 year evaluation period was adopted for the economic analysis with financial years 2010/11 being treated as Year 1 and 2059/60 as Year 50.

The base case analysis is built on a set of assumptions for the yield and demand forecasts:

³³ The standard approach to discounting reduces a time stream of costs and income to an equivalent amount of today's dollars. That single amount is known as the present value of the future stream of costs and income. Present Value is calculated using the method of compound interest. The rate at which the present value is computed is known as the discount rate.

³⁴ Essential Services Commission 2008, *2008 Water Price Review, Regional and Rural Businesses' Water Plans 2008-2013, Melbourne Water's Drainage and Waterways Water Plan 2008-2013 — Final Decision*, June; p.36

- average annual yield estimates for the Northern and Southern Systems are based on the medium climate change scenario;
- supply augmentations for the Surface Supply option are expedited to provide a similar level of service as the Melbourne System Supply option, if two years of ongoing low inflows (i.e. 2006/07 events) would occur;
- average annual demand estimates are based on ViF population growth forecasts and assume unserviced southern towns will not be connected to the supply system. It is further assumed that demand management measures are in place and water efficiency targets by Murray Goulburn are met;
- one-off bulk entitlement costs for access to the Melbourne System are \$370 per ML. SGW water will progressively take up this bulk entitlement, which is initially capped at 5,000 ML, in two tranches of 1,000 ML and a third and final tranche of 3,000 ML;
- variable costs for supply from the Melbourne System water are \$1,100 per ML consumed and fixed costs are \$266 per annum per ML³⁵, based on entitlement size. Both variable and fixed costs are assumed to remain constant in real terms over the analysis period; and
- electricity costs for pump stations are set a \$0.16 per kWh and held constant in real terms over the analysis period, although the sensitivity of the results to real increases in energy costs are examined.

It should be noted, that all dollar figures presented in this report are in 2010/11 dollars and rounded; accordingly, rounding errors may occur.

4.1.2. Modelling Results

Table 27 below shows the estimated PVCs in 2010/11 dollars for the base case scenario for both the Melbourne System Supply and Surface Supply options under the two demand scenarios, ViF and Local Growth. Under the base case assumptions and ViF demand, the PVCs are around \$108.2 million for the Melbourne System Supply and \$118.6 million for the Surface Supply option. That is, the Melbourne System Supply option is about 9 percent less expensive than the Surface Supply option.

Table 27: Whole of life costs – Base Case

	ViF Demand		Local Growth Demand	
	<i>Melbourne System Supply</i>	<i>Surface Supply</i>	<i>Melbourne System Supply</i>	<i>Surface Supply</i>
	\$ million	\$ million	\$ million	\$ million
Northern Systems	71.0	85.6	99.8	115.9
Southern System	37.3	33.0	53.1	40.8
Total	108.2	118.6	152.9	156.8

Source: MJA Analysis

Note: All figures are in 2010/11 dollars

Under Local Growth demand, the PVCs increase to \$153.6 million and \$156.9 million for Melbourne System Supply and Surface Supply option, respectively, closing the gap between

³⁵ Note: Potential trading of entitlements and thereby offsetting part of the fixed annual cost component has not been taken into account.

whole of life costs between the two options. This outcome is largely driven by a significant increase in bulk purchases of Melbourne System supplies, which unsurprisingly has a greater impact on the PVCs of the Melbourne System Supply option. However, the Surface Supply option is nevertheless more expensive under the Local Growth demand scenario.

4.1.3. Sensitivity Analysis

A further possibility for reduced operating costs under the Melbourne System Supply option is the introduction of the trading of entitlements to offset part of the fixed annual cost component Melbourne System supplies. This possibility has not been modelled.

Table 28 below illustrates the results of the sensitivity analysis. As expected, increases in water demand, i.e. Local Growth instead of ViF demand and/or connection of unserved towns, result in higher whole of life costs for both options. The Melbourne System Supply option has lower PVCs in 11 out of the 14 scenarios modelled.

The Melbourne System Supply option is more sensitive to changes in operating costs. Increases in demand or costs of Melbourne System supplies have a significantly higher impact on the whole of life costs of the Melbourne System Supply option than the Surface Supply option.

On the other hand, changes in capital costs have a greater impact on the PVCs of Surface Supply option, increasing the difference in whole of life costs of the two options in favour for the Melbourne System Supply option. It should also be noted that the margin of error associated with capital cost estimates is significantly larger than for operating costs, given the complexities and uncertainties inherent to infrastructure projects. This error margin is somewhat lower for the Melbourne System Supply option, given the detailed engineering studies undertaken to supplement this Business Case.

An additional scenario with regard to operating costs was assessed assuming lower variable costs for Melbourne System water supply. Due to its geographical location close to the desalination plant, SGW is not using the Melbourne System distribution infrastructure. It is therefore possible, subject to negotiations with Melbourne Water, that SGW would not be required to pay the proportion of service and usage charges allocated to transfer infrastructure.

If this is the case, the fixed and variable costs for water from the Melbourne System for SGW would be significantly lower, comprising only charges allocated to headworks. An indicative scenario assumed \$191 per ML for annual service charges (a reduction of 28 percent) and \$884 per ML for usage charges (a reduction of 20 percent).³⁶ This reduced price for Melbourne System water would result in lower PVC for both options, with substantially greater impacts on the Melbourne System Supply option under both the ViF and Local Growth demand scenario.

The whole of life costs of the Melbourne System Supply option would amount to \$100.5 million and \$142.3 million under ViF and Local Growth demand, respectively. That is, the PVC would decrease by \$7.7 million and \$10.6 million. By contrast, the PVC for the Surface Supply option, under both the ViF and Local Growth demand scenario, is less susceptible to changes in the price for Melbourne System water and would only decline slightly by \$1.1 million and \$2.4 million, respectively. As such, the whole-of-life costs for the Melbourne System Supply option would be more than 14 percent less expensive than the Surface Supply option, assuming ViF demand.

³⁶ Melbourne Water, 17.03.2010, pers. comm..

A reduction in supply security for the Surface Supply option was also assessed. This assumes that the surface systems are designed for medium climate change flows, but are not configured to cope with a sequence of extreme low inflows, resulting in lower capital costs. Therefore the risk to SGW to require severe restriction and/or not being able to deliver water to its customers increases substantially. This higher risk compares with PVC savings of \$15 million. The Melbourne System Supply option would then be more expensive, although by less than 5 percent, providing a significantly higher supply security.

A further possibility for reduced operating costs under the Melbourne System Supply option is the introduction of the trading of entitlements to offset part of the fixed annual cost component Melbourne System supplies. This possibility has not been modelled.

Table 28: PV costs – Sensitivity Analysis

	Melbourne System Supply \$ million	Surface Supply \$ million	Difference
Base Case			
ViF Demand	108.2	118.6	-8.7 %
Demand			
Local Growth Demand	152.9	156.8	-2.5 %
ViF Demand & unserviced towns	124.9	126.9	-1.6 %
Local Growth Demand & unserviced towns	170.9	167.6	+2.0 %
CAPEX sensitivities			
Capex +10%	112.8	125.8	-10.3 %
Capex -10%	103.7	111.4	-6.9 %
OPEX sensitivities			
Melb System +1% p.a.	116.7	119.4	-2.3 %
Melb System +2% p.a.	128.0	120.4	+6.3 %
Melb System without transfer charges (ViF)	100.5	117.4	-14.4 %
Melb System without transfer charges (LG)	142.3	154.4	-7.9 %
Discount rate			
4%	144.3	151.8	-4.9 %
8%	81.4	91.9	-11.4 %
Supply Security			
Lower Supply Security (ViF)	108.2	103.3	+4.8 %
Lower Supply Security (LG)	152.9	153.8	-0.6 %

Source: MJA Analysis

Note: All figures are in 2010/11 dollars

All PV cost are for the ViF demand scenario, unless otherwise stated

4.2. Preferred Option

The Melbourne System Supply is the preferred option. The main arguments supporting the preferred option include:

- the Melbourne System Supply option provides a significantly higher level of supply security. Even if augmentations to surface supplies were undertaken to increase the level of service there is still the risk that supply could fail during a sequence of low inflow years. The Melbourne System Supply option effectively mitigates the likelihood of future supply failures due to low stream flows into the relatively small storages resulting from climate change/variability and provides greater flexibility to accommodate changes in demand;
- the Melbourne System Supply option avoids the risk of investing in redundant assets – a risk that would prevail if further investment were to be made in augmenting existing surface supply systems. Under the Local Growth demand scenario, investments to connect all Northern Systems to the Melbourne System supply are required before 2040 regardless of previous surface supply augmentations;
- it provides the necessary security to support the future economic growth in the region, including the ability of SGW to service major industrial customers, e.g. Murray Goulburn, a potential industrial shift in the area and/or population growth;
- it provides an opportunity for the agricultural sector to use additional flows, offering greater security and the potential for future growth for the agricultural value chain;
- it avoids the need for, and associated impacts of, applying for additional bulk entitlements and the consequential reduction in environmental flows; and
- the cost estimates for the Melbourne System Supply option are considered more reliable given the benefit of the more detailed engineering studies undertaken during 2010. Uncertainties regarding the comprehensive surface supply augmentations could potentially result in higher capital costs than estimated, whereas the structural design for the Melbourne System Supply infrastructure is notably less complex.

Elements of the justification are amplified in the following sections.

4.2.1. Supply risk

Water is a fundamental input to the economic growth of any region. Reduced water reliability caused either by climate change/ variability or inadequate supply infrastructure could place significant constraints on the prosperity of the South Gippsland region.

The Melbourne System Supply option is a coherent long term strategy to address future supply demand imbalances arising from reduced water availability and increasing water demand.

Uncertainty about future stream flows

As noted in section 2.1, changes in rainfall, runoff and stream flow, and yields are expressed as average only. Therefore significant variations are possible in any given year. That is, the available yield in a particular year could be significantly lower than suggested by the modelling, exposing the annual fill of the Northern Systems storages to extreme events, e.g. prolonged dry periods.

The vulnerability of the four supply systems to extreme drought was assessed by assuming two consecutive years of low inflows, similar to the inflows experienced in 2006/07. It was concluded that, if sufficient surface supply augmentations for VIF demand only were implemented, all systems, except the Leongatha system, would be able to cope with two years of drought similar to 2006/07, depending on demand. However, the Ruby Creek System

supplying Leongatha would be expected to reach the minimum operating level in the second year of an extreme drought event.

Therefore, the base case scenario assumes that the Ruby Creek supply augmentations will need to be implemented in order to secure supply risk. Under both the ViF and Local Growth scenario, the Tarwin River connection and the additional 1,000 ML reservoir on Ruby Creek would need to be operational in 2020 to reduce the supply risk in a two year drought event. This would provide a similar level of security, but still inferior, as under the Melbourne System Supply option.

The risks of reduced water availability and resulting water supply shortages are effectively removed by implementation of the Melbourne System Supply option, which provides a secure water supply even in years of drought. As such, this option provides long term water supply security for the region and the reliability necessary for future economic growth. In particular, the food industry, a major water user and important contributor to economic growth in the region, will benefit from secure and reliable water supply.

Uncertainty about future demand and economic growth

From a demand side perspective, the Melbourne System Supply option provides more flexibility as stronger growth in water demand can be accommodated by bringing forward augmentation works. On the other hand, should growth in demand slow down in the future, the Melbourne System Supply option also provides the flexibility to defer investment.

The connecting pipelines are sized to service both ViF and Local Growth demand. A greater increase in water demand will be accommodated through additional pumping capacity, incorporated only as required. Therefore, the Melbourne System Supply option avoids duplication of works and a possible redundancy of assets.

By contrast, the Surface Supply option does not allow for a connection between the Southern and Northern Systems under ViF demand. Should demand increase at a higher rate, e.g. Local Growth, interconnections between the systems and supply from the Melbourne System will be necessary to service this additional demand, because there are no further feasible augmentation opportunities to increase the yield of the surface systems. Therefore, the Surface Supply option is effectively a hybrid system under the Local Growth scenario and will inevitably require a connection to Melbourne System Supply connection, resulting in redundant surface supply assets.

Backup in case of system failure

The supply system for the Melbourne System Supply option is designed to deliver average daily demand to all four supply systems in the event of disruption of supply from either the Lance Creek WTP or the Melbourne System. This provides a significantly higher supply security for the Northern Systems than under the Surface Supply option.

Under the Surface Supply option, assuming ViF demand scenario, the Northern Systems would not be connected to the Melbourne System and therefore could face significant water shortages in drought years. Under the Local Growth scenario, the system design allows for additional transfer capacity, but only to cover average daily demand less the yield of surface and groundwater of the Northern Systems.

4.2.2. Water quality

As outlined in section 2.3, SGW faces significant obstacles to achieve future water quality standards both in the Northern and Southern Systems. This is largely due to intensive dairy

and cattle farming in the region and resulting high levels of nutrients and natural organic matter in the reservoirs. Apart from complying with regulatory requirements, this also is an issue for SGW in terms of customer complaints, e.g. taste and odour.

Water sourced from the Melbourne System would be at a consistent water quality and therefore risks to water quality related to intensive dairy and cattle farming or blue green algae blooms would be mitigated. All Northern reservoirs would be decommissioned by 2020 and a disruption of supply from Lance Creek Reservoir, e.g. due to algae blooms, would be covered by the capacity of the system to supply average daily demand from the Melbourne System. By contrast, under the Surface Supply option the systems are not connected and therefore exposed to supply disruptions and/or system failures due to water quality issues, such as algae blooms.

4.2.3. Benefits for the agricultural value chain

Agriculture is one of the main industries in the region, with about 15 percent of the working population of the South Gippsland Statistical Subdivision³⁷ being employed in the industry.³⁸ The South Gippsland region is well integrated within the agricultural value chain, providing inputs and using outputs of agricultural activities.

The existing small storage infrastructure made redundant by connecting to the Melbourne System allows the agricultural sector and other industries embedded in the agricultural value chain to use additional water resources. This provides greater security for the sector and supporting industries, such as major food processors. It may also provide the potential for the establishment of new food industries, such as horticulture or the extension of the growing dairy manufacturing sector.

The Melbourne System Supply option provides job security to workers and enables future economic growth in the region. Given various climate condition, the economic prosperity of the region could be hindered under the Surface Supply option.

4.2.4. Environmental benefits

Additional environmental flows, in particular summer flows, are a substantial environmental benefit of the Melbourne System Supply option, significantly contributing to the recovery of stressed rivers and ecosystems in the Northern Systems.

Several assessments of the condition of South Gippsland's rivers have been undertaken in the past few years:

- DSE's Index of Stream Conditions shows that the environmental conditions of Coalition Creek and Tarwin River (both West Branch and Main Branch) are very poor and poor, respectively; Stream Condition Bass River is listed as moderate; and
- An environmental assessment by Ecowise Environmental suggests that the water quality in the Tarwin River West Branch appears to be degraded and further reductions in water levels could potentially result in an extended decline in water quality.

³⁷ A statistical subdivision is a special geographic (spatial unit) area that is used for the collection and publication of Census data. The South Gippsland Statistical Subdivision comprises the Local Government Areas Bass Coast and South Gippsland.

³⁸ Australian Bureau of Statistics, 2006, Census of Population and Housing

The West Gippsland Catchment Management Authority has stated that a key environmental benefit to the restoration of a natural flow regime, i.e. unimpeded by in-stream dams and extraction for urban supply, would be

- to enable fish passage throughout the entire Tarwin River system, enhancing the abundance of self sustaining populations of Australian Grayling in the river; and
- to enhance the populations of native fish species in tributaries of the Tarwin, including river blackfish, smelt, lamprey, pygmy perch, galaxias species, as well as short finned eel, tupong and spiny crayfish.

Additional flows over and above those required for the environment, could be utilised for agricultural purposes, such as livestock. By contrast, similar achievements are not feasible under the Surface Supply option.

It should also be noted that river basin caps and sustainable diversion limits, which limit total water use in river basins, constrain SGW's access to new resources and make it difficult to obtain new BEs.

5. Review of planning, approval and implementation phases

5.1. Introduction

A key component of the Business Case is to provide assurance that the project planning and approvals, implementation and operations phases present no potential impediments to the development of the Melbourne System connection and supply augmentation. In this Section, we review key elements of SGW's strategy in respect of all principal elements of project development and operations, including the process of gaining all necessary development approvals, and processes used for procurement of design and construction services.

5.2. Planning process

SGW has an in-house project delivery team that manages the planning, procurement, and delivery of infrastructure projects similar to the works required for implementation of the preferred Business Case option of connection to the Melbourne System. Capital expenditure managed by the project team amounts to \$15 million per annum on average. Moreover, recent infrastructure projects have been of similar size and nature to the proposed connection to the Melbourne System. Recent projects have included upgrades to WTPs, pipelines up to 450mm diameter, pump stations, reservoir embankment and spillway remedial works.

5.3. Planning approvals – compliance with legislative & regulatory requirements

This section of the Business Case outlines the compliance with the legislative and regulatory requirements, and indicates the next steps that have been identified and will be undertaken in the process of gaining the relevant approvals.

Multiple planning and environmental approvals will be required for components of the project. SGW will prepare a planning and environmental approvals strategy to identify:

- relevant approvals required for the project,
- approvals already in place or being managed by others, and
- issues associated with obtaining the approvals within required timeframes.

Budgetary provision has been made for this process and time has been allowed for it in the project plan.

The environmental and planning approvals team would utilise its extensive knowledge of approval requirements together with existing information on the project and the locality, and liaise with relevant agencies to prepare an approvals strategy for the project.

The approvals strategy would comprise the following key elements:

- description of likely planning and environmental approvals, including relevant legislation;
- methodology and procedural guide for seeking each approval;
- timelines for each approval process together with interdependencies between approvals and required sequencing;

- information requirements for each approval application and potential to assemble common information to submit with multiple approvals;
- an assessment of the risks of being delayed in obtaining one or more approvals and/or not obtaining a required approval; and
- contingency plans for resolving potential issues.

5.3.1. Planning and development approvals

Planning permits

The area is governed by the Bass Coast Planning Scheme and the South Gippsland Planning Scheme. The planning authorities are the respective Councils.

The approvals outlined in the following sections are likely to include planning permits for some components of the work.

5.3.2. Environmental approvals

SGW's environmental planners, engineers and consultants have a detailed knowledge of the approvals required for infrastructure projects and extensive experience in preparing such strategies.

To implement the supply augmentations proposed, SGW will need to comply with a number of statutes, including:

- Environment Protection and Biodiversity Conservation Act 1990 (Cth)
- Environment Protection Act 1970 (Vic)
- Environment Effects Act 1978 (Vic)
- Planning and Environment Act 1987 (Vic)
- Flora and Fauna Guarantee Act 1988 (Vic)
- Water Act 1989 (Vic)
- Wildlife Act 1975 (Vic)
- Victorian Land Act 1958 and/or Crown Land (Reserves) Act 1978.

The project could, potentially, require preparation of an Environment Effects Statement (EES) under the *Environment Effects Act 1978* (Vic), as the proposed works are capable of impacting on the environment. Similarly, the project needs to take account of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

SGW will address environmental approvals and planning permit issues. Necessary steps that are typically required are set out in Table 29. SGW will employ specialist consultants to undertake these steps.

Table 29: Flora & Fauna Assessment Methodology

Step	Task
Step 1	Desktop review and initial site investigation
Step 2	Short report – summarising ecological issues, legislative and policy risks, options assessment and next required actions
Step 3a (if required)	Targeted surveys for one or more threatened species and communities
Step 3b (if required)	Collection of field information for Net Gain Assessment
Step 3c (if required)	Aquatic Assessments and Surveys
Step 3d (if required)	Other investigations – It is common for the initial assessment to identify other necessary tasks required to fulfil legislative requirements
Step 4 (if required)	Preparation of detailed flora and fauna report(s) suitable for submission in planning applications.

Budgetary provision has been made for this process and time has been allowed for it in the project plan.

Project works site studies and investigations

In the early stages of the project, SGW will commission specialist consultants to produce a Framework Environmental Management Plan. This plan addresses the environmental issues associated with the construction works. It is generally prepared in accordance with the Environment Protection Authority Victoria (EPA) Environmental Guidelines for Major Construction Sites. The plan takes into account relevant federal, state and local environmental guidelines and policies. The framework plan is generally issued to the successful contractor to become the basis for the contractor's Environmental Management Plan.

SGW will undertake several site and location assessments prior to the construction of the proposed pipelines and pump stations proceeding on site, such as a flora and fauna assessment. This assessment will be undertaken externally by qualified environmental consultants and/or ecologists. It involves an inspection of the site to identify any flora and fauna issues. A report will then be prepared and targeted surveys carried out to determine the presence of threatened species. Mitigation measures are implemented to avoid and/or minimise the impact.

A works specific Environmental Risk Assessment is also undertaken prior to construction works commencing. This assessment is undertaken internally by a SGW Environmental officer and aims to identify, assess and manage potential environmental issues arising from the proposed works.

5.3.3. Aboriginal and cultural heritage

SGW commissioned a desktop assessment³⁹ to identify potential impacts on Aboriginal and historic sites located along the proposed pipeline routes from Lance Creek Reservoir to Korumburra, Poowong and Leongatha.

³⁹ Stone, T., 2010 *South Gippsland Water Pipeline Alignment – Powlett River – Lance Creek – Korumburra – Poowong- Leongatha – Cultural Heritage Desktop Assessment*, May

Under the *Aboriginal Heritage Act 2006* and the *Heritage Act 1995*, all developers are obliged to ensure that all steps have been taken to ensure that Aboriginal and historic site are not disturbed.

Aboriginal heritage

The *Aboriginal Heritage Act 2006* and the accompanying *Aboriginal Heritage Regulations 2007* require a cultural heritage management plan (CHMP) for a proposed activity, if:

- (a) all or part of the activity area for the activity is an area of cultural heritage sensitivity; and
- (b) all or part of the activity is a high impact activity.

An area of cultural heritage sensitivity includes any land within 200 metres of a waterway and land within 50 metres of a registered cultural heritage place. However, if an area of cultural heritage sensitivity has been subject to significant ground disturbance, the disturbed part is no longer an area of cultural heritage sensitivity.

Construction of the pipelines could trigger a CHMP because it is a high impact activity impacting on six areas of cultural heritage sensitivity. However if the pipeline can be build on land subject to significant ground disturbance within these areas (e.g. road side verges, existing pipeline easement), a CHMP might not be required.

The desktop assessment also identified two Aboriginal sites, both stone artefact scatter, within 2 km of the proposed pipeline, based on the Victorian Aboriginal Heritage Register kept by Aboriginal Affairs Victoria. The proposed water pipeline will have no impact on those sites.

SGW will commission an aboriginal heritage assessment. This assessment is undertaken externally by a qualified Archaeologist who inspects the site and also carries out a desktop study. The project plan includes provision for a cultural heritage due diligence assessment, e.g. field inspections, and the preparation of a CHMP. Construction works may require supervision from a representative of the Aboriginal tribe.

Cultural heritage

The *Heritage Act 1995* provides for the protection of all Victorian historic sites, places and objects older than 50 years. According to section 127(1) of the Act,

a person must not knowingly or negligently deface or damage or otherwise interfere with an archaeological relic or carry out an act likely to endanger an archaeological relic except in accordance with a consent issued under section 129.

The Victorian Heritage Register and Heritage Inventory do not list any historic sites that are located along the proposed route of the pipeline. However, local planning schemes of Bass Coast Shire and South Gippsland Shire have heritage overlays on seven sites, which have local historical significance, close to the pipeline route.

The project plan includes provision for field inspections and historic site surveys, if required.

5.4. Project delivery and procurement

Project implementation for the supply augmentation has been divided into two broad phases:

- development and construction phase; and
- operational phase.

In each phase, different entities have been allocated responsibilities to ensure that the project is managed by those with the most appropriate experience and expertise in that area. The roles and responsibilities are explained below.

5.4.1. Development and construction phase

The options for project delivery depend on the nature and scope of, and the timing for the project. Whilst the total project scope might be considered large by SGW standards, it will be delivered as smaller elements over a number of years. These elements or sub-projects are considered well within the capability of SGW. Potential methods of delivery include:

- Design and Tender;
- Design and Construct; or
- Alliance

It is anticipated that the project delivery for this project will comprise mainly design and tender, with some design and construct for specialised works. Because the works for this project can be spread over several years, the amount of work in any one year would be well within the capacity of SGW to deliver through standard project delivery methods. Accordingly, an alliance is considered inappropriate and is therefore not recommended.

Based on past experience, SGW proposes to design and tender for this project, in particular for components, such as pipelines, pump stations and WTPs, that required comprehensive specifications of requirements. From SGW's perspective, the design and tender approach provides a better opportunity to control the outcome of the project and to involve local contractors and suppliers in the works. However, the design and construct approach might be used for components such as water tanks.

The first project to be implemented will be the transfer pipelines from Lance Creek to Korumburra, and Korumburra to Poowong. The transfer section between the Melbourne System and Lance Creek is already in place. As noted, it is currently used to transfer potable water from the Lance Creek WTP to the Wonthaggi Desalination Plant for construction and commissioning.

SGW will separately employ engineering consultants for the design of the transfer sections, preparation of tender documents for procurement of pipeline materials, construction of the pipelines, and construction of the pump stations.

SGW will arrange procurement of pipes and fittings and tender the construction works for the pipelines and pump stations. This process has proven to provide more competitive pricing for pipe work and fittings, allows for staging of the delivery components and provides opportunity for local pipe laying contractors to competitively tender for the works.

5.4.2. Operations phase

The newly constructed supply infrastructure will be passed into SGW's regular operations of its supply system after construction and commissioning.

5.5. Stakeholder management and consultation process

A major component of the development of the WSDS and this Business Case has been, and will continue to be, stakeholder consultation. Up to this stage of the development of the WSDS and the Business Case, SGW has identified and consulted with relevant stakeholders, including government departments, local government, the community and major customers.

SGW has commissioned a communications strategy⁴⁰ to support the public release of its WSDS. The strategy aims at:

- providing residents and stakeholders with balanced and objective information to assist their understanding of the need for and appropriateness of the WSDS and the Business Case;
- gaining community and stakeholder views on the WSDS and the Business Case;
- monitoring community mood during the roll-out of the strategy; and
- identifying any issues early and preparing appropriate responses.

5.5.1. Identification of stakeholders

The communication strategy includes a consultation program and a comprehensive list of customers and stakeholders. Key stakeholders include:

- Government agencies: Department of Sustainability and Environment, Department of Health, Regional Development Victoria and Environment Protection Agency;
- Local Governments: South Gippsland Shire, Bass Coast Shire and respective Councillors;
- Water related organisations: West Gippsland Catchment Management Authority, VicWater Industry, Victorian Desalination Project Water Agency Group, Desalination Communications Team, Westernport Water and Southern Rural Water; and
- Town Development and Community Groups: Korumburra Community Development and Action Group, Leongatha Progress Associations, Nyora Development Group, Loch Development Group, Inverloch Residents and Ratepayers Association, Wonthaggi Business Association, Koonwarra Sustainable Communities Centre, Rotary and Lions;
- Major Customers: Burra Foods, Murray Goulburn, Gippsland Beef Producers, Tabro Meats, Gippsland Sprout Co, Esso, Korumburra & Leongatha Hospitals, Bass Coast Regional Health, and South Gippsland Splash Aquatic Centre;
- Environmental Groups: South Gippsland Conservation Society, Bass Coast Renewable Energy group, Bass Coast Landcare, South Gippsland Landcare and Watershed Victoria Community Group.

5.5.2. Consultative process

Stakeholder engagement for the Business Case commenced with briefings of the Department of Sustainability and Environment (DSE) in 2008, after the Victorian Government announced plans for the development and construction of a desalination plant located near Wonthaggi.

⁴⁰ Royce, 2010, South Gippsland Water Communications Strategy, August

Stakeholder and customer input will be ensured through the public launch of the WSDS, stakeholder submissions and other feedback to the WSDS and the Business Case, ongoing meetings and consultation with government agencies, major customers, community groups, and other stakeholders, and website updates and regular newsletters.

Stakeholder feedback from government agencies and Councils to date has been positive.

6. Funding options and customer impacts

This section considers two funding options for the first stage of the project, i.e. connecting the Korumburra and Poowong, Loch, Nyora systems to the Melbourne System via the Lance Creek CWS. Both the impacts on SGW's customers as well as financial impacts on the business itself resulting from the two funding options were assessed.

6.1. Funding options assessed

Precedents exist where State Government grants have been provided to facilitate investment in securing water supplies and mitigate the customer impacts of such investment (for example, grants provided to Central Highlands Water and Coliban Water for the Goldfields Superpipe). For this Business Case, two funding options were assessed using SGW's financial model:

- **'with grant'** – State Government funding is granted for the first stage of the project, i.e. connecting Korumburra and Poowong, Loch, Nyora with the Lance Creek CWS and as such the Melbourne System in 2011; and
- **'without grant'** – all stages of the project are fully funded by SGW.

The assessment of funding options utilised both a building block approach and SGW's existing financial model and assumes ViF demand.

A building block approach, consistent with the Water Plan framework, was used to determine and compare customer impacts of both the Melbourne System Supply and Surface Supply option. This assessment directly builds on the economic evaluation and draws on the same assumptions and capital and operating costs as the economic model.

SGW's existing financial model was then utilised to analyse customer and financial impacts of the Melbourne System Supply option from a whole-of-business perspective, considering potential interrelations with other parts of SGW's capital works program. That is, a balance sheet and profit and loss approach was used to estimate the impacts over the coming ten financial years, 2010/11 to 2019/20. All capital and operating costs for the Melbourne System Supply option scheduled to occur over this time period were extracted from the economic model and incorporated into the financial model. Any avoided costs, i.e. savings in operating costs due to decommissioning of dams or WTPs, have been taken into account, i.e. subtracted from operating costs.

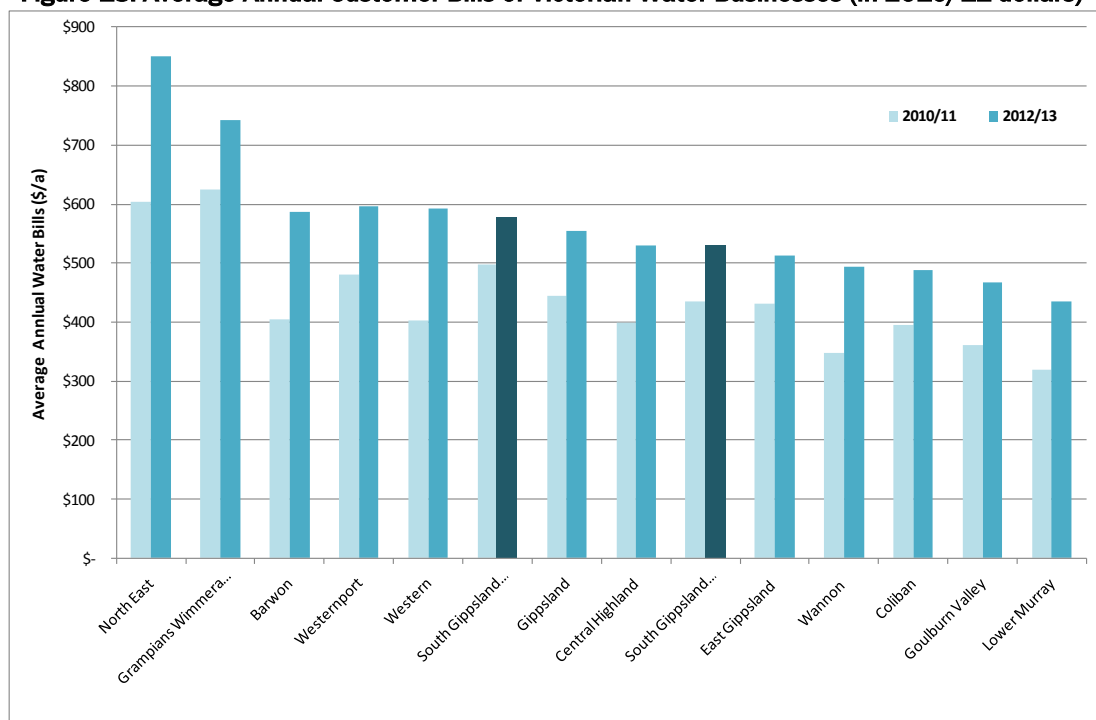
The financial model was then adjusted to assure that the business remains financially stable. That is, tariffs were manipulated to ensure that liquidity and solvency of the business is maintained over the ten years.

6.2. Customer impacts and affordability

6.2.1. Customer Impacts

SGW was able to limit increases of average customer bills over the current regulatory period. Average customer bills for residents in the southern area increased least, compared with average water bills of other Victorian water businesses (Figure 18). By the end of this regulatory period, in June 2013, SGW's average water bill for the southern area will be in sixth place relative to customer bills of other water businesses, down from second place in 2008/09. Future augmentations to enable a secure and reliable future water supply by connecting to the Melbourne System, will put upward pressure on SGW's water tariffs and average customer bills in future regulatory periods.

Figure 18: Average Annual Customer Bills of Victorian Water Businesses (in 2010/11 dollars)

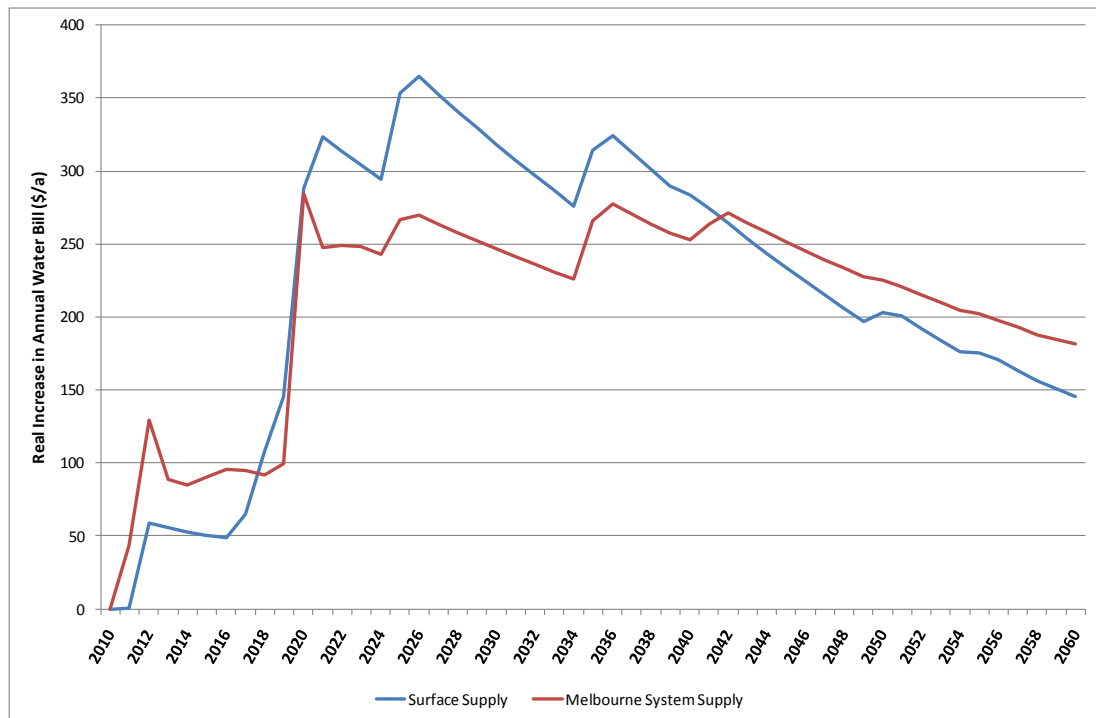


Source: ESC price determinations

The analysis of customer impact, using the building block approach, assumed uniform water service charges across the South Gippsland region consistent with SGW's pricing policy. As such, total customer numbers were used to determine the direct impact on average customer bills arising from the two supply augmentation options.

Figure 19 shows the incremental impacts of supply augmentations on average customer bills without a State Government subsidy for the Melbourne System connection and without smoothing of water tariff increases. That is, it shows the impacts on average customer bills, if tariffs were adjusted to recover operating costs, and return on and of assets occurring in each given year.

Figure 19: Customer Impacts of Melbourne System and Surface Supply (building block approach, uniform pricing, in 2010/11 dollars)



Source: MJA analysis

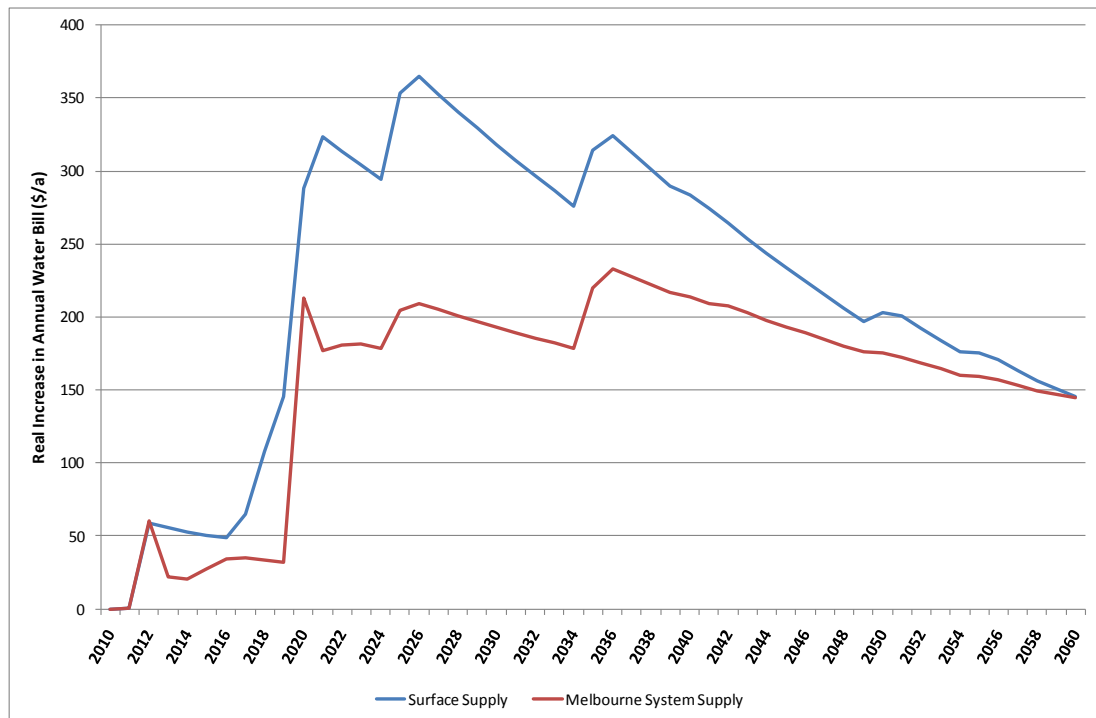
The Melbourne System Supply option results in significantly higher customer impacts over the first ten years. This is mostly due to the capital investments of \$18.9 million (in 2010/11 dollars) for the connections of Korumburra and Poowong, Loch, Nyora to the Lance Creek CWS and the Melbourne System in 2011/12. The substantial increase in impacts in 2020 is due to the connection of Leongatha to the Melbourne System via Korumburra.

Under the Surface Supply option, storage upgrades and increases take place in the first ten years and major capital investments occur in 2020 and 2025, as the Tarwin River Connection is upgraded, an additional 1,000 ML storage constructed and WTPs undergo substantial upgrades.

As noted, the Melbourne System Supply option is the preferred option. It provides a substantially higher level of supply security compared to the Surface Supply option, in particular with regard to potential impacts from climate change/variability and uncertainties in future population and industrial growth.

A State Government subsidy for the first stage of the project – the connection of Korumburra and Poowong, Loch, Nyora to the Melbourne System via the Lance Creek CWS – would partially mitigate the customer impacts arising from the Melbourne System Supply option and underwrite the future development of the region. Resulting real increases in average customer bills would be lower than under the surface option (Figure 20). The maximum increase in real terms in customer bills in 2020 is lessened by approximately \$70 per customer from \$285 to \$215.

Figure 20: Customer Impacts of Melbourne System Supply with State Government grant and Surface Supply (building block approach, uniform pricing, in 2010/11 dollars)



Source: MJA analysis

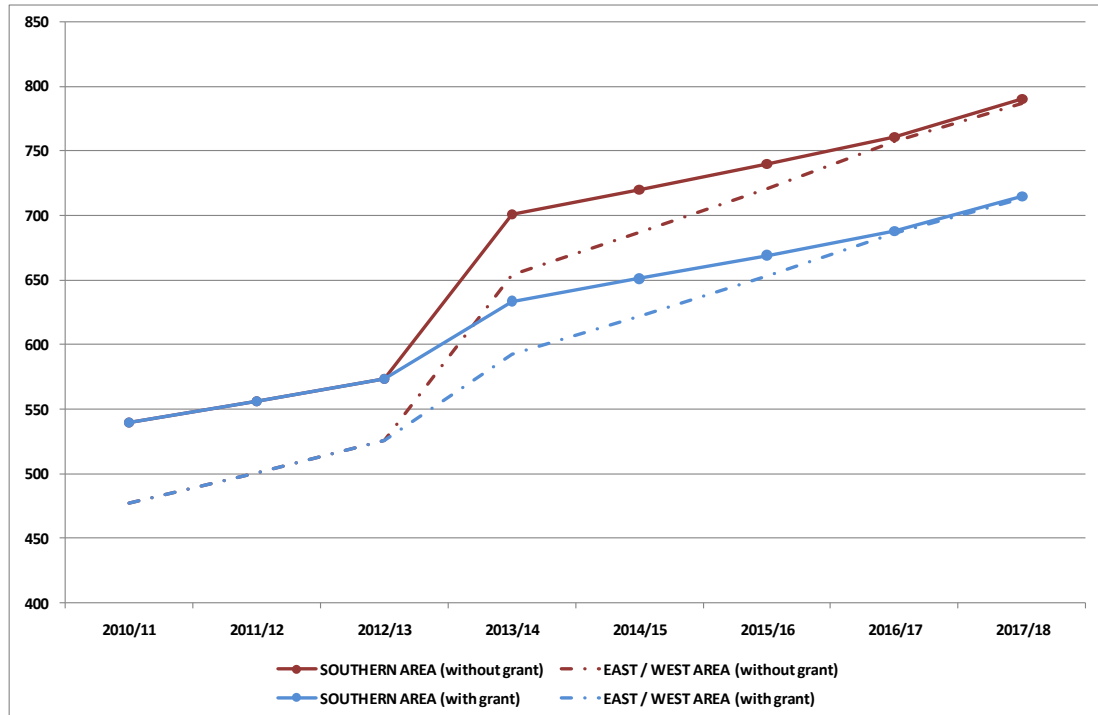
Taking a balance sheet, and profit and loss approach, SGW’s existing financial model was utilised to analyse customer from a whole-of-business perspective over the next ten years. This allows for potential interrelations with other parts of SGW’s planned capital works program and also takes account of existing arrangements, such as SGW’s current Water Plan.

The proposed connection to the Melbourne System will not impact on the water pricing tariffs already contained within SGW’s current Water Plan, covering the five year period from July 2008 to June 2013, as these have previously been assessed and approved by the Essential Services Commission (ESC).

As noted in the current Water Plan, SGW is in the process of moving towards a uniform water service charge across the region. It currently has two separate water service charges: one for the southern area, including Wonthaggi and surrounds, and one for the east-west area, which comprises the Northern Systems, i.e. Korumburra, Leongatha, Poowong, Loch and Nyora as well as the eastern towns, which do not form part of this Business Case. This move towards uniform pricing has been considered in the following assessment. Tariffs for both areas are brought in line over the ten year period.

Figure 21 below shows the impacts of connecting to the Melbourne System on average customer bills for the southern and east/west areas both with and without a State Government subsidy for the first stage of the project. The two red lines show the estimated change in average customer bills for both areas without State Government funding, whereas the blue lines depict the change in average customers bills with State Government funding.

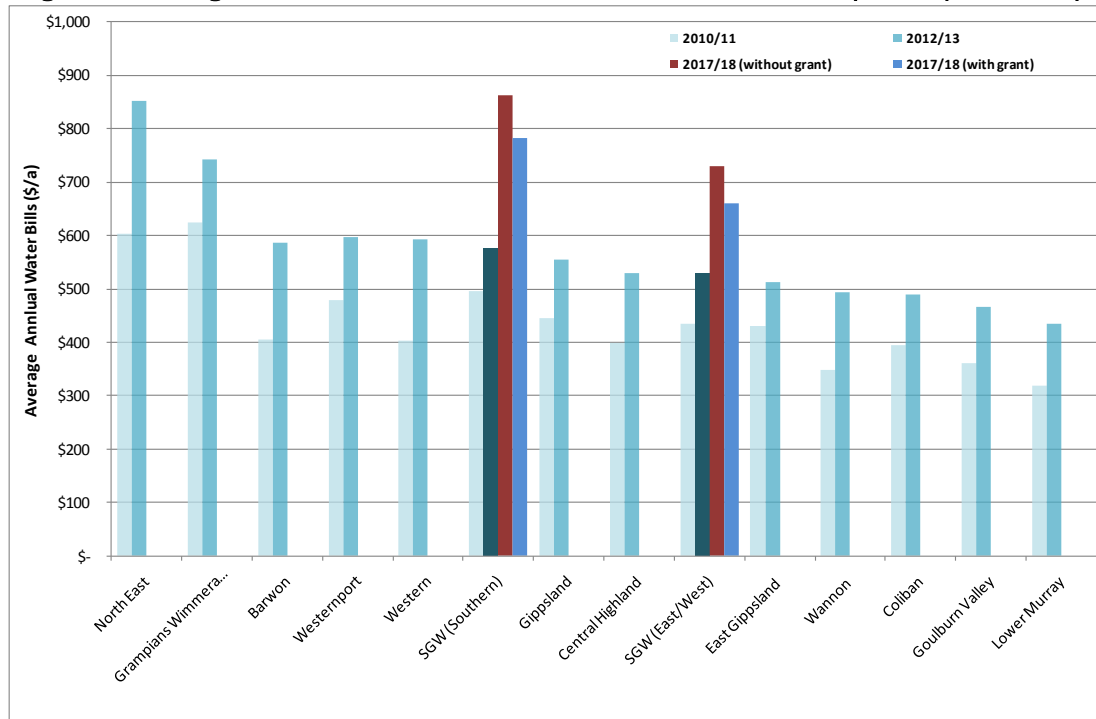
Figure 21: Average Customer Bill for southern and east/west areas – Impacts with and without State Government funding (balance sheet approach, in 2010/11 dollars)



Source: SGW financial analysis

In 2013/14, a substantial increase in tariffs (about 25 percent rise in real terms in average customer bills) would be required to recover the capital expenditure and service associated loans for connecting Korumburra and Poowong, Loch and Nyora to the Melbourne System and securing the system’s supply reliability. This increase would be mitigated substantially (reduced to a rise in average customer bills of about 15 percent in real terms), if the capital costs for the first stage of the project, \$18.9 million (in 2010/11 dollars), were funded through a State Government grant. By 2017/18 the difference in average customer bills would be approximately \$75 per year.

Figure 22: Average Annual Customer Bills of Victorian Water Businesses (in 2010/11 dollars)



Note: assumes customer bills of all other water corporations stay constant in real terms

6.2.2. Affordability

As noted earlier, using the balance sheet approach the water tariffs were manipulated from 2013/14 onwards to increase revenue from volume and service charges and maintain a financially stable position of the business, ensuring that SGW is capable to deliver its services going forward. Cash holdings were maintained at around \$1 million to \$1.5 million per year.

If additional capital expenditure for the first stage of the project (\$18.9 million) is to be funded by SGW, an increase in loans would be required to finance the costs of construction in 2011/12.

Figure 23 to Figure 25 show the changes in three financial indicators from 2010/11 to 2019/20 for both funding options, i.e. with and without State Government grant.

As expected, *working capital* decreases significantly without State Government funding, as current liabilities increase to raise additional funds for the capital investment for the connection to the Melbourne System, resulting in a less secure financial position.

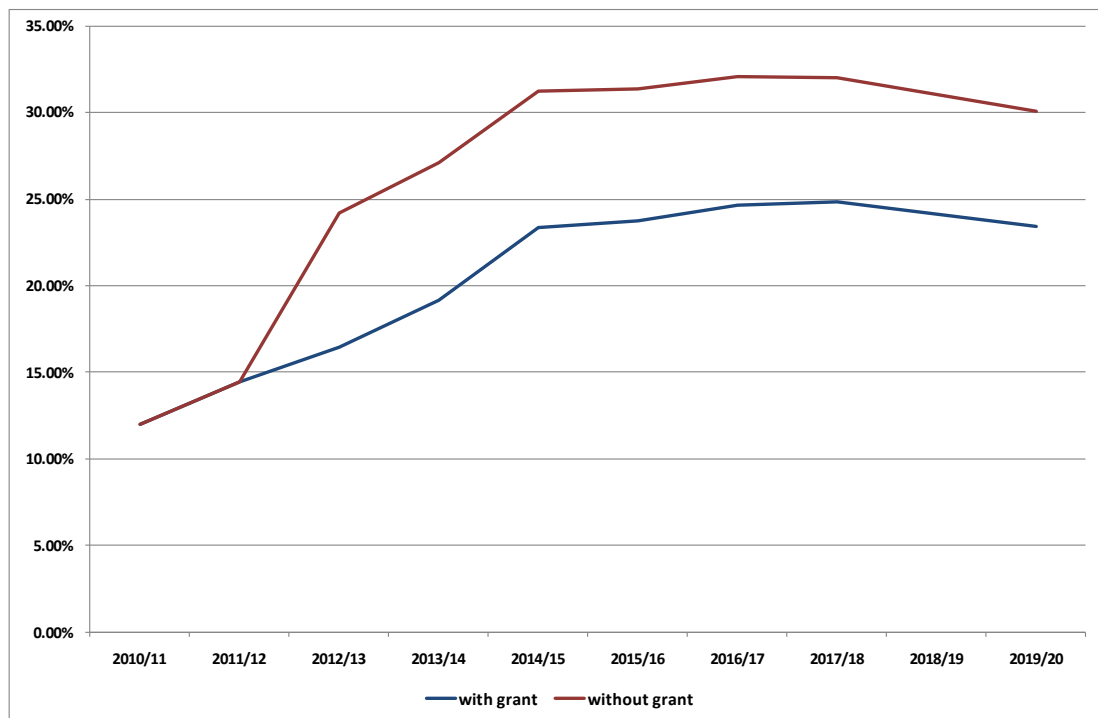
Figure 23: Net Working Capital



Source: SGW financial analysis

Similarly, the *long-term financial viability indicator*, i.e. net borrowings over total assets, increases (unfavourably) more strongly, if no government funding is secured, due to higher net borrowings.

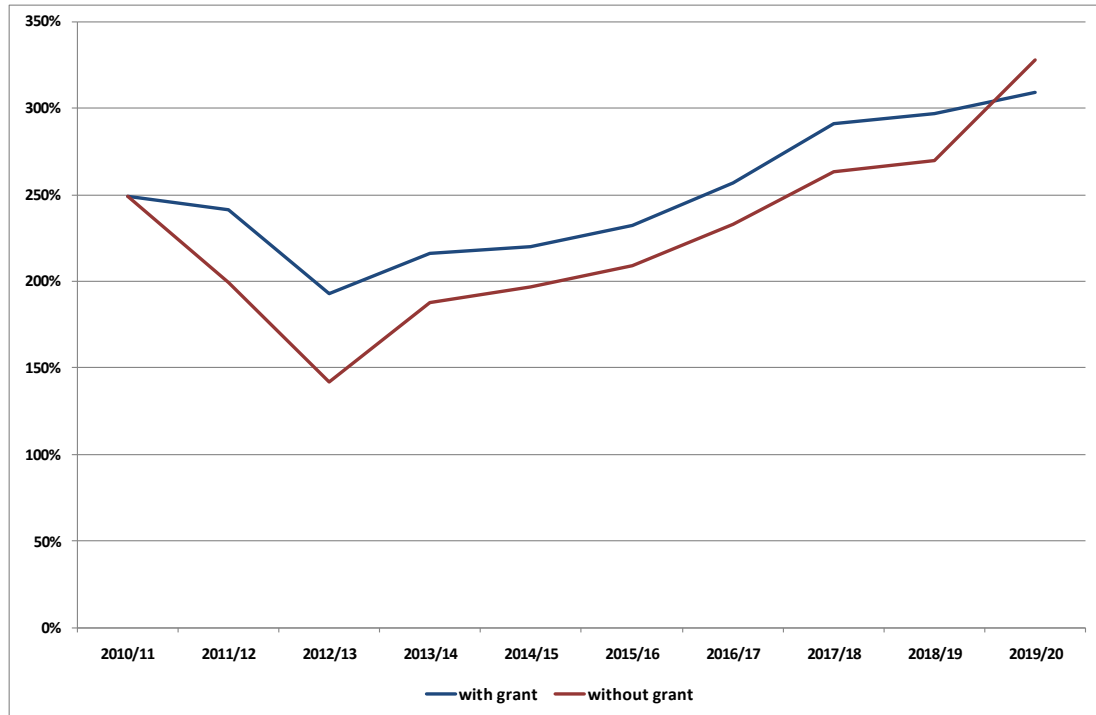
Figure 24: Long-term Financial Viability Indicator (net borrowings / total assets)



Source: SGW financial analysis

Without State Government funding, the *immediate liquidity and debt servicing indicators* decline more severely in 2011/12 and 2012/13, as revenue from volume and service charges cannot be raised to service additional debt, as tariff prices are fixed for the current water plan period.

Figure 25: Immediate Liquidity and Debt Servicing Indicator



Source: SGW financial analysis

All financial indicators depicted above show a healthier financial position going forward, if State Government funding for the first connection of northern towns, i.e. Korumburra, Poowong, Loch and Nyora to the Melbourne System is provided. It also ensures that financial indicators for SGW are in line with the ESC and Department of Treasury and Finance (DTF) benchmarks.

6.3. Preferred funding option

The preferred funding option for the connection to the Melbourne System is State Government funding of the capital costs for connecting Korumburra and Poowong, Loch, Nyora with the Lance Creek CWS to enable Melbourne System supply to these Northern towns. The capital costs of this connection amount to \$18.9 million (in 2010/11 dollars) and the connections are scheduled for construction over 2011 to 2012.

Obtaining government funding for this first stage of the project would not only substantially lessen impacts on customers – average customer bills would be approximately \$75 per annum (10 percent) lower in real terms, but also support the financial stability of SGW and securing its ability to provide reliable service and underwrite the future economic growth of the region.

7. Risk assessment

A comprehensive risk assessment process has been undertaken for this Business Case, as required by the Department of Treasury and Finance *Investment Lifecycle Guidelines – Business Case*.

Two risk workshops were convened by Connell Wagner (now Aurecon) for the purpose of determining appropriate risk ratings. The workshops identified and assessed risks associated with the supply of water from the Melbourne System as well as augmentation of the current surface and groundwater water systems. Attendees at the workshops held in Foster in May and June 2008 included the SGW project managers and senior management.

The results of the risk assessment were reviewed in January 2011 as new information became available.

Based on the findings of the workshops and the 2011 review, it can be concluded that there are no unmanageable risks associated with the project. All key risks can be addressed through implementation of proposed mitigation strategies.

7.1. Risk identification, analysis and evaluation

The risk assessments were based on the methodology consistent with the Australian and New Zealand Standard for Risk Management AS/NZS 4360:2004 and ISO 31000:2009.

This method entails

- identifying the risks (What could happen? How could it happen?);
- analysing the risk, including a review of controls, and assessment of the likelihood and consequences of a particular risk with a score from 1 to 5, where a likelihood of 1 is rare and 5 is almost certain, and a consequence of 1 is insignificant and 5 is catastrophic;
- evaluating the risks and ranking in them in terms of their severity using a risk evaluation table (Figure 26), based on SGW's consideration of overall business risks in its Draft SGW Risk Profile Report.

Figure 26: Risk Evaluation Table

Likelihood	Consequences				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Almost certain (5)	High	Extreme	Extreme	Extreme	Extreme
Likely (4)	High	High	Extreme	Extreme	Extreme
Possible (3)	Medium	Medium	High	High	Extreme
Unlikely (2)	Low	Low	Medium	High	Extreme
Rare (1)	Low	Low	Low	Medium	High

Source: Connell Wagner (now Aurecon), 2008, *Future Desalinated and Surface Water Supply Risk Assessments and WTP Upgrades Study, South Gippsland Water, August*

7.2. Risk mitigation strategies

Risk identification and evaluation was followed by the development of mitigation plans and assessment of post-mitigation risk. Both risks and risk management strategies have been documented in a risk report.⁴¹

The risks identified in the two workshops were recorded in risk registers, including a description of the risk, the evaluation of likelihood and consequence, the resulting risk rating and possible mitigation measures and the manager thereof. The risk register is a dynamic document that will continue to be updated and applied throughout project implementation.

As such, a review of the risk assessments was undertaken in January 2011. Risk ratings of some risks were adjusted, as new information became available. Risk management strategies have been updated, if required.

Risks are presented in sub-categories under each of the major categories which comprise: commercials, project planning and financial, construction, community and other stakeholders, operation and supply, drinking water quality (incl. maintenance and testing), surface water quantity, groundwater quantity, and recycled water.

Table 30 provides an overview over the high priority risks, i.e. risk rated 'Extreme', and possible risk management strategies to address these risks to the Melbourne System Supply option.

Table 30: High priority risks identified in desalination risk workshop

#	Category	Risk	Risk Management Strategy
1.	Drinking Water Quality	If backflow from Cardinia Reservoir is required the water quality may be different to desalinated supply Risk rating was reduced to High	Monitoring of water quality Disinfection at Lance Creek WTP of reverse back flow water
2.	Drinking Water Quality	Biofilm dislodgement from reversing of flow Risk rating was reduced to Medium	Low organics in desalination water
3.	Operation and Supply	Interruption of supply (for longer than 1 day) Risk rating was reduced to High	Lance Creek System sized to supply average daily demand CWSs for each connected system supplied sized to provide one peak day demand
4.	Operation and Supply	Desalination plant decommissioned within 50 year horizon due to sufficient rainwater and 100% dam capacities Risk rating was reduced to High	Supply from Melbourne System with surface water from Cardinia Reservoir Lance Creek System sized to supply connected systems with average daily demand

⁴¹ Connell Wagner (now Aurecon), 2008, *Future desalinated and Surface Water Supply Risk Assessments and Water Treatment Plant Upgrades Study, South Gippsland Water*, August

#	Category	Risk	Risk Management Strategy
5.	Project Planning and Financial	Operational and maintenance costs of operating systems with desalinated water may exceed current operational costs	Financial analysis (this Business Case) and financial planning
6.	Project Planning and Financial	Cost of purchasing desalinated water is excessive to customer	Lobbying / application for subsidies
7.	Project Planning and Financial	ESC may not accept large cost increase to customer	Lobbying / application for subsidies
8.	Project Planning and Financial	Competition for staff and resources with desalination plant	Provide adequate training to existing staff, advertise lifestyle and career opportunities to attract additional staff
9.	Construction	Lack of available resources for construction Risk rating was reduced to High	Adequate project planning, staging of construction Given current status of industry construction works, adequate resources are available
10.	Commercials	Out of spec water supplied Risk rating was reduced to High	Protocols and agreements are robust, preventing supply of out of spec water
11.	Commercials	Take or pay agreement may be applied to SGW	Bulk Entitlement water volumes secured Melbourne 'pool' price for water was made available to SGW, fixed and variable supply costs are known
12.	Community	Potential for increased cost of water resulting in community opposition	Community education and consultation program, Lobbying / application for subsidies
13.	Community	Poor public perception of desalinated water in the region resulting in community opposition	Community education and consultation program, with guidance from DSE
14.	Community	Changeover to fluoridated water supply resulting in community opposition	Community education and consultation program
15.	Community	Customers wary of changes in taste/odour	Community education and consultation program

Source: Connell Wagner (now Aurecon), 2008; SGW, 2011

Table 31 provides an overview over the high priority risks, i.e. risk rated 'Extreme', and possible risk management strategies to address these risks to the Surface Supply option.

Table 31: High priority risks identified in surface and groundwater risk workshop

#	Category	Risk	Risk Management Strategy
1.	Surface Water Quantity	Climate change leading to reduction/loss in supply (> 15% CSIRO yield reduction from 100 year record)	Increasing dam capacity, interconnection of supply systems, supply from Tarwin and Powlett River
2.	Surface Water Quantity	Extreme weather events leading to decrease in raw water quality	Robust water treatment and reservoir management
3.	Surface Water Quantity	Regulatory changes to existing Bes (including environmental release enforcement) – esp. <i>Ruby Creek</i>	Negotiations with DSE, collaboration with CMA re environmental management of assets
4.	Surface Water Quantity	No access to new Bes after completion of Wonthaggi desalination plant – esp. <i>Lance Creek</i>	Negotiations with DSE, collaboration with CMA re environmental management of assets
5.	Surface Water Quantity	Insufficient storage for raw water to ensure future supply – esp. <i>Lance Creek, Little Bass and Coalition Creek</i>	Increasing storage capacity, investigating alternative supplies
6.	Groundwater Quantity	Lack of access to Kooweerup aquifer	Investigating alternative supplies
7.	Groundwater Quantity	Unsustainability of Leongatha groundwater source (from either extraction or lack of rainfall)	Investigating alternative supplies
8.	Drinking Water Quality	Existing treatment processes unable to ensure compliance with more stringent drinking water standards for existing parameters over 50 year time period	Improvements of treatment train, upgrades of WTPs
9.	Drinking Water Quality	Existing treatment processes unable to ensure compliance with drinking water standards for quality parameters that are not currently regulated	Improvements of treatment train, upgrades of WTPs
10.	Drinking Water Quality	Blue green algae blooms – esp. <i>Lance Creek</i>	Active monitoring, advanced treatment, trigger level copper sulphate dosing
11.	Drinking Water Quality	Failing water quality audit / non-compliance to Safe Drinking Water Act – esp. <i>Lance Creek, Coalition Creek</i>	Improvements of treatment train, upgrades of WTPs

#	Category	Risk	Risk Management Strategy
12.	Drinking Water Quality	Level of THMs do not comply with Safe Drinking Water Regulations – esp. Lance Creek	Improvements of treatment train (chloraminated disinfection), upgrades of WTP; Lance Creek upgraded to chloraminated disinfection, which reduces THM risk but does not eliminated future regulation of DBPs such as Cyanogens chloride and NMDA
13.	Operation and Supply	Insufficient storage facilities for treated water to ensure future supply	Increase CWS capacity
14.	Operation and Supply	Insufficient water available to connect unserved towns to existing system – Lance Creek	Investigating alternative supplies
15.	Maintenance and Testing	Increase in testing costs to SGW due to regulatory changes (water quality)	Engage with water quality testing agencies
16.	Construction	Land acquisition and planning requirements for work in private property, and access to private property, resulting in delays and cost overruns – esp. Little Bass	Community consultation, compulsory acquisitions
17.	Community	Negative public reaction due to imposed drinking water restrictions	Community education and communication program, ensuring compliance with level of service requirements
18.	Community	Community response to flushing and air scouring, perceived waste of water Risk rating was reduced to High	Community education and consultation program
19.	Community	Environmental issues regarding removal of native vegetation resulting in community opposition – esp. Little Bass, Ruby Creek	Planning, development of strategy for dam expansion,
20.	Community	Negative community response to increased storage capacity – Ruby Creek, Coalition Creek systems	Community education and consultation program

Source: Connell Wagner (now Aurecon), 2008; SGW, 2011

Risks associated with the supply of water from Melbourne System are largely concerned with negative community reaction to the project, and contract and cost uncertainties with regard to the Melbourne System bulk supply. Interruption or loss of supply from the Melbourne System is also a key concern. However, in case of a disruption of the desalination plant, Melbourne System water can be supplied from the Cardinia Reservoir to the Lance Creek Reservoir. These risks have subsequently been addressed through risk management /

mitigation strategies, such as a detailed communications strategy, a 5GL bulk entitlement for Melbourne System supply and the sizing of the Lance Creek WTP.

By contrast, key issues identified in the surface and groundwater risk assessment are by large concerned with water quality issues and reliability of supply. Mitigation measures for these risks were proposed and are included in the risk register.

At this point in time there are no major unmanageable financial and economic risks remaining for either option, after mitigation strategies have been applied.

8. Project implementation

This section sets out the proposed arrangements for the successful delivery of the Melbourne System Connection and related supply augmentation works.

8.1. Implementation timetable

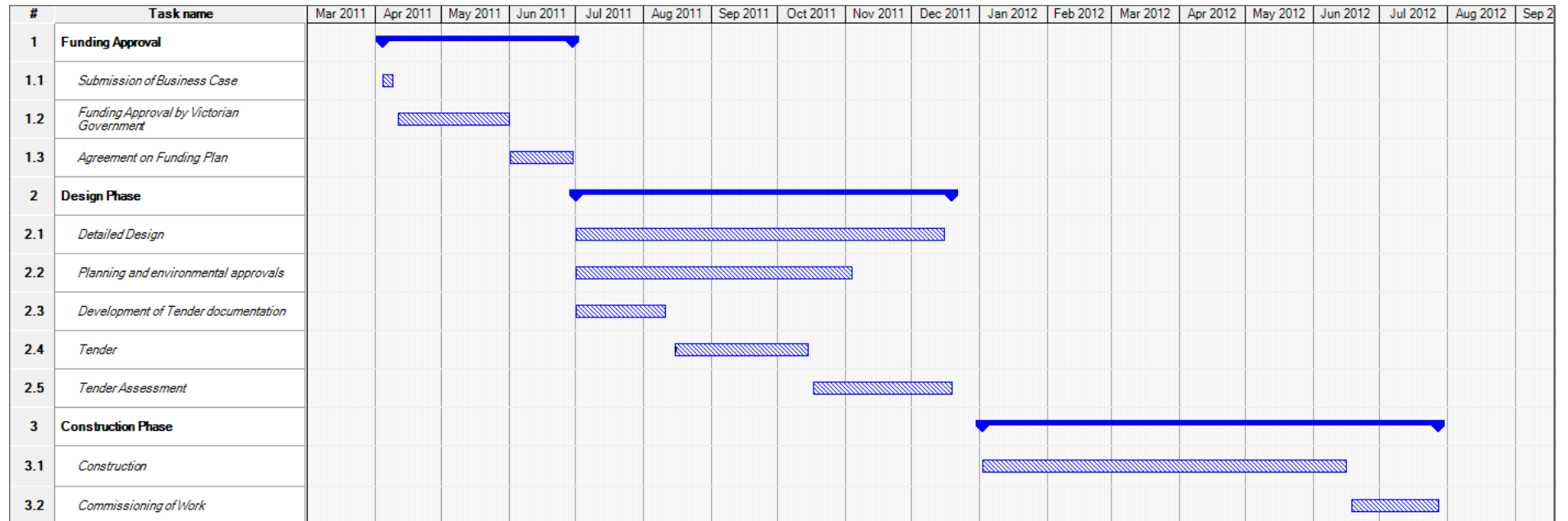
Figure 27 illustrates the main project activities and their related timing for the delivery of Stage 1 of the Melbourne System Connection to Korumburra and Poowong via Lance Creek.

8.2. Project governance

The initiation of the each stage of the project will depend on the sign off by the SGW Board. Governance arrangements for the implementation of the project build on the expertise and capabilities of SGW's in-house project delivery team, which regularly manages the implementation of projects of similar size and nature.

The coordination of the planning, environmental planning and cultural heritage arrangements and permitting will be managed by SGW's project delivery team (as discussed in section 5.3).

Figure 27: Implementation program and timetable



9. Conclusions and recommendations

The Melbourne System Supply is the preferred option, having lower whole of life costs of \$108.2 million (in 2010/11 dollars), assuming ViF demand. The option provides a substantially higher level of supply security compared with the Surface Supply option, avoids the risk of investing in redundant assets, provides the necessary security for future economic growth and prosperity, allows for use of additional flows by the agricultural sector and for higher environmental flows. The Melbourne System Supply option therefore provides security and a basis for the economic prosperity of the region.

The analysis of two funding options, i.e. with State Government subsidy and without subsidy, shows that impacts on average customer bills could be significantly mitigated with a grant from State Government for the first stage of the project. That is, the connection of Korumburra and Poowong, Loch, Nyora to the Melbourne System via the Lance Creek CWS.

Without Government funding water prices are set to rise significantly with the start of the Water Plan 2013 - 2018 to recover the investment of \$18.9 million for the capital works. As shown in Figure 21, this would lead to an estimated 25 percent increase in average customer bills in 2013/14, which could be significantly lessened through a State Government grant.

Additionally, funding through the State Government would ensure that SGW remains financially viable. That is, within the boundaries of financial indicators as recommended by the ESC and hence capable of delivering water supply services to the region into the future.

The SGW board therefore recommends that the State Government provides funding of \$18.9 million (in 2010/11 dollars) to SGW to support the future reliable water supply, and economic growth and prosperity of the region.

**South Gippsland Water
Project – Poowong Loch, and Nyora (PLN) Sewerage Scheme
Business case Document**

Date: September 2012
SGW Reference: Project S26

1. INTRODUCTION

1.1. Project Description

A Modified Conventional Sewerage (MCS) scheme for collection of the wastewater, with pumped mains from each town to a central lagoon treatment facility, and reuse of the effluent for land irrigation comprises the proposed sewerage scheme for the townships of Poowong, Loch and Nyora.

The sewerage scheme will service approximately 650 properties, via a 20.9 km reticulation system consisting of piping ranging from 150 to 300mm diameter. 11 pump stations and 24.8km of rising mains ranging in pipe size from 150 to 300mm diameter will transfer the wastewater to the proposed lagoon Waste Water Treatment Plant (WWTP) with an associated 125 Ha reuse irrigation area.

1.2. Background

The Victorian State Government responded to the community need for improved waste water management in country towns, and accepted the South Gippsland Shire Council's ranking of a high priority for sewerage schemes to Poowong, Loch, and Nyora under the Country Town Water Supply and Sewerage Program. Providing sewerage services to the towns has been included in South Gippsland Water's (SGW) Statement of Obligations with the Victorian State Government.

A partnership was formed between SGW and SGSC for the further investigative work to be done. The partnership was called the South Gippsland Country Towns Sewerage and Innovations Working Group, and it had representatives from each organisation and strong links with DSE.

A preliminary report on the costs involved in sewerage Poowong, Loch & Nyora by Consultants Earth Tech was commissioned by South Gippsland Shire Council in 2003. Following this report SGW carried out internal investigation along with discussions with SGSC into the preferred arrangement of the scheme as well studies into land requirements for a suitable site for the WWTP(s).

South Gippsland Water arranged for an audit of each property to be undertaken over the period March to April 2007 to determine the nature and performance of the existing private septic tanks. It was established that the household systems were not operating satisfactorily resulting in both ground water and surface water pollution resulting in significant health, amenity and odour issues. The lack of sewerage was identified as also being a major impediment to growth in the three towns.

Consultants URS were engaged by SGW to examine the options for providing waste water services to the existing residential zoned land in Poowong, Loch and Nyora, to complete a concept design, and to establish the estimated costs of the preferred scheme. A preferred combination of collection and treatment options were developed using a series of selection criteria, cost estimates and investigations by the consultants. Following the completion and recommendations proposed in the URS report the SGW Board approved in February 2008 a sewerage scheme comprising of Modified Conventional Sewerage collection method, transfer

to a centralised lagoon treatment complex near Nyora and the reuse of the treated water for agriculture.

A Business Case was developed and put forward to Treasury for approval in April 2008, the Department of Treasury and Finance approved and endorsed the Business Case formally in January 2009.

Following adoption of the MCS system which includes pump station and transfer mains components, a detailed design was tendered out and is now almost complete. The detailed design of a lagoon based WWTP facility was also tendered out and is also nearing completion. Detailed cost estimates form part of the detailed design contract and will be prepared for each of the components once the design is complete.

A review of the current cost estimates for the project identified a range of scope and other changes over Business case estimates prepared in 2008 which resulted in project cost estimate increases. A report on these changes was prepared for approval by the Corporation's Board in April 2012 with further justifications and details provided in a report to the Board in June 2012.

Additional study work was completed on the assessment of wastewater treatment options for the scheme - mechanical plant versus lagoon treatment with confirmation that lagoon treatment, as presented in the Business case for Treasury Approval in 2008 still had the lowest capital cost and significantly lower operating costs.

1.3. Purpose

The sewerage of Poowong Loch and Nyora will cost effectively address wastewater management issues that have been highlighted for numerous years in the towns, and will lead to improved amenity including the enablement of future growth of these towns.

1.4. Supplementary Report(s) & Supporting Document(s)

Various reports and documents have been prepared and developed, and have helped to define the associated activities relating to this project. All reference reports and documents can be made available by SGW on CD format.

1.4.1. Consultant reports for this project

The following list provides the consultant reports directly related in establishing the optimum sewerage scheme:-

Trim Ref.	Report
2004/0565	Sewerage Management Options for Loch, Nyora and Poowong, Earth Tech, September 2003
Draft report 2005/09916	Strategic Land Requirements for Wastewater Treatment for Loch-Nyora-Poowong and Meeniyan, GHD, December 2005
2006/01139 or WF2008/2254	Strategic Land Requirements for Waste Water Treatment for Loch, Nyora and Poowong and Meeniyan, GHD, February 2006
2007/08753, 2007/03458	Sewerage Scheme Property Audits, Casey Services. April 2007
2007/11128	Final Report - Innovative sewerage services for Poowong, Loch and Nyora – Concept Design, URS, December 2007
2012/16178 or 2012/16088	Gateway Initiative Business Case Poowong, Loch, Nyora Sewerage Scheme, South Gippsland Water, April 2008
2008/07671	Loch, Nyora and Poowong Sewerage Scheme Treatment Plant Site Selection Study, MAUNSELL/AECOM, October 2008

2009/15038	Loch, Nyora and Poowong Sewerage Scheme Treatment Plant Site Selection Study – Addendum No. 1, AECOM, September 2009
2009/12710	Poowong, Loch and Nyora WWTP Options Review Memorandum, GHD, September 2009
2009/18189	Poowong, Loch and Nyora WWTP Preliminary Investigation Report - Geotechnical, GHD, November 2009
2010/17293	Poowong, Loch and Nyora Sewerage Scheme Cultural Heritage Due Diligence Assessment, Dr. Tim Stone, September 2010
2010/20960	Loch, Nyora and Poowong Sewerage Scheme Treatment Plant Site Selection Study – Addendum No. 2, AECOM, October 2010
2011/11525	Poowong, Loch and Nyora Sewerage Scheme, Proposed Rising Main Route Variations and Alternative Waste Water Treatment Plant (Site 6), Cultural Heritage Due Diligence Assessment, Dr. Tim Stone, June 2011
2011/18358	Poowong, Loch and Nyora WWTP Review of MAR Potential, GHD, August 2011
2011/19461	Poowong, Loch and Nyora Flora and Fauna Assessment, Desktop and Field Assessment for Alignment and Lagoon Option, KBR, August 2011
2011/21022	DRAFT - Irrigation Water Balance for PLN Scheme, RMCG, September 2011
2011/26750	Giant Gippsland Earthworm Survey for the Proposed Poowong, Loch and Nyora Sewerage Scheme alignment, Invert-Eco, November 2011
2011/28867 & 2011/28868	Geotechnical Investigation Nyora Waste Water Treatment Plant. Coffey Geotechnics, December 2011 (includes earlier report completed in 2010)
2012/03863	Nyora WWTP Odour Impact Assessment, GHD. February 2012
2012/06236	Poowong, Loch and Nyora Sewer Rising Main–Offset Requirements, KBR, March 2012
Draft report 2012/14679	Poowong, Loch and Nyora Wastewater Treatment Plant Preliminary Design Report, GHD, June 2012
2012/21537	Preliminary cost estimates of reticulation, rising mains and pump stations by Beveridge Williams spreadsheet. September 2012.
2012/22244	Preliminary cost estimates of WWTP by GHD spreadsheet September 2012

1.4.2. SGW documents

The South Gippsland Water Board has an approval process for Capital works. Works that are included on the Corporation's 10 year plan are done so with a Board approved Strategic Approval Statement (SAS). The Board approves project Capital Expenditure via approval of a Capital Justification Statement (CJS). For this project, these documents are listed below:-

Trim Ref.	Report
In Board agenda	SAS February 2005 – Board Approved August 2005
In Board agenda	CJS February 2008 – Board Approved April 2008
In Board agenda	CJS December 2009 – Board Approved December 2009 (Site Section)
In Board agenda	CJS March 2011 – Board Approved March 2011 (Site Section)
In Board agenda	Cost Estimate Update Report April 2012 – Board deferred and requested more details
In Board agenda	Update Report to Board June 2012 –
2012/20920	Approvals Risk Workshop Risk Matrix – August 2012

2. PROJECT DRIVERS

In Poowong, Loch and Nyora a significant number of household waste water systems fall outside EPA guidelines for satisfactory operation of onsite property septic tanks on account of land capability and allotment size. Town property audits confirmed the flow of untreated waste

water into open accessible drains was causing environmental pollution, community health risks, amenity issues and odour nuisance. The towns are also prevented from growing by means of additional residential subdivisions or housing construction as approvals for onsite wastewater systems will not be granted by the Shire

South Gippsland Shire Council recognised the unacceptable state of existing household waste water systems in the towns and supported Poowong, Loch and Nyora as the top priority for securing reticulated sewerage services under the Government's Country Town Water Supply and Sewerage Program. The submission was accepted by DSE for funding and the Minister for Water Supply resolved that the provision for sewerage service to the towns be included in South Gippsland Water's Statement of Obligations.

3. ASSESSED OPTIONS

3.1. Options

3.1.1. Sewerage system

Consultants URS considered and compared several wastewater collection systems in their Innovative Sewerage Services for Poowong, Loch and Nyora – Concept Design Report, December 2007. The collection systems which were considered included Modified Drainage (M.D.), Variable Graded, Common Effluent Disposal (CED), Vacuum sewers, Grinder Pump installations, Septic Tank Effluent Pumping (STEP), and Modified Conventional Sewerage (MCS). A series of important selection criteria were developed which covered design, construction and maintenance aspects, levels of service, environmental and amenity issues, risks, and costs. These were then set in a matrix against the possible sewerage system options for evaluation.

The outcome of the process highlighted two preferred options which were then evaluated in more detail. These were:

- Modified Conventional Sewerage (MCS). The system essentially comprises a series of pipe networks to collect waste water from the houses and pump it to a treatment site for treatment and reuse. It is a more economical system than Conventional Sewerage, providing cost savings by reduced use of manholes and shallower pipes, without affecting system reliability or maintenance costs.
- Common Effluent Disposal (CED). Septic tanks are retained and modified to take both black water and grey water. The sewerage pipe system is configured to collect the overflow from the tanks on each property. Each septic tank needs to be in serviceable condition and capable of receiving re-plumbed grey water from the house. Septic tanks are required to be periodically desludged (typically 3 to 5 years).

Both the preferred collection options, MCS and CED, incorporate off site treatment and reuse.

The detailed evaluation indicated that a Modified Conventional Sewerage system was the recommended collection method, on the grounds of lower initial scheme cost, lower risk of scheme cost over run, lower maintenance costs for the existing towns, and being more amenable to servicing new homes on infill sites or subdivisions.

3.1.2. Waste water treatment plant (WWTP)

The options for having three, two or one treatment and reuse site for the three towns were investigated and costs estimated. After considering suitable sites, buffer requirements, the elevation of each town, pipeline routes, social/community implications and operating costs, there was a clear preference for a single combined treatment facility system to service the three towns to be located near Nyora. Nyora was the most logical town as it is the largest of

the three, has the most growth potential being the town closest to Melbourne and has suitable land for a treatment facility.

Lagoon based treatment systems are commonly favoured for treating sewage from small rural communities, as there are generally lower capital and operating costs associated with these systems. A disadvantage of lagoon treatment is the larger area required by the facility compared to more highly mechanised activated sludge treatment systems. Lagoon based treatment of sewage provides a well established and least cost solution compared to other mechanical treatment methods and was selected as the option moving forward. This was supported by recommendations from the URS 2007 report and a functional preliminary cost estimate prepared by consultants GHD in 2009. GHD reviewed these costs in May 2012 which again indicated a lagoon based treatment system is still the most cost effective in terms of both capital and ongoing operation costs.

3.1.3. Reuse and disposal

The conventional method of disposing of treated effluent from rural waste water treatment plants is to reuse the reclaimed water for irrigation. However, an objective of SGW for this project was to consider innovative approaches for the management of waste water from Poowong, Loch and Nyora. Consequently, two other approaches were investigated, in addition to irrigation, which would be environmentally sustainable, socially acceptable, and economic, and that would be supported by the local communities. These included Managed Aquifer Recharge (MAR) and connection to a possible future South East Water reuse pipeline network.

The estimated year 2035 effluent volume for the three towns, including residential and industrial and not rainfall, and assuming only modest growth at Nyora, is approximately 200 ML per year.

The proposed wastewater treatment plant site near Nyora is reasonably close to the over-allocated Koo Wee Rup aquifer which could benefit from MAR provided the water was of sufficiently good quality. Consultants GHD undertook a review and produced a report on the potential of MAR. The sand quarries owned by TGS Industrial Sands near the Lang Lang Golf Club may have provided a good vehicle for recharge, however, the TGS Industrial Sand quarries are understood to be extremely valuable to the company as a land fill site. Recharge groundwater bores are another possibility, but preliminary discussions with EPA showed that it is less than enthusiastic about the idea and indicated it is a long and complex approval process. It would appear at this stage that MAR is not viable in the short term, but could be reconsidered as required for a long-term option.

Reuse of treated waste water for irrigation has the benefit of utilising the nutrients contained in the water. This reduces the demand for the application of chemical fertilisers and avoids the need for the removal of those nutrients if the effluent were to be otherwise discharged to the environment. Winter storage will be required to balance summer use with winter inflows. The water will initially be used on SGW land, but as the number of connected households grows, the opportunity to supply neighbouring farmers should be realised. Investigations are currently underway to determine when additional land will be required.

SGW has also initiated discussions with South East Water over the possibility of SGW connecting into a proposed SEW reuse pipe network that has the potential to utilise SGW reuse water. Planning for such a connection is at early stages, and would require conceptual approval from each Board prior to being investigated further. Further investigations by both organisations will more clearly identify the economies of connection, as well as addressing SGW timing needs and SEW proposed works timing to indicate the option viability.

3.2. Financial Analysis

A concept design cost estimate was prepared by consultants URS in 2007 for the Poowong Loch & Nyora sewerage scheme. With an allowance of 40% contingency the total estimated scheme costs were \$16.6M. This estimate was further refined by SGW in 2008 for the Business Case to \$15.65M to coincide with the contingency requirements of the Department of Treasury & Finance. Following further discussions between the Department and SGW this figure was further revised and the final amount totalled \$15.9M which was approved.

As the designs progressed and further detail on the extent and scope of the project was outlined, it became apparent that the initial estimated cost of the project required upgrade and a report was prepared for approval by the Corporation's Board in April 2012 with further justifications and details provided in a report to the Board in June 2012. Subsequent further cost estimating utilising more detailed design information has been completed. This work is the basis of the current cost estimates for the project with consultants continuing to provide updates as they further progress the designs and more information comes to hand.

3.2.1. Cost-benefit assessment

Cost benefit assessments have been undertaken on the various components as part of the option assessments completed by assorted consultants at different times. The URS 2007 report compared the different sewer collection system options and the WWTP arrangement i.e. 1 central vs 2 or 3 separate plants. Consultant GHD considered and compared the different WWTP processes i.e. mechanical versus lagoon which was revised and updated in May 2012. Consultants RMCG and GHD considered and compared the reuse options.

The Do nothing option is now not possible as the Minister for Water Supply included the provision for reticulated sewerage service to the towns of Poowong, Loch and Nyora in South Gippsland Water's Statement of Obligations.

3.2.2. Estimated costs

Table 1 below compares estimated costs of the various components of the total project against what was estimated in the concept design in 2007, the Business Case in the CJS (in 2008 costs) and the current costs as estimated in current cost of the day dollar values. This updated cost estimate for the entire project includes the significant change of scope items as identified in the SGW Cost Estimate Update Report presented to the Corporation's Board in April 2012. Importantly the current cost estimate is based on some of the unit rates from the actual costs for the construction of the recently completed Meeniyah sewer scheme. Functional design costs for the project have been provided by Consultants Beveridge Williams and GHD with an accuracy level of +/- 25% and a contingency amount of approximately 20% and are included in table 1 below. The Consultants cost estimate spreadsheets are attached.

Table 1: Cost estimate updates comparison (2012\$)

Item	Project Item	Concept Design by Consultants URS 2007	CJS/Business Case 2008	Current preliminary cost estimate September 2012
1	Design	\$1,496,500	-	\$754,000
2	Planning and studies		-	\$1,126,000
3	Reticulation	\$4,543,100	\$4,866,674	\$7,310,000
4	Rising mains	\$1,138,000	\$2,500,000	\$2,560,000
5	Pump stations	\$1,950,000	\$2,988,730	\$2,750,000
6	WWTP	\$853,300	\$1,962,929	\$5,810,000
7	Reuse/MAR/Irrigation	\$552,000	-	\$1,020,000
8	Land Purchase and landscaping	940,000	\$940,000*	\$1,450,000
9	SGW Project Management	Included in design costs	-	\$820,000
10	Contingency	\$5,160,500	\$2,651,667	\$5,930,000
	Total	\$16,601,400	\$15,910,000	\$29,530,000

3.2.3. Proposed annual expenditure

Table 2 shows proposed annual expenditure for this project within the Capex plan, with proposed project expenditure in Water Plan III highlighted:

Table 2: Capex plan yearly allocated costs

Year	Current Board Approved Capex Program Amount (\$k)
2012/13	400
2013/14	\$1,510
2014/15	\$8,942
2015/16	\$10,772
2016/17	\$7,418
2017/18	-
Total	\$29,042

3.3. Risk Analysis Assessment

Risk assessments have been undertaken on the various components as part of the option assessments completed by assorted consultants at different times. The URS 2007 report compared the different sewer collection system options and the WWTP arrangement i.e. 1 central vs 2 or 3 separate. Consultants GHD considered and compared the different WWTP processes i.e. mechanical vs lagoon which was revised in May 2012. Consultants RMCG and GHD considered and compared the reuse options.

Commercial and social risks which were assessed within the 2008 Business Case have been managed and minimised by the Corporation to their best ability.

A comprehensive planning risk workshop was undertaken in August 2012. It was attended by all the consultants and specialists who are actively involved in the project. The workshop established and highlighted risks the Corporation may be exposed to during the planning and approvals phase. A risk matrix was established to categorise and rate each risk accordingly, along with mitigation plans detailed.

SGW is minimising commercial risk by having consultants undertake cost estimates based on the detailed designs for the scheme components as they are progressing. This allows SGW to have firm costs moving forward with the project into the tender and construction phases.

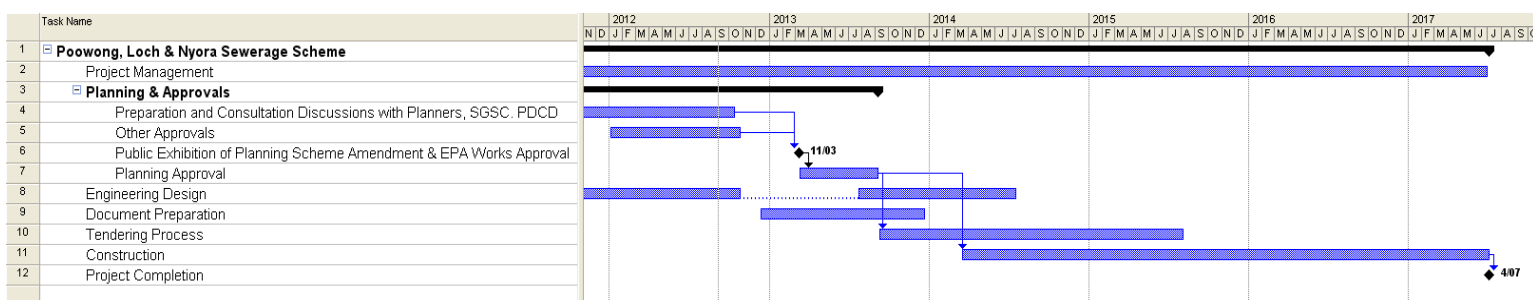
Expenditure program (2012\$) in \$1,000's

Item	2007-2012	2012/13	2013/14	2014/15	2015/16	2016/17
Planning etc	1983	146	50			
Design	500	254				
Nyora RM			615	261		
Nyora PS			300	816		
Nyora retic				1310	3060	
Poowong RM				1290		
Poowong PS				544	786	
Poowong retic					915	915
Loch RM				65	573	
Loch PS					300	300
Loch retic						1350
WWTP, reuse			200	2600	2400	1070
Contingency			305	1585	1890	3020
Total (2012\$)	2483	400	1470	8470	9930	6655
Total Water Plan Nominal \$		400	1510	8942	10772	7418

4. PROJECT TIMING

The forecast completion date for this project is June 2017, this is contingent on a Planning Scheme Amendment for the site of the wastewater treatment plant being issued by September 2013. Currently survey, investigations, detailed design, land purchase and ongoing community consultation are being undertaken with a view to be finished by mid-2013. If approval received, tendering, construction, and commission will commence in 2014 for completion by 2017. Project timelines are as set out below in Figure 1, it provides a "rolled up" Gantt chart of the project.

Figure 1 PLN Gantt chart schedule



4.1. Milestones

The key milestones for the project are as follows:-

- Obtain Victorian State Government Treasury approval (Obtained January 2009)
- Site surveys, preparation of preliminary engineering designs for all the works, identification of wastewater treatment plant site (Completed December 2010)
- Wastewater treatment plant site purchase (Completed June 2011)
- Community consultation (Commenced 2008, ongoing)

- Detail designs (Completion 2013)
- Planning Scheme Amendment Approvals (Completion 2013)
- Tender, contract, construct and commission of all works (Commence 2013*, Completion 2017)
- Ministerial opening (Mid-2017)
 - * This project commencement timing is dependent on planning scheme amendment approvals being granted in 2013.

5. PREFERRED OPTION

5.1. Outcome to be Delivered

SGW will deliver a complete sewerage system for the townships of Poowong, Loch and Nyora through the implementation of a Modified Conventional sewer system to collect domestic wastewater from each town, with pumping station and rising mains from each town to transport the wastewater to a lagoon treatment facility for suitable treatment. A reuse scheme to manage the treated effluent will also be delivered in the form of land irrigation for agricultural production.

6. ATTACHMENTS

The Consultants cost estimate spreadsheets are attached.

Item	Description	Comments / Basis	Qty	Unit	Rate	Amount
A PRELIMINARIES						
A.1	Mobilisation, site establishment, insurances, fees, permits, works setout survey, documentation, demobilisation, safety, quality and environmental management and all other items and works required but not specifically mentioned elsewhere in this Schedule		1	Item	\$ 200,000.00	\$ 200,000.00
<i>Preliminaries Sub Total</i>						\$ 200,000.00
B.1 EARTHWORKS						
B.1	Topsoil stripping average 0.3m deep		53865	cu.m	\$ 4.00	\$ 215,000.00
B.2	Excavate sandy soil to 1m depth (less topsoil stripping so 0.7m deep) and deposited on site		125685	cu.m	\$ 4.00	\$ 503,000.00
B.3	Slotted drain to divert perched groundwater		850	m	\$ 200.00	\$ 170,000.00
B.4	Soil Stripped from borrow pit and compacted	7,500 m ² to 1 m	7500	cu.m	\$ 4.00	\$ 30,000.00
B.5	Excavation, placement and compaction of clay liner and embankments	No allowance for	239000	cu.m	\$ 12.00	\$ 2,868,000.00
B.6	Rock beaching for treatment lagoons	Assumes locally	2422	cu.m	\$ 50.00	\$ 121,000.00
B.7	Rock beaching for winter storage lagoons	Assumes locally	11400	cu.m	\$ 50.00	\$ 570,000.00
<i>Earthworks Sub Total</i>						\$ 4,477,000.00
D PITS AND PIPEWORK						
D.1	Construction of pits		6	Item	\$ 5,000.00	\$ 30,000.00
D.3	Supply and installation of stopboards		8	Item	\$ 1,500.00	\$ 12,000.00
D.4	Supply and installation of DN250 knife gate valves		8	Item	\$ 3,000.00	\$ 24,000.00
D.6	DN250 GRP pipework between lagoons		875	m	\$ 140.00	\$ 123,000.00
D.7	DN250 GRP lagoon bypass pipework		550	m	\$ 140.00	\$ 77,000.00
<i>Pits and Pipework Sub Total</i>						\$ 266,000.00
E MISCELLANEOUS						
E.1	Crushed rock roads (200mm thick)	2600m, 4 m wide	10400	sqm	\$ 16.00	\$ 166,400.00
E.2	Reinstatement of topsoiling (200mm thick) and grassing		20000	sq.m	\$ 2.00	\$ 40,000.00
<i>Miscellaneous Sub Total</i>						\$ 207,000.00
SUB TOTAL						\$ 5,150,000.00 <i>item 14</i>
Contingencies (20%)						\$ 1,030,000.00 <i>item 3</i>
TOTAL						\$ 6,180,000.00

Volumes From 12 D Modelling:

Stripping 171000 m³

Cut 175000 m³

Fill 239000 m³

Fill Shortfall 64000 m³

For outer embankments from sandy layer (say) 50000 m³

To be sourced from borrow pit (say) 15000 m³

Lagoon	Perimeter (No. Lagoon)	Volume	Unit
Rock Beaching (1.1m deep)		1.4	m ² /m
Rock Beaching (3.6m deep)		5.7	m ² /m
Total Lagoon Rock Beaching Volu		2422	m³
FL1B/A	360	2	1008 m ³
FL2	350	1	490 m ³
ML1/2	330	2	924 m ³
WS1	1050	1	5985 m ³
WS2	950	1	5415 m ³
Total Winter Storage Rock Beach		11400	m³
Perimeter	3730		

	Actual cost to 13/9/12	Projected costs	Total
Design			
Retic, PS and rising main	\$ 558,812	\$ 75,000	\$ 633,812
WWTP		\$ 70,000	\$ 70,000
Reuse		\$ 50,000	\$ 50,000
Design sub Total			\$ 754,000 <i>item 4</i>
Reuse pipeline to SEW connection point	3000	200	\$ 600,000
Reuse pump and accessories 2 pumps, shed, electricals			\$ 120,000
Irrigation on SGW site	30	10000	\$ 300,000
Irrigation and reuse subtotal			\$ 1,020,000 <i>item 14</i>
SGW project Management	4 years	3 people	\$ 820,000 <i>Multiple</i>
RMCG	\$ 20,000		
KBR	\$ 25,000		
George Ward	\$ 120,000		
Russell Kennedy	\$ 40,000		
Tim Stone	\$ 20,000		
Invert Eco	\$ 5,000		
SEW options	\$ 25,000		
Others	\$ 20,000		
Planning	\$ 797,137	\$ 275,000	\$ 1,073,000
Property Purchase June 2011	metres	rate	\$ 1,250,000
easements			\$ 630,000
Miscellaneous			
Geotechnical supervision			\$ 100,000
As const survey			\$ 100,000
other studies			\$ 50,000
Commissioning			\$ 100,000
Access Track to WWTP, Gate to lagoons and around lagoons with geotextile	4120	40 870&650& 2600m	\$ 164,800
Drainage & landscaping works			\$ 200,000
Security fence	1600	60	\$ 96,000
Power to WWTP			\$ 100,000
Miscellaneous sub total			\$ 910,800
Contingency of 20% added to items 59 & 69.			\$ 308,160
TOTAL			\$ 4,180,000 <i>item 3</i>

PLN Sewer -Reticulation, Rising Main and Pump station estimated costs - BW

Item	Rate	Nyora		Poowong		Loch		Nyora-Poowong		Nyora-Loch		Nyora-Treatment Plant		Overall		
		Quantity	SubTotal	Quantity	SubTotal	Quantity	SubTotal	Quantity	SubTotal	Quantity	SubTotal	Quantity	SubTotal	Quantity	SubTotal	
SEWER RETICULATION																
150dia	Total		11425		4547		3380									
10%	Bore	\$ 650.00	1143	\$ 742,950.00	455	\$ 295,750.00	338	\$ 219,700.00						1936	\$ 1,258,400.00	
5%	Bore & Sleeve	\$ 750.00	571	\$ 428,250.00	227	\$ 170,250.00	169	\$ 126,750.00						967	\$ 725,250.00	
15%	Crushed Rock	\$ 290.00	1714	\$ 497,060.00	682	\$ 197,780.00	507	\$ 147,030.00						2903	\$ 841,870.00	
70%	Select	\$ 120.00	7998	\$ 959,760.00	3183	\$ 381,960.00	2366	\$ 283,920.00						13547	\$ 1,625,640.00	
225dia	Total		1843		276		590									
10%	Bore	\$ 700.00	184	\$ 128,800.00	28	\$ 19,600.00	59	\$ 41,300.00						271	\$ 189,700.00	
5%	Bore & Sleeve	\$ 800.00	92	\$ 73,600.00	14	\$ 11,200.00	30	\$ 24,000.00						136	\$ 108,800.00	
15%	Crushed Rock	\$ 320.00	276	\$ 88,320.00	41	\$ 13,120.00	89	\$ 28,480.00						406	\$ 129,920.00	
70%	Select	\$ 160.00	1290	\$ 206,400.00	193	\$ 30,880.00	413	\$ 66,080.00						1896	\$ 303,360.00	
300dia	Total		0		18		0									
10%	Bore	\$ 750.00	0	\$ -	2	\$ 1,500.00	0	\$ -						2	\$ 1,500.00	
5%	Bore & Sleeve	\$ 850.00	0	\$ -	1	\$ 850.00	0	\$ -						1	\$ 850.00	
15%	Crushed Rock	\$ 360.00	0	\$ -	3	\$ 1,080.00	0	\$ -						3	\$ 1,080.00	
70%	Select	\$ 180.00	0	\$ -	13	\$ 2,340.00	0	\$ -						13	\$ 2,340.00	
MH		\$ 3,500.00	114	\$ 399,000.00	96	\$ 336,000.00	54	\$ 189,000.00						264	\$ 924,000.00	
MS		\$ 1,800.00	15	\$ 27,000.00	7	\$ 12,600.00	0	\$ -						22	\$ 39,600.00	
TMS		\$ 1,500.00	54	\$ 81,000.00	4	\$ 6,000.00	11	\$ 16,500.00						69	\$ 103,500.00	
Property Connections		\$ 400.00	315	\$ 126,000.00	172	\$ 68,800.00	158	\$ 63,200.00						645	\$ 258,000.00	
SEWER RISING MAIN																
125dia PE			3780		1440		440		8850		4080		5895			
8%	Bore	\$ 500.00	302	\$ 151,000.00	115	\$ 57,500.00	35	\$ 17,500.00	708	\$ 354,000.00	326	\$ 163,000.00	472	\$ 236,000.00	1958	\$ 979,000.00
5%	Bore & Sleeve	\$ 600.00	189	\$ 113,400.00	72	\$ 43,200.00	22	\$ 13,200.00	443	\$ 265,800.00	204	\$ 122,400.00	295	\$ 177,000.00	1225	\$ 735,000.00
10%	Crushed Rock	\$ 100.00	378	\$ 37,800.00	144	\$ 14,400.00	44	\$ 4,400.00	885	\$ 88,500.00	408	\$ 40,800.00	590	\$ 59,000.00	2449	\$ 244,900.00
77%	Select	\$ 70.00	2911	\$ 203,770.00	1109	\$ 77,630.00	339	\$ 23,730.00	6815	\$ 477,050.00	3142	\$ 219,940.00	4539	\$ 317,730.00	18855	\$ 1,319,850.00
Air Valve		\$ 1,200.00	6	\$ 7,200.00	1	\$ 1,200.00	1	\$ 1,200.00	8	\$ 9,600.00	3	\$ 3,600.00	4	\$ 4,800.00	23	\$ 27,600.00
Scour Valve		\$ 1,200.00	2	\$ 2,400.00	0	\$ -	2	\$ 2,400.00	4	\$ 4,800.00	3	\$ 3,600.00	1	\$ 1,200.00	12	\$ 14,400.00
Non-Return Valve		\$ 1,200.00	8	\$ 9,600.00	4	\$ 4,800.00	0	\$ -	4	\$ 4,800.00	2	\$ 2,400.00	0	\$ -	18	\$ 21,600.00
Stop Valve		\$ 1,200.00	4	\$ 4,800.00	2	\$ 2,400.00	0	\$ -	2	\$ 2,400.00	1	\$ 1,200.00	0	\$ -	9	\$ 10,800.00
				\$ 4,288,110.00	item 7	\$ 1,750,840.00	item 10	\$ 1,268,390.00	item 13	\$ 1,206,950.00	item 8	\$ 556,940.00	item 11	\$ 795,730.00	item 5	
Pump Station		\$ 250,000.00	4	\$ 1,000,000.00	5	\$ 1,250,000.00	2	\$ 500,000.00	items 6, 9, 12						11	\$ 2,750,000.00
Provisional Sum		25%		\$ 1,322,027.50		\$ 750,210.00		\$ 442,097.50		\$ 301,737.50		\$ 139,235.00		\$ 198,932.50		\$ 3,154,240.00
				\$ 6,610,137.50		\$ 3,751,050.00		\$ 2,210,487.50		\$ 1,508,687.50		\$ 696,175.00		\$ 994,662.50		\$ 15,771,200.00

ASSUMPTIONS

To prepare this high level cost estimate a number of assumptions have been made.
 An approximate percentage of bored, bored and sleeved, crushed rock backfill and select backfill was assumed;
 Due to the proportioning as stated in the above note, the quantities don't always add up to the total due to rounding;
 Sewer pipe construction rates for the works are based on prices from other jobs at an average depth of 3.5m for sewer reticulation and 1m for rising main;
 Manhole / MS and TMS rates are based on an average depth of 3.5m;
 A Provisional Sum of 25% has been allowed to cater for items such as Testing, Asset Recording, Contractor QA, Contractor survey, rock, additional boring and other variables that may not have been allowed for as part of this high level cost estimate;
 Items shown yellow are inputs from Beveridge Williams;
 Text in Red are Rates provided by Beveridge Williams;
 The Pump Station Rate is a ball park as the pump sizes have not been finalised;

**South Gippsland Water
Project – Northern Towns Supply Connection Works
Lance Creek to Korumburra & Korumburra to Poowong Pipelines
& Dosing Plant
Business Case Document**

Date: September 2012
SGW Reference: Projects H63, H65 & H67

1. INTRODUCTION

1.1. Project Description

The Northern Towns Supply Connection Works consists of a number of elements which in turn will provide SGW with a secure water supply source via the Melbourne supply network. The projects detailed within will be undertaken during Water Plan III and involve the delivery of the following water supply pipelines and facilities:

Lance Creek to Korumburra (H67)

A new 19.7km (approx.) DN450 treated water trunk main and booster pumpstations is to be constructed to connect Lance Creek to Korumburra.

Korumburra to Poowong (H63)

A new 8.5km (approx.) DN300 treated water trunk main is to be constructed to connect Korumburra to Poowong.

Dosing Plant (H65)

Dosing plant at the connection point to the Melbourne system.

1.2. Background

As part of South Gippsland Water's (SGWs) supply and demand planning process, a resource shortfall was identified for the northern towns. SGW needed to determine how the future potable water demands of the residential and industrial users of their region will be met. In particular, the ability to supply the townships of Poowong, Loch and Nyora as supply is currently only just sufficient to meet South Gippsland Water's current level of service objectives under medium climate change and could face a shortfall in water supply within the next five years. The construction of the Melbourne Desalination Plant and the availability of bulk entitlements for SGW provided additional options for long-term resource planning.

SGW engaged Marsden Jacob Associates (MJA) to undertake a Business Case to identify the preferred strategy for SGW moving forward with a secure and reliable water supply system for all their Southern and Northern towns. Results, strategies and nominated options were prepared by consultants GHD which are identified in their report Connection to Melbourne Supply via Lance Creek, July 2010 based on growth figures adopted from the Water Supply Demand Strategy (WSDS), December 2011 prepared by consultants SKM. The GHD report included a very high level "desktop" preliminary alignment and budget estimate. These reports were utilised

and scenarios further evaluated by MJA to establish the preferred option as the basis for the effective long term supply strategy for the Northern Towns.

The preferred option strategy identified from the Business Case is the connection to the Melbourne Supply System via bulk transfer supply pipelines connecting Lance Creek to Korumburra, Korumburra to Poowong and subsequently Korumburra to Leongatha. This is opposed to continued development/improvement of surface water systems.

The planned timing and sizing of infrastructure is based on the Local Growth forecasts of the WSDS. In this context, the delivery capacity of required works will be staged in an appropriate manner where possible to have the flexibility to be able to respond to higher demands as they may eventuate.

Since the approval of the Business Case in April 2011, SGW has in-house further assessed and refined the original preliminary desktop alignment prepared by GHD. Preliminary investigations and assessments have also commenced to further refine and firm up the alignments. Investigations include but are not limited to Flora and Fauna, Cultural Heritage, Giant Gippsland Earthworm and Aerial Survey with the view to undertake Geotechnical Investigations shortly which will then be followed by a Functional Design.

1.3. Purpose

The objective of this project is to ensure that SGW's Northern & Southern water supply systems have a secure water supply into the future, regardless of any future impacts of climate change or significant population or industrial growth demands for water.

1.4. Supplementary Report(s) & Supporting Document(s)

Various investigations, reports and documentation have been undertaken and developed in establishing the associated activities relating to this project. All reference reports and documents can be made available by SGW on CD format.

1.4.1. Consultant reports for this project

The following list provides the consultant reports directly related in developing information about establishing this project:-

Trim Ref.	Report
2008/06099	Connell Wagner, Future Desalinated and Surface Water Supply Risk Assessments and Water Treatment Plant Upgrades Study South Gippsland Water, August 2008
2010/07377	URS, Review of Future management of Northern Systems Dams, May 2010
2010/15995	GHD, Connection to Melbourne Supply via Lance Creek, July 2010
2010/15778	Aurecon, Water Treatment Upgrades Study, August 2010
2011/27539	SKM, Water Supply Demand Strategy (WSDS), December 2011
2011/08270	Marsden Jacob Associates, Business Case to Connect into the Melbourne Water Supply System, April 2011

1.4.2. SGW documents

The South Gippsland Water Board has an approval process for Capital works. Works that are included on the Corporation’s 10 year plan are done so with a Board approved Strategic Approval Statement (SAS). The Board approves project Capital Expenditure via approval of a Capital Justification Statement (CJS). For the Northern Towns Water Supply Connection Works project, the Board has approved the following documents as listed below:-

Trim Ref.	Report
In Board minutes	SAS – Board Approved April 2011
In Board minutes	CJS* – Board Approved June 2012

*The approved CJS is only for the functional design, planning submission and documentation, and associated investigation and studies phase only, a subsequent CJS will be prepared and presented to the Board following the completion of the preliminary and functional design stage works.

2. PROJECT DRIVERS

The need for connecting to the Melbourne supply system and interconnecting the Southern and Northern supply systems of SGW is driven by four main issues:

- Increased volatility associated with stream flows due to the effects of climate change/variability resulting in prolonged and more severe droughts.
- Population growth is placing upward pressure on water demand. Growth is occurring along the coast near Inverloch with likely city-fringe growth centered around Nyora, which is scheduled to be sewered over the next three years.
- Water quality, especially the occurrence of trihalomethanes (THMs), requiring the upgrade of water treatment plants (WTPs).
- Dam safety deficiencies, necessitating major upgrades of existing reservoirs located in the Northern Systems. Deficiencies, such as stability of embankment and capacity.

3. ASSESSED OPTIONS

3.1. Options

SGW has undertaken a thorough process of internal workshops, consultations with State Government and use of expert advisors in order to thoroughly assess available options for supply augmentation.

The outcomes of the revised assessment and consultations with State Government stakeholders prompted SGW to commission updates of previous studies and additional reports to inform the Business Case. With this information at hand, SGW decided to focus on two options for this Business Case:

- Connection of the Northern Systems to the Melbourne System Supply; and
- Continued development of existing Surface Supply systems.

The Melbourne System Supply option assumes that the Northern and Southern supply systems will be connected to the Melbourne System via Lance Creek. The Northern Systems will source water from the Melbourne System and/or Lance Creek Reservoir. This means all reservoirs and WTPs in the Northern Systems would be decommissioned, once each of the respective systems are connected to Lance Creek Reservoir and the Melbourne System.

Under the Surface Supply option existing storage capacities need to be augmented and an additional storage constructed on Ruby Creek to be able to harvest additional winter flows and increase the average annual yield. All WTPs will require upgrades for water quality purposes and some for production and capacity purposes.

GHD undertook a high level preliminary option comparison by establishing a hydraulic model utilising figures from the WSDS to produce cost estimates. The options consisted of various combinations of different pumping, pipe size and pipe material scenarios. This information was then feed into the Business Case and forms the basis of the project moving forward. The data will be further refined as part of the functional design stage which again will entail the comparison of various pumping and pipe size scenarios.

3.2. Financial Analysis

Consultants GHD undertook a high level preliminary cost estimate to a confidence level of $\pm 50\%$ by using a combination of:-

- Published rates for civil engineering construction;
- Budget cost rates provided by construction contractors; and
- Historical cost rates for previously constructed work.

Competitive tenders will be invited for each phase of the two projects at the appropriate time consistent with the allocated expenditure over Water Plan III for each fiscal year.

3.2.1. Cost-benefit assessment

MJA undertook a cost effectiveness assessment which identifies the option that achieves a target outcome at the least net cost. It offered a priority ranking of options on the basis of comparative 'cost per unit of effectiveness'. The outcome of this assessment illustrated that the Surface Supply option is more expensive under the adopted growth demand scenario.

Should SGW adopt a "do nothing" approach, it will run the risk that at some stage in the future it will not be able to meet adopted Level of Service criteria for supply to customers, and should sought after Government funding for the project be forthcoming, SGW would not be in a position to utilise those funds to complete the installation works.

3.2.2. Estimated costs

Table 1 below provides a breakdown of the preliminary estimated costs which have been established by consultants GHD and further refined by MJA for presenting in the Business Case, April 2011. The identified costs presented in Table 1 will further refined and updated as more information comes to light following the completion of the field studies, investigational assessments and functional design which are currently taking place.

Table 1: Preliminary estimated costs

	Dosing Plant	Lance Creek to Korumburra	Korumburra to Poowong
Date	Apr-11	Apr-11	Apr-11
Pipe Supply		\$2,944,000	\$456,000
Pipe Contingency (25%)		\$736,000	\$114,000
Pipe Construction		\$3,228,000	\$1,266,000
Pump Station 1 (incl. power supply)		\$750,000	\$75,000
Pump Station 2 (incl. power supply)		\$750,000	-
Easement Acquisition		\$100,000	\$100,000
Environmental & Cultural Heritage Assessment		\$100,000	\$100,000
Engineering & Administration	\$60,000	\$3,225,000	\$721,000
Dosing Plant Construction	\$500,000	-	-
Contingency - excluding pipe supply	\$140,000	\$4,420,000	\$681,000
Total	\$700,000	\$16,250,000	\$3,510,000

3.2.3. Proposed annual expenditure

Table 2 shows a breakdown of the yearly allocated costs within the Capex plan which is consistent with the Corporation's long-term expenditure profile which have been adjusted for 'nominal' dollars. The funding allocated in Water Plan III is highlighted.

Table 2: Capex plan yearly allocated costs

Year	2012 Board Approved Capex Program Amount (\$k) Dosing Plant	2012 Board Approved Capex Program Amount (\$k) Lance Creek to Korumburra	2012 Board Approved Capex Program Amount (\$k) Korumburra to Poowong
2012/13	-	\$400	-
2013/14	-	\$308	\$51
2014/15	\$74	\$3,273	\$211
2015/16	\$694	\$4,448	\$868
2016/17	-	\$5,127	\$2,631
2017/18	-	\$3,665	-
Total	\$768	\$17,221	\$3,761

3.3. Risk Analysis Assessment

A comprehensive risk assessment process has been undertaken within the MBA Business Case, April 2011, as required by the Department of Treasury and Finance *Investment Lifecycle Guidelines – Business Case*.

The risk assessments were based on the methodology consistent with the Australian and New Zealand Standard for Risk Management AS/NZS 4360:2004 and ISO 31000:2009. This method entailed:-

- Identifying the risks (What could happen? How could it happen?);
- Analysing the risk, including a review of controls, and assessment of the likelihood and consequences of a particular risk with a score from 1 to 5, where a likelihood of 1 is rare and 5 is almost certain, and a consequence of 1 is insignificant and 5 is catastrophic;
- Evaluating the risks and ranking in them in terms of their severity using a risk evaluation table, based on SGW’s consideration of overall business risks in its Draft SGW Risk Profile Report.

The risk assessment concluded that at the time of the assessment that there are no major unmanageable financial and economic risks remaining for either option, after mitigation strategies have been applied.

4. PROJECT TIMING

Preliminary works including field investigations and assessment studies have already commenced for both projects. The construction of the projects will be staged such that the Lance Creek to Korumburra project will commence in 2013/14 and the Korumburra to Poowong project along with the dosing plant to commence in 2015/16. All projects are scheduled for completion by the end of the 2016/17 fiscal year. Funding allocation for these works have been staged to meet the funding allocated in the corporative expenditure program as detailed in Table 2.

4.1. Milestones

The following milestone points are indicative only and will be firmed up following the functional design, planning submission documentation and investigation studies phase of the project:

- | | |
|---|------------------------|
| • Undertake associated investigations and studies i.e. flora & fauna, cultural heritage | 2012/13 |
| • Undertake aerial survey | September 2012 |
| • Undertake geotechnical investigations | November-December 2012 |
| • Implementation and Progression of Community Consultation | 2012/13 |
| • Prepare an Environmental Risk Assessment | 2012/13 |
| • Preparation of Planning Submission | 2012/13 |
| • Functional Design | April-June 2013 |
| • Detail Design | July-September 2013 |
| • Procurement of pipe | 2013/2014 |
| • Construction | 2014-2018 |

5. PREFERRED OPTION

5.1. Outcome to be Delivered

The project will deliver a new 19.7km (approx.) DN450 treated water trunk main with booster pumpstations connecting Lance Creek to Korumburra, a new 8.5km (approx.) DN300 treated water trunk main connecting Korumburra to Poowong and a dosing plant at the connection of the Melbourne supply. These projects will provide SGW with secure water supply into the future diversified harvests, regardless of any future impacts of climate change or significant population or industrial growth demands for water.

South Gippsland Water
Project – Reticulation Sewers Rehabilitation, Infiltration Curtailment & Relining
Business Case Document

Date: September 2012
SGW Reference: Project S29

1. INTRODUCTION

1.1. Project Description

This project is part of an ongoing prioritised works program for the rehabilitation, inflow and infiltration curtailment and relining of ageing and deteriorating sewer mains throughout the entire SGW region. An annual scheduled program with a nominated budget allocation of \$600K generally providing relining of 100mm and 150mm size diameter sewers for a nominal length of approximately 3.2km. The sections to be repaired, relined or replaced are based on the recommendations within the relevant Inflow/Infiltration reports and internal condition logging reports. Prioritised Works are nominated on an annual basis and distributed between several towns working towards the end goal of minimising inflow/infiltration and repairing deteriorating and aging sewer mains.

1.2. Background

SGW has an ageing sewer reticulation network consisting of approximately 400 km of sewer mains in 14 reticulated townships. The existing sewer network consists typically of older style vitrified clay (VC) pipes and cement pipe material with approximately 63km (44km of VC & 19km of cement) of this pipe material which is older than 50 years. This equates to approximately 13% of all the reticulation pipework in the ground. A range of VC pipes in various locations have been observed in numerous CCTV inspections to have been fractured due to house connection settlement, tree root infestation or for other reasons. Due to their age or with joint displacement these pipes are assessed to have either reached or passed their expected life span. Those that have passed their life span are exhibiting increased levels of service interruption and maintenance requirements. The ongoing sewer main replacement program covers the planned prioritised replacement of sewer mains throughout the SGW region.

The ongoing annual works program provides for a planned programmed replacement of leaking, blocked and failing sewer mains on a structured priority identified needs basis, which is determined by a formal assessment and evaluation of asset performance information and feedback provided by SGW Customer Service and Operations and Maintenance reports. For any given length of troublesome sewer main, information such as number of breaks, blockages, interruption to supply, customer complaints and public and staff safety considerations are evaluated during the assessment process, including a financial cost benefit evaluation which leads to the prioritising of the more urgent works.

Programmed rehabilitation and replacement works on an annual expenditure basis are an essential requirement to ensure cost effective security of service to customers.

Investigations and corrective action to assess locations, extent and significance of groundwater and stormwater inflow and infiltration in SGW sewers also occurs. At high intensity stormwater events, surface water drainage infiltrates into leaky or damaged sewers. Reticulation sewer upgrades must meet the EPA requirement that less than 1 in 5 year storm events do not lead to sewer system overflows.

Veolia, ADS Environmental Services and AWT Australia were engaged by SGW to undertake field investigations on a number of the more problematic towns understood to be experiencing significant inflow and infiltration issues. This data was subsequently reviewed and used by consultants Halcrow to develop hydraulic computer models of the town sewer reticulation system and provide recommendations on how to best mitigate the issues in a staged approach. Suspected problematic sections are then further investigated via CCTV.

CCTV inspections of suspect sections of sewer pipeline are used to assess the operating condition of the pipeline, including pipeline condition, defects and blockages, and if identified as a significant issue, it is included within the replacement/rehabilitation program. This type of investigation also assists in determining the remedial option, i.e. rehabilitation of a short length, long length, relining and/or replacement and facilitates organised decision making in addressing priority. An annual perennial budget is thus allocated for these programmed works.

1.3. Purpose

SGW is committed to maintaining service infrastructure as required for current system requirements with a view to future requirements, associated with development of towns with regard to facilitating regional growth in South Gippsland. Appropriate levels of wastewater services' complying with standards and regulations is the policy objective and equally is what SGW customers would expect from SGW. This project allows for this policy objective to continue to be achieved.

1.4. Supplementary Report(s) & Supporting Document(s)

A number of various reports and documents have been prepared and developed in establishing the associated activities relating to this project. All reference reports and documents can be made available by SGW on CD format.

1.4.1. Consultant reports for this project

The following list provides the consultant reports directly related in establishing information about determining the potential sewer sections which may require works further investigations:-

Trim Ref.	Report
2007/02189 2007/02996	GHD – Report on Korumburra Inflow and Infiltration Investigation, February 2007
2008/02171 2008/02173 2008/02176 2008/05871	ADS Environmental Services – Leongatha and Inverloch Sewerage System Study Inflow and Infiltration Report, February 2008
2008/05483 2008/05484	ADS Environmental Services – Wonthaggi Sewerage System Study Inflow and Infiltration Report, July 2008
2011/19064	ADS Environmental Services – Foster and Toora Sewerage System Study

	Inflow and Infiltration Report, December 2008
2009/19384	Environmental Data Services – Foster Flow Monitoring, November 2009
2009/08673	Halcrow – Leongatha Inflow/Infiltration Assessment Report, July 2009
2010/02168	Halcrow – Inverloch Sewerage System Assessment & Augmentation Works Summer 'Tourist' & Future Development Investigation Discussion Paper 1 Ver. 1 February 2010
2010/02168	AWT Australia Pty Ltd, Inflow/Infiltration report for Yarram, Welshpool and Port Welshpool, March 2010
2010/07463	Halcrow – Korumburra Sewerage System Inflow/Infiltration Assessment and Future Development Strategy, July 2011
2012/00063	Halcrow – Foster Inflow/Infiltration Assessment Report, April 2012

1.4.2. SGW documents

The South Gippsland Water Board has an intensive structured approval process for Capital works. Works that are included on the Corporation's strategic 10 year plan are done so with a Board approved Strategic Approval Statement (SAS). The Board approves project Capital Expenditure through approval of a detailed Capital Justification Statement (CJS). For this project, these documents are listed below:-

Trim Ref.	Report
In Board minutes	SAS Board Approved - December 2007
In Board minutes	CJS Board Approved - Not Required. Works approved by Board in annual SGW Capital works program Summary sheet information.

2. PROJECT DRIVERS

There are several key project drivers for the rehabilitation, infiltration curtailment and relining of sewer mains throughout SGW's sewer system network. The existing sewer system consists of extensive lengths of ageing assets which are degraded and are reaching or have exceeded their intended functional design life. Those that have passed their functional operating life span will be exhibiting increased levels of service interruption and maintenance requirements. Identifying and rehabilitating these sections ensures SGW can continue to meet its level of service requirement to provide an efficient, appropriately operational and compliant sewer system ensuring the system has the capacity required and is suited for rapidly increasing development flow demands and meeting EPA requirements of no overflows for 1 in 5 year rainfall events.

3. ASSESSED OPTIONS

3.1. Options

The identified sections of sewer which require rehabilitation work are assessed based on their condition and the operational risk rating will then determine the priority of the works and if the sewer will be repaired, replaced or relined. Table 1 below provides the breakdown of the sewer condition assessment and ranking order.

Table 1 Sewer Condition Assessment and Priority Rating

Rating	Definition	Description
1	Excellent	Sound physical condition
2	Good	Minor internal damage to pipe and joints. Isolated joint
3	Average	If any of these: – Minor joint dislocation; or – Individual leaking joints; or – Minor tree root intrusions; or – Minor cracking of pipes; or – Minor surface corrosion/pitting on pipe or joints. Maintenance required.
4	Poor	If any of these: – Pronounced joint dislocation; or – Multiple leaking joints; or – Excessive number of repair works; or – Multiple extensive tree root intrusions; or – Pronounced cracking of pipes; or – Significant internal surface corrosion/pitting on pipe or joints; or – Exposure of reinforcement; or – Misalignment of pipes due to pipe/associated asset differential movement; or
5	Very Poor	Structurally unsound. Requires replacement.

3.2. Financial Analysis

An annual nominated perennial budget is allocated for these works for the program of works on a priority needs basis. The yearly works program is allocated within the CAPEX plan to provide an annual expenditure which is consistent with the Corporations approved water plan and long-term expenditure profile.

Competitive tenders are invited for each identified section of rehabilitation works. The amount of upgrade works which is completed in a particular year is a function of the tender pricing for individual components and is limited to the budget allocation for that year.

3.2.1. Cost-benefit assessment

The assessed condition of the sewer typically dictates the most beneficial option for type of rehabilitation, however the cost to repair, replace or reline is also evaluated during the assessment. It is considered inappropriate to 'do nothing'. Rehabilitation of identified non functional/non operational sewers is essential in ensuring the system has the capacity required and is suited for rapidly increasing development flow demands and meeting EPA requirements of no overflows for 1 in 5 year rainfall events.

3.2.2. Estimated costs

An annual perennial budget in the order of \$600,000 is allocated for these works during Water Plan III.

3.2.3. Proposed annual expenditure

Table 2 provides the annual budget allocated for rehabilitation of sewer mains throughout SGW's sewer network, expenditure allocated within Water Plan III are highlighted.

Table 2: Capex plan yearly allocated costs

Year	Current Board Approved Capex Program Amount (\$k)
2012/13	\$550
2013/14	\$600
2014/15	\$600
2015/16	\$600
2016/17	\$600
2017/18	\$600
2018/19	\$600
2019/20	\$600
2020/21	\$600
2021/22	\$600
2022/23	\$600

3.3. Risk Analysis Assessment

Risks are typically addressed and assessed within the inflow/infiltration reports which assist in identifying and prioritising the required works. The risks are also then assessed under the risk management scenarios as part of the Condition Evaluation and Rating Assessment.

In not rehabilitating the sections of sewer identified as functionally failing, there is a risk associated with the sewer system failing and sewerage spills resulting in an EPA licence breach. There is also the risk of overloading the WWTP's resulting in reduced detention times which also result in EPA licence compliance breaches in respect to discharge quality.

4. PROJECT TIMING

This project is an ongoing schedule of works with a selected number of network assets being rehabilitated through repairs, replacement and relining undertaken throughout the course of each fiscal year.

5. PREFERRED OPTION

5.1. Outcome to be Delivered

Improved sewer system through the rehabilitation, infiltration curtailment and relining of ageing and deteriorating sewer mains on a staged and risk management basis throughout the entire SGW sewer system network.

**South Gippsland Water
Project – Replacement/Rehabilitation of Water Mains
Business Case Document**

Date: September 2012
SGW Reference: Project R37

1. INTRODUCTION

1.1. Project Description

This project is part of an ongoing prioritised works program for the replacement /rehabilitation of water mains throughout the entire SGW region. An annual scheduled program with a nominated budget allocation of \$500K generally providing replacement of 80mm, 100mm and 150mm size diameter water mains for a nominal length of approximately 2.5km. The sections to be replaced/rehabilitated are based on the rating criteria considering the structural condition of the water main, customer service, water quality and the feedback from the operational staff regarding the operational issues. These works are nominated on an annual basis and distributed between several towns working towards the end goal of uninterrupted supply of water to SGW customers, minimising water loss and repairing deteriorating and ageing water mains.

1.2. Background

South Gippsland Water has an ageing water reticulation network consisting of approximately 689 kilometres of supply mains. Approximately 318 kilometres of the existing network are of the older style asbestos cement (AC) pipe material, installed up until the late 1970's. This material does not have an overly long service life. Due to their age these pipes are considered to have either reached or passed their expected effective life projection of approximately 40 years. Those that have passed their expected life span will be exhibiting increased levels of service interruption and maintenance requirements. The ongoing water main replacement program covers the planned prioritised replacement of water mains throughout the SGW region.

The ongoing annual works program provides for a planned programmed replacement of leaking and failing water mains on a structured priority identified needs basis, which is determined by the rating criteria considering a formal assessment and evaluation of asset performance information and feedback provided by SGW Customer Service and Operations and Maintenance reports. For any given length of troublesome water main, information such as number of breaks, leaks, poor water quality, interruption to supply, customer complaints and public and staff safety considerations associated with frequent repairs and costs are compiled. All such relevant information is considered during the assessment process, which includes a financial cost benefit evaluation which leads to the prioritising of the more urgent works.

A computer hydraulic modelling is used by Halcrow P/L to verify the sizes for its current and future demand. Programmed rehabilitation and replacement works on an annual expenditure basis are an essential requirement to ensure cost effective security of service to customers.

1.3. Purpose

SGW is committed to maintaining service infrastructure as required for current system requirements with a view to future requirements, associated with development of towns with regard to facilitating regional growth in South Gippsland. Appropriate levels of water services complying with standards and regulations is the policy objective. This project allows for this policy objective to continue to be achieved.

1.4. Supplementary Report(s) & Supporting Document(s)

A number of various reports and documents have been prepared and developed in establishing the associated activities relating to this project.

1.4.1. SGW documents

The South Gippsland Water Board has an intensive structured approval process for Capital works. Works that are included on the Corporation’s strategic 10 year plan are done so with a Board approved Strategic Approval Statement (SAS). The Board approves project Capital Expenditure through approval of a detailed Capital Justification Statement (CJS). For this project, these documents are listed below:-

Trim Ref.	Report
In Board minutes	SAS Board Approved - December 2003

CJS Board approval not required, project is included on SGW Capital Expenditure Summary Sheet that is approved annually by Board at each Corporate Plan approval.

2. PROJECT DRIVERS

There are several key project drivers for the replacement/rehabilitation of water mains throughout SGW’s water system network.

Controlled and programmed replacement of leaking, failing mains will maintain supply system integrity. The requirement to upgrade and replace ageing water mains that have passed their “design life”, and which have been assessed on a needs basis as requiring replacement, is recognized as an important and essential part of efficient and functional asset management.

The existing water system consists of extensive lengths of ageing assets which are degraded and are reaching or have exceeded their intended functional design life. Those that have passed their functional operating life span will be exhibiting increased levels of service interruption and maintenance requirements. Also pipeline breaks and required works do have a temporary affect on local service water quality.

Identifying and replacing/rehabilitating these sections ensures SGW can continue to meet its level of service requirement to provide an efficient, appropriately operational and compliant water system ensuring the system has the capacity required and is suited for rapidly increasing development flow demands and WSA requirements of meeting service obligations in terms of security of service and Asset management.

3. ASSESSED OPTIONS

3.1. Options

The identified sections of water main which require replacement/rehabilitation work are assessed based on the rating criteria which then determines the priority of the works and if the water main will be repaired or replaced. Those with the highest score are prioritised for replacement. Table 1 below provides the breakdown of the rating criteria for water main renewal works.

Table 1 Rating Criteria Water Supply Renewals

CRITERIA	DESCRIPTION	SCORE
CUSTOMER SERVICES		
No of Bursts 12 months	>3	30
	>2	20
	>1	10
24 months	>5	30
	>3	20
	>1	10
Customer Complaints	>3	10
	>1	5
Supply Zone	Industrial * Loss of production	30
	Commercial * Loss of business	20
	Council *Road Works	10
	Residential *Shut of block>30	10
WATER QUALITY		
	Unlined pipes Cl or GWI	10
ECONOMIC		
Property Damage	Flooding * House	30
	* Property	20
	* Erosion	10
Main Location	* Road/Pavement	10
	* Conc/Paved Footpath	5
	* Nature Strip	0
Road Reinstatement	* >25m2	10
	* 10m2 - 25m2	5
	* <10m2	2

3.2. Financial Analysis

An annual nominated perennial budget is allocated for these works for the program of works on a scored, priority needs basis. The yearly works program is allocated within the CAPEX plan to provide an annual expenditure which is consistent with the Corporation's approved Water Plan and long-term expenditure profile.

A cost estimation is carried out for each prioritised work and a list of works is selected for the construction for each financial year. The identified section of replacement/rehabilitation works are executed by the "In House" water main laying crew. The amount of replacement works which is completed in a particular year is a function of individual components and is limited to the budget allocation for that year.

3.2.1. Cost-benefit assessment

The financial/economic benefits are quantified in having increased security of supply to SGW's customers. The rating criteria for water main renewal works identifies the most critical sections for the replacement/rehabilitation works, however a detailed assessment of ongoing maintenance costs versus a one-off capital expenditure is also analysed for each works.

The do nothing option is considered inappropriate as the continuing interruptions to supply will only increase customer dissatisfaction and the level of complaints received. An adverse financial affect can be significant maintenance/repair cost increases, which rapidly escalate as ageing assets deteriorate to the end of their functional life.

Replacement /Rehabilitation of identified leaking and failing water mains is essential in ensuring the system has the capacity required and is suited for rapidly increasing development flow demands and meeting WSA requirements.

3.2.2. Estimated costs

An annual perennial budget in the order of \$500,000 is allocated for these works during Water Plan III.

3.2.3. Proposed annual expenditure

Table 2 provides the annual budget allocated for replacement/rehabilitation of water mains throughout SGW's water network, expenditure allocated within Water Plan III are highlighted.

Table 2: Capex plan yearly allocated costs

Year	Current Board Approved Capex Program Amount (\$k)
2012/13	\$500
2013/14	\$500
2014/15	\$500
2015/16	\$500
2016/17	\$500
2017/18	\$500
2018/19	\$850
2019/20	\$850
2020/21	\$850
2021/22	\$850
2022/23	\$850

3.3. Risk Analysis Assessment

Rating criteria also used for analysing the potential risk involvement towards leaking and failing water mains. It also analyse the risks on customer service, water quality and economic.

Environmental risks associated with frequently failing water mains are usually of the consequential damage type, difficult to control due to the unpredictability of type and location of water main breaks. Disturbance to natural run off drainage and ground surface areas are common and often require substantial reinstatement and restoration works. Replacement works are undertaken with investigation and consideration of all environmental issues, particularly the “during construction” phase. SGW has recently implemented comprehensive environmental guidelines for all SGW construction works, which are issued to contractors and to the In house pipe laying crew. All new construction works are also monitored by SGW environmental officers who assist in identifying potential environmental risks during the works planning phase.

In not rehabilitating the sections of water main identified as functionally failing, there is a risk associated with the water system failing and frequent mains breaks resulting poor water quality, environmental issues and poor customer satisfaction towards SGW.

4. PROJECT TIMING

This project is an ongoing schedule of works with a selected number of system sections being replaced/rehabilitated through repairs and replacement undertaken throughout the course of each fiscal year.

5. PREFERRED OPTION

5.1. Outcome to be Delivered

Improved water system through the replacement/rehabilitation of ageing and deteriorating water mains on a staged and risk management basis throughout the entire SGW water system network.

**South Gippsland Water
Project – Leongatha WWTP Digester
Business case Document**

Date: September 2012
SGW Reference: Project USS9

1. INTRODUCTION

1.1. Project Description

To refurbish the existing de-commissioned Anaerobic Digestion System at the Leongatha wastewater treatment plant (WWTP) and provide the Leongatha WWTP with sludge digestion facilities that will allow the treatment plant to achieve its EPA discharge licence conditions without odour issues.

1.2. Background

The Leongatha Wastewater Treatment Plant (WWTP) is the facility for treating all of Leongatha's wastewater.

In 2005, the Leongatha WWTP was upgraded from a biofiltration process to an activated sludge biological nutrient removal (BNR) process with ultraviolet disinfection. The existing inlet works, primary clarifier, former secondary clarifier (as a back-up), and sludge digestion facilities were retained. The digestion facilities were fed by primary clarifier sludge and waste activated sludge (WAS) from the bioreactor tank. WAS was thickened by a rotary sludge thickener (RST) prior to the digesters.

The Anaerobic Digester System at the Leongatha WWTP incorporates a number of key operational components. During Leongatha WWTP upgrade capital works undertaken in 2005, it became apparent that further work on the anaerobic digester system including primary and secondary digesters beyond that initially expected, may be required to replace components that had badly deteriorated and which had reached the end of their effective life. Some components were replaced, as part of the WWTP upgrade. However some items remained outstanding, including the replacement of the boiler and gas circulation pipe work.

In 2009 it was identified that the digester system was becoming blocked with a heavy build up of solidified sludge and rag, and that works to undertake a major cleanout of the digester tanks would need to be implemented. At this time SGW operations staff reported operational difficulties at the anaerobic digester system including:-

- Elevated levels of Hydrogen Sulphide (H₂S) gas
- Poor and unreliable methane production, leading to poor boiler operation
- Increasing solidified sludge accumulation (at around 50% of total tank volume at the primary digester)

It was also identified that:-

- Deterioration to gas circulation and sludge circulation and transfer pipe work had increased

- The associated Supernatant Pit had incurred significant concrete spalling and its deteriorated structural condition required that it be replaced within the short term

From these observations it was concluded that the anaerobic digester system was in a poor operating condition and that works were required to either replace the digesters with a new aerobic digestion system or complete a major refurbishment of the existing anaerobic digestion system.

In mid-2010 the sludge digestion process at Leongatha completely failed and SGW was forced to immediately send all sewage through the activated sludge plant. This increased the load on the activated sludge plant by around 30 per cent.

The digesters were taken off-line to allow them to be cleaned and refurbished so as to allow an assessment to be made about their structural condition and the overall viability of refurbishment. While the digesters were offline, the activated sludge plant was operated in extended aeration mode so that sludge digestion would occur in the activated sludge bioreactor.

With the digesters off-line, there were two possible modes to operate the activated sludge plant, and each method had certain associated risks.

The first approach was to operate the plant in extended aeration (EA) mode by operating with a long sludge age and achieving the necessary level of sludge digestion within the aeration basin. This method minimised the potential for odour in processing and storing of waste sludge, but the higher mixed liquor suspended solids (MLSS) concentration present in the bioreactor increased the risk of foaming and also the potential for solids overloading problems in the clarifier leading to elevated suspended solids in the clarifier effluent and the risk of EPA licence non compliance.

The second approach was to operate with a sludge age that would result in a MLSS concentration within the typical range. This would minimise the potential for the problems of foaming and effluent quality identified with EPA, but would increase the potential for odour generation during the processing and storage of waste sludge due to the incomplete sludge digestion in the activated sludge process.

Operation without sludge digesters

SGW operated the plant in EA mode while investigations were conducted into options to address the problems with the sludge digestion facilities. Sludge management consisted of thickening the WAS and then pumping into large geobags to allow further dewatering via gradual drainage through the bags and eventually drying of the WAS.

Operation of the plant in EA mode did result in problems with foaming and effluent quality due to poor performance of the clarifier and solids in the effluent. This resulted in occasional breaches of the EPA discharge licence conditions.

In 2011, to overcome limitations with the capacity of the existing sludge processing equipment, SGW installed a belt filter press at Leongatha. This allowed the WAS to be thickened and dewatered, rather than just thickened as previously. This also allowed the activated sludge plant to be operated at a lower sludge age to reduce the problems with excess solids in the clarified effluent. The change to operating at a lower sludge age was made in late-2011. The MLSS was reduced and over time the performance of the clarifier improved. However soon after the change in sludge age, the operators reported the presence of odours during sludge processing.

Therefore, despite the best efforts of SGW personnel, the operating experiences of the past two years has confirmed that there are significant risks to operating the Leongatha WWTP without some form of separate sludge digestion facilities and there

is a high probability the plant will either not be able to reliably achieve its discharge licence requirements, or will experience odour problems.

Following the major cleanout, SGW took the opportunity to undertake a condition assessment to assess the condition of the various components of the digesters both external and internal to the digester tanks. The condition assessment found the main structural components of the digesters to be in very good condition however quite a lot of the auxiliary components require replacing/ refurbishing.

Consultants KBR were engaged to investigate alternative options to reinstate sludge digestion facilities at the WWTP and the condition assessment work completed on the existing digesters was used as a basis for the option to refurbish the existing digestion system. From KBR's investigation a comparison of costs associated with each option was prepared and a design path of refurbishing the existing anaerobic digester system emerged as the preferred solution from the options considered to treat and handle the sludge at the Leongatha WWTP.

1.3. Purpose

To provide sludge digestion facilities that will allow the Leongatha WWTP treatment plant to achieve its EPA discharge licence conditions without odour problems. Refurbishing the digester system is also consistent with SGW wastewater strategy and policy in terms of continual improvement of SGW infrastructure for environmental performance, and requirement to meet EPA licence conditions and relevant SEPP guidelines, through the effective treatment of wastewater.

1.4. Supplementary Report(s) & Supporting Document(s)

Various reports and documents have been undertaken and developed in establishing the associated activities relating to this project. All reference reports and documents can be made available by SGW on CD format.

1.4.1. Consultant reports for this project

The following list provides the consultant reports directly related in selecting the preferred option for this project:-

Trim Ref.	Report
2012/18114	KBR – MEG001-TD-WE-REP-0002 Rev. 1, Evaluation of options to provide sludge digestion facilities, June 2012
2011/27664	Aquatec Maxcon – Digester Condition Assessment Report November 2011
2011/25135	Absafe – Leongatha Digester Tank Inspection Rev A October 2011
2010/24414	KBR – MEG001-TD-PR-REP-0001 Rev. 0, Technical Note for the Capacity Review of the WWTP (Including Addendum 1), December 2010

1.4.2. SGW documents

The South Gippsland Water Board has an approval process for Capital works. Works that are included on the Corporation's 10 year plan are done so with a Board approved Strategic Approval Statement (SAS). The Board approves project Capital Expenditure via approval of a Capital Justification Statement (CJS). For this project, these documents are listed below:-

Trim Ref.	Report
2012/14886	SAS April 2011 – Board Approved April 2011
	CJS October 2012 – Board Approval TBA

2. PROJECT DRIVERS

The main driver for this project is to establish a sludge digestion system as part of an overall treatment system which is compliant with EPA licence conditions and relevant SEPP guidelines.

3. ASSESSED OPTIONS

3.1. Options

SGW engaged KBR to investigate alternative options to reinstate separate sludge digestion facilities at the WWTP. The options investigated were:-

- Do nothing
- Anaerobic digestion
 - Natural gas only
 - Combination of natural gas and methane gas (produced during the digestion process)
- Aerobic digestion (new aerobic digester)
- Aerobic digestion (converted existing clarifier)
- Aerobic digestion (converted existing clarifier plus new bioreactor)

In assessing the above options, it was established that the option of a new aerobic digester and works to convert an existing clarifier into an aerobic digester options did not meet the required design capacity. It was also considered inappropriate to 'do nothing' as there are significant risks in operating the Leongatha WWTP without some form of separate sludge digestion facilities with a high probability the plant will either not be able to reliably achieve its EPA discharge licence conditions, or will experience odour problems.

Set out below is a summary of the cost benefit assessment for these options.

3.2. Financial Analysis

Capital and operations and maintenance (O&M) cost estimates have been prepared using a combination of information from suppliers and KBR's experience from current and past projects for each of the options mentioned previously. The estimates have been prepared to a nominal accuracy of $\pm 30\%$.

3.2.1. Cost-benefit assessment

Consultants KBR undertook a cost benefit assessment on the previously noted options which included Net Present Value (NPV) assessments to determine the most viable option. The capital cost is a combination of direct costs provided by Aquatec Maxcon and indirect costs established by KBR. The following provides a snap shot of the capital and NPV amounts for each option which was undertaken in 2011/12 with a $\pm 30\%$ accuracy:-

Option	Capital Cost	NPV
Anaerobic Digestion		
(Natural Gas)	\$2.9M	\$4.04M
(Methane + Natural Gas)	\$2.9M	\$3.99M
Aerobic Digester (new aerobic digester)*	\$2.2M	\$3.36M
Aerobic Digester (converted existing clarifier)*	\$1.3M	\$2.52M
Aerobic Digester (converted existing clarifier plus new bioreactor)	\$3.7M	\$3.94M

The options denoted with an asterisk (*) do not enable the plant to achieve its design capacity, and therefore are not valid options for comparison. The option with the lowest overall capital cost is anaerobic digestion. Anaerobic digestion is also the preferred option from a process design perspective.

Consequently, with the relatively similar NPVs between the anaerobic and aerobic digestion option, but with the anaerobic digestion option providing other, non-financial, advantages including preferred process design, more practical with better environmental outcomes in terms of lowest carbon footprint and greenhouse gas emissions due to reduced power requirements, SGW adopted the refurbishment of the anaerobic digesters using methane and natural gas as its preferred method of refurbishing the sludge digestion process capacity of the Leongatha WWTP.

3.2.2. Estimated costs

The estimated capital cost to refurbish the existing Anaerobic Digestion System as detailed above is \$2.9M. SGW will be seeking to explore further, two delivery mechanisms for this project which include management of works by SGW utilising a technical consultant and several local contractors for construction or delivery by a Design and Construct contract.

Table 1 below provides a breakdown of the estimated costs for project.

Table 1: Estimated cost comparison

Direct Costs	KBR Report Cost Estimate	SGW Revised Cost Estimate
Flow Management	\$228,802	\$228,802
Heating & mixing	\$429,284	\$429,284
Gas Management	\$247,800	\$247,800
Installation and site labour	\$266,680	\$266,680
Lift in/out and refurbish roof	\$357,540	\$257,540
Electrical rewiring and SCADA integration	\$298,540	\$298,540
Overheads (PM, eng, site estab, insura)	\$298,540	\$298,540
Subtotal, direct costs	\$2,127,186	\$2,027,186
Optional Costs		
Additional Works (incl PS refurb, clarifier scraper upgrade)	-	\$239,540
Subtotal, optional costs	-	\$239,540
Indirect Costs		
Engineering and Contract Administration	\$425,500	\$190,560
SGW costs/insurances	\$85,100	\$185,100
Contingency (10%)	\$212,800	\$212,800
Subtotal, indirect costs	\$723,400	\$454,600
Total Costs	\$2,851,000	\$2,855,000

SGW believes that the KBR Report Cost estimate was conservative because it added full EPCM costs to a Design and Construction cost estimate (Which already includes some of these costs). SGW revised the cost estimate as shown above.

3.2.3. Proposed annual expenditure

Table 2 shows proposed annual expenditure for this project within the Capex plan. The expenditure allocated in Water Plan 3 is highlighted.

Table 2: Capex plan yearly allocated costs

Year	Current Board Approved Capex Program Amount (\$k)
2012/13	\$800
2013/14	\$2,055
Total	\$2,855

3.3. Risk Analysis Assessment

The key risk drivers for this project are to do with the need for SGW to be able to ensure EPA licence compliance with discharge from the Leongatha WWTP and this includes not causing any discernible odour beyond the WWTP property boundary.

Since the failure of the anaerobic digestion systems at Leongatha WWTP in 2010, the plant has been operated in either extended aeration mode or 'normal' activated sludge mode. Both methods of operation have presented challenges which have resulted in periods in which achieving the EPA discharge licence conditions has been difficult, including experiencing odour problems with sludge processing and storage.

What has been identified by consultants KBR, as set out in this business case, is that there is strong evidence that the plant cannot operate satisfactorily without some form of additional sludge digestion and without this then indeed there is the potential for EPA licence non compliance with respect to effluent discharge and odour.

Either of these non compliance scenarios is not acceptable for SGW and therefore there is the need to provide cost efficient works that will enable compliance.

4. PROJECT TIMING

Upgrading the Digester system is required in order to continue meeting EPA licence conditions and relevant SEPP guidelines. To achieve this and the objective of the current Corporate Plan, this project is to be initiated and completed prior to the end of 2013/14 fiscal year.

4.1. Milestones

- Investigations and Assessments 2010–2011
- Finalise recommendation July 2012
- CJS for Board Approval December 2012
- Design review November – December 2012
- Detailed design, drawings & specifications January 2013

- Develop tender documentation January 2013
- Tender let February 2013
- Tender review and award March 2013
- Construction commence March 2013
- Construction complete February 2014
- Commissioning March 2014

5. PREFERRED OPTION

5.1. Outcome to be Delivered

Provision of sludge digestion facilities that will allow the treatment plant to achieve its EPA discharge licence conditions without odour issues in an economically advantageous manner.

**South Gippsland Water
Project – Foster WWTP Upgrade
Rising Main, Pipeline & Storage
Business Case Document**

Date: September 2012

SGW Reference: Projects S114, S130 & S150

1. INTRODUCTION

1.1. Project Description

South Gippsland Water proposes to upgrade the Foster Wastewater Treatment system,

In the short term (<10 years), the following project works will be undertaken:

- Scientific studies to prove no adverse impact on the environment of current effluent discharge via ocean outfall into Corner Inlet.
- Retain existing Wastewater lagoons
- Install Pump station, rising main, maturation lagoons and summer reuse at SGW owned Promontory Road site. In winter the effluent is discharged to the ocean outfall
- Ocean outfall is retained in short term

In the long term (>10 years), the following works will be undertaken:

- Winter storage lagoon constructed which allows for full reuse at the Promontory Rd site and closure of the ocean outfall
- In an emergency wet year effluent is discharged under licence to a nearby creek

1.2. Background

The Foster Wastewater Treatment Plant (WWTP), located on Fuller Road 3 km south of Foster, is a lagoon treatment system. Currently the treated effluent from the WWTP is discharged via an outfall into Corner Inlet. The WWTP is having difficulty complying with the EPA discharge licence, particularly for suspended solids and E coli throughout the year. This is due to overloading problems, problems with algal growth, and insufficient maturation lagoon detention time required to achieve the disinfection requirements.

This has prompted SGW to investigate upgrade options to ensure that EPA compliance is achieved. Several reports and investigations have been undertaken that have allowed SGW to confirm its future upgrade strategy.

A report commissioned by SGW titled Foster WWTP - Upgrade Site Selection Investigation; KBR 18 March 2008, gave rise to a submission to the Board recommending the purchase of a site on Fullers Road Foster adjacent to the WWTP site to construct additional lagoons and storage. The owner of the recommended site was not willing to sell his land and the South Gippsland Shire Council planners were aware of SGW's intention to acquire the land but proceeded with the public exhibition

of a new town plan which included the rezoning for housing of the land south of the town down to the Rail Trail. Due to the required buffer distances from houses to the proposed treatment plant augmentation, this proposed planning change effectively made the recommended site unviable for the intended purpose.

SGW then commissioned consultants KBR to prepare a report titled Foster WWTP Investigation of Options for siting the New Foster Sewage Treatment Plant; 11 August 2010, which identified five sites on rural land south of Foster which would be suitable for the treatment plant augmentation, for a winter storage lagoon, and for irrigation of the reclaimed effluent. Wastewater could be pumped from the existing treatment plant to any of the sites. There was the potential with full reuse for the outfall to Corner Inlet to be decommissioned. A triple bottom line assessment was developed giving an evaluation score to environmental, technical, economic and social factors for each of the sites, with Site 2 being the most preferred advantageous and was subsequently purchased by SGW in 2011.

A further internal detailed analysis was completed on the staging options for development of treatment, winter storage and irrigation together with associated land requirements for irrigation with revised estimates. This work was developed further with support from KBR.

Consultants KBR undertook an option study assessing fifteen (15) options (detailed in Table 1) which would address the EPA licence compliance issues, compare capital and Net Present Value (NPV) costs to assist in the process of the Corporation determining the most advantageous option. A Multi Criteria Assessment (MCA) was undertaken on the six (6) identified preferred options. This assessment highlighted two (2) favourable options. A carbon assessment is also being undertaken on the two options. The Corporation's most advantageous option which will progress to functional design, is Option 2A.

1.3. Purpose

To provide an efficient and EPA licence compliant wastewater treatment plant for the township of Foster. Undertaking this project is consistent with SGW wastewater strategy and policy in terms of continual improvement of SGW infrastructure for environmental performance, and requirement to meet EPA licence conditions and relevant SEPP guidelines, and with working towards the ultimate aim of the closure of the outfall pipeline into Corner Inlet.

1.4. Supplementary Report(s) & Supporting Document(s)

Various reports and documents have been undertaken and developed in establishing the associated activities relating to this project. All reference reports and documents can be made available by SGW on CD format.

1.4.1. Consultant reports for this project

The following list provides the consultant reports directly related in selecting the preferred option for this project:-

Trim Ref.	Report
2010/14780	Foster Sewage Treatment Plant - Investigation of Options for siting the New Foster Sewage Treatment Plant, KBR, August 2010

2011/07396	Foster Sewage Treatment Plant - Interim options investigation for EPA licence compliance, KBR, April 2011
Refer hard copy file	Foster Sewage Treatment Plant Upgrade - Net Gain Report, KBR, July 2011
2011/14539	Foster Sewage Treatment Plant - Concept Report, KBR, August 2011
n/a – in progress	Review of Upgrading Options (including outcomes from MCA and Carbon Assessment), KBR. This report currently in progress.

1.4.2. SGW documents

The South Gippsland Water Board has an approval process for Capital works. Works that are included on the Corporation's 10 year plan are done so with a Board approved Strategic Approval Statement (SAS). The Board approves project Capital Expenditure via approval of a Capital Justification Statement (CJS). For this project, these documents are listed below:-

Trim Ref.	Report
2010/06709	CJS – Board Approved May 2008
Refer hard copy file	SAS – Board Approved August 2010
Refer hard copy file	Subsequent CJS – Board Approved October 2011
In Board minutes	Foster WWTP Review of Long Term Strategy, PowerPoint Presentation to Board – August 2012

2. PROJECT DRIVERS

The following list the key project drivers associated with this project:-

- Compliance with EPA licence requirements
- Compliance with SEPP (WOV)
- Community acceptance
- Minimise Operating Costs
- Maximise Reuse - provide more sustainable operating conditions
- Closing outfall to Corner Inlet
- Optimise Operation

3. ASSESSED OPTIONS

3.1. Options

There were fifteen (15) upgrade options investigated within the KBR report, Review of Upgrading Options, August 2012. These options can be broadly divided into three groups, based on the type of treatment proposed as follows:-

- Lagoon treatment (Options 1–4, 2A & 7A)
- Lagoon/DAF treatment (Options 5–7)
- Activated sludge (or MBR) treatment (Options 8–12A).

Table 1, over page, provides details on the 15 upgrade options and their associated short term and long term treatment and disposal requirements.

Following discussions with the EPA about the future upgrade of the outfall into Corner Inlet, the options 5, 8, 9 & 12 which all use the ocean outfall in the long term were discounted from further consideration as the EPA advised that it would not support approvals for upgrade. Options 1 & 3 were also discounted from further consideration because they would only be adopted if external circumstances dictated that the existing WWTP would need to be decommissioned at the existing site and all treatment lagoons relocated to the new Promontory Road site. Option 6 was also discounted from further consideration because Option 7 stages the construction of the winter storage lagoon to the long term and as such has advantages over Option 6. Option 11 was discounted due to option 12A producing higher class effluent. Option 10 involves activated sludge treatment and has a higher and significantly higher Capital Cost and NPV respectively for minimal if any additional benefit over the remaining lower cost options.

Therefore Options 2, 2A, 4, 7, 7A & 12A remained as the most feasible options for further detailed analysis to be undertaken. To assess the options a MCA was completed by SGW with input from KBR for the 6 options. The MCA considered various factors including Environmental, Social, Economical, Fit for Purpose and Risk and Governance. The MCA revealed the preferred options to be Option 2A and 7A. Option 2A was subsequently selected by the Corporation as the preferred option to move forward with for further discussion with the EPA.

Table 1 Upgrade options for the Foster WWTP investigated

Option	Time frame	Treatment	Disposal
1	Short term	Lagoon-based treatment remains at existing site Maturation lagoons constructed at new site	Direct summer reuse at new site, with winter discharge from new site via new rising main to existing ocean outfall
	Long term	Construct treatment lagoons and extra maturation lagoon (M3) at new site. Decommission existing site	Full reuse through construction of winter storage at new site Emergency discharge to creek near Promontory Road.
2	Short term	Lagoon-based treatment remains at existing site (short term and long term) Maturation lagoons constructed at new site	Direct summer reuse at new site, with winter discharge from new site via new rising main to existing ocean outfall
	Long term		Full reuse through construction of winter storage at new site. Emergency discharge to creek near Promontory Road.
2A	Short term	Lagoon-based treatment remains at existing site with Maturation lagoons constructed at new site, and scientific studies	Summer reuse and ocean discharge
	Long term		Full reuse through construction of winter storage at new site. Emergency discharge to creek near Promontory Road.
3	Short term	Lagoon-based treatment remains at existing site Maturation lagoons constructed at new site	Full reuse through construction of winter storage at new site. Emergency discharge to creek near Promontory Road.
	Long term	Construct treatment lagoons and extra maturation lagoon (M3) at new site. Decommission existing site	As for short term

4	Short term	Lagoon-based treatment remains at existing site (short term and long term) Maturation lagoons constructed at new site	Full reuse through construction of winter storage at new site. Emergency discharge to creek near Promontory Road.
	Long term		As for short term
5	Short term	Lagoon-based treatment remains at existing site (short term and long term) DAF and disinfection constructed at existing site	Ocean discharge. No reuse
	Long term	Add chemical P removal upstream of DAF	Extend ocean outfall. Continued ocean discharge. No reuse
6	Short term	Lagoon-based treatment remains at existing site (short term and long term) DAF and disinfection constructed at existing site	Full reuse through construction of winter storage at new site Emergency discharge to creek near Promontory Road
	Long term	Add chemical P removal upstream of DAF	As for short term
7	Short term	Lagoon-based treatment remains at existing site (short term and long term) DAF and disinfection constructed at existing site	Ocean discharge. No reuse
	Long term	No change from short term	Full reuse through construction of winter storage at new site Emergency discharge to creek near Promontory Road
7A	Short term	Lagoon-based treatment remains at existing site Scientific studies	Ocean discharge. No reuse
	Long term	Maturation lagoons constructed at new site	Full reuse through construction of winter storage at new site. Emergency discharge to creek near Promontory Road.
8	Short term	Activated sludge plant at existing site (incl.	Ocean outfall. No reuse

		disinfection)	
	Long term	No change from short term	Extend ocean outfall. Continued ocean discharge. No reuse
9	Short term	Activated sludge plant at existing site (excl. disinfection) Holding pond at new site	Summer reuse at new site, with winter discharge to ocean outfall
	Long term	Add UV disinfection and chem. P removal to activated sludge system	Extend ocean outfall for continued winter discharge and summer reuse.
10	Short term	Activated sludge plant at existing site (excl. disinfection)	Full reuse through construction of winter storage at new site Emergency discharge to creek near Promontory Road.
	Long term	Add UV disinfection and chem. P removal to activated sludge system	As for short term
11	Short term	Activated sludge plant at existing site (incl. disinfection)	Direct discharge to local creek. No reuse
	Long term	Add P removal to activated sludge system	No change from short term.
12	Short term	Advanced activated sludge plant (membrane bioreactor, with chemical P removal) plus UV and chlorination at existing site to produce Class A effluent	Ocean outfall or direct discharge to local creek. No reuse
	Long term	No change from short term	No change from short term
12A	Short term	Advanced activated sludge plant (membrane bioreactor, with chemical P removal) plus UV and chlorination at existing site to produce Class A effluent	Discharge to Stockyard Creek
	Long term		

3.2. Financial Analysis

Capital and operations and maintenance (O&M) cost estimates have been prepared using a combination of information from suppliers and KBR's experience from current and past projects for each of the options mentioned previously. The estimates have been prepared to a nominal accuracy of $\pm 30\%$.

3.2.1. Cost-Benefit Assessment

Consultants KBR undertook a cost benefit assessment on all the previously noted options which included Net Present Value (NPV) assessments to determine the most viable option. Table 2 provides a snap shot of the capital and NPV amounts only for the 6 preferred options.

Table 2 Cost assessment of the six preferred options

Opt.	Description	Effluent Class	Cap Exp Short Term (\$m)	Cap Exp Long Term (\$m)	Cap Exp TOTAL (\$m)	NPV (\$m)	Comments
2	Existing & New Lagoons + Summer Reuse in short term + Winter Storage in long term	C	5.8	6.3	12.1	11.0	Allows for staging which reduces NPV
2A	Existing & New Lagoons + Scientific Studies + Summer Reuse in short term + Winter Storage in long term	C	4.8	6.3	11.1	9.7	Allows for staging which reduces NPV
4	Existing & New Lagoons + Winter Storage in Short Term	C	10.3	0.7	11.0	12.6	Current CJS.
7	Existing Lagoons + DAF in Short Term. Winter Storage in Long term	B	2.9	8.8	11.7	10.1	Allows for staging which reduces NPV
7A	Existing Lagoons + Scientific Studies in short term + Winter Storage in Long term	C	1.9	9.2	11.1	9.0	Allows for staging which reduces NPV
12A	Full Mechanical Plant (Membrane Bioreactor) + Discharge to Stockyard Creek in Short Term.	A	6.7	0.1	6.8	10.2	Improves quality of effluent to Class A. Very high O&M costs.

3.2.2. Estimated costs

The estimated capital cost for the preferred Option 2A is \$11.1M. A breakdown of the costs can be seen Table 3 below:

Table 3 Breakdown of estimated costs for Option 2A

Item Description	Option 2A		
	Short Term (\$k)	Long Term (\$k)	Total (\$k)
Maturation Lagoons M1	202.6	-	202.6
Maturation Lagoons M2	202.6	-	202.6
Winter Storage Lagoon	-	4,554.6	4554.6
Transfer Pump Station at existing site	284.0	-	284.0
Rising Main to new site	1,856.4	-	1856.4
Irrigation at Prom Rd (summer only)	341.9	-	341.9
Irrigation at Prom Rd (full reuse)	-	889.7	889.7
Decommission Ocean Outfall from existing site	-	86.1	86.1
Emergency discharge line to nearby creek	-	361.5	361.5
Purchase new Prom Rd Site (refer note)	1,800.0	-	1800.0
Additional upgrade works on existing Lagoons	-	380.0	380.0
Scientific Studies	100.0	-	-
ESTIMATED TOTAL	4,787.5	6,271.9	11,059

Note: new Promontory Road land was purchased in 2011/12

3.2.3. Proposed annual expenditure

Table 4 shows proposed annual expenditure for this project within the Capex plan with proposed project expenditure in Water Plan III highlighted.

The allocated funding will allow for the anticipated short term works to be carried out, this is subject to the outcomes of studies to confirm that there is minimal environmental impact to the receiving waters with the current outfall to Corner Inlet. SGW has proposed that the short term works as set out above would be completed over Water Plans 3 and 4, with Long term works scheduled for completion in Water Plan 5. Table 4 sets out the proposed expenditure in relation to these works.

Table 4: Capex plan yearly allocated costs

Year	Current Board Approved Capex Program Amount (\$k)			
Project	S114 – Winter Storage & Reuse	S130 - Reuse	S150 – Pipeline, Summer Storage & Reuse	Total
2012/13	-	-	\$100	\$100
2013/14	-	-	-	-
2014/15	-	-	-	-
2015/16	-	-	-	-
2016/17	-	-	-	-
2017/18	-	\$114	\$1,191	\$1,305
Water Plan IV	-	\$228	\$1,354	\$1,582
Water Plan V	\$5,382	\$890	-	\$6,272
Total	\$5,382	\$1,232	\$2,645	\$9,259

3.3. Risk Analysis Assessment

The key risk drivers for this project are to do with the need for SGW to be able to ensure EPA licence compliance. The complete range of identified risks associated with each option were assessed as part of the within the MCA.

4. PROJECT TIMING

Improving the Foster WWTP is required in order to continue to meet EPA licence conditions and relevant SEPP guidelines. To achieve this and the objective of the current Corporate Plan, short term works as listed above are to be initiated and completed prior to the end of 2018/19 fiscal year subject to the outcomes of the studies which will be undertaken.

4.1. Milestones

- Investigations and Assessments 2010/11
- New Prom Rd Land Purchase 2011/12
- CJS for Board Approval October 2011
- Presentation to Board July 2012
- Commence EPA Discussions September 2012
- Subsequent CJS for Board Approval November 2012
- Commence Scientific Studies (ongoing) December 2012
- Pump station, pipeline, summer storage & summer reuse
 - Design, Tendering, Construction 2017/18
 - Complete construction & Commissioning 2018/19
- Winter storage and reuse
 - Design, Tendering 2025/26
 - Construction & Commissioning 2026 to 2028

The results of the scientific studies may influence works timing.

5. PREFERRED OPTION

5.1. Outcome to be Delivered

SGW will provide an efficient and compliant wastewater treatment plant for the township of Foster which meets the licence requirements of EPA and relevant SEPP guidelines. In the short term SGW will undertake scientific studies to prove no adverse impact on environment of current effluent discharge at Corner Inlet. In 2017/18 & 19 SGW will construct a pump station, rising main and maturation lagoons at the Promontory Road site with a summer reuse arrangement. In the long term a winter storage lagoon is to be constructed which will allow for full reuse at the Promontory Road site and closure of the existing ocean outfall.

**South Gippsland Water
Project – Wonthaggi Sewer System Upgrades
Business case Document**

Date: September 2012
SGW Reference: Project S123

1. INTRODUCTION

1.1. Project Description

This project is for a staged improvement implementation program for augmenting the Wonthaggi Sewerage System to address significant existing deficiencies and rapid current and future development. The staged program is based on a 50 year forward planning horizon which considered all components of the sewer network. However, this report will highlight the works specifically related to sewer upgrades which have been identified for implementation during Water Plan III (2013/14 to 2018/19).

There is approximately 2,770m of existing sewers ranging from DN150 to DN300 proposed to be upgraded in capacity by increasing sizes to ranges between DN225 to DN450 during Water Plan III.

1.2. Background

A detailed computer based hydraulic model of the sewer system using software - InfoWorks CS was developed and an assessment of the Wonthaggi Sewerage System was undertaken by consultants Halcrow to develop an augmentation strategy that will allow the system to cater for current flows as well as proposed future growth and development within the Wonthaggi township catchment, and meet EPA Victoria sewer flow containment guidelines.

In the light of the sewer system capacity deficiencies in the North Wonthaggi area, Halcrow were requested to assess the whole Wonthaggi township sewer system. A detailed investigation into land availability and predicted land release estimates was undertaken. This process involved detailed discussions with the Bass Coast Shire Council Strategy Planning Department in order to determine latest predictions for immediate and future proposed development growth across the whole of the Wonthaggi catchment.

The Wonthaggi sewerage system catchment covers some 488 hectares and consists of approximately 73 kilometres of sewers ranging in size from DN100 to DN450. The system also has fourteen pumping stations.

In January 2010, Halcrow submitted their Wonthaggi Sewerage System – Future Development Strategy. This strategy recommended a staged improvement implementation program over a 30 year horizon for augmenting the Wonthaggi sewerage system based on the hydraulic model analysis, flow survey data and comparative risk assessments. Halcrow has since submitted an Addendum to the original report assessing the proposed augmentation requirements for a 50 year design development horizon and update according to the reduced inflow/infiltration works which had already been undertaken.

The staged improvement implementation program primarily consists of upsizing sections of existing sewers, implementing new sewers and rising mains, improving or upgrading existing pump stations, and providing emergency storage facilities..

The proposed augmentation measures defined by Halcrow over the 50 year design development horizon include the following:

- Upgrading existing gravity sewers (11,847 metres) to provide increased flow capacity
- Installing new pumping stations (3 No.)
- Installing new rising mains (3,556 metres)
- Installing new gravity sewers (8,573 metres)
- Upgrading emergency storage tanks (4 No.)
- Installing new emergency storage tanks (3 No.)
- Decommission existing sewer pumping stations (4 No.)
- Upgrade sewer pump station impellers (1 No.)
- Upgrade sewer pump sets (3 No.)

However, this Business Case for Water Plan III works involves detailing those works associated with upgrades to existing sewers over the Water Plan period, as pump stations will undertaken as separate projects, and any new sewers and rising mains for new developments are generally funded by developers.

1.3. Purpose

SGW is committed to upgrading infrastructure as required for current system requirements and future requirements associated with development of towns to facilitate regional growth in South Gippsland. Furthermore, appropriate levels of wastewater services complying with standards and regulations is what SGW customers would expect from SGW. This project allows for this to be achieved.

1.4. Supplementary Report(s) & Supporting Document(s)

Various investigations, reports and documentation have been undertaken and developed in establishing the associated activities relating to this project. All reference reports and documents can be made available by SGW on CD format.

1.4.1. Consultant reports for this project

The following list provides the consultant reports directly related in establishing information about the determination of optimum sewer sizes for this project:-

Trim Ref.	Report
2008/05483 2008/05484	ADS Environmental Services – Wonthaggi Sewerage System Study Inflow and Infiltration Report July 2008
2010/00378	Halcrow – Wonthaggi Sewerage System Future Development Strategy, January 2010
2010/09044	Halcrow – Wonthaggi Sewerage System Future Development Strategy - Addendum Report No.1, May 2010
2010/20785	Halcrow – Wonthaggi Sewerage System Future Development Strategy - Addendum Report No.2, October 2010
2011/05191	Halcrow – Wonthaggi Sewerage System Future Development Strategy - Addendum Report No.3, March 2011

1.4.2. Consultant reports for works associated with this project

The following list provides the consultant reports which relate to Wonthaggi sewer system upgrade works not specific for this project however associated with the identified overall Wonthaggi sewer system upgrades:-

Trim Ref.	Report
Refer hard copy file	Halcrow – Wonthaggi Development Plan - Assessment of System Capacity (2010/11)
Refer hard copy file	Halcrow – Wonthaggi Wastewater Treatment Plant Outfall Pumping System - Performance Issues Discussion Paper (2010/11)

1.4.3. SGW documents

The South Gippsland Water Board has an approval process for Capital works. Works that are included on the Corporation's 10 year plan are done so with a Board approved Strategic Approval Statement. The Board approves project Capital Expenditure via approval of a Capital Justification Statement. For Wonthaggi sewer system upgrades, the Board has approved the following documents as listed below:-

Trim Ref.	Report
2012/22231	Strategic Approval Statement (SAS) Board Approved - June 2010
2012/22232	Capital Justification Statement (CJS) Stage 6A, Board Approved - April 2011
2012/22233	Capital Justification Statement (CJS) Stage 6B, Board Approved - May 2011
2012/22234	Capital Justification Statement (CJS) Stage 6C, Board Approved - July 2011

The upgrade works that are proposed to be completed during Water Plan III are set out in Table 2 below.

2. PROJECT DRIVERS

The following section details the key project drivers for the identified sewer upgrades within the Wonthaggi sewer network. The developed sewer system hydraulic model revealed extensive capacity deficiencies in the existing sewer reticulation system. The existing sewer system capacity is inadequate in maintaining existing levels of service. Existing levels of service in this instance relates to providing a system which meets the needs for current and future flows without surcharging and complies with EPA Victoria guidelines for containing 1 in 5 year ARI storm events.

The Wonthaggi Sewerage System – Future Development Strategy Report, and Addendums 1, 2 and 3 have incorporated analysis of the Wonthaggi/Dalyston Structure Plan to assess the impact of immediate, intermediate and future development associated with designated areas for future growth. The existing Wonthaggi main trunk sewer system currently surcharges in locations during peak demand and rainfall events. The ongoing township development is compounding this surcharging problem. The hydraulic model undertaken by Halcrow highlights that the existing sewer system will not be able to accommodate predicted future development growth over the next 50 years and identified works which need to be undertaken in a staged fashion into the future including over the duration of Water Plan III to alleviate the currently experienced surcharging.

3. ASSESSED OPTIONS

3.1. Options

The hydraulic model developed by Halcrow was used to assess the performance of the Wonthaggi Sewerage System under the existing and future level of catchment development. Analysis was undertaken for both dry weather and estimated wet weather flow conditions.

The dry weather flow analysis was based on population and per capita water consumption data, with recorded flow data being used to calibrate/validate the model outputs. The wet weather flow analysis was based on the three most significant rainfall events from each of the flow surveys. The run-off flows from impermeable and permeable areas were calibrated against the recorded flow data. During the calibration for both the dry and wet weather flows, the hydraulic model was run and comparative hydrographs were produced for each flow monitor position.

The optimum size and identification of which sewers require upgrades were subsequently adjusted based on the selected outcome of the following system augmentation options available to accommodate the 1 in 5 year ARI rainfall event flows and projected growth for scenarios for the various catchment sections of the town. These modelling options were as follows:-

North Wonthaggi

- Option – Transfer System Augmentation
- Option – Provision of Storage (detention) Facilities

South Wonthaggi

- Option – Transfer System Augmentation
- Option – Provision of Storage (detention) facilities

Wonthaggi

- Option – Transfer System Augmentation
- Option – Provision of Storage (detention) facilities
- Option – Transfer / Storage Combination

Halcrow identified the required sizes and provided costs based on generic sewer construction techniques in 2010. Consultants KBR subsequently investigated alternative construction options as part of the detailed design phase, these included lift and relay, pipe bursting, micro tunnelling, duplication (new sewer) and a combination where viable. The preferred solution was based on the most practical and feasible construction method, and cost effective option. The costs were compared as a unit rate basis in 2011 dollar amounts. The most optimum option was specific to the sewer being upgraded with a combination of pipe bursting, lift and relay and new sewer being selected. These methods were proposed on the detailed design drawings and specifications for tender.

3.2. Financial Analysis

In order to provide a comparative assessment of the identified options, indicative estimates of the cost of implementing each option were initially prepared by consultants Halcrow to a confidence level of $\pm 10-15\%$ by using a combination of:-

- Published rates for civil engineering construction;

- Budget cost rates provided by construction contractors; and
- Historical cost rates for previously constructed work.

Consultants Halcrow recommended staged augmentation works based on priority of works and their understanding of SGW's expenditure profiles, however these were not consistent with SGW's short-term or long-term expenditure level profiles. SGW developed a portfolio of works with reasonable expenditure which is consistent with the Corporation's overall capital expenditure profile.

Consultants KBR undertook detailed designs of the first six stages of proposed upgrades (Stages 6A to 6F as shown in Table 2) of which Stages 6C to 6E are within Water Plan III. Budget unit rate estimates were developed during this design process. The most cost effective and practical construction methodology was adopted within the designs which allow for competitive tenders from local contractors and others to be sought for each stage when the upgrade is required.

Competitive tenders will be invited for all stages of upgrades at the appropriate time consistent with the allocated expenditure over Water Plan III for each fiscal year.

3.2.1. Cost-benefit assessment

Consultants Halcrow undertook a cost benefit assessment on the basic system augmentation options as detailed previously which were proposed to accommodate the 1 in 5 year ARI rainfall event flows and future predicted development. It was established that the most appropriate solution for the Wonthaggi Sewerage System was initially recommended a combination of constructing multiple emergency storage facilities throughout the catchment to contain flows and upgrade the sewer network accordingly. The results of this assessment in 2010 dollar values are detailed below. However following further investigations and the reduced inflow/infiltration values it was reassessed with transfer system augmentation being the prepared option moving forward for the view to review and monitor the system on an ongoing basis.

North Wonthaggi

Option – Transfer System Augmentation	\$9,193,000
Option – Provision of Storage (Detention) Facilities	\$12,370,000

South Wonthaggi

Option – Transfer System Augmentation	\$2,729,000
Option – Provision of Storage (detention) facilities	\$2,444,000

Wonthaggi

Option – Transfer System Augmentation	\$11,922,000
Option – Provision of Storage (detention) facilities	\$14,814,000
Option – Transfer / Storage Combination	\$13,775,000

It is considered inappropriate to 'do nothing'. Upgrading of the sewers is essential in ensuring the system has the capacity required and is suited for rapidly increasing flow demands and meeting EPA requirements for "no spills" and rainfall event flows.

3.2.2. Estimated costs

A proposed annual capital works program has also been established by Halcrow in order to determine annual program costs and budgets for each stage of the sewer

pipeline system upgrade works. The costs presented in Table 1 below, include supply and construction, detail design, SGW management costs & contingency for the 50 year design horizon.

3.2.3. Proposed annual expenditure

The Halcrow report identified a “staggered” capital works program which has been modified in SGW’s Capital Works (CAPEX) Program in a staged progressive yearly works program to provide a more uniform annual expenditure which is consistent with SGW’s long-term expenditure profile. This is shown in Table 1, with proposed expenditure in Water Plan III highlighted. Table 2 sets out the detail of what is proposed for these works over Water plan III.

Table 1: Capex plan yearly allocated costs

Year	Halcrow Identified Sewer Upgrade Cost (\$k)	2012 Board Approved Capex Program Amount (\$k)
2011/12	\$798	\$800
2012/13	\$426	\$800
2013/14	\$575	\$250
2014/15	\$441	\$250
2015/16	\$495	\$250
2016/17	\$462	\$250
2017/18	\$397	\$250
2018/19	\$514	\$1,000
2019/20	\$395	\$1,000
2020/21	\$581	\$1,000
2021/22	-	\$1,000
Total	\$5,084	\$6,850

3.3. Risk Analysis Assessment

Halcrow consultants undertook a risk assessment in its ‘Wonthaggi Sewerage System Future Development Strategy, January 2010’ report. A comparative assessment of the future development options considered was undertaken using a risk assessment process. Through this process, which was undertaken in accordance with the guidelines outlined in Australian Standard AS 4360–2004 Risk Management, consideration was given to issues including, but not limited to:-

- Hydraulic performance;
- Containment levels (failure scenario);
- Emergency storage;
- Pumping regime;
- Impact on existing infrastructure;
- Impact of the construction process;
- Emergency Storage physical location;
- Potential variability in cost;
- Maintenance of service during construction;
- Operation and maintenance costs; and
- Operational safety.

The risk assessment process involved the identification of potential risk exposures or hazards, and then assigned a ranking for each risk exposure/hazard. The ranking was based on an assessment of the consequence (or impact) of that exposure/hazard being realised and the likelihood that it would be realised.

Qualitative measures were applied to each of these characteristics, which were then combined to give a relative ranking for each exposure or hazard, i.e. consequence x likelihood = ranking. For this risk assessment, a secondary ranking was completed through the assignment of weighting factors for each of the issues listed above.

For the system to work the following elements need to be assessed and working in order to deliver the optimum and most efficient outcome. The risks associated with these augmentation elements were individually assessed for the two basic system augmentation options available to accommodate the 1 in 5 year ARI rainfall event flows options as detailed previously.

- Upgrading of existing sewers throughout the Wonthaggi catchment;
- Provision of new sewers in undeveloped areas on the eastern and western edges of the catchment;
- Construction of a new sewage pumping station (for future residential development) on the south eastern edge in undeveloped area;
- Upgrading of all four major sewage pumping stations with increased capacity pumping sets;
- Provision of emergency storage facilities at one or a number of the existing major sewage pumping stations; and
- Provision of new rising mains for existing and new sewage pumping stations through developed and undeveloped areas of catchment.

Furthermore, the sewer upgrades identified within this project minimise the risk associated with the sewer system being under capacity in certain locations and resulting in predictions of potential high level surcharging of the system with regular sewer spills resulting in an EPA licence breach especially during wet weather events.

Not acting on the future strategic system upgrade and augmentation proposal will result in the sewer system being under capacity and resulting in high level surcharging of the system with regular sewer spills. The future development and strategic growth of the Wonthaggi Township will be impaired and placed at risk.

4. PROJECT TIMING

This project is comprised of a staged schedule of works with upgrades to occur progressively over a number of years. The first stage of the project commenced in 2011/12. Table 2 (over page) details all proposed augmentations works, their respective year identified by Halcrow, and the year works are scheduled by SGW over a 10 year period with the Water Plan III activities highlighted. Note the works have been staged to meet the funding allocated in the corporative expenditure program as detailed in Table 1.

Table 2: Proposed augmentation and its scheduled year

Halcrow Identified Year	SGW Identified Year	SGW Works Stage	Proposed Augmentation by Halcrow
2010/11	2011/12	6A	Upgrade Sewers (Rear Lane off White Road 535m to DN300) Upgrade Sewers (Roadway off White Road 145m to DN375)
2011/12	2012/13	6B	Upgrade Sewers (Rear Lane off White Road 520m to DN300)
2012/13	2012/13	6C	Upgrade Sewers (U/s WWTP 50m to DN450)
	2013/14	6C	Upgrade Sewers (Rear Lane off White Road 380m to DN300)
2013/14	2014/15	6D	Upgrade Sewers (MacKenzie Street 195m to DN225)
	2015/16		Upgrade Sewers (Rear Lane off Murray Street 165m to DN300)
2014/15	2016/17	6E	Upgrade Sewers (Rear Lane off White Road 110m to DN225) Upgrade Sewers (Rear Lane off White Road 180m to DN300)
	2017/18		Upgrade Sewers (Murray Street 320m to DN300)
2015/16	2018/19	6F	Upgrade Sewers (MacKenzie Street 90m to DN225) Upgrade Sewers (Rear Lane off White Road 185m to DN300) Upgrade Sewers (Murray Street 234m to DN225)
2016/17			New Sewer (Reed Crescent 775m to DN150)
2017/18	2019/20		Upgrade Sewers (Rear Lane off Milner Street 230m to DN300) Upgrade Sewers (Chambers Street 85m to DN225) Upgrade Sewers (Brown Street 86m to DN225)
2018/19			Upgrade Sewers (U/s WWTP 640m to DN450)
2019/20	2020/21		Upgrade Sewers (U/s WWTP 120m to DN450) Upgrade Sewers (U/s WWTP 255m to DN525)
2020/21			Upgrade Sewers (U/s WWTP 140m to DN525) Upgrade Sewers (Between Graham Street & South Dudley Road 310m to DN300)
2021/22			None
Post 2022			Further upgrades are dependent on future developments and growths within the Wonthaggi area and will be assessed and identified accordingly.

5. PREFERRED OPTION

5.1. Outcome to be Delivered

Upgrading various sections of the Wonthaggi Sewer System network in a staged approach alongside upgrades to pump stations and providing emergency storages where required will provide SGW with a sewer network system for Wonthaggi which can continue to maintain existing levels of service by meeting current and future flows and fully complying with EPA Victoria's guidelines.

**South Gippsland Water
Project – Environmental Obligations
Business Case Document**

Date: September 2012
SGW Reference: Project S118

1. INTRODUCTION

1.1. Project Description

This project is an ongoing program established to upgrade existing and ageing sewer pump stations to meet EPA obligations with regard to control of sewage spillage and containment up to a 1 in 5 year return storm duration. Programmed works include installation of detention storages, alarm diallers / telemetry systems, alternative power supply configuration (generator input), electrical cabinet upgrades and upgrade of pumps.

1.2. Background

SGW own and maintain over 80 Sewer Pump Stations (SPS). Many of these SPS's have been in service for over 30-40 years and are either in need of extensive refurbishment works and/or do not meet current demand in regard to storage and pumping capacity.

The operational reliability of many of these pump stations has also been compromised by ageing and corroded pumpsets, pipework and valves. Works to refurbish and replace these operational components are ongoing and as determined by SGW's Operational Staff and Infrastructure asset condition assessments.

Hydraulic models developed for SGW's individual sewerage systems have identified SPS's which require additional storage capacity and upgraded pumpsets to meet current and future demand and EPA containment guidelines. Required emergency storage volumes and increased pump rates required are as provided in the Hydraulic System Assessments – Sewerage System Augmentation Reports.

1.3. Purpose

SGW is committed to upgrading infrastructure as required for current and future system requirements associated with ageing infrastructure and escalating development of towns to facilitate regional growth in South Gippsland. Appropriate levels of wastewater services complying with standards and regulations are set for SGW customers. This project allows for these standards and levels of service to be achieved and maintained through refurbishing and upgrading SGW's SPS's to meet current and future demands and containment requirements as set by the EPA.

1.4. Supplementary Report(s) & Supporting Document(s)

A number of various reports and documents have been prepared and developed in establishing the associated activities relating to this project. Specifically SGW's Corrective Actions Register contains a listing of required SPS upgrades as determined from asset condition assessments. SGW have also developed future

Sewerage System Augmentation and Improvement plans consistent with the system deficiencies identified in the individual system hydraulic models and asset condition evaluations. All reference reports and documents can be made available by SGW on CD format.

1.4.1. Consultant reports for this project

The following list provides the consultant reports directly related in establishing information about determining the potential sewer sections which may require works further investigations:-

Trim Ref.	Report
2009/17031	Halcrow – Inverloch Sewerage System – System Assessment & Augmentation Strategy – 50 Year Design Horizon
2011/05191	Halcrow – Wonthaggi Sewerage System – Future Development Strategy – 50 Year Design Horizon
2010/07463	Halcrow – Korumburra Sewerage System – Inflow/Infiltration Assessment and Future Development Strategy
2009/08673	Halcrow – Leongatha Sewerage System – Assessment of Augmentation Works – 50 Year Design Horizon
2012/00063	Halcrow – Foster Sewerage System – Inflow/Infiltration Assessment and Future Development Strategy

1.4.2. SGW documents

The South Gippsland Water Board has an intensive structured approval process for Capital works. Works that are included on the Corporation’s strategic 10 year plan are done so with a Board approved Strategic Approval Statement (SAS). The Board approves project Capital Expenditure through approval of a detailed Capital Justification Statement (CJS). For this project, these documents are listed below:-

Trim Ref.	Report
In Board minutes	SAS Summary Sheet November 2009 – Board Approved November 2009
In Board minutes	CJS Board Approved - Not Required. Works approved by Board in annual SGW Capital works program Summary sheet information.

2. PROJECT DRIVERS

The main driver for this project is SGW's environmental obligation of containing sewerage flows and the EPA's containment guidelines which require that SGW's sewerage infrastructure has sufficient capacity to contain sewage flows during a 1 in 5 year return period storm duration event.

All new SPS's constructed are designed with sufficient capacity to contain such flows, however, many of SGW's older SPS's do not have sufficient storage volumes or are in need of refurbishment to ensure their operational reliability and achievement of current required standards.

3. ASSESSED OPTIONS

3.1. Options

SGW engaged Halcrow to develop system hydraulic models and investigate options for upgrading SGW's SPS's to meet current EPA containment guidelines.

Options developed include upsizing of gravity sewer mains, increasing pump rates, refurbishment of existing pump wells and provision of underground emergency storage tanks.

3.2. Financial Analysis

Cost estimations for required works are based on initial condition inspection assessments and estimations on the amount of upgrade/refurbishment works that would be required for each facility in order to maintain SGW's SPS's to a level deemed operationally acceptable and that ensures SGW meet the required environmental obligations by minimizing sewage spills to the environment. Further financial analysis on the identified SPS upgrade/refurbishment works was subsequently undertaken in the various township Halcrow Sewage System Augmentation Reports.

3.2.1. Cost-benefit assessment

Consultants Halcrow undertook a cost benefit assessment on each of their identified system augmentation options including the upgrade and refurbishment of the SPS's and provision of emergency storage tanks which were proposed to accommodate the 1 in 5 year return period rainfall event flows.

Options selected for implementation are considered the most cost effective and institute the lowest risk to SGW in ensuring that the system is compliant with the EPA containment guidelines.

3.2.2. Estimated costs

The estimated capital costs for these works are required to be determined on a per SPS basis. Condition assessments, operational performance and environmental risk including sewer containment history determine which pump stations are a priority for refurbishment/upgrade works. Cost estimations for each SPS identified as requiring refurbishment/upgrade works is undertaken in advance in order to determine and coordinate with the annual works program.

Cost estimations are based on current equipment, materials and industry rates and previous works completed by SGW on past similar projects.

3.2.3. Proposed annual expenditure

Table 1 shows a breakdown of the yearly allocated costs within the Capex plan which is consistent with the Corporation's long-term expenditure profile. The dollars allocated in Water Plan III are highlighted.

Table 2: Capex plan yearly allocated costs

Year	Current Board Approved Capex Program Amount (\$k)
2012/13	\$250
2013/14	\$250
2014/15	\$250
2015/16	\$250
2016/17	\$250
2017/18	\$250
2018/19	\$250
2019/20	\$250
2020/21	\$250
2021/22	\$250
2022/23	\$250

3.3. Risk Analysis Assessment

Environmental Risk assessments have been carried out on each of SGW's SPS's. Results of these risk assessments are provided in SGW's Corrective Actions Register. The risk ranking of each of the SPS's has been utilised to determine the priority of works under the Environmental Obligations Program.

Environmental risk assessments include identification of any possible adverse environmental impacts at each SPS, the likelihood that any of these adverse impacts being realised, and the consequence of each of the identified impacts.

4. PROJECT TIMING

The Environmental Obligations project is an ongoing program of works to be undertaken over the next 10 years. Budget allocations of \$250K per year have been provided in the Capex plan for the next 10 years. These SPS refurbishment/upgrade works are undertaken in accordance with their individual environmental risk ranking scores and in accordance with any operational or functional deficiencies that they may have including their ability to meet the EPA containment guidelines.

5. PREFERRED OPTION

5.1. Outcome to be Delivered

SGW will refurbish/upgrade as required each of SGW's SPS's such that they meet set service level standards and current EPA containment guidelines and ensure that they are maintained to an acceptable operational level for both current and future demand flow rates.

Works will include the provision of underground emergency storage tanks, upgrading of pump sets, refurbishment of existing pump wells, refurbishment/replacement of defective valves and pipework and refurbishment/replacement of old defective



Electrical Control Cabinets and telemetry systems. All works will be undertaken with the wider goal of ensuring that SGW meets all required environmental obligations.

SOUTH GIPPSLAND WATER

COMMUNITY ENGAGEMENT PLAN for
WATER PLAN III: 2013-2018



[COMMUNITY ENGAGEMENT: WATER PLAN III]

1.0 Overview:

To ensure South Gippsland Water (SGW) meets its regulatory requirements but also provides validation for aspects and decisions made in Water Plan III, SGW must;

- Consult key stakeholders and community and consult widely ensuring we have incorporated the views of all customer segments in our process.
- Simply by putting a document out for comment is not enough, nor is the use of views expressed by a customer reference group enough.
- SGW must be able to demonstrate a consultation process and that consumer views have been incorporated into the plan.
- The commission EXPECTS SGW to use of a variety of means to capture customer views and will reject pricing proposals where they consider consultation was in-adequate or in-effective.
 - o Options discussed at ESC Engagement Seminar were; *Surveys, Willingness to pay surveys, Customer choice economic modelling, Focus groups, Customer consultative & review committees, Public meetings and forums, Newsletters, Bill inserts, On-line forums, Blogs, Social media, Written submissions, Complaints data and Customer satisfaction surveys.*

2.0 Engagement Objectives:

Undertake broad and in-depth customer consultation regarding the development of our next 5 year water plan; Water Plan III . This consultation will be required to inform both the preparation of the plan and also to review the draft and apply any amendments as recommended by the community.

Consultation will focus on areas of customer in-put and will primarily relate to service priorities and pricing (see section 5.1 for detailed Engagement Topics);

- Pricing and Tariff Reform;
- Service Standards
- Top 10 projects
- Water Provision(Operational Projects) and WSDS
- Wastewater Provision (Operational Projects)
- Environmental Projects

We will also need to inform customers regarding our regulatory obligations such as;

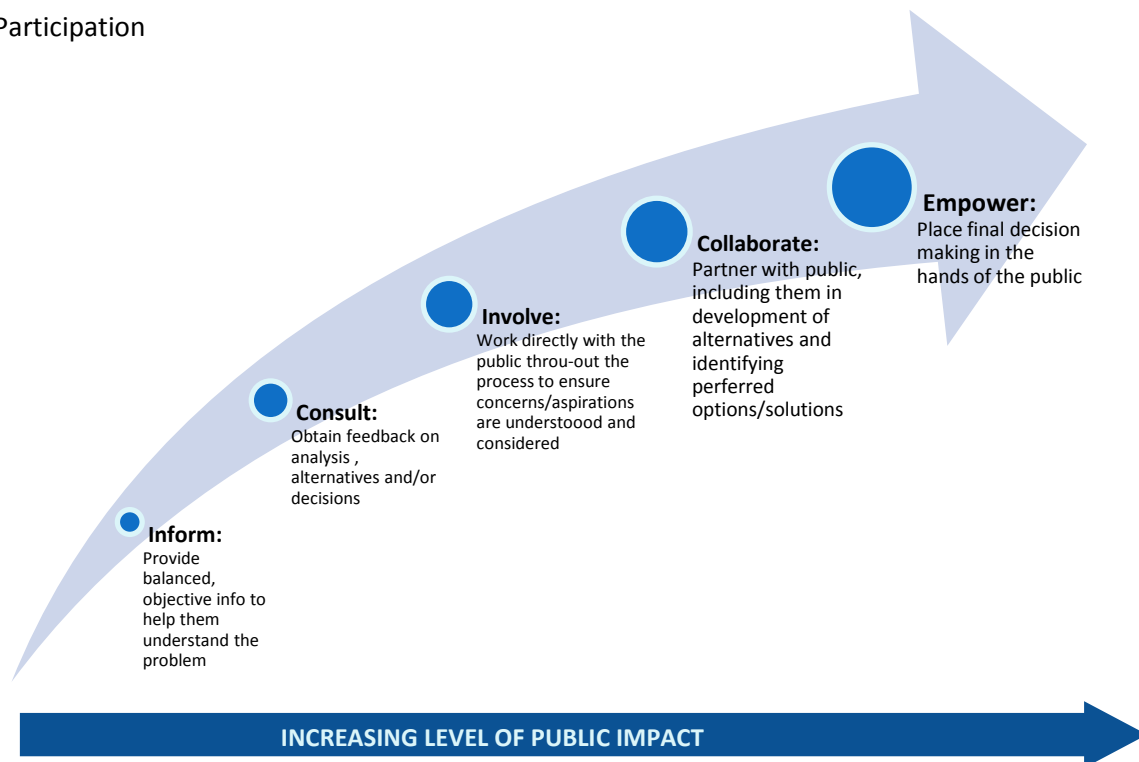
- Water & Wastewater Services, Dam Safety, Water Quality Testing
- Environmental

Engagement is required to satisfy our regulatory requirements, however South Gippsland Water has always been a customer focussed organisation which genuinely wants to know and respond to the opinions' of its customer base.

Successful engagement from our customer base would include;

- Responses from all customer segments and geographic areas within our region and for South Gippsland Water to use these responses to frame the Water Plan.
- A range of engagement activities undertaken and involvement from the community in these activities.
- Engagement that results in the community working with us to 'consult' on the IAP2 spectrum of public participation.
- Engagement that allows SGW to plan for the long term benefit of the wider community.

Figure: 2.1 IAP2 Spectrum of Public Participation



3.0 Identification of Key Stakeholders:

Government - External:		Level of Engagement	
-	Essential Services Commission	Contributor	Inform
-	Department of Health	Contributor	Inform
-	Environmental Protection Agency	Contributor	Inform
-	Department of Sustainability & Environment	Contributor	Inform
Government – Local:			
-	South Gippsland Shire Council	Contributor	Consult
-	Bass Coast Shire Council	Contributor	Consult
-	Shire of Wellington	Contributor	Consult
-	West Gippsland Catchment Management Authority	Contributor	Consult
	Southern Rural Water	Contributor	Consult
Internal:			
-	Board of Directors	Decision Maker	Empower
-	Senior Management	Decision Maker	Empower
-	SGW Staff (who will execute the plan)	Contributor	Collaborate
Community:			
-	Community Clubs (Rotary, Lions, Apex)	Contributor	Consult
-	Landcare	Contributor	Consult
-	Sports Clubs (Football, Netball, Bowls, Golf, Cricket)	Contributor	Consult
Customer Segments:			
-	Business (Murray Goulburn, Burra Foods)	Contributor	Consult
	-Farmer/Other	Contributor	Consult
-	Life Stage (Young Singles/Couples) (Families)(Older Singles/Couples)	Contributor	Involve
	- Owner/Renter	Contributor	Consult
	- Concession	Contributor	Consult

4.0 Engagement Planning:

Preparation to be done:

- 1) Information Sharing: SGW needs to identify how we are going to disseminate information in order to inform our customer base. See section 5.0 Engagement Toolbox.
- 2) Identify topics to be covered in our consultation and engagement program as outlined in section 2.0. These topics/programs should be bundled and consulted upon together. We should consult in 2 phases, pre draft and draft.
- 3) Identify tools for information sharing and engagement. See section 5.0 Engagement Toolbox
- 4) Create timeline for engagement – clearly identify timeline for the two stages as outlined in Section 6.0
- 5) Create engagement program materials

4.1 Consultation of Other Regulatory Bodies:

South Gippsland Water has an obligation to consult other regulatory bodies and for those regulatory requirements to appear within our Water Plan. As a result our own staff are responsible for their area of expertise and should ensure they;

- Consult the relevant regulator
- Document the consultation be it a meeting or attendance at a board meeting, seminar etc
- Document discussion and where possible the resolution of issues
- Consultation with other regulators forms the first phase of Water plan preparation

5.0 Engagement Toolbox:

TOOL	CUSTOMER SEGMENT	LEVEL OF ENGAGEMENT	ENGAGEMENT OBJECTIVES	STAGE (Pre-Draft, Draft, Final)	DELIVERABLES	BUDGET/ RESOURCES	TIMING	IMPORTANCE
Customer Satisfaction Survey	ALL	Consult	Identify customer thoughts on a broad range of SGW services	1- Pre-draft	Provides initial direction to SGW of what services are most important to our customers	N/A Existing resource	Jan 2012	Low
SGW Planning Docs & other Regulatory Guidelines	ALL	Inform/Consult	Identify requirements as set out by regulators and previously approved SGW Plans	1 - Pre-draft	Provides initial direction regarding writing draft and what projects/services need to be considered in the Water plan.	Nil Existing Resources	Oct 2011 – Feb 2012	High
Focus Group Customer Discussions	Customers - ALL	Consult	Consult on items to be included in the Water Plan	1 Pre – Draft 2 - Draft	Identification of specific details regarding tariffs, GSL’s WSDS etc which will be used to inform the writing of the plan	\$10 - 15K Compensation for participants, \$70 per 1.5hr session	Mar and Aug 2012	High
Web Survey	ALL	Consult	Consult on items to be included in the Water Plan	1 Pre – Draft 2 - Draft	Could be used to gain information where we have knowledge gaps	\$500	Apr and Aug 2012	High
Advertorials	ALL – Mainly Residential Customers	Inform	Provide information regarding our plan	2 - Draft	Inform community of key information from draft, key changes, key projects, where is our investment going?	\$4,000	March – Aug 2012	Med
Info/Fact Sheets	ALL	Inform	Provide key information in plain English so our customers can understand what we are proposing	1 - Pre Draft 2- Draft	Materials that customers can use to gain an understanding of the plan – it needs to be balanced and objective	\$1000	Mar - Aug 2012	Med
Direct Mail & Web Mail Survey	ALL	Consult	Provide information regarding our plan and gather feedback	1 – Pre Draft 2- Draft	Inform community of key information from draft, key changes, key projects, where is our investment going?	Use Pipeline Newsletter and send with April account mailing – all customers. August – sent via Aust Post Unaddressed mail.	Apr - Aug 2012	High
Community Groups & Local Gov’t/ Authority s	Receptive Audiences	Inform/Consult	Provide information regarding our plan and gather feedback	1 – Pre Draft 2-Draft	Inform community of key information from draft, key changes, key projects, where is our investment going?	Nil - Time	May – Aug 2012	Med
Draft Open For Community Comment	ALL	Inform/Consult	Plan is open to public, SGW invites comment	2 -Draft	Inform community of key information from draft, key changes, key projects, where is our investment going?	Nil – Time/Postage	May – Aug 2012	High

5.1 Engagement Topics



Pricing & Tariffs

- Tariff Reform
- Structure
- Customer Choice
- Regional Price Differential
- Price Rise Affordability
- Murray Goulburn Pricing



Service Standards

- Service Standards
- Incident Response Times
- Levels of Service
- KPI's
- Guaranteed Service Levels



Top 10 Projects

- Top 10 projects to be started or completed over WP3 period and how these projects effect tariff increases



Water Provision

- Filters & Filter Monitoring
- Operator Competency & Training
- Water Quality
- Fluoridation
- WSDS
- Options for use of storages



Wastewater Provision

- Wastewater Plans
- Water re-use projects (outfall closure)
- Sewerage Schemes (Poowong, Loch Nyora, Alberton)



Environment

- Catchment Management
- Sustainability Projects
- Green House Gas Emission Projects
- Re-use Issues - lower expenditure on environment



Inform customers regarding regulatory obligations

- Operational
- Water & Wastewater Services
- Dam Safety
- Water Quality Testing

6.0 Engagement Timeline (See 6.1 for Actual SGW Activity and Outcome Achieved)

Date	ESC Activity	SGW Activity
Oct 2011	Esc releases guidance on Water Plans	SGW starts planning
Oct 2011- Mid May 2012	Consultation by Businesses with customers, Government & the ESC on service offerings and pricing	Phase 1 Consultation Pre Draft: Focus Groups, Web Survey and Meetings with other regulators, Local Gov't and other authorities
Mid May 2012	Draft Water Plan released by water businesses for public comment	Inform Community: Media Release, Draft Avail on SGW Web, Info Packs, Mail Interested Persons, Advertorials, Radio, Web Mail, Direct Mail Info Packs and Community Talks,
Mid June 2012	ESC releases supplementary guidance	Phase 2 Consultation on Draft: Focus Groups inc online forum/discussion or survey section, Direct Mail or Web Mail inc Survey, Meetings & discussions with Community Groups, Local Gov't and other authorities, Charities etc.
Mid May to Aug 2012	Business consultation on draft Water Plan with Government, ESC and Public to inform final Water Plans.	
Mid Sep – Jan 2013	ESC Assesses Water Plans	
Feb 2013	ESC releases Draft Decision	
Feb 2013 – Apr 2013	ESC consultation on Draft Decision	
May 2013	ESC releases Final Decision	SGW to advise customers of new rates and details of Water Plan III

6.1 SGW Actual Activity & Outcome Achieved

Activity	Details	Recruitment/Targeting	Phase	Results	Outcomes
Focus groups March 2012	3x2 hour group discussions. Yarram, Korumburra & Wonthaggi Included information sheets prior to groups	Bartley Consulting – Cold calls from customer list	1 – Pre Draft	37 Customers attended Qualitative discussion Quantitative feedback	Bartley Consulting report
April 2012 survey	Article and survey in Pipeline Newsletter Also available online	Mailed to all (approx 20,000) customers with April rates notice	1 - Pre Draft	266 hardcopy responses 53 online responses Quantitative data	Quantitative data A feature article & 6 question survey
Advertorials	Feb 2012 – Full Colour ½ page community update Aug 2012 – 4 column Full Colour advert	All local papers (The Yarram Standard, Foster Mirror, The Star and The Sentinel Times)	1 – Pre Draft 2 - Draft	-	Community awareness
Media releases	March - “Water Planning Underway” April - “Water Planning Underway” June - “Draft Water Plan 3 Released for Public Comment” August - “Water Plan 3 Public Comment Closes Soon”	All local papers	1 – Pre Draft 2 - Draft	Articles published in all local papers	Community awareness
Fact Sheets	4x4 fact sheets on website homepage	Visitors to www.sgwater.com.au	2 - Draft	Available for download online	Community awareness
Focus groups August 2012	3x2 hour group discussions. Yarram, Leongatha & Wonthaggi	Bartley Consulting – Cold calls from customer list, cold called existing community groups and invited selected participants from phase 1 groups	2 - Draft	29 Customers attended Qualitative discussion Quantitative feedback forms	Bartley Consulting report
Direct mail survey August 2012	6 page A4 brochure, direct mailed to over 11,400 homes (Australia Post Unaddressed Mail deliveries) Also available online	Selected towns/homes in service region: Qty 11,400 Town/Quantity: Yarram/ 923 Foster/ 629 Leongatha/2,069 Korumburra/1,396 Inverloch/3,720 Wonthaggi/2,696	2 - Draft	100 hardcopy responses 50 online responses Quantitative data	Quantitative data Information from fact sheets and an 8 question survey
Presentations	Guest speaker regarding Water Plan - community groups/schools	Wonthaggi Probus Club, Lions Club and Rotary Club. Leongatha and South Gippsland Secondary Colleges	2 - Draft	-	Community awareness
Requests for comment	Key stakeholder sent copies of the Draft Water Plan and invited to comment	Key stakeholders, local government and other authorities	2 - Draft	-	Community awareness

NB: Results from consultation activities above have been incorporated into South Gippsland Water’s Draft Water Plan III and Water Plan III documents.



Water Plan III

Feedback from Phase 1 Community Consultations

For

South Gippsland Water

By

Bartley Consulting Pty Ltd

March 2012

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Contents

1	Summary	1
1.1	Overview of consultations	1
1.2	Participants	1
1.3	Key findings	1
2	Background	4
3	Aspects requiring feedback	5
4	Consultation approach	7
4.1	Consultations sessions	7
4.1.1	Recruiting approaches	7
4.1.2	Session details	7
4.2	Information sessions - participant profile	8
5	Service standards	9
5.1	Information provided to participants	9
5.2	Feedback	9
6	Guaranteed service levels	14
6.1	Information provided to participants	14
6.2	Feedback	14
6.2.1	Overall reaction	14
6.2.2	Support for specific GSLs	15
7	Capital expenditure projects	18
7.1	Information provided to participants	18
7.2	Feedback	20
7.2.1	Water security project feedback	20
7.2.2	Operational, maintenance or compliance requirement project feedback	22
7.2.3	Poowong, Loch, Nyora Sewerage Scheme project feedback	24
8	Tariff structure	25
8.1	Increased volumetric component	25
8.1.1	Information provided to participants	25
8.1.2	Feedback	26
8.2	Tariff choice	29
8.2.1	Information provided to participants	29
8.2.2	Feedback	29
8.3	Seasonal tariff	31
8.3.1	Information provided to participants	31
8.3.2	Feedback	31
8.4	Wastewater tariff structure	32
8.4.1	Information provided to participants	32
8.4.2	Feedback	32
9	Regional tariff alignment	33
9.1	Information provided to participants	33
9.2	Feedback	33
10	Hardship	35
10.1	Information provided to participants	35
10.2	Feedback	35
11	The environment	37
11.1	Outfall closure	37
11.1.1	Information provided to participants	37



11.1.2	Feedback	37
11.2	Carbon offset or green energy	38
11.2.1	Information provided to participants	38
11.2.2	Feedback	38
11.3	Greenhouse gas emissions	39
11.3.1	Information provided to participants	39
11.3.2	Feedback	39
11.4	South Gippsland Water's support for environmental projects	40
11.4.1	Information provided to participants	40
11.4.2	Feedback	40
12	Appendix: Open-ended comments	41
12.1	South Gippsland Water's service standards	41
12.1.1	Specific comments	41
12.2	Proposed capital expenditure projects	44



1 Summary

1.1 Overview of consultations

In 2012 the ESC will begin a review of the prices applied to water and sewerage services provided by Victoria's 19 water businesses for the period July 2013 to June 2018. As part of the review, the ESC requires each water business to prepare a draft Water Plan that considers customers' needs.

South Gippsland Water identified a range of aspects of its service and proposed projects to be included in their Draft Water Plan III for which they sought customer input, in terms of understanding customer's support and concerns about their proposals.

In March 2012, South Gippsland Water held customer workshops in Yarram, Wonthaggi and Korumburra to provide an opportunity for customers throughout the region to provide feedback on its Water Plan III proposals. Bartley Consulting worked with South Gippsland Water in the design, conduct and reporting of the outcomes of these customer consultations.

1.2 Participants

- A total of 37 customers and customer representatives participated in the sessions (Yarram: 13 customers; Korumburra: 12 customers; Wonthaggi: 12 customers)
- Participants ranged in age from 30 to 39 to over 80 years
- They included single people, couples, and families
- Many participants were retired, some were in paid employment
- Almost half of the participants were eligible concession card holders
- Several customers' livelihood depended on water (e.g. farmers and a caravan park owner)
- Financial counsellors were present at the Korumburra and Wonthaggi sessions, and a representative of the Bass Coast Shire Council was present at the Wonthaggi session

1.3 Key findings

Service/project/tariff	Key findings
Service standards	<ul style="list-style-type: none"> • Most participants believe that all of the standards presented to them are moderately important or very important (i.e. they rated the importance of the Standards at least 5 out of 10) • Most participants felt that the current standards are reasonable • Rather than improving the standards, most participants would prefer that South Gippsland Water focussed on improving its communication with customers to keep them informed when planned works were occurring and the likely duration that they would be without water; if a notice was received saying the water would be off at a particular time it was not turned off earlier than the stated time
Guaranteed service levels	<ul style="list-style-type: none"> • Participants were divided as to the value of GSLs <ul style="list-style-type: none"> • 20% believe they are very worthwhile (they gave a rating of 9 or 10 out of 10) while 34% believed that they were not worthwhile (they gave a rating of 1 to 4 out of 10) • 23% believed that GSLs would improve South Gippsland Water's performance



Service/project/tariff	Key findings
	<ul style="list-style-type: none"> Participants who did not support GSLs would rather South Gippsland Water invested the money in its infrastructure and maintenance than making individual payments to participants; others were concerned about the cost of such a scheme
Capital expenditure	<ul style="list-style-type: none"> Most participants supported all nine projects presented to them, regardless of the availability of State Government funding to reduce the financial burden on customers They also generally supported the projects, regardless of whether they believed they were directly affected
Tariff structure	<ul style="list-style-type: none"> Participants were divided in their support for volumetric tariffs <ul style="list-style-type: none"> 20% were very supportive of it (i.e. they gave a rating of 9 or 10 out of ten), because it would encourage customers to become more water efficient, they would be better off financially and user pays was fair 17% did not support volumetric tariffs (i.e. they rated the strategy between 1 and 4 out of 10) because of adverse impacts on businesses and low income earners Participants were divided in their support for a tariff choice <ul style="list-style-type: none"> 34% agreed with the proposal because they liked the idea of allowing customers to choose a tariff structure that suited them 34% did not agree with the proposal because it was adding a layer of complexity for customers; some customers might make a bad decision and there would be costs associated with providing customers with choice Participants did not generally support seasonal tariffs (71% were against the proposal) –they did not believe it would encourage visitors to use less water – visitors would not see the cost and it penalises residents, particularly gardeners Just under a third of participants supported the proposal for a volumetric wastewater charge (29%); 46% did not support the proposal
Region tariff alignment	<ul style="list-style-type: none"> Most customers supported the proposal for regional tariff alignment (26% gave a rating of 9 or 10 out of 10 and 37% gave a rating of 5 to 8 out of 10) – these participants generally believed that it is reasonable that all customers across the region should pay the same tariffs; and it would lessen the impact of tariff increases in the Southern Region 11% were against the proposal (i.e. they gave a rating of 1 to 4 out of 10); they believed that customers should pay what it costs to provide the service, and if the costs are different in different locations this should be reflected in variable tariffs across the region



Service/project/tariff	Key findings
Hardship	<ul style="list-style-type: none"> • Most participants supported the proposal to proactively assist vulnerable customers affected by the proposed price structure to move to a volumetric tariff (31% gave a rating of 9 or 10 out of 10 and 37% gave a rating of 5 to 8 out of 10) • Participants emphasised the importance of educating customers to be water efficient, and they believed that many of these vulnerable customers were not aware of what they could do to increase their water efficiency • They would also like to see South Gippsland Water offer water audits to these customers to help them become more water efficient
The environment	<ul style="list-style-type: none"> • Most participants (66%) supported the closure of more ocean outfalls, however when customers specifically considered the cost, the level of support decreased to 34% • 54% of customers supported South Gippsland Water purchasing carbon neutral power or Green Energy from renewable sources – 34% did not support the proposal because they did not want to pay for it or they did not think it was South Gippsland Water's role • Most participants (71%) believed that South Gippsland Water should participate in programs to reduce its greenhouse gas emissions, even if these programs do not pay for themselves (60%) – however customers were generally unsure how much South Gippsland Water should spend • Almost half of the participants (49%) believe South Gippsland Water's expenditure on environmental projects is about right; 26% were unsure.



2 Background

The Essential Services Commission (ESC) is the economic regulator of water businesses in Victoria. This means that under the Essential Services Commission Act 2001 and Part 1A of the Water Industry Act 1984 the ESC is responsible for regulating the prices and service standards of businesses that supply water, sewerage and related services to residential, industrial and commercial, and irrigation customers throughout Victoria.

This year, the ESC is reviewing prices applied to water and sewerage services provided by Victoria's 19 water businesses to cover the period from July 2013 to June 2018.

As part of the review, the ESC requires each water business to release a draft Water Plan for public consultation and comment by May 2012. Water businesses must then formally submit a final Water Plan to the ESC in September 2012.

The ESC identifies two main purposes for Water Plans¹. They provide:

- A mechanism for businesses to commit to a set of outcomes and prices for the next regulatory period
- Information the ESC requires to assess businesses' proposals about services, expenditure, revenue, and tariffs

In the Water Plan, businesses are required to detail the outcomes that they plan to deliver, including their service delivery standards and other outcomes, how they propose to deliver these outcomes, expected revenue to deliver the outcomes and their proposed pricing strategies.

The ESC also expects Water Plans to detail the consultations that water authorities undertook to form their draft Water Plans before they submit them to the ESC.

Specifically the ESC requires draft Plans to:

- be accessible to customers so they can provide views on the service and price proposals
- be clearly set out to enable readers to easily understand the proposed prices and tariff structures
- summarise proposed major projects and service outputs and the rationale for them, and
- include information so that customers can easily understand service and price trade-offs

The ESC further requires water businesses to:

“demonstrate that there was appropriate customer consultation on the draft Water Plan and that the views of customers have been considered and taken into account in business proposals.”

In January 2012, South Gippsland Water commissioned Bartley Consulting to assist with its customer consultation program to inform the development of its Draft Water Plan III. This report details the approach to those consultation and the findings from them.

¹ Essential Services Commission (2011). 2013 Water Price Review: Guidance on Water Plans. October 2011, page 7.



3 Aspects requiring feedback

South Gippsland Water identified a range of aspects of its service and proposed projects to be included in their Draft Water Plan III for which they sought customer input, and customer's support and concerns about their proposals.

The following table provides an overview of the aspects of service for the consultations.

Table 3-1: Overview of consultation topics

Service/project/tariff	Overview of "proposals"
Service standards	<ul style="list-style-type: none"> • Customers' perceptions of the importance of a range of core service standard targets that South Gippsland Water intends to deliver over the regulatory period in relation to water supply and supply interruptions, sewerage and customer service • South Gippsland Water was also interested in determining whether customers thought that the proposed standards were satisfactory
Guaranteed service levels	<ul style="list-style-type: none"> • Customer interest in a scheme whereby if South Gippsland Water fails to meet a set service standard, a payment would be made to residential customers as recompense for unacceptable levels of service and to provide an incentive for South Gippsland Water to improve its performance • South Gippsland Water identified seven specific examples of GSLs and customers were asked to suggest a suitable amount of compensation and indicate the importance of having a GSL for each aspect of service
Capital expenditure	<ul style="list-style-type: none"> • Customer support for nine key capital expenditure projects and the extent to which they would be directly affected by the project
Tariff structures	<ul style="list-style-type: none"> • Customers' reactions to four possible pricing strategies <ol style="list-style-type: none"> 1. Volumetric tariff: placing less emphasis on the fixed component of the water charge and increasing the volumetric component across South Gippsland Water's region 2. Tariff choices: creating a tariff structure that lets customers choose their preferred tariff, for example one tariff may have a much higher service charge and a lower volumetric charge and another may have a low service charge and high volumetric charge 3. Seasonal tariff: charging more for water in the summer peak months when demand is at its highest and water is at its scarcest 4. Volumetric waste water charge: whereby volumetric, wastewater charges would be calculated on the amount of water used within the household
Region tariff alignment	<ul style="list-style-type: none"> • A strategy to reduce the tariff gap between customers in South Gippsland Water's Southern Region (covering Inverloch, Wonthaggi and Cape Paterson) with East West Region customers (covering the remainder of South Gippsland Water's region).
Hardship	<ul style="list-style-type: none"> • A proposal to undertake a proactive approach to assist vulnerable customers affected by the proposed (volumetric) price structure, by South Gippsland Water identifying its most vulnerable customers and directly contact these customers to outline the avenues available for assistance if needed



Service/project/tariff	Overview of "proposals"
The environment	<ul style="list-style-type: none">• A proposal to close more ocean wastewater outfalls• South Gippsland Water investing in 'Carbon Neutral' Power or 'Green' Power from renewable energy sources• South Gippsland Water participating in programs to reduce its greenhouse gas emissions, such as installing solar power at plants and depots, large scale tree planting, including customer's suggestions as to the amount of investment• South Gippsland Water financial support for environmental projects and environment focussed organisations



4 Consultation approach

4.1 Consultations sessions

4.1.1 Recruiting approaches

South Gippsland Water held customer workshops in Yarram, Wonthaggi and Korumburra to provide an opportunity for customers throughout the region to provide feedback.

Bartley Consulting and South Gippsland Water developed a number of strategies to inform customers of the workshops and maximise the feedback from a diverse range of customers living and working in the region. These included:

- Phoning customers who participated in South Gippsland Water's Annual Customer Satisfaction Survey in 2010 and 2011, and who at the end of the survey indicated an interest in being involved in other forms of consultation with South Gippsland Water
- Phoning representatives of key business and community groups in South Gippsland Water's region, including relevant officers from the Shires of Bass Coast, South Gippsland and Wellington and financial councillors working in South Gippsland Water's region

To encourage customer participation and demonstrating South Gippsland Water's commitment to the consultation process:

- Customers who attended the workshops were offered a token of \$50 plus an additional \$10 or \$20 to cover their travel as a token of appreciation, and acknowledging that some participants had taken time from their working day to attend the sessions
- Customers were provided with a light meal/refreshments
- They were also offered giveaways, such as rain gauges

4.1.2 Session details

Details of the sessions are in the following table.

Table 4-1: Session details

	Yarram	Korumburra	Wonthaggi
When	6 March 2012	7 March 2012	7 March 2012
Time	1:30pm – 3:30pm	11:30am to 1:30pm	5:30pm – 7:30pm
Venue	Pelican meeting room at the Yarram Library, Yarram	Coal Creek Conference Room at the Coal Creek Centre, Korumburra	Wonthaggi Centennial Centre Meeting Room at the Centennial Centre; Wonthaggi
Offering	Afternoon tea	Light lunch	Light supper

The Community Relations Coordinator (CRC), attended all three sessions, while the Executive Assistant to the South Gippsland Water CEO, attended the first two sessions. Helen Bartley from Bartley Consulting attended all three sessions.

The South Gippsland Water CRC introduced the sessions and then provided details of the issues for consideration, with the assistance of a Powerpoint presentation. After the CRC introduced each issue Bartley Consulting sought feedback about the issue from participants. Participants could also ask questions to clarify issues during the session. Where possible, either of the South Gippsland Water people answered these immediately. Several participants raised other issues that were outside the scope of the sessions. South Gippsland Water separately noted these issues for action and dealt with them outside the session.

Bartley Consulting's role was to ensure that South Gippsland Water presented the information objectively and then gather feedback from participants in a fair way to ensure all of them had



an equal opportunity to state their views. Bartley Consulting recorded participants' comments and questions during the session.

We also gave participants a written questionnaire that followed the Powerpoint presentation, which they were encouraged to complete after each topic was presented and discussed. The questionnaire contained a mix of precoded questions and spaces for participants to include additional comment, beyond that raised during the discussions.

4.2 Information sessions - participant profile

The profiles below combine background information gathered when participants accepted their invitation to attend a session and the questionnaires completed during the sessions.

Table 4-2: Participant profile

Characteristic	Yarram	Korumburra	Wonthaggi
Residential location	<ul style="list-style-type: none"> 13 residential customers 	<ul style="list-style-type: none"> 12 residential customers (some also with professional interests) 	<ul style="list-style-type: none"> 12 residential customers (some with professional interests)
Gender	<ul style="list-style-type: none"> 7 male; 6 female 	<ul style="list-style-type: none"> 6 male; 6 female 	<ul style="list-style-type: none"> 5 male, 7 female
Age range	<ul style="list-style-type: none"> 30-39 to 80+ 	<ul style="list-style-type: none"> 40-49 to 70+ 	<ul style="list-style-type: none"> 40-49 to 70+
Family structure	<ul style="list-style-type: none"> 1 single person 8 couples (two people were part of the same couple) 1 family with dependent children 2 families with independent children at home 	<ul style="list-style-type: none"> 1 single person 3 couples 3 single persons or couples 2 families with dependent children 3 not established 	<ul style="list-style-type: none"> 1 single person 7 couples (two people were part of the same couple) 2 families with dependent children 2 not established
Eligible concession card holder	<ul style="list-style-type: none"> 9 eligible concession card holders 	<ul style="list-style-type: none"> 5 eligible concession card holders 	<ul style="list-style-type: none"> 7 eligible concession card holders
Work status	<ul style="list-style-type: none"> 8 retired 3 working full time 1 permanently incapacitated 	<ul style="list-style-type: none"> 4 retired 6 working full time 2 not established 	<ul style="list-style-type: none"> 5 retired 2 working full time 2 working part time/casually 3 not established
Water dependent business operators	<ul style="list-style-type: none"> 3 farmers using SGW water 	<ul style="list-style-type: none"> 1 caravan park operator, 1 farmer using SGW water 	<ul style="list-style-type: none"> None
Other professional interests	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Welfare, financial counselling 	<ul style="list-style-type: none"> Financial counselling Local council officer
Locations represented	<ul style="list-style-type: none"> Alberton Port Albert/Landsborough Yarram/South Dudley 	<ul style="list-style-type: none"> Korumburra/Bena Leongatha Meenyan Poowong/Loch/Nyora 	<ul style="list-style-type: none"> Cape Paterson Inverloch Wonthaggi



5 Service standards

5.1 Information provided to participants

- South Gippsland Water operates within a framework of standards for the services it delivers, including 21 service standards listed in the participant questionnaire
- Most of the service standards listed in the questionnaire are currently in place from Water Plan II
- South Gippsland Water is proposing to continue these into Water Plan III

5.2 Feedback

In all sessions participants queried aspects of the Standards presented to them. In particular they wanted to know whether the Standards were the same as they are now or whether they had changed. The CRC confirmed that nearly all were the same as they are now with the exception of *Priority 3 leakages* where the response time had increased slightly, given the low impact of this type of issue.

Several participants also queried some of the targets, given the distances maintenance crews sometimes need to travel to get from their location to an incident. The CRC explained and emphasised that these targets were generally averages – often the response time could be less; sometimes it might be longer than the stipulated duration. She also explained that incidents are logged and monitored on South Gippsland Water's Asset Maintenance System. If repeated incidents occur at the same location this suggests a "hot spot" requiring greater attention.

One participant suggested that if South Gippsland Water can adhere to the current standards, then they should increase to further improve the quality of South Gippsland Water's service.

Another participant questioned how South Gippsland Water's standards compare to other water authorities and suggested that they could be useful targets.

In general across all groups, and in the context of the above information:

- Most participants believe that all of the standards presented to them are moderately important or very important (i.e. they rated the importance of the standards at least 5 out of 10).
- Most participants felt that the current standards are reasonable
- A small number of participants believed that if these standards are achievable then they should be raised
 - *"If the standards have already been met – there needs to be written to set a 5% or 10% improvement each year. If you insist on an improvement each year."*
- Other participants did not want the standards to increase if they resulted in increased costs:
 - *"If you're going from the current standard to improve [it makes sense], but if the cost goes up I may not want it shorter if the cost blows out."*

Participants suggested that the main factor was that they were kept informed when planned works were occurring and the likely duration that they would be without water; they also commented that if a notice was received saying the water would be off at a particular time it was not turned off earlier than the stated time.



The following table details participants' feedback from the questionnaire in relation to the 21 service standards presented.

Table 5-1: Importance and perceptions of South Gippsland Water's service standards

Description of the Standard	Importance 1 = Not at all important 10 = Very important	Standard is satisfactory
For every 100km of water pipework, there will be no more than 28 breaks per year.	No response = 11 (31%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 8 (23%) 9 or 10/10 = 14 (43%)	No response = 9 (26%) Yes = 24 (69%) No = 2 (6%)
Priority 1 – A substantial water-mains break with potential to cause water loss, affect the environment and/or affect water quality. <i>Response time – 30 minutes</i>	No response = 17 (49%) 1 to 4/10 = 0 (0%) 5 to 8/10 = 6 (17%) 9 or 10/10 = 12 (34%)	No response = 15 (43%) Yes = 20 (57%) No = 0 (0%)
Priority 2 – A water main leak which may cause minor water loss, affect the environment and/or affect water quality. <i>Response time – 40 minutes</i>	No response = 15 (43%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 12 (34%)	No response = 16 (46%) Yes = 19 (54%) No = 0 (0%)
Priority 3 - No immediate impact on the customer, property or environment. <i>Response time – 1440 minutes.</i>	No response = 18 (51%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 8 (23%) 9 or 10/10 = 8 (23%)	No response = 16 (46%) Yes = 19 (54%) No = 0 (0%)
99% of unplanned water interruptions should be restored within 5 hours	No response = 16 (46%) 1 to 4/10 = 0 (0%) 5 to 8/10 = 9 (26%) 9 or 10/10 = 10 (29%)	No response = 12 (34%) Yes = 22 (63%) No = 1 (3%)
99% of planned water supply interruptions should be restored within 5 hours	No response = 14 (40%) 1 to 4/10 = 0 (0%) 5 to 8/10 = 8 (23%) 9 or 10/10 = 13 (37%)	No response = 9 (26%) Yes = 22 (63%) No = 4 (11%)
On average, all South Gippsland Water customers will not be without water for more than 33 minutes in an unplanned water interruption	No response = 16 (46%) 1 to 4/10 = 0 (0%) 5 to 8/10 = 9 (26%) 9 or 10/10 = 10 (29%)	No response = 11 (31%) Yes = 22 (63%) No = 2 (6%)



Description of the Standard	Importance 1= Not at all important 10 = Very important	Standard is satisfactory
On average, all South Gippsland Water customers will not be without water for more than 2 hours 30 minutes in a planned water interruption	No response = 16 (46%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 11 (31%)	No response = 12 (34%) Yes = 21 (60%) No = 2 (6%)
No more than 30%* of customers will be affected by an unplanned interruption per year	No response = 18 (51%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 8 (23%) 9 or 10/10 = 8 (23%)	No response = 12 (34%) Yes = 21 (60%) No = 1 (3%)
No more than 50%* of our customers will be affected by a planned interruption per year	No response = 18 (51%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 8 (23%) 9 or 10/10 = 8 (23%)	No response = 13 (37%) Yes = 22 (63%) No = 1 (3%)
The duration of any planned water supply interruption will be no longer than 5 hours* on average	No response = 18 (51%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 9 (26%) 9 or 10/10 = 9 (26%)	No response = 13 (37%) Yes = 20 (57%) No = 2 (6%)
The duration of any unplanned water supply interruption will be no more than 5 hours* on average	No response = 18 (51%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 9 (26%)	No response = 13 (37%) Yes = 21 (60%) No = 1 (3%)
No customer will have more than 5 unplanned water interruptions in any 12 month period	No response = 18 (51%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 9 (26%)	No response = 14 (40%) Yes = 18 (51%) No = 3 (9%)
For every 100km of wastewater pipe-work, there will be no more than 18 blockages per year	No response = 18 (51%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 9 (26%)	No response = 15 (43%) Yes = 18 (51%) No = 2 (6%)
On average all sewer blockages will be attended within 30 minutes	No response = 18 (51%) 1 to 4/10 = 0 (0%) 5 to 8/10 = 6 (17%) 9 or 10/10 = 11 (31%)	No response = 14 (40%) Yes = 19 (54%) No = 1 (3%)



Description of the Standard	Importance 1 = Not at all important 10 = Very important	Standard is satisfactory
A sewer blockage will be rectified within two hours on average	No response = 19 (54%) 1 to 4/10 = 0 (0%) 5 to 8/10 = 5 (14%) 9 or 10/10 = 11 (31%)	No response = 14 (40%) Yes = 20 (57%) No = 1 (3%)
All sewer spills should be contained within 5 hours on average	No response = 18 (51%) 1 to 4/10 = 0 (0%) 5 to 8/10 = 6 (17%) 9 or 10/10 = 11 (31%)	No response = 16 (46%) Yes = 17 (49%) No = 2 (6%)
Customers should not experience more than 3 sewer blockages per year	No response = 18 (51%) 1 to 4/10 = 0 (0%) 5 to 8/10 = 6 (17%) 9 or 10/10 = 11 (31%)	No response = 18 (51%) Yes = 17 (49%) No = 0 (0%)
98% of telephone calls to the South Gippsland Water Foster Office will be answered within 30 seconds	No response = 18 (51%) 1 to 4/10 = 0 (0%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 11 (31%)	No response = 13 (37%) Yes = 20 (57%) No = 2 (6%)
Complaints to the Energy and Water ombudsman (Victoria) will not exceed 1.1 per 1000 customers	No response = 18 (51%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 9 (26%)	No response = 16 (46%) Yes = 19 (54%) No = 0 (0%)
Unaccounted water (net raw water received at the treatment plant compared to metered water delivered) will have no greater than 14% difference	No response = 19 (54%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 8 (23%)	No response = 16 (46%) Yes = 17 (49%) No = 2 (6%)

Participants also raised concerns about specific standards, detailed in Appendix 12.1. The key concerns were as follows:

- They believed that 28 breaks per year for every 100 kilometres of water pipework was too many breaks – some participants believed there should not be any breaks; and therefore this standard could be improved
- Although response times were averages, most participants in all groups felt that the key issue was communication:
 - Knowing when the water would be turned off and when they could turn it on again
- For planned interruption:
 - Not turning the water off earlier than the notice states
 - Being kept informed if the water was off for longer than expected



- Standards associated with wastewater spills were considered too lenient – participants were concerned by the health risks associated with spills



6 Guaranteed service levels

6.1 Information provided to participants

- **GSLs are levels of service guaranteed by South Gippsland Water**
- **Currently South Gippsland Water does not run a GSL program**
- **GSLs have two main objectives:**
 - **They provide a measure of recompense for customers who receive unacceptable levels of service**
 - **They provide incentives for utilities to improve their levels of performance**
- **However, there are costs in setting up and running such schemes.**
- **South Gippsland Water estimates that it could cost approximately \$5K p.a. per GSL adopted.**

6.2 Feedback

6.2.1 Overall reaction

Participants were initially asked for their overall reaction to GSLs. Participants were divided as to the value of GSLs – 20% believe they are very worthwhile (they gave a rating of 9 or 10 out of 10); 34% believed that they were not worthwhile (they gave a rating of 1 to 4 out of 10); 31% did not respond. Twenty three percent believed that GSLs would improve South Gippsland Water’s performance.

Table 6-1: General support for GSLs

Whether GSLs are worthwhile, where 1 is not at all worthwhile and 10 is extremely worthwhile	No response = 11 (31%) 1 to 4/10 = 12 (34%) 5 to 8/10 = 4 (14%) 9 or 10/10 = 7 (20%)
Whether GSLs would improve South Gippsland Water’s performance	No response = 11 (31%) Yes = 8 (23%) No = 13 (37%)

Some participants who did not support GSLs would rather South Gippsland Water invested the money in its infrastructure and maintenance than making individual payments to participants:

- *“I would rather the money were spent on resolving the issue.”*
- *“The system you have now is working, if it aint broke, don't fix it.”*
- *“Money would be better spent improving infrastructure.”*
- *“Not necessary to have GSLs. Service and communication are important. Documentation of breakages, which are always rectified after problems persist, are also important.”*
- *“I don't expect and don't want them to pay me if they don't do their job. If they pay people then the money is not in the pot to fix the service.”*
- *“I think rather than compensate put the money into fixing the infrastructure.”*
- *“Sewerage blow-back. I want no more than to clean it up like nothing has happened.”*



Others believed that South Gippsland Water already had service quality obligations, without needing to have GSLs:

- *"I expect government organisations to do their job."*
- *"SGW is already obligated to maintain standards."*
- *"It is superficial - compensation is regulated for serious incidents."*
- *"Twist it around another way – it's broken mains that damage people's houses. They can be compensated in another way – SGW has confirmed that it is required to restore [the house] to its previous condition."*

Others were concerned about the costs of such a scheme:

- *"Too costly."*
- *"There needs to be due regard to cost and explain to customers the cost of significantly resolving responsive timeframe providing they are not too high."*
- *"My thought would be where would you get the money from? Would the water rates go up?"*
- *"It puts the price up."*
- *"Sifting and sorting manually you'd have to employ another person? Then you pay a person to do it then you pay out."*

Four customers who supported GSLs provided reasons as follows:

- *"Customers want a good reliable water supply, rather than recompense for failure. However where reliability fails a customer should rightly not be charged the same as someone who had no interruptions."*
- *"It would make SGW accountable. It makes you more accountable for maintenance. In the long run it would be a better system."*
- *"It makes South Gippsland Water more accountable. It highlights a problem before the system fully breaks down. It highlights minimal maintenance expenses. The GSL will offset major maintenance works."*

Several participants questioned whether GSLs were standard practice for other water businesses. The CRC explained that some water businesses already had GSLs in place and the ESC may mandate all water businesses to introduce GSLs. Despite this situation, and the small cost per customer (suggested to be around 25 cents per GSL) most participants did not favour them for South Gippsland Water. From a Shire perspective:

- *"I would suggest SGW is not ready for GSLs. There is still a lot of risk in the system, still a lot of growth needs to occur to support the cost of GSLs."*

6.2.2 Support for specific GSLs

After some general discussion about the overall value of GSLs and participants' in-principle support or otherwise, participants were presented with a list of seven specific GSLs being considered by South Gippsland Water. For each of these they were asked to suggest an appropriate amount of reimbursement and the importance of the specific GSL to them. As shown in the following table, few participants believed that any of the GSLs were very important.

Overall, participants were more likely to give each of the GSLs a low importance rating (between 1 and 4 out of 10) for each of the proposed GSLs than a high rating, except for the GSL proposed for non-containment of sewer spills.

At most, 26% of participants believed that is very important to have a GSL for sewer spills within a house that are a result of failure in South Gippsland Water pipes that are not contained within 1 hour of notification (i.e. they gave an importance rating of 9 or 10 out of 10).



Only three of the 35 participants suggested any amount of compensation (beyond no compensation), partly because they did not support GSLs and partly because they did not feel they had sufficient knowledge to suggest an amount.

In all groups there was some debate about the hardship GSL. However participants focussed more on debating whether it was reasonable that South Gippsland Water could restrict the water flow/pressure to customers' properties rather than have a GSL for the processes South Gippsland Water was expected to follow or taking legal action against a customer if they had charges owing to South Gippsland Water. Some participants were surprised that South Gippsland Water could restrict customers' access to water and they believed that all customers should be entitled to water:

- *"I would have thought you wouldn't cut water off from anyone."*
- *"Surely there is something to say you can't do that."*

Other participants believed that it is reasonable to restrict access to water:

- *"[It's okay] if you don't cut someone's water off, but you reduce their pressure and supply so they can still get a drink. I would say work out what [amount of water] the average person is entitled to a day, then give them messages you've used a lot of water. Then after today – the price you're paying now is starting to increase. Once you fix someone's meter to low pressure, they know."*

Table 6-2: Participants importance ratings and suggested reimbursement for GSLs

Description of GSL	Importance 1= Not at all important 10 = Very important	Participants' suggested amount of reimbursement
Unplanned water supply interruptions within any 12 month period - no more than 5 p.a.	No response = 11 (31%) 1 to 4/10 = 12 (34%) 5 to 8/10 = 5 (14%) 9 or 10/10 = 7 (20%)	No response = 15 (43%) Nil = 12 (34%) Range \$20 to \$50 = 3 (9%)
Unplanned water supply interruptions - not including interruptions which are a result of the customer's pipework - service restored within 5 hours	No response = 14 (40%) 1 to 4/10 = 10 (29%) 5 to 8/10 = 6 (17%) 9 or 10/10 = 5 (14%)	No response = 17 (49%) Nil = 15 (43%) Range \$20 to \$50 = 3 (9%)
Sewerage interruptions within any 12 month period - no more than 3 p.a.	No response = 15 (43%) 1 to 4/10 = 12 (34%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 5 (14%)	No response = 19 (54%) Nil = 13 (37%) Range \$20 to \$75 = 3 (9%)
Unplanned interruptions to sewer service – This does not include interruptions which are a result of your pipework - service restored within 5 hours	No response = 16 (46%) 1 to 4/10 = 8 (23%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 4 (11%)	No response = 20 (57%) Nil = 12 (34%) Range \$20 to \$50 = 3 (9%)
Sewerage spills to be contained - within 5 hours of notification	No response = 14 (40%) 1 to 4/10 = 8 (23%) 5 to 8/10 = 7 (20%) 9 or 10/10 = 6 (17%)	No response = 17 (49%) Nil = 12 (34%) No. who provided a price = 3 Range \$20 to \$50



Description of GSL	Importance 1 = Not at all important 10 = Very important	Participants' suggested amount of reimbursement
Sewer spills within a house, that are a result of failure in our pipes, to be contained - within 1 hour of notification	No response = 14 (40%) 1 to 4/10 = 7 (20%) 5 to 8/10 = 5 (14%) 9 or 10/10 = 9 (26%)	No response = 20 (57%) Nil = 12 (34%) No. who provided a price = 3 Range \$50 to \$100
Restricting the water supply OR taking legal action against a residential customer prior to taking reasonable endeavours to contact the customer and provide information about the help that is available if the customer is experiencing difficulties paying	No response = 16 (46%) 1 to 4/10 = 8 (23%) 5 to 8/10 = 5 (14%) 9 or 10/10 = 6 (17%)	No response = 20 (57%) Nil = 12 (34%) No. who provided a price = 3 Range \$50 to \$250



7 Capital expenditure projects

7.1 Information provided to participants

Strategy overview

- An overview of South Gippsland Water’s proposed long-term Water Supply Demand Strategy for the next 50 years which looks at population growth, water supply yields and water demand.
- The construction of the desalination plant and an 82 kilometre pipeline connecting the plant to Melbourne’s supply system has made it possible for South Gippsland Water to tap into this supply system and that for Wonthaggi, Inverloch and Cape Paterson, supply security is assured through the connection to Melbourne’s supply system



Proposal to secure the water supply for the Northern Region

- Networking Southern and Northern supply systems using Lance Creek Reservoir as the prime water supply for both regions
- The Melbourne Supply system will be a backup supply
- This means South Gippsland Water can run the Lance Creek Reservoir more efficiently with a guaranteed alternate source of a non-rainfall dependent supply when needed
- The networking program will occur in stages
- Lance Creek to Korumburra is the first stage
- Connection of Leongatha into the network is likely to be the last stage and depends on Murray Goulburn water requirements (which is the largest commercial water customer in Leongatha)
- In developing this strategy South Gippsland Water explored maintaining and up-grading the existing water supplies to cater for future demand
- However over the long term, networking our Northern region is most cost effective and it provides South Gippsland Water with diversified water sources





Benefits

- Certainty of supply
- Efficiency of existing infrastructure
- Enables levels of regional growth not otherwise possible
- Allows future industrial growth and supports existing industry, such as Murray Goulburn and Burra Foods
- It is a less complex water supply system

Cost

- The project requires a large injection of capital funding up-front, rather than incremental investment
- South Gippsland Water is seeking funds [\$20m] from State Government to smooth the tariff path and remove unacceptable customer impacts

Central Towns Project

- South Gippsland Water is reviewing a strategy for the Eastern region called the 'Central Towns Project'
- This project identified that the existing separate systems of Fish Creek, Foster and Toora (which also supplies Port Franklin, Welshpool and Port Welshpool) do not, or will not, in the near future meet demand and/or water quality requirements
- Foster has excess storage capacity, Fish Creek's system does not meet supply standards and separate systems are not economical to operate
- As a result South Gippsland Water is looking at how these towns might be linked, via either raw water or treated water pipelines
- New water storages need to be built and treatment plants up-graded





Summary of South Gippsland Water's key capital expenditure projects

	Project	Driver	Completion	Capital Cost
Water Security	Melbourne Supply Connection Works – Lance Creek (Wonthaggi) to Korumburra*	Security of Supply Water Supply Demand Strategy	2016	\$14.7 M
	Melbourne Supply Connection Works – Korumburra to Poowong*	Security of Supply Water Supply Demand Strategy	2016	\$ 3.2 M
	Central Towns – Scoping the Upgrade/Connection of Foster, Toora and Fish Creek Supply Systems**	Security of Supply Water Supply Demand Strategy - Addendum	N/A	\$ 2.0 M
Operation, Maintenance or Compliance Requirement	Leongatha Sewer System Upgrade	Compliance obligations under EPA guidelines Statement of Obligations Customer Charter Service Standards	2017-2018	\$ 5.8 M
	Wonthaggi Sewer System Upgrade	Compliance obligations under EPA guidelines Statement of Obligations Customer Charter Service Standards	2018	\$ 4.4 M
	Replacement/Rehabilitation of water mains – Region Wide	Statement of Obligations Customer Charter Service Standards	Ongoing	\$ 3.7 M
	Inverloch Sewer System Upgrade	Compliance obligations under EPA guidelines Statement of Obligations Customer Charter Service Standards		\$ 3.35M
	Sewer rehabilitation/re-lining – Region Wide	Statement of Obligations Customer Charter Service Standards	2018	\$ 3.0 M
Other	Poowong, Loch, Nyora Sewerage Scheme	Government directive by Minister for Water	2014-2015	\$13.85 M
	*Contingent on State Government Funding. ** Scope and extent to be approved			

7.2 Feedback

After the information presentation participants could ask questions about the projects and review the information provided in their feedback form about each project.

They were then asked to indicate whether they supported each project and whether they were directly affected by it. They also had an opportunity to comment on each project. Most participants supported all nine projects presented to them, regardless of the availability of State Government funding to reduce the financial burden on customers. They also generally supported the projects, regardless of whether they believed they were directly affected.

7.2.1 Water security project feedback

In relation to water security, most participants supported the proposals to connect to Melbourne's water supply and the Central Towns Project, as important strategic projects to ensure the region's water supply into the future in terms of supporting regional growth and if there was another drought.



Table 7-1: Participants' importance ratings support for key capital expenditure projects

Project	Support the project	Affected directly by the project
Project 1: Melbourne Supply Connection Works – Lance Creek (Wonthaggi) to Korumburra (subject to State Government funding)	<u>Blanket support</u> No response = 4 (11%) Yes = 27 (77%) No = 3 (9%) Yes and no = 1 (3%) <u>Support without funding</u> No response = 3 (9%) Yes = 18 (51%) No = 13 (37%) <u>Whether funding matters</u> No response = 4 (11%) Yes = 27 (77%) No = 4 (11%)	No response = 5 (14%) Yes = 14 (40%) No = 15 (43%) Yes and no = 1 (3%)
Project 2: Melbourne Supply Connection Works – Korumburra to Poowong (subject to State Government funding)	<u>Blanket support</u> No response = 6 (17%) Yes = 26 (74%) No = 3 (9%) <u>Support without funding</u> No response = 4 (11%) Yes = 16 (46%) No = 15 (43%) <u>Whether funding matters</u> No response = 4 (11%) Yes = 29 (83%) No = 2 (6%)	No response = 7 (20%) Yes = 5 (14%) No = 23 (66%)
Project 3: Central Towns Project	Blanket support No response = 5 (14%) Yes = 27 (77%) No = 1 (3%)	No response = 8 (37%) Yes = 7 (20%) No = 20 (57%)

Participants identified a number of benefits of these projects:

- Security in times of drought:
 - *"If you have a drought you can always back up."*
- The water source (desalinated water) is independent of rainfall and climate change:
 - *"Regardless of where the water comes from we need it – us and generations ahead. I'm on a low income, not happy about the desal, but forget about me. My children and*



grandchildren need water; we've been a long time without water. For future generations we need an independent source."

- *"I don't like desal, but it's unrelated to climate."*
- It is planning for the future:
 - *"I don't have a problem of people trying to picture as to what we have to provide for in 50 years. We are the biggest wasters in the world. We need to address that issue, but at same time need to plan for the future."*

Levels of support were generally still high for these projects even if there was not Government funding available, although costs became a concern.

- *"Reluctantly, but has to be put in place for the future demand, I am concerned public/customers will end up footing the bill."*
- *"At some level below \$20m support would evaporate."*
- *"Cost would be too expensive to be footed solely from customers."*

However some participants were concerned that the region was being forced to use desalinated water and to pay for it:

- *"It sounds a bit like the government is trying to sell us desal water and our infrastructure will fall by the wayside."*
- *"Melbourne water prices have to go up and up and up to pay for the desal. By the end of this Water Plan we could be looking at \$2,000+ rates for the next five years, when now we are paying only \$1,000."*
- *"You wouldn't connect to Melbourne Water. I only understand Wonthaggi and Phillip Island."*
- *"One thing that has worried me was published in the local paper by Steve Evans in June 2011. It seems since then a change has occurred. Proposals seem to be different. The strategy was to purchase additional water if needed. You seem to be saying now we'll purchase it anyway."*

Other concerns were:

- The Southern Region would be subsidising the Eastern and Northern Regions
- The accuracy of the project costings
- The likelihood of obtaining State Government Funding – and whether the funding would have to be repaid
- What would happen to the current infrastructure

One participant preferred to see more dams built, although South Gippsland Water noted that they would not get funding to build dams:

- *"If you're going to get \$15-\$20million for pipe to Korumburra – how much would it cost to build a dam."*

A full list of comments from participants is contained in Appendix 12.2.

7.2.2 Operational, maintenance or compliance requirement project feedback

In relation to operation, maintenance or compliance requirement projects most participants supported all four proposed projects presented to them, regardless of whether the project affected them.

Participants in all groups strongly supported ongoing maintenance and upgrading of old infrastructure as core elements of South Gippsland Water's service standards. They also identified that upgrading of old systems was important to cater for a growing population in the region.



Several participants who lived in towns along the Bass Coast were concerned that their towns were not specifically mentioned among these projects:

- *"All of a sudden plans are going ahead to double the size of Cape Paterson. What liaison has gone into the planning, they need to double the water and double the sewerage?"*
- *"I wonder how good the planning is with some of these sewerage schemes. In Inverloch, I live in an area to be zoned residential, after 8-9 years of development the sewerage pipe needs to be enlarged. The area has always been [zoned] residential. It's not rocket science to work out how many people will live there."*

The Shire representative explained that in the last two years they have been assessing what the region will be like in the next ten years with these issues in mind. He indicated that a lot of organisations had been caught out because growth in the area has been much bigger than was ever envisaged or planned. He also explained that South Gippsland Water was obliged to service developments with the appropriate infrastructure

None of the participants objected to any of the projects.

Table 7-2: Participants' support for operational, maintenance or compliance projects

Project	Support the project	Affected directly by the project
Project 4: Leongatha sewer system upgrades	No response = 7 (20%) Yes = 27 (77%) No = 1 (3%)	No response = 7 (20%) Yes = 7 (20%) No = 21 (60%)
Project 5: Wonthaggi sewer system upgrade	No response = 6 (17%) Yes = 28 (80%) No = 1 (3%)	No response = 9 (26%) Yes = 9 (26%) No = 17 (49%)
Project 6: Water main replacement/rehabilitation (across the region)	No response = 5 (14%) Yes = 29 (83%) No = 1 (3%)	No response = 6 (17%) Yes = 16 (46%) Yes and no = 1 (3%) Unsure = 1 (3%)
Project 7: Inverloch sewer system upgrade	No response = 8 (37%) Yes = 27 (77%) No = 0 (0%)	No response = 15 (43%) Yes = 8 (23%) Yes and no = 2 (6%)
Project 8: Reticulated sewer rehabilitation/re-lining (across the region)	No response = 6 (37%) Yes = 29 (74%) No = 0 (0%)	No response = 8 (23%) Yes = 14 (40%) No = 11 (31%) Yes and no = 1 (3%) Unsure = 1 (3%)

A full list of comments from participants is contained in Appendix 12.2.



7.2.3 Poowong, Loch, Nyora Sewerage Scheme project feedback

All participants supported this project, or they chose not to comment. Apart from the direct benefits of a sewerage system over septic tanks, some participants also noted that it would benefit the real estate value of properties in those towns:

- *"The Poowong area when it get sewerred will cost \$1,000 per house but they will gain \$10,000 in value! It puts a lot of value on the property."*

However there were also concerns about the costs to low income earners:

- *"My concern is the low income people who have spent many years living in those towns and it [the expense] creates an anxious time for them. Usually low income people do not have a say."*

Several participants queried the timeline for the Poowong, Loch Nyora sewerage scheme, South Gippsland Water confirmed that it depends on the Shire and EPA, which provides direction to South Gippsland Water on where sewerage schemes are needed. Others queried when other areas such as Venus Bay would be sewerred. South Gippsland Water commented that the same process applies to Venus Bay as other areas.

Table 7-3: Participants' support for the Poowong, Loch, Nyora Sewerage Scheme

Project	Support the project	Affected directly by the project
Project 9: Poowong, Loch, Nyora Sewerage Scheme	Blanket support No response = 6 (17%) Yes = 29 (83%)	No response = 6 (17%) Yes = 5 (14%) No = 23 (66%) Yes and no = 1 (3%)

A full list of comments from participants in contained in Appendix 12.2.



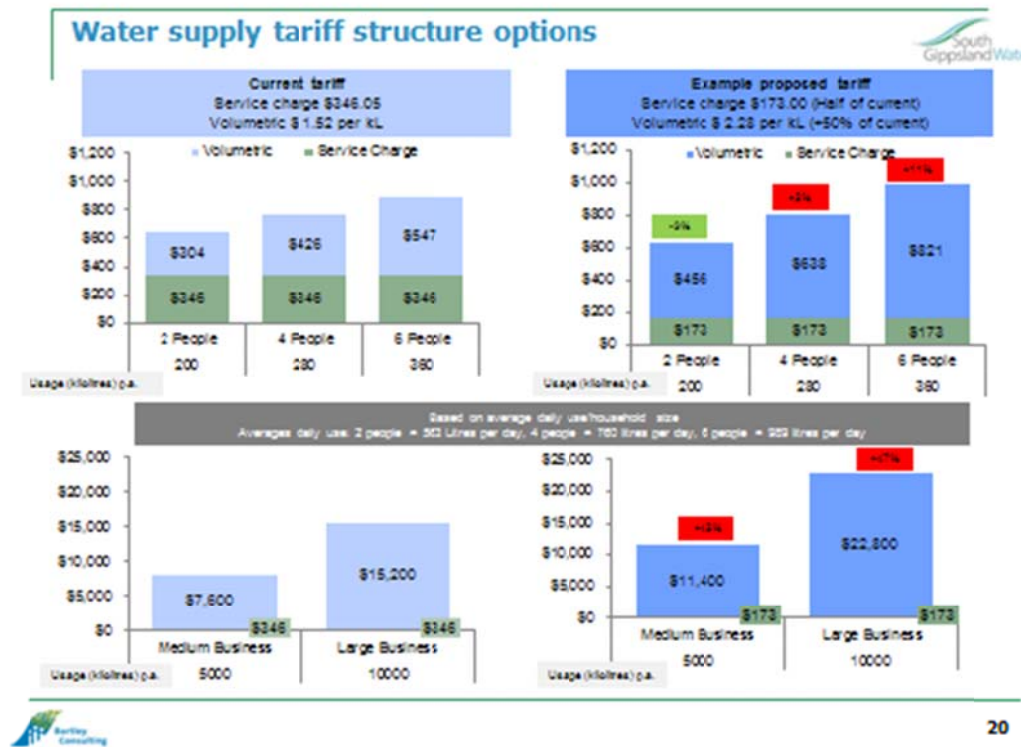
8 Tariff structure

8.1 Increased volumetric component

8.1.1 Information provided to participants

- Current pricing has two components: a service charge - relating to infrastructure and fixed costs; and a volumetric charge, which is a variable charge according to water use.
- South Gippsland Water is proposing to promote sustainable water use by revising the water pricing structure to place less emphasis on the fixed charge (service charge) and a greater emphasis on the volumetric charge. This will impact on:
 - Major and non-domestic customers (representing 10% of customers) who use 45% of water
 - Tenants who only pay the volumetric component of tariffs, and who will have pay a greater share of the water bill
 - Large families who have a higher water usage

Participants were shown the following graphs which present five scenarios of the current situation for residential and business customers according for different household/business sizes and five scenarios under the proposed changes which place greater emphasis on the variable component.





8.1.2 Feedback

Participants were then asked to rate the strategy on a 10-point scale from poor to excellent. As shown below, participants were divided in their support for the strategy – 20% were very supportive of it (i.e. they gave a rating of 9 or 10 out of ten, while 17% did not support it (i.e. they rated the strategy between 1 and 4 out of 10). Just over a quarter of participants (26%) did not provide a rating.

Table 8-1: Participants' support for volumetric tariffs

Proposal	Strategy rating 1 = Poor, 10 = Excellent
Volumetric tariff	No response = 9 (26%) 1 to 4/10 = 6 (17%) 5 to 8/10 = 13 (37%) 9 or 10/10 = 7 (20%)

Participants were then asked to provide reasons for their rating. Participants who did not support the proposal gave the following reasons:

- Caravan park owners pay the water bill and have no control over how much water their guests use, so if the usage charges increase the owners are affected.
 - *"At the Caravan Park it would put costs up too much as we have no control on how much water guests use. I think businesses should come under another way of charging us."*
- The current system is working
- Concerns for low income earners, including pensioners, and their ability to pay the increased usage charges if they can't control their water use.
 - *"I am concerned for low income earners because they have concession services and charges and concerned for businesses such as caravan parks/hospitality."*
 - *"A lot of people can't afford to change their usage patterns, health problems, families with kids."*
 - *"I would hate to see a large family encourage children not to flush to reduce water usage."*
- Impacts on quality of life:
 - *"Volumetric is hard when your wife is a keen gardener."*

One participant suggested that if the volumetric charge increased then there was a case for landlords to decrease their rent:

- *"Another solution – poor tenants! The fixed charge at the moment is on the landlord, if it was a single usage charge, it would be reasonable for my rent to go down by the fixed charge reduction, over time the rent would affect the fact the landlord is no longer paying any water charge at all."*

However most other participants did not believe that landlords would reduce their rent if their water bill was reduced.

Participants who supported the proposal believed that:

- It would encourage people to become more water efficient
 - *"Makes people more water efficient."*
 - *"We need to reduce overall water usage."*
 - *"It will teach you to use less."*



- *"People pay \$150 for petrol. Why shouldn't people pay the same for water? The solution to cut your water use is in your own hands, the same as petrol."*
- *"I think young people think that way [i.e. user pays]."*
- *"I believe the [proposed] tariff system has the potential to reduce water consumption."*
- User pays is fairer
 - *"Pay for what is used makes householders more aware of usage, low important water is harder for businesses etc."*
 - *"User pays is far superior to fixed cost."*
 - *"Users are therefore responsible for their own consumption."*
 - *"Payment for what we use."*
- They would be better off financially
 - *"I agree because we're pensioners because we don't use much water, we save it."*
 - *"I believe in the volumetric because I'm a pensioner don't use a lot of water, my grandchildren are spending too much time in the shower, my friends are spending too much time watering – they would use less water if they had to pay for it."*
 - *"We are a family of five with three kids, with the size of our family with careful use - at the moment most is service to property charge. It would probably be more beneficial to us to put charges on volumetric use."*

Financial counsellors believed that if the increase in the volumetric charge was introduced it was essential that those on low incomes were given the appropriate support to help reduce their water use to keep their bills manageable:

- *"Bring in ways to help people reduce their usage. What I haven't seen here is helping people who want to reduce their usage but they can't work out how to."*
- *"From a financial counseling point of view, we're going to get clients coming through with higher bills. Would there be an increase of concession that could be put on their bills?"*

Various suggestions were provided to help people with financial hardship, especially if the volumetric component was increased. They included:

- More government rebates for people (although South Gippsland Water noted that the rebate was applied to the fixed component)
- A requirement for a tank for rental properties
- Two tiered system for water usage, such as a flat rate then a concession or a tariff structure to help people understand what they're using – price signals to indicate usage over a certain volume (South Gippsland Water noted that the ESC is not in favour of this type of tariff structure)
 - *"Have a sliding scale – the more you use, the price drops slightly – price per KL drops a little bit."*
- Have separate tariffs for businesses and residents
- Assist people to reduce usage, e.g. help customers purchase water efficient goods
- Educating customers
 - *"Explaining more to them so that people think they can't flush the toilet etc."*
 - *"We are a low socio-economic area in Victoria. People need to be helped but not sustained, teach positive ways of using water without their bills skyrocketing – help those people with positive things."*



- *"In the last years of the drought we were told to keep water to 155 litres. In Brisbane people had a worse situation. They were taught to read their own meters, and compare each week with what they're doing – it worked."*

In one group, participants questioned where South Gippsland Water would get its revenue if customers put in rainwater water tanks on a large scale, thus significantly affecting South Gippsland Water's revenue through water usage.

- *"How would you go if put supply volume up, all townies put in water tanks and in another five years' time you did not have enough revenue – what will you say?"*
- *"At the end of the day, we could cut our own throats if SGW was not getting enough money to support the system – then you'll put your service fees up?"*

A full list of comments from participants' questionnaires is contained in Appendix 12.3.

Participants were also asked to suggest the amount of the higher volumetric rate. None of the participants could suggest an amount. Four participants suggested that the change should occur slowly:

- *"Start with a small increase."*
- *"I would prefer a 'somewhere in-between' initial change."*
- *"Sufficiently much to maintain income (approx.) and to induce customers to save water."*
- *"Slowly lift variable rate to impact use."*



8.2 Tariff choice

8.2.1 Information provided to participants

- South Gippsland Water could create a tariff structure based on customer choice.
 - For example, they could create a number of tariff options and customers could choose the one that suits them - one tariff may have a much higher service charge and lower volumetric charge - another may have a very low service charge and a high volumetric charge

8.2.2 Feedback

Participants were then asked to rate this proposal. Participants were divided with 34% supporting the proposal, 34% not supporting the proposal and 31% did not respond to the question.

Table 8-2: Participants' support for a tariff choice

Proposal	Strategy rating 1 = Poor, 10 = Excellent
Tariff choice	No response = 11 (31%) Yes = 12 (34%) No = 12 (34%)

Several participants were concerned about the proposal:

- It was adding a layer of complexity:
 - *"Keep it simple."*
 - *"I've had enough of choices."*
 - *"It would be complicated for a lot of people."*
 - *"Lots of options could be too difficult to understand."*
 - *"Keep it basic throughout."*
 - *"People have had enough of choices."*
 - *"That would be so messy."*
- They thought customers might make a bad decision:
 - *"I am concerned customers will enter into a tariff structure that is not right for them."*
 - *"People make the wrong choices."*
 - *"If you chose a tariff six months down the track and realised another one was more attractive you would want to be able to switch, a bit like choosing your power company."*
- The billing system would need to be upgraded (which would result in added costs for customers)
 - *"Do you have the infrastructure?"*
- Choice is not necessary as people don't think about choosing:
 - *"I think 90% of people pay their bills and don't think about it. They don't give it two seconds thought, until a politician alerts them."*

Others liked the idea of having a choice

- *"I like the idea of giving people a choice."*



- *"People will pick the cheapest for them."*

Participants were then asked whether they believed that customers would understand the tariff options to make wise choices. Generally participants believed that customers would need to be educated to make informed decisions:

- *"If it were explained fully, they could make wiser choices."*
- *"There needs to be more education now that the drought has broken people are more complacent with water usage."*



8.3 Seasonal tariff

8.3.1 Information provided to participants

- South Gippsland Water could also introduce a seasonal tariff, i.e. charge more for water in the summer peak months when demand is at its highest and water is at its scarcest
- Coastal townships in the region have increased populations due to a large influx of visitors, this increased demand increases costs to the region by increasing South Gippsland Water infrastructure capacity requirements, such as treatment plants and reservoirs
- Customers would not get an account for the summer usage until March

8.3.2 Feedback

Participants were then asked to rate this proposal. Few participants supported this proposal (only 11%); more than two thirds (77%) did not support the proposal.

Table 8-3: Participants' support for a seasonal tariff

Proposal	Support for strategy
South Gippsland Water should impose a seasonal tariff	No response = 5 (14%) Yes = 4 (11%) No = 25 (71%)

Most participants who were against the proposal felt that non-permanent residents would not realise that they were being charged more for water in the summer; nor would it teach them to use less water, regardless of when the account was issued.

- *"It wouldn't affect visitors' behaviour - our behaviour has already changed."*
- *"No, they use what they want regardless."*
- *"Visitors don't care."*

Some participants also felt that if non-permanent residents were sufficiently wealthy to have a holiday house they would not worry about the water charges. They also noted that holiday tenants would not be the ones paying the account.

- *"Rented properties/motels etc. would incur a higher fee for the owner, not the holiday maker using the water."*
- *"Local families will end up paying more."*

Although participants recognised that some people are excessive garden waterers, other felt that seasonal tariffs penalised local residents, especially those who were gardeners:

- *"I'm definitely against that for summer. My wife is a keen gardener, she uses water in the summer for the garden and therefore it would be more expensive for us."*
- *"Why should we pay for transients? I want to keep my vegie patch."*
- *"There goes the summer vegie patch!"*
- One participant believed that it would help deter or stop visitors using up locals' water.
 - *"A lot of people come to our towns and use our water because they are on restrictions in Melbourne and not at their holiday area."*

In general participants believed that a greater emphasis on the volumetric component was a more appropriate strategy to encourage customers to be water efficient.



8.4 Wastewater tariff structure

8.4.1 Information provided to participants

- Wastewater charges are calculated as a flat per annum charge as follows:
 - Developed properties: \$437.85 (2011/2012 tariffs)
 - Undeveloped properties: \$256.95 (2011/2012 tariffs)
- South Gippsland Water has reviewed the structure and investigated the possibility of a volumetric charging system which would be based on customers' water meter usage, although due to the lack of connection/relationship between water usage and sewerage disposal, South Gippsland Water does not see a benefit in a volumetric wastewater charge.

8.4.2 Feedback

Participants were then asked to rate this proposal. Just under a third of participants supported this proposal (29%); 46% did not support the proposal.

Table 8-4: Participants' support for a volumetric wastewater charge

Proposal	Support for strategy
Whether there is any value in South Gippsland Water changing to a volumetric wastewater charge	No response = 8 (23%) Yes = 10 (29%) No = 16 (46%)

Participants' main concerns were that they could be paying for a service they are not using if they are not generating wastewater from the water they used:

- *"Paying for this service when we use tank water to flush toilets."*
- *"Water on the garden does not go down the wastewater."*

Other participants could not understand why sewerage needed to be separate from the water supply when it was the same water source.



9 Regional tariff alignment

9.1 Information provided to participants

- In 1995, five water boards merged to form South Gippsland Water. Tariffs varied across the region due to the five Water Boards' different pricing structures
 - South Gippsland Water immediately embarked on a program of price harmonisation to move to an overall regional tariff approach
 - Today the region remains divided by only two tariff areas
 - South Gippsland Water is aiming to continue tariff alignment across the region over this Water Plan covering a period of five years
- South Gippsland Water is proposing to continue tariff alignment across the region over the next Water Plan period
 - The \$80 difference will be reduced to an estimated \$50 during 2012/13 and further reduced to zero by 2017/18
 - This will mean higher price increases for East/West customers
 - Southern customers still pay higher tariffs until 30 June 2018

9.2 Feedback

Participants were asked to provide a rating of their level of support to align tariffs across South Gippsland Water's region, using a 10-point scale from poor to excellent. Regardless of where they lived, participants were divided in relation to their levels of support to align tariffs across the Region. Just over a quarter (26%) strongly supported the proposal (i.e. they gave a rating of 9 or 10 out of 10), while 11% were against the proposal (i.e. they gave a rating of 1 to 4 out of 10).

Table 9-1: Participants' support for a regional tariff alignment

Proposal	Strategy rating 1 = Poor, 10 = Excellent
Align tariffs across the South Gippsland Region	No response = 9 (26%) 1 to 4/10 = 4 (11%) 5 to 8/10 = 13 (37%) 9 or 10/10 = 9 (26%)

Participants were then asked to give reasons for their rating. Participants who supported the regional tariff alignment believed that it is reasonable that all customers across the region should pay the same tariffs:

- *"Fairness and equality of service is essential."*
- *"Get to equality over time."*
- *"Needs to be fair."*
- *"Should already be done."*
- *"Equity! It should not have taken this long to make the same charge."*

Others believed that it would lessen the impact of price increases in the Southern Region.

- *"They should be paying what we're paying sooner than later – reduce impact of price increases on Bass Coast."*



- *“Water prices will rise. I think that we should pay no more than other areas for water.”*
- *“We should pay the same tariff now; Southern Region is being discriminated against.”*
- Some participants were surprised that tariffs were not already aligned:
 - *“Twenty two years is far too long to achieve parity – we’ve done our time!”*
 - *“It should occur in a shorter time frame.”*
 - *“It must have got to the stage where it must be history.”*

Those who were not in favour of the proposal believed that customers should pay what it costs to provide the service, and if the costs are different in different locations this should result in different tariffs:

- *“Shouldn’t it relate to what it costs?”*

There were also concerns about the impacts of low income earners in the East-West Region:

- *“Depending on the demographics. The East-West Region may have low income families and is not subject to holiday explosion.”*



10 Hardship

10.1 Information provided to participants

- A revised tariff structure, with an emphasis on the volumetric charge will affect vulnerable customers
- South Gippsland Water aims to identify the most vulnerable customers (including tenants and concession card holders), contact these customers and outline available assistance if needed

10.2 Feedback

Participants were asked to rate this strategy, using a 10-point scale from poor to excellent.

Table 10-1: Participants' support for South Gippsland Water to assist vulnerable customers

Proposal	Strategy rating 1 = Poor, 10 = Excellent
South Gippsland Water intends to undertake a proactive approach to assist vulnerable customers affected by the proposed price structure. Based on its customer information, South Gippsland Water intends to identify its most vulnerable customers and directly contact these customers to outline the avenues available for assistance if needed. This will include the 875 customers who are both tenants and Concession Card Holders, particularly those whose water use exceeds the maximum rebate amount.	No response = 10 (29%) 1 to 4/10 = 1 (3%) 5 to 8/10 = 11 (31%) 9 or 10/10 = 13 (37%)

They were then asked to provide reasons for their ratings. The participant who gave a low rating (1 to 4 out of 10) provided the following reasons for rating the proposal as poor:

- *"I feel that people should learn to use their water wisely. If you keep helping them they will not try."*

Participants who supported the proposal highlighted the importance of educating customers to be water efficient, and they believed that many of these vulnerable customers were not aware of what they could do to increase their water efficiency.

- *"Some people are unaware of how to save water."*
- *"SGW needs to work with families who are experiencing hardship e.g. help them with water reduction."*
- *"Assisting/educating supporting vulnerable customers is very important."*
- *"Education is always of benefit to the supplier and customer."*
- *"Could you provide advice on reducing water usage – help them to reduce their water usage?"*
- *"Do any water authorities have an education officer to talk to people about their high water usage?"*



One financial counsellor queried the number of customers who received utility relief grants on hardship grounds. They were surprised that only 18 customers were receiving these grants. He believed that many customers were not aware that they were eligible for grants and that better information and communication to these customers was very important².

In two groups, participants also suggested that water audits, funded by South Gippsland Water, would help vulnerable customers.

- *"I believe South Gippy Water needs a water audit for low income earners to help educate and save money on their bills and retrofit their houses."*
- *"Help with hardship people – generally support, SGW to wear water audit cost."*
- *"A water audit is the way to go. You [SGW] go to the house and educate them."*

Some participants in one session also suggested that SGW should more widely promote their showerhead exchange program, and make the showerheads more widely available, than through South Gippsland Water.

- *"Where do you get the showerheads from here? That's the sort of think a lot of people wouldn't know. It relies on people reading the paper."*
- *"Progress Associations could take on this [showerhead distribution] as a project to let their people now what's on offer."*

Others suggested that some people are doing all they can to reduce their water use, so they were unsure of the value of the proposal.

- *"Some older people are seriously saving water in very hard ways."*

In one session, customers queried whether South Gippsland Water also checks for accounts for anomalies in water usage. South Gippsland Water explained that if there was an undetected leak that was located because of abnormally high water usage then a customer can apply for an undetected leak concession on their water usage.

² South Gippsland Water subsequently confirmed that the Department of Human Services had issued 18 Utility Relief Grants (URGs) to eligible South Gippsland Water customers. This means that the Government pays these customers' bills are paid by the Government so that South Gippsland Water gets its bills paid, and these customers are not at risk of having their water flow rate restricted or their water pressure reduced, so both the customer and South Gippsland Water benefit from the grant.

South Gippsland Water's customer service team regularly sends out URG applications to customers who could benefit from them, on behalf of the Department of Human Services. However the customer needs to complete and sign most of the application form because it asks for private/personal information which South Gippsland Water cannot complete for the customer. Few customers send their forms into DHS. Because of this and other assessment factors, DHS has only award a small number of URGs to South Gippsland Water customers.



11 The environment

Due to time constraints, this topic was only discussed in the Yarram and Korumburra sessions, although most Wonthaggi participants answered the environment questions in the participant questionnaire.

11.1 Outfall closure

11.1.1 Information provided to participants

- South Gippsland Water has a long term goal to close ocean outfalls (pipelines which deliver treated wastewater into the ocean) into Corner Inlet
- Corner Inlet is an internationally recognised (RAMSAR) bird habitat and fish nursery for Victoria's fish stocks
- Over the last 10 years South Gippsland Water has progressively closed ocean outfalls
- It has two remaining outfalls left into Corner Inlet at Foster and Toora
- Plans are in place to close these in the next two to five years

11.1.2 Feedback

Participants were asked whether they would like to see South Gippsland Water close more ocean outfalls, such as the Baxter's Beach (Wonthaggi) outfall in the future. Most participants (66%) supported the closure of more ocean outfalls, although several qualified their support, suggesting that their support was subject to the cost.

When customers specifically considered the cost, the level of support decreased to 34%. Based on South Gippsland Water's scenario of \$30M+ to close the Baxter's Beach outfall several participants who no longer supported the proposal believed that the costs outweighed the benefits.

Table 11-1: Participants' support closure of ocean outfalls

Proposal	Support for the proposal
South Gippsland Water to close more ocean outfalls, such as the Baxter's Beach (Wonthaggi) outfall, in the future	No response = 6 (17%) Yes = 23 (66%) No = 6 (17%)
Support for closure of the outfall closure at any cost? For example preliminary estimates suggest the cost to close the Baxter's Beach outfall would be \$30M+.	No response = 8 (23%) Yes = 11 (31%) No = 16 (46%)

Most participants were surprised at the cost:

- *"\$30 million just to close it? I'm shocked."*
- *"\$30 million just to put a plug in it!"*
- "I'm shocked at the price of the infrastructure. It would be cheaper to pipe water."
 - *"Yes and no - Good idea but not for the amount of money."*

Other participants suggested alternative strategies, given the cost of closing the outfalls:

- *"Would it be an improvement to upgrade the standard of effluent going into it [the ocean] – what's the cost of alternatives?"*



Others continued to support the proposal but no longer considered that it was a priority, because of the cost:

- *“Down the track in a few years.”*
- *“Other things are more immediate.”*
- *“It’s work to be done into the long term, not immediately.”*
- *“Yes - but not at the expense of other projects.”*

A third of customers unconditionally supported the closure of ocean outfalls:

- “It’s got to be done. You can’t keep pumping rubbish into the sea.”
- “Yes and if it is left for a longer period it will cost heaps more.”

Participants also wanted to know what would happen to the water if it was not discharged into the ocean. One participant suggested that it could be sold to irrigators to help recover the costs of closing the outfalls; another had concerns about the safety of using recycled water.

11.2 Carbon offset or green energy

11.2.1 Information provided to participants

- South Gippsland Water could purchase ‘Carbon Neutral’ Power or ‘Green’ Power from renewable energy sources
- This power is more expensive

11.2.2 Feedback

Participants were asked whether they supported South Gippsland Water purchasing carbon neutral power or Green Energy from renewable sources. Overall, 54% did not support this proposal.

Table 11-2: Participants’ support for South Gippsland Water to purchase green power

Proposal	Support for the proposal
Willingness to pay more for South Gippsland Water to purchase carbon neutral power or Green Energy from renewable sources	No response = 4 (11%) Yes = 12 (34%) No = 19 (54%)

Those who did not support the proposal gave the following reasons:

- They did not want to pay for it
- They did not believe that it was South Gippsland Water’s role; rather it was the responsibility of individuals:
- “It’s up to the individual to do that.”

One participant believed that South Gippsland Water should examine capitalising gas from their own operations. Another participant suggested South Gippsland Water should invest in solar panels; South Gippsland Water advised that it already has solar panels on various units.

Another participant wanted to know where South Gippsland Water would purchase green energy.



11.3 Greenhouse gas emissions

11.3.1 Information provided to participants

- **South Gippsland Water could participate in programs to reduce its greenhouse gas emissions, such as installing solar power at plants and depots and large scale tree planting**

11.3.2 Feedback

Participants were asked whether South Gippsland Water should participate in programs to reduce its greenhouse gas emissions, even if these programs do not pay for themselves. They were also asked to suggest an appropriate amount for South Gippsland Water to invest each year into environmental projects.

Most participants (71%) believe that South Gippsland Water should participate in them, even if these programs do not pay for themselves (60%).

Table 11-3: Participants' support for South Gippsland Water to participate in programs to reduce its greenhouse gas emissions

Proposal	Support for the proposal
South Gippsland Water could participate in programs to reduce its greenhouse gas emissions, such as installing solar power at plants and depots, large scale tree planting.	No response = 4 (11%) Yes = 26 (74%) No = 3 (9%) Yes and no = 1 (3%)
Whether South Gippsland Water should participate in these programs, even if they do not pay for themselves or take more than 10 years to pay back, i.e. cover their costs	No response = 8 (23%) Yes = 21 (60%) No = 6 (17%)
An appropriate amount for South Gippsland Water to invest each year into environmental projects, given that any funds contributed to such projects would affect tariffs	No response = 11 (31%) Less than \$50,000 = 2 (6%) \$50,000 to \$100,000 = 8 (23%) More than \$100,000 = 2 (6%) Unsure = 10 (29%)

However, few participants were able to suggest an amount of expenditure – most felt that they did not have sufficient knowledge to comment on the amount of investment. Among those customers who did suggest an amount, most suggested between \$50,000 to \$100,000 per annum.

Table 11-4: Participants' suggestions for South Gippsland Water's investment in environmental projects

Proposal	Suggested amount
An appropriate amount for South Gippsland Water to invest each year into environmental projects, given that any funds contributed to such projects would affect tariffs	No response = 11 (31%) Less than \$50,000 = 2 (6%) \$50,000 to \$100,000 = 8 (23%) More than \$100,000 = 2 (6%) Unsure = 10 (29%)



Among the small number of participants who did not support South Gippsland Water's investment in programs to reduce its greenhouse gas emissions, one did not believe in climate change:

- "I don't believe in climate change – I'm 86 it was hotter when I was a boy."

11.4 South Gippsland Water's support for environmental projects

11.4.1 Information provided to participants

- South Gippsland Water currently supports a number of environmental projects and environment focussed organisations
- Over the last 5 years South Gippsland Water has contributed \$332K to environment programs including Landcare and WaterWatch, environment education, pine harvesting, revegetation, fencing and environment grants
- In addition, in 2007 South Gippsland Water spent \$470K to buy land in the Battery Creek Catchment
- These projects are within South Gippsland Water's catchment areas
- They help improve catchment health and water quality, making water safer, healthier and easier to treat

11.4.2 Feedback

Participants were asked to indicate whether they believed that South Gippsland Water's investment in environmental projects was too low, about right or too high. Almost half of the participants (49%) believe South Gippsland Water's expenditure is about right; 26% were unsure.

Table 11-5: Participants' perceptions of South Gippsland Water's current investment in environmental projects

Proposal	Support for the proposal
Whether South Gippsland Water's level of investment in environmental projects and environment focussed organisations, over the last 5 years of \$332K and expenditure of \$470K to buy land in the Battery Creek catchment is too low, about right or too high	No response = 6 (17%) Too low = 3 (9%) About right = 17 (49%) Unsure = 9 (26%)



12 Appendix: Open-ended comments

12.1 South Gippsland Water's service standards

12.1.1 Specific comments

Description of the Standard	Comments
For every 100km of water pipework, there will be no more than 28 breaks per year.	<ul style="list-style-type: none"> • "Water is very important to our family and supply disruption is a nuisance." • "I hope there are no breaks." • "I don't know what a satisfactory standard should be." • "With due regard to cost, there should be a CIP for all service standards. Does the cost outweigh the benefits? If so, leave standard at a reasonable level - the current level." • "Reduce the number of breaks - front end maintenance and asset mapped condition reported and preventive management." • "For every 100 kilometres that's a break every 4 kilometres on every pipeline – that's excessive – its very ordinary infrastructure if it breaks that much." • "The Standard is too low – it [pipelines] needs some serious upgrading." • "I have old pipeline, its down for replacement, there's a break every one kilometre – four kilometres is better but still very poor." • "I would have thought a breakage once every two to three kilometres over 100 kilometres." • "I've been seven years in Alberton. I've had one breakage over seven years that is an excessive amount to have one break to Alberton every four years on average." • "Where do the breaks come from? Why should there be any breaks?" • "Why isn't it 25 breaks?" • "How can they guarantee 28 per 100 kilometres?"
Priority 1 – A substantial water-mains break with potential to cause water loss, affect the environment and/or affect water quality. <i>Response time – 30 minutes</i>	<ul style="list-style-type: none"> • "Very good service." • "Wouldn't it depend on travelling time, occasionally it could be longer so change to 1 hour." • "I have not had any experience of breakages of pipes." • "Considering distances this is a good average."
Priority 2 – A water main leak which may cause minor water loss, affect the environment and/or affect water quality. <i>Response time – 40 minutes</i>	<ul style="list-style-type: none"> • "Any water loss should be avoided." • "Considering distances this is a good average."
Priority 3 - No immediate impact on the customer, property or environment. <i>Response time – 1440 minutes.</i>	<ul style="list-style-type: none"> • "As we mentioned this is an average - hate to have targets that cannot be achieved." • "Any water loss should be avoided."
99% of unplanned water interruptions should be restored within 5 hours	<ul style="list-style-type: none"> • "Depends on type of interruptions." • "With no time to prepare, too long." • "Any water loss should be avoided."



Description of the Standard	Comments
<p>99% of planned water supply interruptions should be restored within 5 hours</p>	<ul style="list-style-type: none"> • “Sometimes time can be longer.” • “Should be below unplanned interruptions.” • “Better if it were shorter,” • “Seems long. I don’t have any idea what a satisfactory standards should be.” • “Okay if adequate notice given.” • “Perhaps more details re time off - more press.” • “Five hours!”
<p>On average, all South Gippsland Water customers will not be without water for more than 33 minutes in an unplanned water interruption</p>	<ul style="list-style-type: none"> • “Being attended within 30 minutes with travelling time. Can they get there in 30 minutes? Wouldn’t it be better to have 60 minutes and exceed expectations?” • “What about the people who don’t get attended to within 30 minutes? They will get worried – I went to the website and say 30 minutes [and they were not there within that time].” • “It’s very easy with planned work you can organise it. When I get a busted mains it takes whatever. They might say it takes an hour and it takes two.”
<p>On average, all South Gippsland Water customers will not be without water for more than 2 hours 30 minutes in a planned water interruption</p>	<ul style="list-style-type: none"> • “It’s important for business, aged care facilities, hospitals. Households can be prepared with notices received so as not important as business.” • “I need more detailed information of time off”. • “But why does your form say 9:30 to 3:30? We have one [outage] today – will that be more than two hours?” • “People don’t know that within the time it might only be off for two hours. When the guy dropped off the form he said only a couple of hours – we need more specific notifications [which two hours? We have our community kitchen, we cancelled it; then the water was back on.” • “They need to know when they can turn the water off.” • “I don’t have any idea what a satisfactory standards should be.” • “I’m concerned about all customers without water for two hours.” • “Having the information is more important than knowing it will be more than two hours.” • “If the letter [from South Gippsland Water] says the water will be turned off at 9:00 is should not be turned off before.” • “If you know you can deal with it.” • “What if you’re in an area where they don’t do any work in the first instance – pipes are never cleaned – we filter our water.”
<p>No more than 30%* of customers will be affected by an unplanned interruption per year</p>	<ul style="list-style-type: none"> • “Not relevant” • “This seems a high percentage of failure”
<p>No more than 50%* of our customers will be affected by a planned interruption per year</p>	<ul style="list-style-type: none"> • “Seems contradictory to the above standard”
<p>The duration of any planned water supply interruption will be no longer than 5 hours* on average</p>	<ul style="list-style-type: none"> • “No relevant.” • “Better off later in the morning.”



Description of the Standard	Comments
The duration of any unplanned water supply interruption will be no more than 5 hours* on average	<ul style="list-style-type: none"> • “Seems high if a good level of maintenance is in place.” • “Too long for businesses and individual if no notice given [for unplanned interruptions].” • “Does the averaging explain within five hours, versus 99%?”
No customer will have more than 5 unplanned water interruptions in any 12 month period	<ul style="list-style-type: none"> • “Again this seems too high.” • “Should be no more than two, otherwise an interruption should become a managed issue.”
For every 100km of wastewater pipe-work, there will be no more than 18 blockages per year	<ul style="list-style-type: none"> • “Unqualified to answer, but seems reasonable.” • “Again this seems too high.” • “Seems a lot.”
On average all sewer blockages will be attended within 30 minutes	<ul style="list-style-type: none"> • “We’ve been customers since 1973 – we’ve had a very good run with the water and the sewerage – leave the standards as they are.” • “A few time frames I thought were unrealistic, but if you have history that’s okay – I’m worried about the workers.”
A sewer blockage will be rectified within two hours on average	
All sewer spills should be contained within 5 hours on average	<ul style="list-style-type: none"> • “Health risk needs to be quicker - less acceptable.” • “Spills should be a case-by-case issue - rank categorise spill and indicate realistic rectification time frames.”
Customers should not experience more than 3 sewer blockages per year	<ul style="list-style-type: none"> • “Health risk needs to be quicker - less acceptable.” • “Seems high.”
98% of telephone calls to the South Gippsland Water Foster Office will be answered within 30 seconds	<ul style="list-style-type: none"> • “Unrealistic promise.”
Complaints to the Energy and Water ombudsman (Victoria) will not exceed 1.1 per 1000 customers	<ul style="list-style-type: none"> • “If standards are not met this is not important.” • “Good response.”
Unaccounted water (net raw water received at the treatment plant compared to metered water delivered) will have no greater than 14% difference	<ul style="list-style-type: none"> • “Percentage maximum.” • “Losing water in systems, fire brigades can get stuck into your [South Gippsland Water’s] water supply.” [South Gippsland Water responded that they can account for fire water in the 14%].



12.2 Proposed capital expenditure projects

Project	Comments
Project 1: Melbourne Supply Connection Works – Lance Creek (Wonthaggi) to Korumburra (subject to State Government funding)	<ul style="list-style-type: none"> • General comments • “Desal is unrelated to climate.” • “Has the potential to increase water usage.” • “However, only as part of a holistic strategy which includes the promotion of water harvesting/third pip and other measures.” • “It’s a “hind sight” yes, because now that the desal is in we are forced to take advantage of it.” • “Korumburra is growing and rainfall is expected to decrease, seems like forethought.” • “Necessary to do - drought, future growth, development inevitable.” • “Need to have back up as what happened in 2006 is likely to happen again.” • “Sounds sensible idea to me.” • “Southern Region ratepayers are being asked to subsidise other areas.” • “There is no choice, the demand will be imminent.” • “To ensure the water supply in case of drought.” • “Will ensure adequate supply.” • “With State help.” • Comments regarding support for the project without State funding • “Because it seems necessary, but costs should be shared equally by all customers with the Southern Area no longer paying extra, especially for water for other areas.” • “Cost would be too expensive to be footed solely from customers.” • “However this needs to be communicated to the customers - look at how lower income people can pay.” • “I’m not 100% certain this i.e. really necessary especially with costly pumping station to be built and consuming vast quantities of electricity.” • “Impact on customers would not to be too great without Government funding.” • “It is important for SGW to consolidate assets, so this strategy is the foundation for future structure of the supply system • “Large up front bill.” • “Reluctantly, but has to be put in place for the future demand, concerned public/customers will end up footing the bill.” • “The government forced the desal onto us and the project has blown out of all proportions - they should pay the price.” • “To ensure the water supply in case of drought.” • “Well something will have to be done.” • Comments regarding the importance of State funding • “Affects the quality and availability of supply.” • “As a ratepayer.” • “As the city gets cheaper subsidized water, country customers should also qualify.” • “At some level below \$20m support would evaporate.” • “Cost would be too expensive to be footed solely from customers.” • “People wouldn’t be faced with such an increase in their water bills in the future.” • We are not wealthy enough down here to meet the costs



Project	Comments
Project 2: Melbourne Supply Connection Works – Korumburra to Poowong (subject to State Government funding)	<ul style="list-style-type: none"> • General comments • “Cost would be too expensive to be footed solely from customers.” • “Forward planning.” • “However this needs to be communicated to the customers - look at how lower income people can pay.” • “Makes sense and is fair.” • “Need State help.” • “Need to fulfill demand.” • “Not really sure, Is Poowong growing? What other water sources do they have? Insufficient info to comment.” • “To ensure their water supply.” • “Will increase water usage.” • Comments regarding support for the project without State funding • “Cost would be too expensive to be footed solely from customers.” • “Insufficient info.” • “Makes sense and is fair.” • “Prefer government funding - believe it is a cost South Gippsland Water should cop not to be put onto the customers.” • Comments regarding the importance of State funding • “At some level below \$20m support would evaporate.” • “Cost would be too expensive to be footed solely from customers.” • “Makes sense and is fair.”
Project 3: Central Towns Project	<ul style="list-style-type: none"> • General comments • “Above says demand won’t be met if the upgrade is not followed through; concerned again that customers in the long run will foot the bill. Wouldn’t like to see a sharp increase in bills.” • “Become more efficient, security for the towns.” • “Consolidation of resources, costs etc.” • “Ensures adequate water supply for the future.” • “Essential service.” • “Fish Creek really needs a reliable water supply.” • “Forward planning.” • “Makes sense and is fair.” • “Out of my area.” • “Small population and this first figure will obviously grow as work starts.”
Project 4: Leongatha sewer system upgrades	<ul style="list-style-type: none"> • General comments • “Because of the growth in population and the aging of the infrastructure.” • “Essential service.” • “Forward planning.” • “I guess this would be necessary no matter what ever though I don’t think Leongatha’s population will increase much.” • “Keep your customers out of this.” • “Presumably it is necessary.” • “This would be an ongoing maintenance/upgrade shouldn’t affect people’s bills.” • “Updating and replacing ageing infrastructure important - costs of maintenance kept more under control.” • “With increases in population, sewer infrastructure needs to be upgraded.”



Project	Comments
Project 5: Wonthaggi sewer system upgrade	<ul style="list-style-type: none"> • General comments • "Again should be a South Gippy Water cost not to be forwarded onto customers." • "Essential service." • "Forward planning." • "Important for maintenance, less problems for residents, business hospitals, etc." • "Infrastructure needs to be up with current standards." • "Maintenance of efficient sewerage systems is an A1 priority for the population." • "Makes sense due to growing population and age of existing system." • "Necessary ongoing work." • "Presumably it is necessary." • "Sewer facilities need to be upgraded as population increases."
Project 6: Water main replacement/rehabilitation (across the region)	<ul style="list-style-type: none"> • General comments • "Essential service." • "Forward planning." • "I am aware of the need for replacement of very old water mains." • "Necessary ongoing work." • "Necessary upgrades and replacements." • "Need system maintenance ongoing." • "Needs to be done." • "Ongoing maintenance and improvements." • "Presumably it is necessary." • "Replacing water mains will reduce water loss due to old infrastructure." • "The workability of a constant safe water supply is a RIGHT of the population."
Project 7: Inverloch sewer system upgrade	<ul style="list-style-type: none"> • General comments • "Again as a company upgrade not a cost to be forwarded onto customers." • "Because of the growth in population." • "Essential service." • "Forward planning." • "Growing population, ageing infrastructure as indicated." • "More efficient, less breakages." • "Necessary ongoing work." • "Replacement will ensure that infrastructure will keep up."
Project 8: Reticulated sewer rehabilitation/re-lining (across the region)	<ul style="list-style-type: none"> • General comments • "Essential service." • "Forward planning." • "In the long run will offset the costs, keeping it the way it us costly improving the flow will save money." • "More efficient less breakdowns." • "Needs to be done." • "Seems necessary." • "This is vital for the health of the community."



Project	Comments
Project 9: Poowong, Loch, Nyora Sewerage Scheme	<ul style="list-style-type: none">• General comments• "All Victorians are entitled to these services."• "Essential service."• "Forward planning."• "If required it needs to be done."• "Important for environment."• "It is a Government directive - it should be funded."• "Needs to be done."• "With government funding."



Water Plan III

Feedback from Phase 2 Community Consultations

For

South Gippsland Water

By

Bartley Consulting Pty Ltd

August 2012

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Contents

1	Summary	1
1.1	Overview of consultations	1
1.2	Participants	1
1.3	Key findings	1
2	Background	4
3	Aspects requiring feedback	6
4	Consultation approach	9
4.1	Consultations sessions	9
4.1.1	Recruiting approaches	9
4.1.2	Session details	9
4.2	Information sessions - participant profile	10
5	Service standards	12
5.1	Information provided to participants	12
5.2	Feedback	13
5.2.1	Verbal feedback	13
5.2.2	Written feedback	14
6	Guaranteed service levels	18
6.1	Information provided to participants	18
6.2	Feedback	18
6.2.1	Verbal feedback	18
6.2.2	Written feedback	19
7	Capital expenditure projects	21
7.1	Information provided to participants	21
7.2	Feedback	22
7.2.1	Verbal feedback	22
7.2.2	Written feedback	23
8	Tariff increase	28
8.1	Information provided to participants	28
8.2	Feedback	29
8.2.1	Verbal feedback	29
8.2.2	Written feedback	30
9	Regional tariff alignment	32
9.1	Information provided to participants	32
9.2	Feedback	32
9.2.1	Verbal feedback	32
9.2.2	Written feedback	33
10	Increasing the volumetric component of water charges	34
10.1	Information provided to participants	34
10.2	Feedback	35
10.2.1	Verbal feedback	35
10.2.2	Written feedback	36
11	Tariff choice	38
11.1	Information provided to participants	38
11.2	Feedback	38
11.2.1	Verbal feedback	38
11.2.2	Written feedback	39



12 Retention of fixed wastewater tariffs	40
12.1 Information provided to participants	40
12.2 Feedback	40
12.2.1 Verbal feedback	40
12.2.2 Written feedback	41
13 Looking after disadvantaged customers	42
13.1 Information provided to participants	42
13.2 Feedback	43
13.2.1 Verbal feedback	43
13.2.2 Written feedback	44



1 Summary

1.1 Overview of consultations

Earlier this year the Essential Services Commission (ESC) began a review of the prices applied to water and sewerage services provided by Victoria's 19 water businesses for the period July 2013 to June 2018. As part of the review, the ESC requires each water business to prepare a draft Water Plan that considers customers' needs. In March 2012, South Gippsland Water held customer workshops in Yarram, Wonthaggi and Korumburra to provide an opportunity for customers throughout the region input into its draft Water Plan III. South Gippsland Water submitted the draft to the ESC in April 2012, which resulted in some refining and a draft Water Plan III which is now the subject of public consultation before being lodged with the ESC for final approval.

Bartley Consulting worked with South Gippsland Water on the customer consultations to *inform* the draft Plan. Bartley Consulting was also engaged to work with South Gippsland Water in the design, conduct and reporting of the outcomes of the customer consultations at Yarram, Wonthaggi and Leongatha to *gather customer feedback about the draft Plan* before SGW finally submits it to the ESC.

1.2 Participants

- A total of 29 customers/customer representatives participated in the sessions (Yarram: 11 customers; Wonthaggi: 7 customers; Leongatha 11 customers)
- Participants ranged in age from 30 to 39 to over 60 years
- They included:
 - Single people, couples, families, retired people
 - People working in full-time, part time and casual employment
 - Several local business operators, including several customers' whose livelihood depended on water (e.g. a caravan park owner and a laundry operator)
- Financial counsellors attended the Leongatha and Wonthaggi sessions; a Landcare representative attended the Yarram session; a representative of the Bass Coast Shire Council attended the Wonthaggi session; and a representative of the South Gippsland Shire attended the Leongatha session

1.3 Key findings

Service/project/tariff	Key findings
Service standards	<ul style="list-style-type: none"> • Nearly all customers (93% of participants) were happy with the service standards presented to them • Most participants rated South Gippsland Water's overall service as good or excellent (69%) <ul style="list-style-type: none"> • Water pressure was a concern to groups of customers across the region
Guaranteed service levels	<ul style="list-style-type: none"> • Nearly all participants (93% overall) indicated that they believe that the proposed GSLs are appropriate, given that the ESC has obligated South Gippsland Water to introduce GSLs • Most customers were confused by the wording of the fourth GSL related to restricting a customer's water supply or taking legal action, before making a reasonable effort to contact the customer to provide information about the help that is available, if the customer is experiencing difficulties paying. The wording needs to be clearer for



Service/project/tariff	Key findings
	<p>customers to understand this GSL</p> <ul style="list-style-type: none"> Nearly all participants (93% overall) indicated that they believe that the proposed rebate amounts per breach are appropriate
Capital expenditure	<ul style="list-style-type: none"> Most participants supported the projects presented to them, they recognised the need for capital works to cater for population growth, compliance and general maintenance Nearly all participants (93% overall) indicated that they support the Poowong, Loch and Nyora Sewerage Scheme Most participants (86% overall) indicated that they support the Northern Towns Supply Connection with \$20M of State Government funding - only 48% of participants supported the Northern Towns Supply Connection without State Government funding Most participants (83% overall) indicated that they support investment into the Foster Wastewater Treatment Plant upgrade Overall, although most participants (66%) felt that South Gippsland Water's investment into capital expenditure of \$71.85M over 5 years is about right, overall 31% were unsure Most participants (86% overall) supported greater capital investment now to construct infrastructure to help ensure the region's water supply during drought Customers were divided as to whether they would support increased investment in water security if it meant higher tariffs – overall 38% yes, 28% no and 31% unsure
Tariff increase	<ul style="list-style-type: none"> Most customers (72% overall) believe that the proposed tariff increases are about right They supported South Gippsland Water's proposal to minimise tariff increases, noting the potential impacts of any increases on low and fixed income earners in the region
Regional tariff alignment	<ul style="list-style-type: none"> Nearly all customers (93% overall) support the customer equity principle of tariff alignment Most customers (86% overall) support South Gippsland Water's proposal to unify tariffs across the region
Increasing the volumetric component of water charges	<ul style="list-style-type: none"> Most customers (86% overall) support South Gippsland Water's proposal to increase the volumetric component of water charges by approximately 0.6% per year over 5 years Some customers would like a greater emphasis on the volumetric component to encourage greater water efficiency Others were concerned about the impacts of the greater emphasis on volumetric charges among those customers who were already water efficient
Tariff choice	<ul style="list-style-type: none"> Most customers (79% overall) support South Gippsland Water's decision not to offer customers any tariff choice mainly because of potential difficulties making the "right" choice
Retention of fixed wastewater tariffs	<ul style="list-style-type: none"> Nearly all customers (93% overall) support South Gippsland Water's proposal to continue with a fixed residential wastewater service charge



Service/project/tariff	Key findings
Hardship	<ul style="list-style-type: none">• Only half of the participants were aware of the forms of help available for customers if they needed it (52% overall). Some of these customers were only aware of some of the forms of help.• Customers believe that information with the bill is the best method of informing customers about the assistance available• The positioning of “hardship” within revenue may be a deterrent to some customers to contact South Gippsland Water if they experience difficulties paying their bills, where as they may feel more comfortable contacting “customer service”• Customers would also like to see South Gippsland Water offer water audits and other incentives to help these customers become more water efficient



2 Background

The Essential Services Commission (ESC) is the economic regulator of water businesses in Victoria. This means that under the Essential Services Commission Act 2001 and Part 1A of the Water Industry Act 1984 the ESC is responsible for regulating the prices and service standards of businesses that supply water, sewerage and related services to residential, industrial and commercial, and irrigation customers throughout Victoria.

This year, the ESC is reviewing prices applied to water and sewerage services provided by Victoria's 19 water businesses to cover the period from July 2013 to June 2018.

As part of the review, the ESC required each water business to release a draft Water Plan for public consultation and comment by May 2012. Water businesses must then formally submit a final Water Plan to the ESC in September 2012.

The ESC identifies two main purposes for Water Plans¹. They provide:

- A mechanism for water businesses to commit to a set of outcomes and prices for the next regulatory period
- Information the ESC requires to assess businesses' proposals about services, expenditure, revenue, and tariffs

In the Water Plan, water businesses are required to detail the outcomes that they plan to deliver, including their service delivery standards and other outcomes, how they propose to deliver these outcomes, expected revenue to deliver the outcomes and their proposed pricing strategies.

The ESC also expects Water Plans to detail the consultations that water authorities undertook to form their draft Water Plans before they submit them to the ESC.

Specifically the ESC requires draft Plans to:

- Be accessible to customers so they can provide views on the service and price proposals
- Be clearly set out to enable readers to easily understand the proposed prices and tariff structures
- Summarise proposed major projects and service outputs and the rationale for them, and
- Include information so that customers can easily understand service and price trade-offs

The ESC further requires water businesses to:

"demonstrate that there was appropriate customer consultation on the draft Water Plan and that the views of customers have been considered and taken into account in business proposals."

In March 2012, South Gippsland Water held customer workshops in Yarram, Wonthaggi and Korumburra to provide an opportunity for customers throughout the region input into its draft Water Plan III. South Gippsland Water submitted the draft to the ESC in April 2012, which resulted in some refining and a draft Water Plan III which is now the subject of public consultation before South Gippsland Water lodges it with the ESC for final approval

Bartley Consulting worked with South Gippsland Water on the customer consultations to *inform* the draft Plan. Bartley Consulting was also engaged to work with South Gippsland Water in the design, conduct and reporting of the outcomes of the customer consultations to *gather customer feedback about the draft Plan* before SGW finally submits it to the ESC.

In addition to these consultations, South Gippsland Water has established an online feedback form on its website, open to all customers to provide feedback, and they undertook a letter-box

¹ Essential Services Commission (2011). 2013 Water Price Review: Guidance on Water Plans. October 2011, page 7.



drop of feedback forms to residents in all major towns across the region. South Gippsland Water is separately managing these aspects of the consultations.

DRAFT



3 Aspects requiring feedback

South Gippsland Water's Draft Water Plan III is 48 pages. It summarises the main elements for the Final Water Plan III including:

- Service standards
- Expenditure to deliver services
- Major projects
- Customer growth and demand
- Tariff structures and proposed prices
- Customer consultations undertaken

South Gippsland Water identified the key elements of its Draft Water Plan III requiring customer feedback. Together, South Gippsland Water and Bartley Consulting prepared a detailed customer questionnaire, which provided customers with some background information about South Gippsland Water an overview of the purpose of a Water Plan, core information from the draft and a series of questions to understand customer support or otherwise for the proposals. The questionnaire contained a mix of yes/no and scaled response questions and space after most questions for additional comments.

The following table provides an overview of the range of areas in the Water Plan for which South Gippsland Water required customer feedback.

Table 3-1: Overview of feedback topics

Topic area	Overview of customer feedback required										
Service standards	<p>Customers were presented with 17 proposed service standards, some of which are the same as for the current Water Plan and some for which South Gippsland Water is proposing to improve</p> <p><i>Customers were asked:</i></p> <ul style="list-style-type: none"> • <i>Whether they were happy for South Gippsland Water to maintain or improve the proposed standards</i> • <i>To provide an overall rating of South Gippsland Water's service, and to comment on their the supply</i> 										
Guaranteed service levels (GSLs)	<p>The Draft Water Plan includes four GSLs as follows:</p> <table border="1"> <thead> <tr> <th>Service level guarantee</th> <th>Rebate for breach (\$) per customer</th> </tr> </thead> <tbody> <tr> <td>Unplanned water interruptions restored within five hours of notification</td> <td>\$75</td> </tr> <tr> <td>Unplanned interruptions to sewer service restored within five hours of notification</td> <td>\$75</td> </tr> <tr> <td>If we cause a sewage spill within a customer's house, we will pay the customer \$1,000. We will also clean up the property and provide alternative accommodation if required (not applicable if the customer is at fault or contributes to the spill, i.e. a non-functioning overflow relief gully)</td> <td>\$1,000</td> </tr> <tr> <td>If SGW restricts a residential customer's water supply, or takes legal action against a residential customer before making a reasonable effort to contact the customer to provide information about the help that is available, if the customer is experiencing difficulties paying (this GSL is applicable from 1st July 2012)</td> <td>\$300</td> </tr> </tbody> </table> <p><i>Customers were asked:</i></p> <ul style="list-style-type: none"> • <i>Whether they believe that the four proposed GSLs are appropriate</i> 	Service level guarantee	Rebate for breach (\$) per customer	Unplanned water interruptions restored within five hours of notification	\$75	Unplanned interruptions to sewer service restored within five hours of notification	\$75	If we cause a sewage spill within a customer's house, we will pay the customer \$1,000. We will also clean up the property and provide alternative accommodation if required (not applicable if the customer is at fault or contributes to the spill, i.e. a non-functioning overflow relief gully)	\$1,000	If SGW restricts a residential customer's water supply, or takes legal action against a residential customer before making a reasonable effort to contact the customer to provide information about the help that is available, if the customer is experiencing difficulties paying (this GSL is applicable from 1st July 2012)	\$300
Service level guarantee	Rebate for breach (\$) per customer										
Unplanned water interruptions restored within five hours of notification	\$75										
Unplanned interruptions to sewer service restored within five hours of notification	\$75										
If we cause a sewage spill within a customer's house, we will pay the customer \$1,000. We will also clean up the property and provide alternative accommodation if required (not applicable if the customer is at fault or contributes to the spill, i.e. a non-functioning overflow relief gully)	\$1,000										
If SGW restricts a residential customer's water supply, or takes legal action against a residential customer before making a reasonable effort to contact the customer to provide information about the help that is available, if the customer is experiencing difficulties paying (this GSL is applicable from 1st July 2012)	\$300										



Topic area	Overview of customer feedback required
	<ul style="list-style-type: none"> • <i>Whether the amounts per breach are reasonable</i>
Capital expenditure	<p>Customer support for nine key capital expenditure projects to respond to regional growth, for compliance and general maintenance</p> <p><i>Customers were asked:</i></p> <ul style="list-style-type: none"> • <i>Whether they supported each project</i> • <i>Whether they feel the capital expenditure of \$71.85 M over 5 years, is too little, about right or too much</i> • <i>Whether they support greater capital investment now (during wet years) to construct infrastructure that helps ensure supply during drought, and even if it meant higher tariffs</i> • <i>Whether the amounts per breach are reasonable</i>
Tariff structures	<p>Because of current economic conditions South Gippsland Water is aiming to minimise price increases for customers, to 13.3% over the five years of the Water Plan (4.5% increase in the first year, with 2% annual increases for the following four years). Customers were presented with details of the proposed tariffs.</p> <p><i>Customers were asked whether the proposed tariffs are too low, about right or too high</i></p>
Region tariff alignment	<p>South Gippsland Water operates two different tariff rates across its region, as a result of different tariff structures when the Water Boards merged in 1994. It has gradually been aligning tariffs to remove the tariff gap between customers in South Gippsland Water's Southern Region (covering Inverloch, Wonthaggi and Cape Paterson) with East West Region customers (covering the remainder of South Gippsland Water's region) by 2016.</p> <p><i>Customers were asked:</i></p> <ul style="list-style-type: none"> • <i>Whether they agree with the customer equity principle of tariff alignment</i> • <i>Whether they support South Gippsland Water's proposal to unify tariff rates across its region</i>
Increasing the volumetric component of water charges	<p>South Gippsland Water is proposing to gradually increase the volumetric component of water charges by approximately 0.6% p.a. over five years to place more emphasis on sustainable water use and allow customers greater control of their bill</p> <p><i>Customers were asked:</i></p> <ul style="list-style-type: none"> • <i>Whether they support South Gippsland Water's proposal to increase the volumetric component of water charges by approximately 0.6% per year over 5 years</i> • <i>Whether an increase of approximately 0.6% per year over 5 years is fast enough</i>
Tariff choice	<p>In the March 2012 consultations to inform the Draft Water Plan, customers were asked if they would like to choose how their tariff is calculated. Customers' views were divided. The consultations also identified issues with tariff choice including added complexity and possible impacts on vulnerable customers if they made a wrong choice, a need to educate customers and costs associated with upgrading the billing system. South Gippsland Water decided not to proceed with offering customers a choice of tariffs in the Draft Plan</p> <p><i>Customers were asked whether or not they supported South Gippsland Water's decision</i></p>



Topic area	Overview of customer feedback required
Retaining a fixed charge for wastewater tariffs	<p>Currently South Gippsland Water charges a fixed amount to residential properties for waste water services. It has decided to continue with this approach as it does not have the infrastructure and it believes customers would not favour a variable charge on wastewater</p> <p><i>Customers were asked whether or not they support South Gippsland Water's proposal to continue with a fixed residential wastewater service charge</i></p>
Hardship	<p>South Gippsland Water offers a range of methods to look after disadvantaged customers, including installment plans, Centrepay payment plans, helping customers access utility relief grants and State Government concessions</p> <p><i>Customers were asked:</i></p> <ul style="list-style-type: none"><i>Whether they were aware of the help available for disadvantaged customers</i><i>To provide ideas to help promote these services and other help or services to assist customers experiencing hardship and having difficulty paying</i>



4 Consultation approach

4.1 Consultations sessions

4.1.1 Recruiting approaches

South Gippsland Water held customer workshops in Yarram, Wonthaggi and Leongatha to provide an opportunity for customers throughout the region to provide feedback.

- Bartley Consulting and South Gippsland Water developed a number of strategies to inform customers of the workshops and maximise the feedback from a diverse range of customers living and working in the region. These included:
- Phoning selected customers who participated in the March 2012 focus groups and who indicated they would be interested in attending again
- Phoning representatives of key business, welfare and community groups in South Gippsland Water's region, including relevant officers from the Shires of Bass Coast, South Gippsland and Wellington and financial councillors working in South Gippsland Water's region

To encourage customer participation and demonstrating South Gippsland Water's commitment to the consultation process:

- Customers who attended the workshops were offered a token of \$50 plus an additional \$10 or \$20 to cover their travel as a token of appreciation, and acknowledging that some participants had taken time from their working day to attend the sessions
- Customers were provided with a light meal/refreshments

4.1.2 Session details

Details of the sessions are in the following table.

Table 4-1: Session details

	Yarram	Wonthaggi	Leongatha
When	Tuesday, 7th August 2012	Tuesday, 7th August 2012	Wednesday 8th August 2012
Time	11:00 – 1:00pm	5:30pm – 7:30pm	11:00am to 1:00pm
Venue	Pelican meeting room at the Yarram Library, Yarram	Wonthaggi Centennial Centre Meeting Room at the Centennial Centre; Wonthaggi	GippsTAFE, Leongatha
Offering	Light lunch	Light supper	Light lunch

The Community Relations Coordinator attended all three sessions. The Executive Assistant to the South Gippsland Water Managing Director attended the last two sessions. Helen Bartley from Bartley Consulting attended all three sessions.

Helen Bartley introduced and facilitated the sessions while the South Gippsland Water representatives responded to customers' questions. We all took notes during the sessions.

We divided each session into groups of topics:

- Service standards and GSLs
- Capital expenditure projects
- Tariff structures, regional tariff alignment and proposed increases to the volumetric component of water charges
- Tariff choice and retaining a fixed charge for wastewater tariffs



- Hardship

Before we discussed each topic with customers, we gave them a handout about the topic, discussed the information in the handout and answered any questions. We then allowed time for discussion about the topic before respondents were asked to complete some questions about their support or otherwise for the proposals contained in the questionnaire.

Several participants raised other issues that were outside the scope of the sessions. Some of the comments related to these issues are reported as they appeared to affect or influence customers' feedback, particularly feedback related to service standards and key performance indicators. South Gippsland Water noted other issues that were clearly unrelated to deal with outside the session.

4.2 Information sessions - participant profile

The following table profiles the customers who attended each session.

Table 4-2: Participant profile

Characteristic	Yarram	Wonthaggi	Leongatha
Total (28 customers)	<ul style="list-style-type: none"> • 11 customers 	<ul style="list-style-type: none"> • 7 customers 	<ul style="list-style-type: none"> • 11 customers
In addition to living in the region, customers represented the following groups...	<ul style="list-style-type: none"> • Business customers (including large volume water users) • Community groups (traders, progress associations) • Families with dependent children • Low/fixed income and disadvantaged customers • Farmers • Environment 	<ul style="list-style-type: none"> • Families with dependent children • Low/fixed income and disadvantaged customers • Local government 	<ul style="list-style-type: none"> • Business customers (including large volume water users) • Community groups (traders, progress associations) • Families with dependent children • Low/fixed income and disadvantaged customers • Local government
Gender	<ul style="list-style-type: none"> • 5 male; 6 female 	<ul style="list-style-type: none"> • 3 male; 4 female 	<ul style="list-style-type: none"> • 4 male; 7 female
Age range	<ul style="list-style-type: none"> • 30-39 to 60+ 	<ul style="list-style-type: none"> • 30-39 to 60+ 	<ul style="list-style-type: none"> • 30-39 to 60+
Household structure	<ul style="list-style-type: none"> • ~4 single person/retired couple • ~2 couples • 2 families with dependent children • 3 not established 	<ul style="list-style-type: none"> • 2 single people • 1 couple • 3 families with dependent children • 2 not established 	<ul style="list-style-type: none"> • ~2 single people • ~2 couples • 4 families with dependent children • 3 not established
Eligible concession card holder	<ul style="list-style-type: none"> • 4+ eligible concession card holders 	<ul style="list-style-type: none"> • 1+ eligible concession card holders 	<ul style="list-style-type: none"> • 1+ eligible concession card holders
Work status	<ul style="list-style-type: none"> • 3 retired • 3 working full time • 3 working part time/casually 	<ul style="list-style-type: none"> • 2 retired • 3 working full time • 2 working part time/casually 	<ul style="list-style-type: none"> • 4 retired • 5 working full time • 2 working part time/casually



Characteristic	Yarram	Wonthaggi	Leongatha
	<ul style="list-style-type: none"> • 1 home duties • 1 not established 		
Water dependent business operators	<ul style="list-style-type: none"> • 1 laundry operator • 1 farmer using SGW water 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • 1 caravan park operator • 1 farmer using SGW water
Other professional interests	<ul style="list-style-type: none"> • None • Landcare 	<ul style="list-style-type: none"> • Welfare, financial counselling • Local government 	<ul style="list-style-type: none"> • Welfare, financial counselling • Local government • Real estate
Locations represented	<ul style="list-style-type: none"> • Devon North • Korumburra • Port Albert/Landsborough • Port Welshpool • Tara Valley • Yarram/South Dudley 	<ul style="list-style-type: none"> • Cape Paterson • Inverloch • Wonthaggi 	<ul style="list-style-type: none"> • Korumburra • Leongatha • Meeniyan • Poowong/Loch/Nyora



5 Service standards

5.1 Information provided to participants

- We have a range of Service Standards outlined in our Customer Charter. They relate to:
 - The time it takes to respond to and repair faults
 - The number of breaks or blockages within our networks
 - The number of service interruptions customers' experience
 - Our levels of customer service
- We have consistently performed well against our Service Standards, meeting or exceeding these each year
 - Over the last five years our customer satisfaction rating has been consistently high, with at least 95% of customers satisfied or very satisfied with our service
- Over the next five years we propose to maintain the Service Standards and our current levels of service provision to customers

The information provided to customers included a list of service standards and for each service standard, the target for 2011/12, the result for 2011/12 and the proposed targets for 2013/14 - 2017/18; as shown below:

Description of the Standard	Target 2011/12	Result 2011/12	Target 2013/14 - 2017/18
For every 100km of water pipework, there will be no more than 28 breaks per year.	28	13.83	25
When we receive an incident report we assign it a priority rating which highlights the urgency for response			
Priority 1 – A substantial water-mains break with potential to cause water loss, affect the environment and/or water quality	30 mins	16.92 mins	30 mins
Priority 2 – A water main leak which may cause minor water loss, affect the environment and/or water quality	40 mins	20.92 mins	40 mins
Priority 3 - No immediate impact on the customer, property or environment.	1440 mins (24 hrs)	516.30 mins (8.6 hrs)	600 mins (10 hrs)
99% of planned water supply interruptions should be restored within 5 hours	99%	100%	99%
99% of unplanned water interruptions should be restored within 5 hours	99%	99%	99%
On average, all SGW customers will not be without water for more than 2 hours 30 minutes in a planned water interruption	150 mins	34.62 mins	100 mins
On average, all SGW customers will not be without water for more than 33 minutes in an unplanned water interruption	33 mins	8.11 mins	30 mins
The duration of any planned water supply interruption will be no longer than 5 hours on average	300 mins	194 mins	250 mins
The duration of any unplanned water supply interruption will be no more than 1 hour 40 minutes on average	100 mins	94.82 mins	100 mins



Description of the Standard	Target 2011/12	Result 2011/12	Target 2013/14 - 2017/18
No customer will have more than 5 unplanned water interruptions in any 12 month period	0	0	0
For every 100km of wastewater pipe-work, there will be no more than 18 blockages per year	18	21.67	18
On average all sewer blockages will be attended within 30 minutes*	30 mins	31.15 mins	30 mins
A sewer blockage will be rectified within two hours on average	120 mins	74.95 mins	120 mins
All sewer spills should be contained within 5 hours on average	100%	100%	100%
Customers should not experience more than 3 sewer blockages per year	0	0	0
98% of telephone calls to our Foster Office will be answered within 30 seconds	98%	99.1%	98%

5.2 Feedback

5.2.1 Verbal feedback

In the Yarram session, several customers commented on the age of some infrastructure and its impact on South Gippsland Water's ability to meet some service standards.

- *"Yarram still has a few old water mains – the main street has a big one." (Yarram session)*

South Gippsland Water maintains an asset management system to monitor infrastructure issues and record hotspots, so that they can be efficiently dealt with, to minimise the likelihood of major breaks occurring.

In all groups, various residential and business customers commented on issues with their water pressure. One customer at the Yarram session was particularly concerned and commented as a major user of water:

- *"As a big user in Yarram (laundry) ever since the Water Board cut the pressure because of breakages, when you're relying on pressure to fill washers, it's very, very slow. It's a problem given the amount of water I expect to come through ... I'm installing my own pump to get better pressure" (Yarram business customer)*

South Gippsland Water explained that Yarram's water pressure was reduced, but before the pressure was reduced it was unusually high, and was causing many breaks. It is still within the Plumbing Industry Commission and South Gippsland Water standards. South Gippsland Water also explained that customers could check their pressure by timing how long a 20 litre bucket takes to fill; it should take less than one minute to fill.

A Poowong customer who attended the Leongatha session also reported significant difficulties with the water pressure:

- *"Poowong has extremely poor pressure and I'm on top of a hill. I thought it was because I was level with the tower; even the CFA is very aware of the pressure. I generally use tank water but as soon I use town water I have extremely poor pressure" (Leongatha session)*

Several customers at the Wonthaggi session commented that sometimes their water had a musty smell. South Gippsland Water explained that sometimes algal blooms can affect the taste and smell of water.



Most customers in all sessions were happy with the water quality:

- *"The water quality here is excellent" (Yarram session)*
- *"When we came down from Melbourne to Inverloch, the water tasted foul, but it's better than it used to be" (Leongatha session)*

However some customers were concerned:

- *"We get a lot of brown water at the caravan park – it's very dirty" (Leongatha session)*
- *"The water in Meeniyah is highly chlorinated, it happened after the Meeniyah difficulties" (Leongatha session)*

In the Wonthaggi session, one customer praised South Gippsland Water's efficiency:

- *"Service standards: as a resident I needed my meter changed over. I contacted them and they were there before lunch to fix the meter" (Wonthaggi session)*

Customers at the Yarram session also discussed a need to be informed if there were planned service interruptions. However several customers noted that they do not have a letter box to receive information (particularly customers from Port Albert). One business customer also noted that it is difficult to get Australia Post to deliver brochures.

- *"Some of us don't have letterboxes – so we don't know when outages will occur." (Yarram session)*

Customers discussed email as an alternative method of communicating with customers. However not all customers have email or check it regularly.

5.2.2 Written feedback

Proposed standards

The questionnaire asked customers:

Are you happy for us to maintain or improve our current customer service standards?

Nearly all participants in all groups (93% overall) indicated that they were happy with the service standards that were presented to them.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=27 (93%)	n=10	n=7	n=10
No	n=2 (7%)	n=1	n=0	n=1

Comments received from customers in the questionnaire are further evidence of customer support for the proposed service standards.

- *"Just keep on doing what you are doing" (Yarram customer)*
- *"Good continuous improvement targets" (Wonthaggi customer)*

However two customers felt that because the targets are being achieved that they should be raised to encourage an even higher standard of service:

- *"I feel that you are being too easy on yourselves" (Meeniyah customer)*
- *"Keep raising the bar at a reasonable rate; don't be afraid to push the so called limits" (Cape Paterson customer)*



Customers' overall rating of South Gippsland Water's overall service

The questionnaire asked customers:

How do you rate our overall service?

Most participants in all groups rated South Gippsland Water's overall service as good or excellent (69%).

Response	All customers	Yarram	Wonthaggi	Leongatha
Very poor	n=3 (10%)	n=1	n=0	n=2
Poor	n=0 (0%)	n=0	n=0	n=0
Satisfactory	n=6 (21%)	n=3	n=2	n=1
Good	n=13 (45%)	n=5	n=3	n=5
Excellent	n=7 (24%)	n=2	n=2	n=2
No response	n=1 (3%)	n=0	n=0	n=1

Two customers (7%) rated the service as very poor. One had significant concerns about the water pressure at their property (Poowong customer).

The other customer had issues with the water taste and chlorination:

"I still do feel that Meeniyans water is excessively chlorinated, it tastes terrible and we need a filter to make it drinkable" (Meeniyans customer)

The questionnaire then asked customers to provide additional comments about South Gippsland Water's service and its supply system. Concerns about water pressure were a common theme in all groups:

- *"Lack of water pressure is my main concern" (Yarram customer)*
- *"Improve water pressure for Port Albert" (Port Albert customer)*
- *"Water pressure needs surveying in Poowong" (Poowong customer)*
- *"I would still like a slight increase in the pressure of water in the tap" (Cape Paterson customer)*

One customer reported specific issues with the water pressure on Black Saturday:

- *"Water pressure needs to be addressed. Black Saturday - no water. I appreciate this was an extreme situation, but this area is at high fire risk" (Langsborough-Port Albert customer)*

South Gippsland Water explained that reticulated water should not be relied on during bush-fires. It is not a water source to cater for demands of fighting bush-fires; it is a drinking water source. If electricity is cut in an emergency South Gippsland Water's power source for its water pumps may also be affected.

Another customer has a permit to take water straight from the river; they also had issues with water pressure:

- *"Water pressure is very variable due to maintenance works at the reservoir" (Tara Valley customer)*

One customer had issues with the smell of the water, although they noted it has improved in recent years:



- *"Occasionally there is an unpleasant odour (foul?), but, it is much better than ten years ago" (Korumburra customer)*

DRAFT



Two customers praised South Gippsland Water for its service in their questionnaires:

- *"It all seems to work well" (Inverloch customer)*
- *"Excellent since 1973; only one sewer blockage" (Leongatha customer)*

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6 Guaranteed service levels

6.1 Information provided to participants

- The ESC is mandating water businesses to guarantee the service levels they provide to customers
- We are proposing to guarantee our service levels for some of our Service Standards that customers rated highly in our consultations in early 2012, or they have significant customer impacts if the service level is not achieved
- We proposed to offer a rebate to customers if we fail to meet these Service Standards

Customers were presented with the following proposed GSLs:

Service level guarantee	Rebate for breach (\$) per customer
Unplanned water interruptions restored within five hours of notification	\$75
Unplanned interruptions to sewer service restored within five hours of notification	\$75
If we cause a sewage spill within a customer's house, we will pay the customer \$1,000. We will also clean up the property and provide alternative accommodation if required (not applicable if the customer is at fault or contributes to the spill, i.e. a non-functioning overflow relief gully)	\$1,000
If SGW restricts a residential customer's water supply, or takes legal action against a residential customer before making a reasonable effort to contact the customer to provide information about the help that is available, if the customer is experiencing difficulties paying (this GSL is applicable from 1st July 2012)	\$300

6.2 Feedback

6.2.1 Verbal feedback

Verbal feedback in all of the sessions indicated general support for the proposed GSLs although several customers at the Leongatha session questioned whether they were necessary:

- *"Under what regulations do you pay the \$75? Nature takes its course and things happen. Why is it so necessary that someone is payed \$75? I don't know why we need it" (Leongatha session)*
- *"It seems extravagant" (Leongatha session)*
- *"It's the day and age we live in. It's crazy; they [the ESC] are justifying their existence" (Leongatha session)*

Other customers questioned South Gippsland Water's ability to meet the GSLs:

- *"Are you confident that you'll get it back on track in five hours?" (Wonthaggi session)*

South Gippsland Water explained that on average it exceeds its standards and the GSLs are about compensating customers for extreme events.

Other customers queried whether five hours was too short, a period before they became eligible for a rebate.

Some customers asked about the process to receive payment if there was a breach. South Gippsland Water explained that it would automatically deduct the amount from the customer's bill – they would not have to apply for a rebate.



Yarram session customers discussed the importance of communicating information about the GSLs to customers, especially to ensure they understood the separation of customers' responsibilities from South Gippsland Water's responsibilities.

One customer in the Wonthaggi session queried whether \$75 for unplanned interruptions was a time-based payment, for example if the water was off for two days would the rebate be a multiple of \$75?

- *"In the electricity industry, compensation is per day i.e. \$300 per day for an incorrect disconnection" (Wonthaggi session)*

South Gippsland Water advised that in certain circumstances it would provide bottled water or truck water in for customers. Customer then suggested that South Gippsland Water needed to clarify the payment circumstances.

Customers in all groups found the wording of the fourth GSL related to hardship difficult to understand. Although the wording is as recommended by the ESC, customer generally agreed that it needed a better explanation.

- *"Make people aware of the organisation's responsibilities" (Yarram session)*

6.2.2 Written feedback

Appropriateness of the proposed GSLs

The questionnaire asked customers:

Are the above Guaranteed Service Levels appropriate?

Nearly all participants in all groups (93% overall) indicated that they believe that the proposed GSLs are appropriate.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=27 (93%)	n=11	n=7	n=9
No	n=1 (3%)	n=0	n=0	n=1
Unsure	n=1 (3%)	n=0	n=0	n=1

Although most customers supported the choice of GSLs, but several questioned whether they were generally needed:

- *"I question why SGW needs to pay a \$75 penalty; this will eventually increase rates" (Poowong customer)*
- *"A rebate of \$75 for unplanned interruptions to a sewer is rather extravagant and I feel unnecessary, only making our water accounts higher" (Poowong customer)*
- *"Not entirely necessary for GSLs 1, 2 and 3"*

Two customers (both relatively young and in employment) were particularly concerned about the wording of the fourth GSL:

- *"Re-word or add an extra explanation around point 4 - just to clarify its only if SGW doesn't comply with hardship" (Meeniyan customer)*
- *"The wording is tricky for GSL 4" (Nyora customer)*

Another customer felt that it was important for South Gippsland Water to educate customers about the GSLs as customers should be made aware of their entitlements if South Gippsland Water breached a guaranteed service:

- *"Education of home owners [about the GSLs] is essential" (Port Albert customer)*



One customer felt that five hours was a long time to be without water:

- *"First one - five hours is a long time without water but we recognise re difficulties and distances" (Inverloch customer)*

Customers were also asked:

Are the above amounts per breach reasonable?

Nearly all participants in all groups (93% overall) indicated that they believe that the proposed rebate amounts per breach are appropriate.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=27 (93%)	n=11	n=7	n=9
No	n=2 (7%)	n=0	n=0	n=2

One customer who did not agree with the amounts did not support the first two GSLs - they believed that they were not necessary. Consequently they did not believe that the amounts per breach were appropriate.

The other customer partially supported GSLs but only the last two and then questioned the amount of the rebate:

- *"One and two at \$75 are not needed; three and four should be on a case, by case basis" (Leongatha customer)*

Two other customers, although they indicated that they generally supported the amount per breach, believed that they some were too generous:

- *"The last one seems to be a high price for SGW, surely \$150 would be sufficient." (Port Albert customer)*
- *"More than enough" (Devon North customer)*



7 Capital expenditure projects

7.1 Information provided to participants

Driver	Project overview	Delivery date	Water Plan expenditure
Growth	Poowong/Loch/Nyora Sewerage Scheme: nominated by the Minister for Water & under SGW's Statement of Obligations - SGW will construct a sewerage system to service these towns	2016/17	\$25.0M
	Northern Towns supply connection works – Lance Creek to Korumburra: Stage 1: construction of a pipeline and pump station, as preferred in the Water Supply Demand Strategy Business Case assessing future supply options for Northern towns to connect Korumburra Water Supply System to Lance Creek (& the Melbourne Supply System)	2016/17	\$14.3M
	Northern Towns supply connection works – Korumburra to Poowong: Stage 2: Construction of a pipeline and pump station to connect Little Bass (Poowong, Loch & Nyora) Water Supply System to Lance Creek (and the Melbourne Supply System)	2016/17	\$3.1M
	Wonthaggi sewer system upgrades: upgrade the Wonthaggi sewer system to cater for future population growth	Ongoing	\$1.2M
Compliance	Foster Wastewater Treatment Plant (WWTP) Upgrade: Stage 1: the existing plant has difficulty complying with EPA licence requirements. We will construct new maturation and winter storage lagoons on additional land already acquired	2013/14	\$5.4M
	Foster WWTP upgrade: Stage 2: construct a pipeline to connect upgrade works to existing plant	2014/15	\$1.4M
	Sewer Pump Station Upgrades: upgrade ageing sewer pump stations to meet EPA obligations	Ongoing	\$1.2M
Maintenance	Region wide – sewer mains replacement/rehabilitation	Ongoing	\$2.8M
	Region wide - water mains renewals/replacement	Ongoing	\$2.3M



7.2 Feedback

7.2.1 Verbal feedback

In all sessions customers debated the fairness of paying for projects that were outside their district, where they did not believe they would derive a direct benefit. For example:

- *"Almost all these projects are in the Northern area, why is the southern area paying for it" (Wonthaggi session)*
- *"I am concerned that at the eastern end of SGW, customers are bearing the cost of getting water from desal and we ended up having to contribute that we never have to benefit" (Yarram session)*

Customers discussed the fact that funding of the Poowong Loch Nyora Sewerage Scheme is a carryover from former legislation; whereas new sewerage schemes are now user-pays. They did not think it was fair that some customers might have to pay twice (e.g. paying for the Poowong Loch Nyora Sewerage Scheme and at Port Albert):

- *"In Alberton they're paying \$10k for the sewerage. Will people in Alberton they get a differential rate because they paid for it?" (Leongatha session)*
- *"Nobody wants to subsidise or pay any extra for these upgrades but they have to go ahead" (Yarram session)*

One customer queried whether the inclusion of the Poowong Loch Nyora Sewerage Scheme, in the last Water Plan and Water Plan III would be at the expense of other sewerage other towns:

- *"The Poowong Loch Nyora Sewerage Scheme was in the last Water Plan. Now it is in this Plan, does that mean there are no more opportunities in for other schemes in this Plan?" (Leongatha session)*

Customers also discussed the impacts of the Northern Towns Supply Connection and expressed concerns about being connected to Melbourne's water supply:

- *"This proposal is saying that it is expensive to obtain water via the desal" (Wonthaggi session)*
- *"It worries me the fact of getting tied up in Melbourne with the desal. Is that going to come back on our bill? If Melbourne says we need water I am concerned that they will take our water. We are self-sufficient down here" (Yarram session)*
- *"That pipeline, the Northern Supply Line it will be connected to Korumburra and to the desal? If it gets tough we'll be connected to desal [and we'll pay for it]" (Leongatha session)*

One customer questioned whether Poowong need to have access to a larger water supply:

- *"Is there still that demand in Poowong? The abbs [abattoirs] got a grant to treat their own water and no longer use the same volumes." (Leongatha session)*

Most customers supported the upgrade of the wastewater treatment plant at Foster because they were concerned about the ocean outfall into Corner Inlet, for example:

- *"I don't support ocean outfalls" (Yarram session)*
- *"I feel the same about the water treatment at Foster, the outfall runs into the ocean, it's not a good thing and it has to be changed regardless" (Yarram session)*

Customers in all sessions then discussed their support or otherwise for increased infrastructure investment to help ensure water security into the future. Customers generally supported increased investment.

- *"It's a sensible way to go to secure water now for drought" (Yarram session)*
- *"I support increased investment; they have to repair and rebuild, but it depends on the cost" (Yarram session)*
- *"The percentage increase needs to be known" (Wonthaggi session)*



Yarram customers also believed that South Gippsland Water should continue to encourage customers to be water efficient, to reduce the need for more infrastructure:

- *“With regards to self-sufficiency, people purchasing tanks reduces the need for water and SGW services” (Yarram session)*
- *“When we first built in Port Welshpool we were not allowed water tanks. At that time we could have put them in where we wanted to, but now we can’t”*

7.2.2 Written feedback

Poowong/Loch/Nyora Sewerage Scheme

Customers were asked:

Do you support the Poowong, Loch and Nyora Sewerage Scheme - \$25M?

Nearly all participants in all groups (93% overall) indicated that they support the Poowong Loch Nyora Sewerage Scheme. One customer did not support the Poowong Loch Nyora Sewerage Scheme and one was unsure – although interestingly both supported tariff alignment across South Gippsland Water’s region (see Section 9).

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=27 (93%)	n=11	n=7	n=9
No	n=1 (3%)	n=0	n=0	n=1
Unsure	n=1 (3%)	n=0	n=0	n=1

Customers in all sessions, and regardless of where they lived, added to their support with the following comments:

- *“Upgrades must go on” (Yarram customer)*
- *“Half their luck, if the is funding no longer available for areas such as Langsborough” (Port Albert customer)*
- *“[They are] fast becoming commuter towns – they need this as soon as possible” (Yarram customer)*
- *“Yes, all people need secure, high quality water where possible” (Korumburra customer)*
- *“Badly needed” (Leongatha customer)*
- *“Poowong needs sewerage as soon as necessary” (Poowong customer)*
- *“As soon as possible”*

Two customers were concerned about the costs:

- *“I have concerns about the costs to the ordinary household” (Port Albert customer)*
- *“Not without government funding” (Wonthaggi customer)*



Northern Towns supply connection

Customers were asked:

Do you support the Northern Towns Supply Connection with \$20M of State Government funding?

Most participants in all groups (86% overall) indicated that they support the Northern Towns Supply Connection **with** \$20M of State Government funding. One customer did not support the Northern Towns supply connection and one was unsure – although both supported tariff alignment across South Gippsland Water’s region (see Section 9).

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=25 (86%)	n=8	n=6	n=11
No	n=1 (3%)	n=0	n=1	n=0
Unsure	n=1 (3%)	n=1	n=0	n=0
No response	n=2 (7%)	n=2	n=0	n=0

One customer supported the project unconditionally:

- *“I think it makes sense to network” (Wonthaggi customer)*

Two customers emphasised that their support was conditional on State Government funding:

- *“It can’t go ahead without government funding” (Cape Paterson customer)*
- *“None without full government [funding]” (Wonthaggi customer)*

Another customer did not believe that other areas should subsidise the project:

- *“I feel that this area should not subsidise other areas” (Yarram customer)*

Customers were then asked:

Do you support the Northern Towns Supply Connection without \$20M of State Government funding?

Without \$20M of State Government funding, only 48% of participants across all groups supported the Northern Towns Supply Connection.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=14 (48%)	n=5	n=1	n=8
No	n=6 (21%)	n=3	n=2	n=1
Unsure	n=7 (24%)	n=2	n=4	n=1
No response	n=2 (7%)	n=1	n=0	n=1

Their main concerns related to increased costs to customers:

- *“I am presuming costs to users would increase. Water costs and all other service costs [are already] increasing and expensive” (Port Albert customer)*
- *“It depends on the rate hike or the investment alternatives” (Wonthaggi customer)*
- *“I would like to know the financial burden on customers if this does not come through” (Inverloch customer)*



- *“State Government needs to assist ratepayers” (Yarram customer)*
- *“It can't go ahead without Government funding” (Cape Paterson customer)*

Two customers suggested that South Gippsland Water needs to look for alternative funding if State Government funding was not available:

- *“We still need infrastructure, so we would still need a strategic plan or options to achieve it” (Cape Paterson customer)*
- *“You need a plan B [if State Government funding is not forthcoming]” (Leongatha customer)*

Foster Wastewater Treatment Plant

Customers were asked:

Do you support investment into the Foster Wastewater Treatment Plant upgrade - \$6.8M?

Most participants in all groups (83% overall) indicated that they support investment into the Foster Wastewater Treatment Plant upgrade.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=24 (83%)	n=10	n=5	n=9
No	n=0 (0%)	n=0	n=0	n=0
Unsure	n=4 (14%)	n=1	n=2	n=1
No response	n=1 (3%)	n=0	n=0	n=1

Several customers were concerned about the current outfall into Corner Inlet and the importance of closing this outlet. Therefore they supported the Foster Wastewater Treatment Plant upgrade:

- *“Ocean outfalls need to be reduced to Corner Inlet. Infrastructure would have to be developed” (Port Albert customer)*
- *“Wastewater going into the ocean must be changed” (Port Welshpool customer)*
- *“Yes this needs to be modernised and directed away from the Corner Inlet” (Port Albert customer)*

One customer noted that it was important for South Gippsland Water to comply with EPA standards:

- *“They need to get to EPA standards” (Leongatha customer)*



Extent of capital works expenditure

Customers were asked:

After reviewing the capital expenditure projects, do you feel this investment into capital expenditure, \$71.85M over 5 years, is too little, about right or too much?

Although most participants in all groups (66% overall) felt that South Gippsland Water's investment into capital expenditure of \$71.85M over 5 years is about right, overall 31% were unsure.

Response	All customers	Yarram	Wonthaggi	Leongatha
Too little	n=0 (0%)	n=0	n=0	n=0
About right	n=19 (66%)	n=7	n=4	n=8
Too much	n=0 (0%)	n=0	n=0	n=0
Unsure	n=9 (31%)	n=4	n=3	n=2
No response	n=1 (3%)	n=0	n=0	n=1

Two customers were concerned that ratepayers across the region were not benefitting equally from the expenditure:

- *"The vast majority of expenditure is in the east-west area but all ratepayers are being asked to pay" (Wonthaggi customer)*
- *"The water plan needs to adopt a balanced approach for all customers to try and even out all the costs/benefits" (Yarram customer)*

One customer added their support for the expenditure:

- *"It [the budget] manages to upgrade aging infrastructure and considers population growth" (Wonthaggi customer)*

Water supply security

Customers were asked:

Do you support greater capital investment now (during wet years) to construct infrastructure that helps ensure supply during drought?

Most participants (86% overall) supported greater capital investment now, to construct infrastructure to help ensure the region's water supply during drought.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=25 (86%)	n=11	n=5	n=9
No	n=2 (7%)	n=0	n=1	n=1
Unsure	n=1 (3%)	n=0	n=1	n=0
No response	n=1 (3%)	n=0	n=0	n=1

Several customers also suggested that customers should be encouraged to be more water efficient or even self-sufficient

- *"Promote more self-sufficiency in households" (Port Albert customer)*



- *"Though we should be encouraging water restrictions. It also depends what it is. Dams?" (Wonthaggi customer)*
- *"There needs to be more spent on water saving measures" (Wonthaggi customer)*
- *"Perhaps grants for grey water systems for flushing toilets etc." (Cape Paterson customer)*

Customers were then asked:

Would you still support increased investment in water security if it meant higher tariffs?

Customers were divided as to whether they would support increased investment in water security if it meant higher tariffs – overall 38% yes, 28% no and 31% unsure.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=11 (38%)	n=4	n=1	n=6
No	n=8 (28%)	n=3	n=2	n=3
Unsure	n=9 (31%)	n=4	n=4	n=1
No response	n=1 (3%)	n=0	n=0	n=1

Some customers who supported increased investment qualified their support:

- *"Some people are already stretched financially; it would depend on the costs but it has to be paid from somewhere so the only way to pay for the improved infrastructure is to increase tariffs" (Korumburra customer)*
- *"Depends on cost and infrastructure being developed" (Foster customer)*
- *"Yes we are dependent on water and it is a necessity I enjoy. We are very lucky in this country to have high quality drinking water" (Cape Paterson customer)*

Customers who did not support increased investment, or were unsure, indicated that their support or otherwise depended on the increase:

- *"This depends on the cost of the tariffs" (Port Albert customer)*
- *"Depends on higher tariff amount" (Wonthaggi customer)*
- *"The supply charge from South Gippsland is much higher than other areas" (Port Albert customer)*
- *"Income is fixed, my bills are not" (Yarram customer)*
- *"Too costly" (Yarram customer)*
- *"Depends on level of increase - perhaps a massive jump might be off-set" (Wonthaggi customer)*
- *"Too vague a proposition to support , wait until we measure the piece of string" (Cape Paterson customer)*
- *"How much "higher"? 50% no way, 20% no, 10% too much, 3-5% not good but I can live with it" (Inverloch customer)*



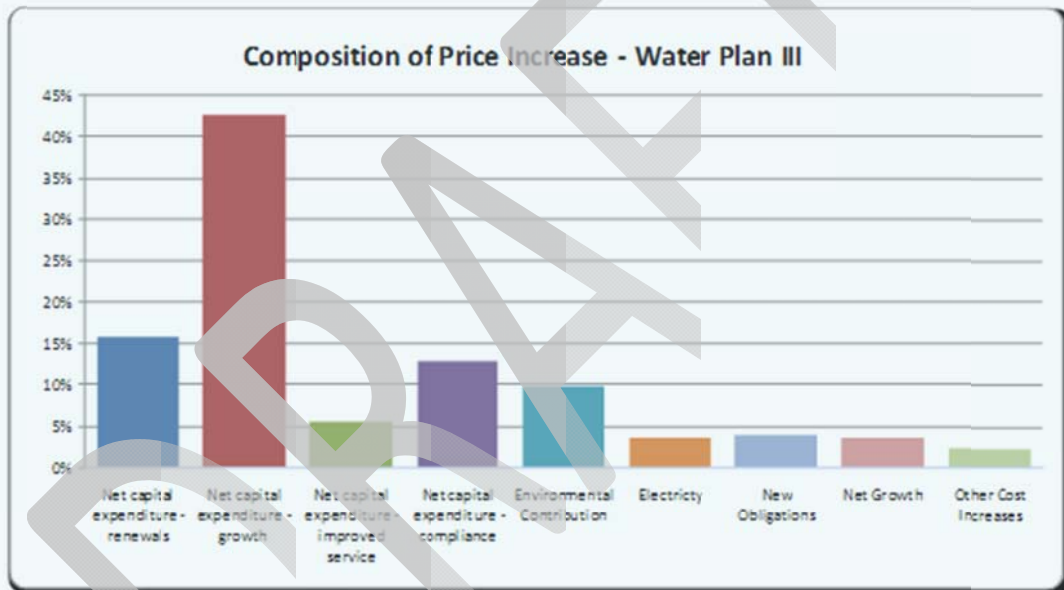
8 Tariff increase

8.1 Information provided to participants

Because we are a State-owned Water Corporation, our prices are calculated to cover our operating costs, rather than delivering a profit for private investors. Because of current economic conditions we are aiming to minimise price increases for our customers. Growth is the main price increase contributor over the next 5 year period.

The high capital costs are due to:

- 40% of the price increase is cost of constructing the Poowong/Loch and Nyora Sewerage Scheme, a scheme nominated by the Minister for Water
- 15% of the price increase is due to renewals expenditure to replace aging infrastructure and maintain existing systems
- 12% of the price increase is compliance expenditure to meet existing and increasing regulations and standards related to water quality and environmental discharges



The Poowong Loch and Nyora Sewerage Scheme, which provides for growth, is limited by previous State Government legislation on customer contributions (i.e. \$800 per lot) and therefore has a significant shortfall on capital and an impact on tariffs.

The proposed weighted average price increases per annum (excluding CPI) are as follows. These equate to a cumulative weighted average total increase of 13.3% over the five years.

Year	Proposed percentage increase
2013/14	4.5%
2014/15	2.0%
2015/16	2.0%
2016/17	2.0%
2017/18	2.0%



Proposed tariffs and prices across our region 2013/14 to 2017/18

Real \$ (1/1/13)	2013/14	2014/15	2015/16	2016/17	2017/18
East/West (all towns excluding Inverloch, Cape Paterson, Wonthaggi)					
Basis of service charge	\$ p.a.	\$ p.a.	\$ p.a.	\$ p.a.	\$ p.a.
General tariff	\$324.49	\$338.70	\$353.52	\$369.01	\$376.20
Vacant land	\$324.49	\$338.70	\$353.52	\$369.01	\$376.20
Agreements	\$295.02	\$307.94	\$321.43	\$335.50	\$342.03
Concessional	\$260.86	\$266.95	\$273.19	\$279.57	\$285.01

Southern (Inverloch, Cape Paterson, Wonthaggi)					
Basis of service charge	\$ p.a.	\$ p.a.	\$ p.a.	\$ p.a.	\$ p.a.
General tariff	\$363.62	\$365.40	\$367.17	\$369.10	\$376.20
Vacant land	\$363.62	\$365.40	\$367.17	\$369.01	\$376.20
Agreements	\$326.74	\$328.33	\$329.93	\$335.50	\$342.03
Concessional	\$260.86	\$266.95	\$273.19	\$279.57	\$285.01

Basis of volume charge	cents per kL	cents per kL	cents per kL	cents per kL	cents per kL
Overall usage	1.73	1.79	1.86	1.93	1.97
Murray Goulburn	2.10	2.18	2.27	2.35	2.40

Wastewater tariffs					
Basis of service charge	\$ p.a.	\$ p.a.	\$ p.a.	\$ p.a.	\$ p.a.
General tariff	\$467.17	\$473.99	\$480.91	\$487.93	\$497.44
Vacant land	\$274.16	\$278.16	\$282.22	\$286.34	\$291.91

8.2 Feedback

8.2.1 Verbal feedback

Customers in all sessions generally accepted that tariffs needed to increase and they supported South Gippsland Water's proposal to keep tariff increases to a minimum.

- *"People could not afford greater increases" (Yarram session)*
- *"There are a lot of pensioners with fixed incomes [who could not afford more]" (Yarram session)*
- *"Our pockets won't stand it if you do [increase tariffs by a greater amount]" (Yarram session)*
- *"What are the current annual tariff charges per account? [South Gippsland Water confirmed that annually the current fee is \$355, increasing to \$363 in 2013] – this area is not initially a huge increase" (Wonthaggi session)*
- *"Everyone would rather pay less but it's not too bad" (Leongatha session)*
- *"You've got to have it – water is the most precious thing on earth (Leongatha session)*

However, after customers reviewed the table of proposed tariffs, some questioned specific aspects associated with having to pay for infrastructure they don't use:

- *"Where we are we have none of this infrastructure, septic, river water we have to pay for filtering our own water – water by agreement" (Yarram session)*



- *“Wastewater tariffs – what if you put on a grey water system to keep grey water on the property – you are paying the full amount of service charge for wastewater” (Wonthaggi session)*
- *“To play devil's advocate – basic volume charge, that's pretty low – no one paying the full price to have water delivered to the door – what's the chance of upping that” (Wonthaggi session)*
- *“Would there be a charge for people on their own water supply?” (Leongatha session)*

One customer in the Leongatha session also questioned why the percentage increase was greater in the first year (2013/14). South Gippsland Water explained that the greater increase corresponded to the timing of the larger capital works projects.

Another customer questioned Murray-Goulburn's tariffs and the impact on Leongatha's water usage:

- *“Is Murray Goulburn's usage affecting Leongatha's tariffs? If they use 60% of our water supply and we are facing increased tariffs, shouldn't they be paying more?” (Leongatha session)*

8.2.2 Written feedback

The questionnaire asked customers:

Are the proposed increases too low, about right, or too high?

Most customers in all groups (72% overall) believe that the proposed tariff increases are about right.

Response	All customers	Yarram	Wonthaggi	Leongatha
Too low	n=2 (7%)	n=1	n=0	n=1
About right	n=21 (72%)	n=7	n=6	n=8
Too high	n=0 (0%)	n=0	n=0	n=0
Unsure	n=3 (10%)	n=2	n=0	n=1
No response	n=3 (10%)	n=1	n=1	n=1

Two customers who supported South Gippsland Water's approach to keep tariff increases to a minimum commented that they would not want the increases to be any larger:

- *“They couldn't be too high as people are already stretched financially, the cost of living keeps increasing” (Korumburra customer)*
- *“Any higher, objections would be made. Costs are already higher compared to other regions. Factor in the large percentage of pensioners and families” (Port Albert customer)*

Others simply commented that the increases seemed reasonable:

- *“The prices seem reasonable: 13.5% increase. Water by agreement should be the same price as general” (Cape Paterson customer)*
- *“Reasonable and necessary for future capital expenditure” (Poowong customer)*
- *“As a customer, you never want to pay more, but to maintain infrastructure, we need to pay. If SGW has got the balance right it is hard to know” (Foster customer)*

One customer was concerned about low income earners and suggested that the increases should be advertised to help customers modify their budgets:



- *"But I would rather pay less of course; the higher increase in 2013/14 will hit low income earners. Maybe advertise this to allow for budgets to be adjusted" (Inverloch customer)*

Another customer believed that the volumetric component was too low:

- *"Volumetric charge too low, we should be paying the real cost of supplying water" (Wonthaggi customer)*

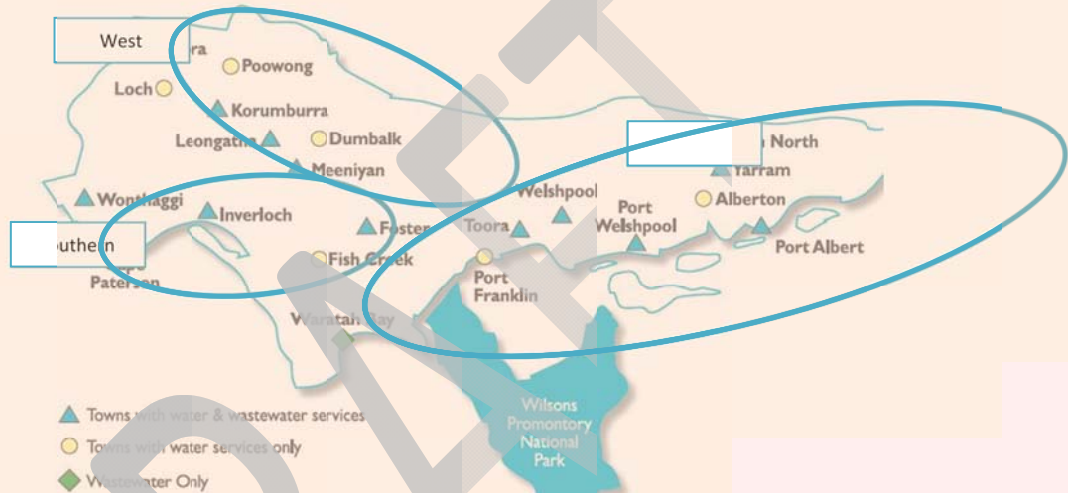
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9 Regional tariff alignment

9.1 Information provided to participants

- Since 1994 when we formed, we have operated two different regional tariff rates
- We have gradually been aligning tariffs across the region
- We propose to continue to align tariffs so in 2016 they are uniform so all residential customers who receive treated water pay the same price, regardless of system or location
- This means that until 2016 customers in the East/West Region (all towns excluding Inverloch, Wonthaggi and Cape Paterson) will receive larger price rises than customers in the Southern Region (Inverloch, Wonthaggi and Cape Paterson)



9.2 Feedback

9.2.1 Verbal feedback

In all sessions nearly all customers agreed with the principle of tariff alignment:

- *[Said tongue in cheek] "It's a wonderful idea that they pay more than we do!" (Yarram session)*
- *"Ultimately will it be of benefit across the board – will it bring the prices down or push them up?" (Yarram session)*
- *"I have no issues with regional Tariff alignment" (Wonthaggi session)*
- *"A few years ago the water supply here was substandard, now it's been improved and I accept what you're saying – everyone paying the same for their water" (Yarram session)*
- *"Water is dearer for Inverloch, Wonthaggi and Cape Paterson – that's not fair" (Leongatha session)*
- *"The bottom line is that it is only fair to lock it together. That's reasonable" (Leongatha session)*

However some customers believed that tariffs should have been aligned sooner, for example:



- *“It takes until 2016 for the tariffs to align too long” (Yarram session)*

From a financial counselling perspective there were concerns that it could increase hardship in the west of the region:

- *“But it does raise the issue in East-West – potentially put more people into financial hardship – could be a driver of more people struggling financially” (Wonthaggi session)*

9.2.2 Written feedback

The questionnaire asked customers:

Do you agree with the customer equity principle of tariff alignment?

Nearly all customers in all groups (93% overall) support the customer equity principle of tariff alignment. Notably, earlier in the sessions some customers did not believe they should pay for capital works projects that would not benefit them directly. As the discussions evolved, more customers understood that sometimes they would pay for works that benefitted them directly and sometimes they would not benefit directly. On this basis they then supported tariff equity.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=27 (93%)	n=10	n=7	n=10
No	n=0 (0%)	n=0	n=0	n=0
Unsure	n=0 (0%)	n=0	n=0	n=0
No response	n=2 (7%)	n=1	n=0	n=1

One customer provided additional feedback:

- *“It will bring the areas into alignment. Wonthaggi is already a struggling town” (Korumburra customer)*

Customers were then asked:

Do you support our proposal to unify tariff rates across our region?

Most customers (86% overall) support South Gippsland Water’s proposal to unify tariffs, across the region.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=25 (86%)	n=9	n=6	n=10
No	n=3 (10%)	n=2	n=1	n=0
Unsure	n=0 (0%)	n=1	n=0	n=0
No response	n=1 (3%)	n=0	n=0	n=1

One customer provided additional feedback:

- *“It should happen sooner than 2016” (Wonthaggi customer)*



10 Increasing the volumetric component of water charges

10.1 Information provided to participants

Currently

In 2011/12 a typical South Gippsland Water, water bill was comparable or lower than other regional Water Corporation bills. Our customers' average water consumption is the second lowest in Victoria.

We currently operate a largely fixed cost business with only minor fluctuations in costs depending on water usage. Examples of variable costs are treatment costs (i.e. chemicals), electricity costs (for pumping water/running treatment plants).

Why the price difference between Water Corporations?

Victoria's Water Corporations have separate catchments, supply and treatment systems. All these systems cost different amounts of money to construct and operate. They also have different customer bases. We are the second smallest Water Corporation in Victoria and have fewer customers to share the cost of maintaining our infrastructure.

What we are proposing

We anticipate a typical residential bill in 2013/14 to be approximately \$1,037 per year or \$345 per 4 months and made up of three parts¹:

- **Water Service Charge:** reflecting the fixed costs of collecting and supplying treated water
- **Volumetric Water Charge:** reflecting the volume of water used
- **Wastewater Service Charge:** reflecting the fixed and variable costs of collecting, pumping and treating wastewater before it is reused or returned to the environment

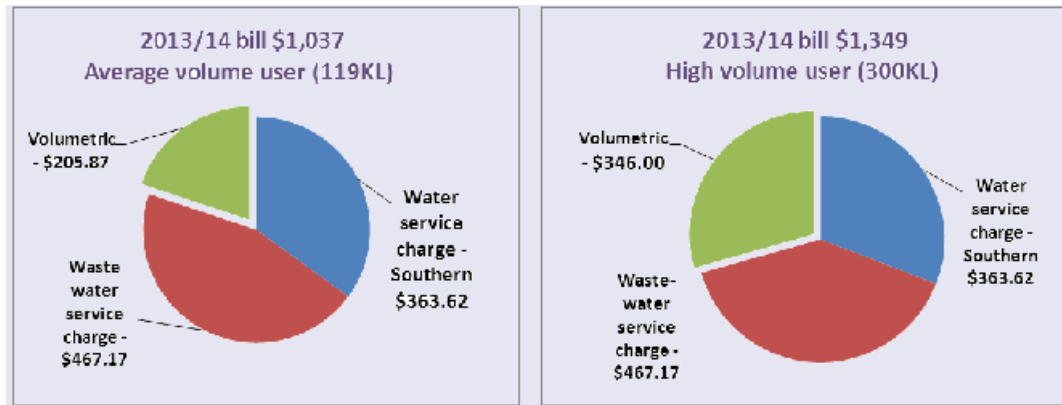
Our current volume water usage and other charges are low relative to the total bill, accounting for approximately 20% of the total bill, or 35% of a customer's water charges (based on average usage of 119KL).

Due to customers' relatively low average water use, if we reduce the service charge, we estimate that the volumetric component needs to increase approximately five-fold to generate enough income to meet our costs.

We propose to gradually increase the volumetric component of water charges by approximately 0.6% p.a. over five years to place more emphasis on sustainable water use and allow customers greater control of their bill. For example, if a large family has usage of 300KL, the volumetric water charge increases to 38% of their bill, or 58% of their water charges. We believe that vulnerable customers who are water reliant, larger users (i.e. large families) or tenants who only pay for their water usage will be disadvantaged if we substantially increase the volumetric component of their water charges.

Water Business	Consumption 2010-11 (kL/household)	2011-12 (\$)
Darwin Water **	142	932
Central Highlands Water	125	1075
Coliban Water	144	922
East Gippsland Water	145	1028
Gippsland Water	157	1165
Goulburn Valley Water	199	726
GWM Water	151	1028
Lower Murray Water	313	721
North East Water	157	777
Southern Gippsland Water	114	958
Wannon Water ***	134	1019
Westport Water	62	984

¹ The average volumetric use is 119 KL p.a. and the anticipated bill is based on the Southern Region service charge



10.2 Feedback

10.2.1 Verbal feedback

In all sessions most customers generally agreed with rate of increase of the volumetric component of the bill:

- *"It should be human nature to pay for the water you use" (Yarram session)*
- *"The rate is fast enough with everything going up" (Wonthaggi session)*
- *"The volumetric component is very cheap at the moment" (Wonthaggi session)*

But, subject to accurate metering:

- *"If you are going to put a focus on water – make sure meters are working" (Yarram session)*

However they acknowledged the difficulties for some customers:

- *"It's very difficult. People on a fixed income can't pay any more than what they do, yet they have got to pay more" (Yarram session)*
- *"With kids, it's not just the water costs that are increasing it's the service costs and the sewerage costs would be more. All of those things people don't consider" (Yarram session)*
- *"Financial hardship will increase for some customers, but it's an opportunity for some people to reduce their usage, and it brings it in line with electricity" (Yarram session)*
- *"There are classes of people who will have more impacts by high volumetric charges: tenants, large families, people with medical problems. Any increases will be matched with more hardship assistance. This comes at a cost which may reduce any savings. I doubt a lot of permanent residents are not wasting any water. I doubt that much more efficiency can be gained. Landlords would be the greatest beneficiaries, unemployed and retired people home all day will pay more" (Wonthaggi session)*

In the Leongatha session a caravan park operator was concerned because they cannot control the amount of water used by tenants:

- *"People with caravan parks have no control over what people use – because our customers use what they want when they want" (Leongatha session)*

There were also concerns that customers who used minimal water would not be able to further reduce their water use, and would be further penalised for already being water efficient.

- *"If you're a minimum user you'd be paying more" (Leongatha session)*
- *"If you put in water tanks, you're worse off if there's an increase in the volumetric charge" (Yarram session)*

Other customers believed that the increase in the volumetric component was too small:



- *"I'd support a full volumetric charge without any supply charge" (Yarram session)*
- *"Water is still cheap, it's the supply charges that come onto people's bills" (Yarram session)*
- *"Paying \$1.70 for 1000 litres of water - it should be going up faster than 0.6%. It's not even inflation" (Wonthaggi session)*

In the Leongatha and Wonthaggi sessions customers discussed the needed to encourage businesses to save more water. For example:

- *"Industry and businesses are using a lot of water. All the savings are focussed on homes rather than businesses. Because their volumetric rates are so low, those businesses just let the water run" (Leongatha session)*
- *"More needs to be done to encourage businesses to save water" (Leongatha session)*

10.2.2 Written feedback

The questionnaire asked customers:

Do you support South Gippsland Water's proposal to increase the volumetric component of water charges by approximately 0.6% per year over 5 years?

Most customers (86% overall) support South Gippsland Water's proposal to increase the volumetric component of water charges by approximately 0.6% per year over 5 years.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=25 (86%)	n=9	n=6	n=10
No	n=3 (10%)	n=1	n=1	n=1
Unsure	n=1 (3%)	n=1	n=0	n=0

Two customers who supported the proposal provided additional feedback:

- *"Costs need to be met for improved services" (Korumburra customer)*
- *"Everything is increasing, it needs to be gradual" (Inverloch customer)*

Two customers who did not support the proposal believed the volumetric component should be larger:

- *"It should be higher" (Wonthaggi customer)*
- *"I believe that it is reasonable to charge a higher percentage of total bill based on usage" (Yarram customer)*

Customers were then asked:

Is an increase of approximately 0.6% per year over 5 years fast enough?

Most customers (79% overall) believe that an increase of approximately 0.6% per year over 5 years is fast enough.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=23 (79%)	n=9	n=4	n=10
No	n=3 (10%)	n=2	n=1	n=0
Unsure	n=3 (10%)	n=0	n=2	n=1



Three customers who believe that the increase is fast enough provided additional comments:

- *"It needs to be a gradual increase as there are customers who would find it extremely difficult" (Korumburra customer)*
- *"0.6% is very generous" (Wonthaggi customer)*
- *"Any further increase will lead to increased hardship" (Wonthaggi customer)*

One customer suggested that the increase per year was too low:

- *"It's very low but in the current economy it is probably realistic" (Inverloch customer)*

Another customer wanted more information:

- *"I do not have the information to have an informed opinion" (Cape Paterson customer)*

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11 Tariff choice

11.1 Information provided to participants

Earlier this year we asked our customers if they would like to choose how their tariff is calculated. Customers' views were divided (34% supported a choice, 34% were against and 31% did not respond). They were concerned about the complexity for customers and the increased costs to South Gippsland Water (a new billing system would be required) to provide customers with tariff choice. Specifically:

- Customers would need to understand more about their water use and knowledge to make the right choice for them, which would require an extensive customer education program.
- Customers were also concerned about the impact tariff choice may have on vulnerable customer groups (the elderly, low income households and tenants who have limited ability to change usage or upgrade plumbing and white goods).
- They also thought there was significant risk in customers making an ill-informed decision, then being locked into the wrong type of tariff.

11.2 Feedback

11.2.1 Verbal feedback

Several related tariff choice to choosing between electricity providers (which they did not find easy):

- *"It would be like a rebate into the grid for electricity" (Leongatha session)*
- *"It would be like trying to calculate [compare] an SEC tariff to any other" (Yarram session)*

Customers discussed what information they needed to make an informed decision:

- *"You'd need to know if you're a big user or not" (Wonthaggi session)*
- *"It would be a great incentive for people to know where they stand with water use" (Wonthaggi session)*

They also discussed South Gippsland Water processes that would need to occur

- *"What difference does it make to accounting?" (Yarram session)*
- *"Unless it was done when the meter was read – and noted residential average usage" (Wonthaggi session)*
- *"Is there scope to compute average usage and compare?" (Wonthaggi session)*
- *"You have to have the backup systems there" (Leongatha session)*

Two customers at the Leongatha session liked the idea of being able to choose a tariff that suited them:

- *"You would think people who rely 100% on tanks could expect a reduction in their service charge" (Leongatha session)*
- *"My gripe is having to pay for a service charge I don't use. Waste is different [to water supply] as its going through the sewerage [so you should only pay for what you use]." (Leongatha session)*

Having considered these issues, most customers did not generally support any tariff choice:

- *"No tariff choice – you don't have it anywhere else" (Wonthaggi session)*
- *"It would be a management nightmare" (Wonthaggi session)*



11.2.2 Written feedback

The questionnaire asked customers:

Given the above, do you support our decision NOT to offer customers a choice of tariffs?

Most customers (79% overall) support South Gippsland Water's decision not to offer customers any tariff choice. Notably, nearly all customers who were at the Leongatha and Wonthaggi sessions supported the proposal, whereas a smaller proportion of customers at the Yarram session supported the decision.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=23 (79%)	n=7	n=6	n=10
No	n=5 (17%)	n=3	n=1	n=1
Unsure	n=3 (10%)	n=1	n=0	n=0

Four customers who supported the proposal provided additional feedback:

- *"Too difficult to compare tariffs" (Korumburra customer)*
- *"None of our other bills do this" (Wonthaggi customer)*
- *"Too complex and as per reasons above" (Inverloch customer)*
- *"One system for all" (Cape Paterson customer)*



12 Retention of fixed wastewater tariffs

12.1 Information provided to participants

We operate a fixed charge for wastewater services. We do not propose to introduce a volumetric wastewater charge because:

- We have no meters to measure household wastewater so we would need to base volume on water use. We believe this would lead to negative customer sentiment, as customers may feel they are paying twice for their water use.
- It would be too expensive to install meters to meter wastewater separately.
- The wastewater collection and treatment system and costs associated with this are entirely separate from the water supply system.
- There is not necessarily a link between water use and wastewater discharge, i.e. I may use a lot of water to water my garden, and this does not end up in the wastewater treatment system.

12.2 Feedback

12.2.1 Verbal feedback

Customers in all sessions discussed the logistics associated with imposing a volumetric charge on wastewater. Their main concerns were:

- How to charge for wastewater
 - *"Can you charge on the number of thrones! Commercial businesses do!" (Leongatha session)*
 - *"They would do it for the volume of water you use" (Yarram session)*
- A need for additional meters
 - *"Another set of meters, people measuring and checking often ending up in a smart meter situation" (Leongatha session)*
 - *"Have a meter on the toilets" (Yarram session)*
 - *"No wastewater meter" (Leongatha session)*
- Difficulties regulating wastewater generation
 - *"Very difficult to regulate!" (Yarram session)*
 - *"People who use tanks to water their house could be falsely charged (Wonthaggi session)*
- Added costs to customers
 - *"I pay a commercial charge as I'm a business customer – there would extra charge for that volume of water" (Yarram session)*
 - *"There would be a lot more washing water that goes down the sewerage, there is an industrial charge and I pay a license as well" (Yarram session)*
 - *"Leave it like it is – people will be going down the public toilet" (Leongatha session)*
- Whether it would encourage customers to reuse their grey water
 - *"It could be an incentive to use grey water for the loos" (Wonthaggi session)*



12.2.2 Written feedback

The survey asked customers:

Do you support South Gippsland Water's proposal to continue with a fixed residential wastewater service charge?

Nearly all customers in all groups (93% overall) support South Gippsland Water's proposal to continue with a fixed residential wastewater service charge.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=27 (93%)	n=9	n=7	n=11
No	n=0 (0%)	n=0	n=0	n=0
Unsure	n=2 (7%)	n=2	n=0	n=0

Several customers who did not support the proposal, further articulated the reasons for their support:

- *"Costs would escalate, new toilets etc. if done separately" (Port Welshpool customer)*
- *"Valid reasons above not to change" (Inverloch customer)*
- *"Old service good" (Leongatha customer)*

However one customer believed that they should be reimbursed if they reused their wastewater:

- *"We should all be conserving water and I feel the user should pay for the volume used. [Charges for] grey water [that is used] should be debited from the account instead of [customers being] charged for it" (Cape Paterson customer)*

Among the customers who supported the proposal, several also suggested that customers should be given incentives if they have a grey water system:

- *"There should be an opportunity to apply for vacant land and if proper grey water system installed" (Wonthaggi customer)*
- *"Have incentives for installing and using grey water to reduce the load on waste water" (Cape Paterson customer)*



13 Looking after disadvantaged customers

13.1 Information provided to participants

As prices rise and the costs of living increase, so do the numbers of our customers who are experiencing hardship. Unfortunately the number of people who are experiencing hardship is growing.

Usually customers are billed three times a year (i.e. every four months) and some customers have difficulty paying their bill this way.

What do we do to help customers experiencing hardship?

Instalment Plans – customers can choose to pay off small amounts regularly to avoid a large bill three times a year. We have just changed our policy so customers who are on instalment plans are now exempt from paying interest on over-due balances. As a result our customer service staff encourage all customers experiencing difficulties paying their bill to contact us, so we can help them because we can't help, if we don't know that customers need help.

Centrepay Payment Plans – customers who receive a regular payment from Centrelink, can set up a Centrepay Payment Plan so that a nominated amount is automatically taken from each Centrelink payment to pay us direct, making their four-monthly bill more manageable. A Centrepay payment plan is easy set up - a customer simply has to approve us to receive Centrepay payment and we make the arrangements with Centrelink.

Utility Relief Grants – DHS administers the Utility Relief Grants program, for a one-off financial contribution towards a customer's bill, if they are experiencing payment difficulties (up to \$500 per utility). We can recommend customers apply for a grant and help them fill out part of the application. However, the customer must complete the application and apply for it themselves. Consequently some customers do not complete or submit their application to DHS, and this service may be underutilised.

State Government Concessions – are available for concession card holders; they reduce water service tariffs

	2013/14	2014/15	2015/16	2016/17	2017/18
East/West (all towns excluding Inverloch, Cape Paterson, Wonthaggi)					
<i>Basis of service charge</i>	<i>\$ p.a.</i>	<i>\$ p.a.</i>	<i>\$ p.a.</i>	<i>\$ p.a.</i>	<i>\$ p.a.</i>
General tariff	\$324.49	\$338.70	\$353.52	\$369.01	\$376.20
Concessional	\$260.86	\$266.95	\$273.19	\$279.57	\$285.01
Southern (Inverloch, Cape Paterson, Wonthaggi)					
<i>Basis of service charge</i>	<i>\$ p.a.</i>	<i>\$ p.a.</i>	<i>\$ p.a.</i>	<i>\$ p.a.</i>	<i>\$ p.a.</i>
General tariff	\$363.62	\$365.40	\$367.17	\$369.01	\$376.20
Concessional	\$260.86	\$266.95	\$273.19	\$279.57	\$285.01



13.2 Feedback

13.2.1 Verbal feedback

As expected, the financial counsellors and others who worked in welfare were aware of the various forms of assistance available to customers.

- *"The Salvation Army can contribute to bills, same with Vinnies and UnitingCare and offer other support. Most often people don't know about DHS help. Our welfare agency understands every utility has those supports. In case management, often finances come up."* (Leongatha session)

In all sessions, other customers' awareness of help available for customers who need it was variable.

- *"It's on the bill"* (Wonthaggi session)
- *"How many old people read the small print?"* (Wonthaggi session)
- *"I knew there was something but not the details"* (Wonthaggi session)
- *"Some people know about hardship, some don't know. All you can do keep telling people about it. But if its a major crisis it's the last thing people want to know about"* (Wonthaggi session)
- *"I only just found out about it"* (Yarram session)

However, customers generally agreed South Gippsland Water should help customers who were experiencing hardship:

- *"Its excellent to help people on hardship"* (Yarram session)
- *"Everyone thinks utilities are big bickie grabbers. They're out to grab money, South Gippsland Water has proven today that you're not."*

In each session South Gippsland Water then answered questions about each of the forms of help available and explained the Centrepay process, and the steps that a customer needs to take to obtain a Utility Relief Grant from DHS. Importantly South Gippsland Water emphasised that customers needed to let them know if they were having difficulties paying the account, as they were unable to help until they were aware a customer was having difficulties.

Customers then discussed how South Gippsland Water should promote the services available to customers experiencing hardship. The most frequently mentioned suggestion in each group was to include information with the bill. Several customers had seen information on the bill; others were not aware of this. Some customers in the Wonthaggi session commented that this information should not be in "fine print"; it needs to be clearly presented possibly as a separate document:

- *"There is an intelligent way – not small print"* (Wonthaggi session)
- *"Is it on the bill – do you have anything on the bill? I would not put it with all the other stuff. Have it on a single clear sheet of paper"* (Leongatha session)

Other suggestions discussed in the sessions to raise awareness of the ways that South Gippsland Water could help these customers included advertisements on local television, and letterbox drops.

One issue of concern in all sessions (particularly of concern to financial counsellors and welfare workers, was that the information was not reaching the people who needed it:

- *"The people you need to get at are not people in homelessness services [they are usually in the system]. It's the people on the minimum and low wages who are being missed out"* (Leongatha session)
- *"The other hardships [such as paying bills] after job loss are so far down the list when dealing with some clients, that you don't get to deal with [this kind of] hardship"* (Wonthaggi session)



In the Wonthaggi session, customers also discussed reluctance among some customers to ask for help:

- *“Some people are too proud; some are dumb” (Yarram session)*
- *“Hardship is always a nasty one – vulnerability” (Wonthaggi session)*

From a financial counselling perspective, a suggestion was made that services to assist customers in need should be marketed differently:

- *“It’s how it’s marketed. It should be perceived to sit in customer service rather than revenue” (Wonthaggi session)*

Customers also discussed the importance of educating and encouraging customers to be water efficient to help them reduce their water bills:

- *“What’s missing is people who are using a lot of water want to know what to do to reduce use, water audits, retro fits” (Wonthaggi session)*
- *“Education: if they are wasting water, they need to be educated to reduce their water consumption – maybe even at the school level – children to educate the parents” (Yarram session)*
- *“Increase education to the schools. You need to get into the curriculum” (Yarram session)*

As a way of providing more help to customers, customers in all sessions suggested that South Gippsland water should refer customers experiencing financial hardship to a financial counsellor.

13.2.2 Written feedback

Awareness

Customers were asked:

Did you know that this help is available for customers if needed?

Only half of the participants were aware of the forms of help available for customers if they needed it (52% overall). Some of these customers were only aware of some of the forms of help.

Response	All customers	Yarram	Wonthaggi	Leongatha
Yes	n=15 (52%)	n=5	n=4	n=6
No	n=9 (31%)	n=3	n=2	n=4
Unsure	n=3 (10%)	n=1	n=1	n=0
No response	n=2 (7%)	n=2	n=0	n=1

Among the nine customers who indicated that they are retired (most of whom were on fixed incomes/pensions), six were aware of the forms of help available to people in hardship circumstances. Half of the 12 customers aged 60+ were aware of the forms of help available.

Customers’ suggestions to raise awareness

Customers were then asked:

How could we [South Gippsland Water] best promote these services and the help that is available to customers experiencing hardship?

Twenty-one of the 27 participants across the three sessions provided a range suggestions for South Gippsland Water to promote its services and help to customers experiencing hardship.



Several customers suggested that information should be included on the back of the bill; not realising that the customer account already contains this information:

- *"Include details on every account" (Yarram customer)*
- *"Oh! It's on the back of the bill" (Wonthaggi customer)*

Others suggested that the information should be printed as a separate flyer and sent with the account:

- *"Enclosing a flyer with the water rates bill" (Korumburra customer)*
- *"Put information in a brochure sent out with payment notices" (Yarram customer)*
- *"Put a DL sized notice with the bill" (Meeniyen customer)*
- *"Through brochures with accounts" (Yarram customer)*
- *"When the account is mailed out, combine this info with it" (Devon North customer)*
- *"Print something on your bill (separate sheet)" (Meeniyen customer)*
- *"Place brochures in envelope with overdue accounts" (Port Albert customer)*

Alternatively the information could be printed on the envelope:

- *"Inform customers of this service by printing the information on back of account envelope" (Poowong customer)*
- *"Print it on the envelope that contains the bill" (Meeniyen customer)*
- *"Printing the information on the back of the account envelope" (Poowong customer)*

Other suggestions to disseminate information included:

- Advertising at doctors' surgeries
- South Gippsland Water attending community group meetings, such as bowls or Senior Citizens' clubs or church groups
- Ensuring that welfare groups have the information available to pass on to their clients
- Advertising with Centrelink
- Letter box drops

Customers' suggestions to help customers experiencing hardship

Customers were then asked:

What other help or services should we [South Gippsland Water] provide to help customers experiencing hardship and difficulty paying?

Nine customers provided suggestions on their questionnaires for South Gippsland Water to promote its services and help to customers experiencing hardship. The key suggestions were:

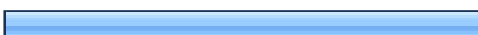


- Encourage customers to reduce their water use:
 - *"Educating people including school children on water usage" (Korumburra customer)*
 - *"Promote as you do, more often ways of water reduction use" (Poowong customer)*
 - *"Water audits and retrofits to reduce use, affordable payments" (Wonthaggi customer)*
 - *"Information on their usage and ideas to reduced their bills" (Cape Paterson customer)*
- Referrals to financial counsellors/planners:
 - *"Referral service to financial planners" (Yarram session)*
 - *"One-on-one financial counselling for people who feel they are in hardship financially" (Cape Paterson customer)*
 - *"Refer to financial counsellors" (Korumburra customer)*






- Increased billing frequency
 - *"Maybe offer to clients, a bill – monthly" (Port Albert customer)*
- Automatic payments to South Gippsland Water from Centrelink payments
 - *"Centrelink customers should be taken out automatically" (Wonthaggi customer)*

DRAFT





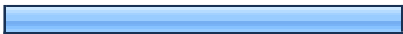
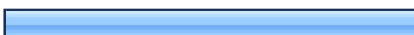
1. To promote sustainable water use and allow customers greater control of their bill, South Gippsland Water is looking to decrease the annual service charge and increase the volumetric component of our water tariffs. Should South Gippsland Water gradually increase volumetric water tariffs?

		Response Percent	Response Count
Yes		76.8%	235
No		16.0%	49
Unsure		7.2%	22
answered question			306
skipped question			13




2. Should South Gippsland Water introduce a program of compensation for customers who receive poor levels of service from the Corporation?

		Response Percent	Response Count
Yes		71.8%	214
No		15.1%	45
Unsure		13.1%	39
answered question			298
skipped question			21

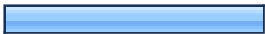
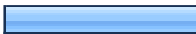

3. As the Essential Services Commission is mandating that a compensation program be introduced, please select from the options below the standards of service that should attract compensation; i.e. if South Gippsland Water did not meet these levels of service, compensation would be issued? Service Standards:

		Response Percent	Response Count
No more than 5 unplanned water interruptions per year		53.1%	153
Unplanned water supply interruptions to be restored within 5 hours		67.0%	193
No more than 3 sewerage interruptions per year		48.3%	139
Unplanned sewerage interruptions to be restored within 5 hours		63.5%	183
Sewer spills to be contained within 5 hours		64.2%	185
South Gippsland Water shall not restrict water supply or take legal action over unpaid bills, prior to taking reasonable measures to contact the customer in person or over the phone.		66.3%	191
	Other (please specify)		41
answered question			288
skipped question			31

4. Do you support South Gippsland Water's long term strategy to network towns in the northern region (Korumburra, Poowong, Loch & Nyora) to Lance Creek Reservoir and the Melbourne Supply System? This strategy is also known as the 'Water Supply Demand Strategy'

		Response Percent	Response Count
Yes		52.6%	163
No		27.7%	86
Unsure		19.7%	61
	Additional Comment		11
answered question			310
skipped question			9

5. If the Corporation does not receive funding from the State Government, should it still proceed with the plan to interconnect townships in the Northern region (Korumburra, Poowong, Loch & Nyora) to Lance Creek Reservoir? Without funding the strategy has a more immediate impact on tariffs, yet over the long term the interconnection strategy is cheaper than the alternate option of maintaining separate surface water systems.

		Response Percent	Response Count
Yes		41.6%	128
No		30.8%	95
Unsure		27.6%	85
	Additional Comment		54
answered question			308
skipped question			11



**6. You answered "No" to Question 5; "Should South Gippsland Water proceed with the plan to interconnect townships in the Northern region to Lance Creek Reservoir?"
Please explain why?**

	Response Count
	104
answered question	104
skipped question	215

7. Do you have any comments you would like to add regarding South Gippsland Water's Water Plan or Water Supply Demand Strategy?

	Response Count
	87
answered question	87
skipped question	232

8. Please select your customer type;

		Response Percent	Response Count
Residential		98.0%	300
Commercial		2.6%	8
	Other (please specify)		9
answered question			306
skipped question			13



9. Please select your age group;

		Response Percent	Response Count
18-29		0.3%	1
30-39		3.5%	11
40-49		8.7%	27
50-59		16.1%	50
60+		71.3%	221
answered question			310
skipped question			9



10. What is your current work status?

		Response Percent	Response Count
Full Time Employed		21.9%	65
Home Duties		4.7%	14
Part Time Employed		11.4%	34
Retired		64.0%	190
Other (please specify)			12
answered question			297
skipped question			22

11. Please select your gender;

		Response Percent	Response Count
Male		54.8%	167
Female		45.2%	138
answered question			305
skipped question			14

12. Please select your household structure?

		Response Percent	Response Count
Single/Couple		85.9%	255
Family with dependent children		14.1%	42
Other (please specify)			8
answered question			297
skipped question			22

13. What is your location?

		Response Percent	Response Count
Alberton/Port Albert		2.0%	6
Fish Creek		0.0%	0
Foster		6.0%	18
Inverloch/Cape Paterson		41.9%	126
Korumburra & Surrounds		10.6%	32
Leongatha/Koonwarra		12.0%	36
Meeniyian/Dumbalk		1.3%	4
Poowong/Loch/Nyora		2.7%	8
Port Albert/Landsborough		0.3%	1
Toora & Surrounds		4.7%	14
Waratah Bay		1.0%	3
Wonthaggi		13.6%	41
Yarram/Devon North		5.0%	15
	Other (please specify)		11
answered question			301
skipped question			18




14. Thank you for taking the time to complete this survey. Your comments will help shape the direction South Gippsland Water takes over the coming five years. This will help us better plan for the future and ensure that we are meeting the expectations of our customers and the communities we serve. If you would like to take part in future surveys or customer consultation regarding our Water Plan and strategic direction, please provide your details below;

		Response Percent	Response Count
Name:		100.0%	141
Address 1:		95.0%	134
Address 2:		1.4%	2
Town:		95.7%	135
State:		94.3%	133
Postal Code:		95.7%	135
Email Address:		45.4%	64
Phone Number:		75.2%	106
answered question			141
skipped question			178




1. Q: How do you rate our overall service?

	Very Poor	Poor	Satisfactory	Good	Excellent	Rating Average	Response Count
	0.7% (1)	4.3% (6)	37.0% (51)	47.1% (65)	10.9% (15)	3.63	138
answered question							138
skipped question							12

2. Do you feel the proposed Guaranteed Service Levels (above) are appropriate?

		Response Percent	Response Count
Yes		72.9%	102
No		9.3%	13
Unsure		17.9%	25
Comments			7
answered question			140
skipped question			10

3. Do you feel the above rebate amounts (per breach) are reasonable?


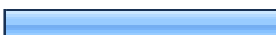
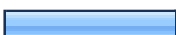
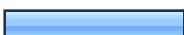
		Response Percent	Response Count
Yes		71.2%	99
No		11.5%	16
Unsure		17.3%	24

Comments 6

answered question 139

skipped question 11

4.

		Response Percent	Response Count
Too little		0.8%	1
About right		43.6%	58
Too much		27.1%	36
Unsure		28.6%	38

Any comments? 50

answered question 133

skipped question 17




5. Are the proposed tariff increases...?

		Response Percent	Response Count
Too low		1.5%	2
About right		52.6%	72
Too high		31.4%	43
Unsure		14.6%	20
	Any comments?		41
answered question			137
skipped question			13

6. Do you agree with the customer equity principle of tariff alignment?

		Response Percent	Response Count
Yes		55.7%	73
No		16.8%	22
Unsure		27.5%	36
	Any comments?		20
answered question			131
skipped question			19





7. Do you support South Gippsland Water’s proposal to gradually increase the volumetric component of water charges by approximately 0.6% per year over 5 years?

		Response Percent	Response Count
Yes		59.7%	83
No		30.2%	42
Unsure		10.1%	14
answered question			139
skipped question			11









8. Do you have any further comments regarding our Water Plan you would like to add?

	Response Count
	97
answered question	97
skipped question	53

9. Are you a South Gippsland Water residential or business customer?

		Response Percent	Response Count
Residential		91.6%	131
Business or commercial		1.4%	2
Both		4.9%	7
Neither		2.1%	3
Unsure		0.0%	0
answered question			143
skipped question			7






10. What customer groups do you feel you represent?

		Response Percent	Response Count
Family with dependent children		9.9%	14
Family		17.0%	24
Farmer		0.7%	1
Commercial Business		2.8%	4
Fixed Income		13.5%	19
Retiree		66.7%	94
Customer in financial hardship		6.4%	9
Tenant		2.8%	4
	Other (please specify)		9

answered question 141

skipped question 9






11. What is your work status?

		Response Percent	Response Count
Employed full time		14.5%	20
Employed part-time or casually		13.0%	18
Unemployed		1.4%	2
Home duties		2.2%	3
Retired		70.3%	97
	Other (please specify)		9











answered question 138

skipped question 12

12. What is your age?

		Response Percent	Response Count
18 to 29		0.7%	1
30 to 39		1.4%	2
40 to 49		7.1%	10
50 to 59		9.9%	14
60+		80.9%	114
answered question			141
skipped question			9

13. In what town do you live?








		Response Percent	Response Count
Alberton		0.7%	1
Cape Paterson		0.0%	0
Devon North		2.2%	3
Dumbalk		0.0%	0
Fish Creek		0.0%	0
Foster		6.6%	9
Inverloch		36.8%	50
Korumburra		9.6%	13
Leongatha		19.9%	27
Loch		0.0%	0
Meeniyah		0.0%	0
Nyora		0.7%	1
Poowong		0.7%	1
Port Albert		0.0%	0
Port Franklin		0.0%	0
Port Welshpool		0.0%	0
Toora		0.0%	0
Waratah Bay		0.0%	0
Welshpool		0.0%	0
Wonthaggi		21.3%	29
Yarram		1.5%	2

Other (please specify) 6

answered question 136

skipped question 14

14. If applicable, in what town or district do you work?








		Response Percent	Response Count
Alberton		0.0%	0
Cape Paterson		0.0%	0
Devon North		0.0%	0
Dumbalk		0.0%	0
Fish Creek		0.0%	0
Foster		15.2%	5
Inverloch		21.2%	7
Korumburra		6.1%	2
Leongatha		33.3%	11
Loch		0.0%	0
Meeniyah		3.0%	1
Nyora		0.0%	0
Poowong		0.0%	0
Port Albert		0.0%	0
Port Franklin		0.0%	0
Port Welshpool		0.0%	0
Toora		0.0%	0
Waratah Bay		0.0%	0
Welshpool		0.0%	0
Wonthaggi		15.2%	5
Yarram		6.1%	2

Other (please specify) 10

answered question 33

skipped question 117

15. Please provide your details if you wish for South Gippsland Water to contact you in future for further surveys.

		Response Percent	Response Count
Name:		98.5%	65
Address 1:		93.9%	62
Address 2:		3.0%	2
City/Town:		93.9%	62
Postal Code:		95.5%	63
Email Address:		37.9%	25
Phone Number:		72.7%	48
answered question			66
skipped question			84

Page 3, Q2. Do you feel the proposed Guaranteed Service Levels (above) are appropriate?

1	None	Aug 27, 2012 10:53 PM
2	I believe only the item relating to a sewerage spill is necessary	Aug 25, 2012 6:12 PM
3	Not the \$1000	Aug 15, 2012 12:10 PM
4	Not required	Aug 13, 2012 12:45 PM
5	All highly improbable, money paid is a drop in the bucket. Just fix it.	Aug 10, 2012 12:00 PM
6	Rebate of \$1000 should be full restoration if severe damage plus compensation.	Aug 10, 2012 10:29 AM
7	? at all	Aug 10, 2012 9:21 AM

Page 3, Q3. Do you feel the above rebate amounts (per breach) are reasonable?

1	None	Aug 27, 2012 10:53 PM
2	see above	Aug 25, 2012 6:12 PM
3	\$75 Rebate may not be enough if customer has wedding or event affected. Should be subject to variables.	Aug 14, 2012 10:55 AM
4	Not required	Aug 13, 2012 12:45 PM
5	Just fix the problem, why add an additional "reward"	Aug 10, 2012 1:37 PM
6	? at all	Aug 10, 2012 9:21 AM

1	Not happy if this is spent accessing desal water	Sep 3, 2012 10:45 AM
2	We oppose spending of funds on all Northern Towns connections works.	Aug 30, 2012 3:56 PM
3	disagree with spending capital to install pipeline for Desal Water	Aug 30, 2012 3:43 PM
4	As long as its not used for desal water.	Aug 30, 2012 1:06 PM
5	Investment OK but is wrong in regards to proposals to supply Northern Towns. NO use of desal water. YES to gradually increasing dam capacity.	Aug 30, 2012 12:58 PM
6	Our biggest concern is that we do not want to be connected, let alone consumer desalination water as Korumburra's reservoirs are still sufficient to supply our town.	Aug 30, 2012 12:03 PM
7	Disagree with growth Plan for Northern Towns. Do not support de-commissioning of Dams and replacing bulk of supply with Desal water.	Aug 29, 2012 4:06 PM
8	Unsure with regards to connecting all areas to Lance Creek.	Aug 29, 2012 11:02 AM
9	Opposed to capital expenditure that will be used to provide desal water to South Gippsland customers.	Aug 29, 2012 10:43 AM
10	Weasel words	Aug 29, 2012 10:40 AM
11	To disgard existing reservoirs is a disgrace.	Aug 29, 2012 10:40 AM
12	A stupid question how would the average customer know what is reasonable or adequate.	Aug 29, 2012 10:32 AM
13	Expense is to be expected	Aug 29, 2012 10:08 AM
14	It is not clear the capital expendiyure is solely due to growth. Is part of the proposed expenditure to replace old infrastructure?	Aug 27, 2012 10:55 PM
15	Why is the Melbourne Supply System involved?	Aug 25, 2012 6:15 PM
16	I oppose the Northern Towns Supply Connection Works Stage 1 and 2. We need to maintain and expand our existing local water infrastructure for our future security of supply. With our abundant rainfall and topography South Gippsland should be a contributor to the water security of the State and not be reliant on Melbourne's supply.	Aug 24, 2012 1:34 PM
17	? No plans for recycling, re-using and reducing = 3 core principles of responsible water provision = all new infrastructure projects with no plans to ensure these are built in. Also if plans are to connect to Melbourne supply system, then is this necessary to add extra costs of desalination to local bills = not acceptable.	Aug 23, 2012 10:25 AM
18	\$71 million is too much. Will it be possible, or cheaper to connect Korumburra, Lance Creek and Poowong to the desalination pipeline?	Aug 23, 2012 10:14 AM
19	Yarram people request a public meeting Re Golf Club Water Saga. How much money was wasted. Enngineers, Pipeline who authorised the project and did heads roll?	Aug 22, 2012 12:27 PM
20	Korumburra - Poowong Stage 1 could be put back a little in my view some other projects are more essential	Aug 22, 2012 12:09 PM

Page 4, Q4.

21	No important - New dams should be built.	Aug 22, 2012 11:53 AM
22	Sewering of Nyora was voted out by the residents in 1986! It is over-due but not because of SGW! It is the Northern Towns Works are related to proposed decommissioning of reservoirs we have NOT seen the justification!	Aug 22, 2012 11:50 AM
23	System must be properly maintained and improved. I ticked 'about right' but I bet in 5 years time it is nowhere near enough.	Aug 22, 2012 11:44 AM
24	I cannot see the point in pumping water from Lance Creek to Korumburra - disrupting farmland again, using power unnecessarily, and then having to use expensive desal water.	Aug 21, 2012 12:23 PM
25	I wouldn't really know, but I wouldn't deny people in other areas of service.	Aug 20, 2012 1:13 PM
26	See Q 5.	Aug 20, 2012 1:05 PM
27	Important that ratepayers must trust your decisions!	Aug 20, 2012 12:58 PM
28	If connection of Lance Creek to Korumburra involves taking water from desal and increases our costs, we should be so advised. Don't like secret little agendas.	Aug 20, 2012 12:52 PM
29	insufficient information re growth proposals	Aug 20, 2012 9:45 AM
30	\$71 Million is too much. Will it be possible to cheapen the connection to Korumburra, Lance Creek and Poowong to the Desalination Pipeline?	Aug 16, 2012 12:27 PM
31	If government is funding why is this needed to be funded. We have nothing to base our thoughts on. Concerns regarding the expansion of population of major towns i.e. Leongatha. How shall the water needs be met?	Aug 16, 2012 10:30 AM
32	It's very difficult to know as you are the experts in this field and we have to trust that you can bet advise us.	Aug 16, 2012 10:23 AM
33	Northern TownsLance Creek to Korumburra and Korumburra to Poowong - unnecessary. Maintain the existing dams - Don't succumb to Desal pressure; Wonthaggi area is expanding and needs all of Lance Creek Supply; Earthquake daner to pipelines.	Aug 16, 2012 10:18 AM
34	To an outsider it's hard to visualize anywhere what the expense would be.	Aug 15, 2012 12:54 PM
35	Aims seem reasonable- Not qualified to comment on costings	Aug 15, 2012 12:11 PM
36	It is very hard to give an opinion, without more detailed information and greater expertise on my part.	Aug 14, 2012 1:02 PM
37	The government didn't come through with full funds? So the above costs - expenditure are needed!?	Aug 14, 2012 12:50 PM
38	Where is the other 15 million, above adds up to 56.7 million not \$71.85 as you say.	Aug 14, 2012 12:33 PM
39	Is the Northern towns supply connection really necessary?	Aug 13, 2012 2:21 PM
40	We STRONGLY DISAGREE with decommissioning any reservoirs to replace that water with desalination water. Absolute total waste of money and unnecessary mess.	Aug 13, 2012 2:16 PM

Page 4, Q4.

41	Unsure, as costs keep going up on projects and some of them could be 6 years away from completion.	Aug 13, 2012 1:09 PM
42	I don't know why we have to tap into desal, when we've got perfectly good individual water storage in each town.	Aug 13, 2012 12:56 PM
43	Not important	Aug 13, 2012 12:46 PM
44	1. Additional storage facilities would seem sensible judging from the saturated ground we are experiencing at Wonthaggi. 2. Unfortunately I live in a Wonthaggi street that has been ignored by sewerage installation plans !!!	Aug 12, 2012 4:52 PM
45	I do not agree with joining the lance creek /melbourne water system or anything to do with the desal plant!	Aug 12, 2012 1:23 PM
46	Connection of Korumburra to Lance Creek NOT REQUIRED.	Aug 10, 2012 5:41 PM
47	Healthy emphasis on South Gippsland. The Authority acts an Agency, this is a no brainer. If these are FULLY funded by the Govt what capital expenditure from Revenue is to take place?	Aug 10, 2012 1:42 PM
48	Is the water supply for Leongatha sustainable in extended drought- 10 years?	Aug 10, 2012 12:45 PM
49	Why did Foster WWater plant NOT comply when first constructed? The connection of Poowong and Korumburra is DUMB. Your reliance on the Desal in time of drought will cost the rate payers an arm and a leg. Why not improve and make hold capacity larger?	Aug 10, 2012 12:00 PM
50	Sewer mains rehabilitation??? Water mains renewals/replacements?? one and the same thing!	Aug 10, 2012 11:26 AM

Page 5, Q5. Are the proposed tariff increases...?

1	Closing existing reservoirs that have serviced the community for over 100 years is expensive and unnecessary. Building new pipelines and water from desal is very expensive and unnessesary.	Aug 31, 2012 2:03 PM
2	Why the big increase for 2013/14 - couldn't it be spread more evenly accross the years?	Aug 31, 2012 1:57 PM
3	In Inverloch we pay the highest price for water and get the worst tasting water. Why should we pay for Poowong, Loch and Nyora	Aug 30, 2012 12:09 PM
4	As we have already had steady increases over the years and there are still no incentives to save water and we are already paying \$750 a year without using a single drop of water!	Aug 30, 2012 12:04 PM
5	No - all areas should be on same rate now.	Aug 29, 2012 4:07 PM
6	It at least seems to be in line with current CPI.	Aug 29, 2012 10:33 AM
7	How much of the increased revenue will be directed to recurrent expenses - like executive salary increases.	Aug 27, 2012 11:07 PM
8	Wonthaggi/Inverloch is too high because the people had to pay for the Lance Creek reservoir which will supply other places so everyone should be paying the same now	Aug 26, 2012 6:13 PM
9	Water is a scarce commodity and need to be very mindful/cautious in cost increases.	Aug 23, 2012 10:27 AM
10	Many People are struggling just to survive. Council rates, electricity bills and now water. Show some leadership and freeze prices for 5 years.	Aug 22, 2012 12:28 PM
11	Do not increase, leave as is.	Aug 22, 2012 11:54 AM
12	Just cannot see it being held at 2%	Aug 22, 2012 11:44 AM
13	basis is too high, careful people must suffer	Aug 22, 2012 9:53 AM
14	I wouldn't really know - but as you are the ones analysis the finances I will accept that it is 'about right'.	Aug 20, 2012 1:18 PM
15	Inappropriate for a customer not au fait with context, industry and regulatory factors to say!	Aug 20, 2012 1:06 PM
16	I trust!	Aug 20, 2012 12:58 PM
17	The price rise of 14% is out of kilter with CPI - Why is this so high. If it increases due to desal - why not tell us. If it is a State Govt surcharge.	Aug 20, 2012 12:54 PM
18	What if nil Govt. assistance?	Aug 20, 2012 9:47 AM
19	Surely the rate charges need to be based on the costs and need to ensure supply in the future, we are not the experts you are. In Queensland vacant blocks pay \$1,000 p.a. for sewerage and water.	Aug 16, 2012 10:41 AM
20	We believe that a far greater contribution should be made by the developer of any new subdivision at least from \$800 to \$3,000 + CPI increases.	Aug 16, 2012 10:24 AM
21	I do not understand this, as we in this village all pay the same, if one or two	Aug 15, 2012 1:11 PM

Page 5, Q5. Are the proposed tariff increases...?

	or more live in the same house. There are about 52 houses in this village paying near on \$1000 per year. That's \$52,000 just for this village, without all of Inverloch! Can't see how it costs this much money.	
22	With wastewater tariffs, service charges and volume charged on top-unbelievable! I don't work, am a pensioner and I would like to know where I get the money from?	Aug 15, 2012 12:48 PM
23	All I know, the more prices rise the less we can spend on food, medicine, lastly clothes. We only buy clothes at welfare shops.	Aug 15, 2012 12:25 PM
24	1.5% excluding CPI is reasonable for this type of enterprise	Aug 15, 2012 12:12 PM
25	Again, I feel I am not really in a position to make a judgement.	Aug 14, 2012 1:03 PM
26	As a concessional tariff receiver I am grateful for the low increases here at Korumburra.	Aug 14, 2012 12:51 PM
27	Why should southern users pay for all their own dam improvements, then pay for East/West improvements as well. East/West should have to pay their own expenses.	Aug 13, 2012 2:24 PM
28	We STRONGLY DISAGREE with the use of desalination water, where the profits go overseas.	Aug 13, 2012 2:18 PM
29	You cannot guarantee to keep prices down or low.	Aug 13, 2012 1:11 PM
30	If enough people disagreed with the increase, would you reduce it?	Aug 13, 2012 12:58 PM
31	Not required	Aug 13, 2012 12:46 PM
32	Increases DO NOT include CPI, some expenditure not needed	Aug 10, 2012 5:45 PM
33	NO IDEA. Services to property by Utility providers and statutory authorities appear to have significantly high annual increases.	Aug 10, 2012 1:47 PM
34	\$10 extra per quarter too much for retiree's	Aug 10, 2012 1:19 PM
35	Tariff increases should be for volume of water USED, not for infrastructure maintenance.	Aug 10, 2012 12:47 PM
36	Service Charges are a rip off the water we can afford. Even if increased marginally the concession does not match the high fees. Mainly over the top service fees.	Aug 10, 2012 12:00 PM
37	I don't understand question 6	Aug 10, 2012 10:41 AM
38	My pension increased by a 6th of 1% or .62% likely you include CPI increases and compounding your 13.3% would be closer to 30%.	Aug 10, 2012 9:54 AM
39	The \$800 per lot is too low, it should be around \$1000 to \$1500 per lot	Aug 10, 2012 9:14 AM
40	What happens to the tariffs for the "Northern Towns" when thwy connect to the I'Loch/CP/W'ggi supply system in 2017/18. Will they be incorporated under the I'Loch/CP/W'ggi tariff structure?	Aug 9, 2012 5:48 PM
41	We have lower rates than East Gipps and Westernport	Aug 1, 2012 12:35 PM

Page 5, Q6. Do you agree with the customer equity principle of tariff alignment?

1	Rates for southern towns should immediately be brought into line with the other areas. Southern towns for last 25 years have had higher rates in South Gippsland due to funding of Lance Creek reservoir.	Aug 30, 2012 12:59 PM
2	WTF's that?	Aug 30, 2012 12:09 PM
3	Southern area get no more benefits yet pay a higher rate.	Aug 29, 2012 10:44 AM
4	There will never be customer equity as long as the majority of annual charges are solely property based.	Aug 29, 2012 10:33 AM
5	Tariff increase in one area should see a tariff decrease in areas that are currently paying a higher tariff.	Aug 27, 2012 11:07 PM
6	Equity in region is fair and ok however service charges are becoming excessive in all utilities and prohibitive to lower income users.	Aug 23, 2012 10:27 AM
7	How long is a piece of string?	Aug 22, 2012 12:00 PM
8	Not required	Aug 22, 2012 11:54 AM
9	as pensioners, we cannot reduce our water bill by careful use. the costs are virtually fixed for small users.	Aug 22, 2012 9:53 AM
10	the actual cost of water is a small percentage of the total bill, no real incentive to conserve	Aug 21, 2012 12:28 PM
11	Yes though I don't want increased bills higher than CPI!!	Aug 20, 2012 1:18 PM
12	As I can see no explanation of the principle here, I cannot comment!	Aug 20, 2012 1:06 PM
13	Don't understand this concept	Aug 20, 2012 12:54 PM
14	Aging infrastructure and increasing regulations would be hard to pre quote.	Aug 15, 2012 12:56 PM
15	Who's equality, any pension rise is gone before we get it.	Aug 15, 2012 12:25 PM
16	When all works East/West are complete, then align tariffs.	Aug 13, 2012 2:24 PM
17	What I do agree with is: People who waste water should be penalised. Those who are careful should be rewarded.	Aug 13, 2012 12:58 PM
18	I don't understand this question	Aug 12, 2012 4:54 PM
19	Tariffs and prices should be consistent across ALL of the SGW Region.	Aug 10, 2012 5:45 PM
20	What does this mean- it's double dutch. I consider a straight out usage charge per litre to everyone to be more equitable, but you avoid this by having a property charge!!!!	Aug 10, 2012 1:47 PM

Page 7, Q8. Do you have any further comments regarding our Water Plan you would like to add?

1	Q7. Yes 0.6% at a minimum. Needs to be great emphasis on usage charge.	Sep 3, 2012 10:46 AM
2	I think it should be users pays! NOT forcing all users to bear the costs. I would like to see service charges reduced and water costs increases as they are in QLD. At present I have no incentive at all to save water and as I pay so much I may as well use it.	Aug 31, 2012 2:02 PM
3	The actual water is free. It is the cost of treating etc which costs us, maintenance and growth is covered elsewhere. I can't bring my water usage down any furtehr, so why should I have to pay more? What about some incentive for those using little, or bringing their water usage down.	Aug 31, 2012 1:58 PM
4	We have great water. Please no DESAL!	Aug 31, 2012 4:32 AM
5	We oppose sending any water from Lance Creek reservoir to other towns .This is a facility paid for by the heavy tariffs levied on Southern users for the last 25 years.We will need this water to cater for the expansion taking place in Bass Coast. SG Water needs to raise Dam walls in Northern towns to ensure their own supply and to preserve assets . The purchasing of Desal water should not be considered an alternative for the following reasons:- The price will be expensive and will rise. Aqasure and Melbourne water are both organisations that are untrustworthy . The building of their plant has caused a lot of damage to our road inforstructure to which they will leave us with the bill for most of it. Neither of them have paid any rates to Bass Shire .It is important that we distance ourselves from them and retain our independence.	Aug 30, 2012 4:16 PM
6	we oppose any expenditue on a pipeline for Desal water and the de-commissioning of any reserviors and supply of Desal Water to replace them.	Aug 30, 2012 3:48 PM
7	I think it would be disastrous to use the desalinated water from the Wonthaggi plant	Aug 30, 2012 2:23 PM
8	Why decommission local reservoirs with good quality water for desal water. Refuse to use it. Will buy more tanks and be self sufficient.	Aug 30, 2012 1:07 PM
9	Yes, the method of distributing this survey is flawed; almost designed for a minimum response. In winter most customers with holiday residences do not come to the beach areas. Many customers have gone to Northern states for climate reasons. This water plan should have been distributed with a letter containing our last water account. I am opposed to any plan that involves using Desal water. It requires the use of a large amount of electricity which will only increase as more sea water is converted to a drinkable state. I am gravely concerned with any customer have to use straight desal water.	Aug 30, 2012 1:03 PM
10	Fix the taste of water in Inverloch (and Leongatha) We have just returned from 3 months in Outback NSW, QLD, NT and SA and every town expect one the water (bore water) tasted better then at Inverloch.	Aug 30, 2012 12:11 PM
11	We absolutely do not want our children drinking desalination water as we know it is unsafe for consumption especially young children and we don't need to be connected to the desal plant. If there were incentives to save water more people would and we shouldn't allow water to run down the drains when it rains 'save it'. We also do not want fluoride in our water system because of the health effects. Our children have never used fluoride toothpaste and they all have health strong teeth! Please research this!	Aug 30, 2012 12:07 PM
12	I do not agree to the connection to Desal water for this area. Don't put all our	Aug 30, 2012 10:32 AM

Page 7, Q8. Do you have any further comments regarding our Water Plan you would like to add?

	water supply in such a environmentally unsound bucket.	
13	Using Desal water is a plan that is enviromentally unfriendly due to the large amounts of power used to treat seawater.This will cause the costs of desal water to continually rise.I believe we should not become tied to the unknown costs and whims of Melbourne Water. Aquashore and Melbourne Water have consistinaty refused to pay any rates to Bass Coast Shire in spite of owning prime land in Wonthaggi. SG Water should not be supporting People who are not good and honest corporate bodies.	Aug 29, 2012 4:22 PM
14	I don't see why we need desal water if you put money into a new dam. With our rainfall we don't need water. They tell me that if you follow the creek around poowong you don't need to use pumps.	Aug 29, 2012 11:14 AM
15	Yes, I am very concerned that we are NOT catching all the runoff and making plans for the future. We should never be short of water in Gippsland. We need more natural catchment areas because there is so much water running out to sea. Don't wait for more dry years before some good catchment dams are built. The Gippsland area is growing and the smart thing would be to move accordingly and be prepared. Water is critical and let us advance in this area before it is too late. We are very concerned about this, please take this matter seriously.	Aug 29, 2012 11:11 AM
16	Decommissioning other water storages and relying totally on Lance Creek reservoir and the desalination plant is equating to "all eggs in one basket". Should a major drought or catastrophe occur at the desal-plant and Melbourne requires 100GL of water what happens then? WE ARE NOT IN FAVOR OF THIS PROJECT! NB: We do object to any proposal to fluoridate the water en-masse, many other countries are totally opposed and have rejected this process. Fluoride can be obtaine by tablet and toothpaste if required.	Aug 29, 2012 11:06 AM
17	This area has enough rain and weather for catchment of rain, this is fresh rainwater that has not created a negative impact on the surrounding ocean through salt and destruction of our marine bio-diversity.	Aug 29, 2012 11:01 AM
18	Single person dwelling should incurr lower service rates - should be rated according to number of people in dwelling. None of us want desal water which is what you are proposing. You will do as you please - as usual. This is a waste of paper.	Aug 29, 2012 10:42 AM
19	I disagree with the Northern Towns Supply Connection Works. This area has significant annual rainfall and I consider the best way to spend this money is to improve the smaller reservoirs rather than force the areas to use the desalinated water. Let the desalinated water go to Melbourne and leave our area using water from the sky! It may cost more to maintain and improve the smaller reservoirs but will help maintain our environment. Let us use the water from this rainy environment.	Aug 29, 2012 10:39 AM
20	I would like to see a pricing scheme based on a nominated tariff rate i.e. Low user - higher water charge and lower fixed costs, High water users lower water use charge but higher fixed costs. Please NO DESAL WATER	Aug 29, 2012 10:35 AM
21	I think it is unfair that we are penalised with higher prices when we are the ones who have put so much effort into saving water over the past five years.	Aug 29, 2012 10:28 AM
22	Long term users are being asked to pay for all these continuous expanding areas and subdivisions. The profit takers should be accountable and not long	Aug 29, 2012 10:26 AM

Page 7, Q8. Do you have any further comments regarding our Water Plan you would like to add?

	term ratepayers. Also we live in a seniors village 'Sunnysand' at Inverloch. This village is only for seniors but this park has had 57 meters put in and we are paying that of a normal household. We should not be asked to subsidise growth areas and connecting to Melbourne water which is obvious what the long term plan is all about. Also we are also paying for the mass influx of holiday makers into caravan parks and expensive rentals in holiday times.	
23	Waste of ratepayers money construction of pipeline to Korumburra who never runs out of water. Cheaper option up-grade No 3 reservoir (common sense).	Aug 29, 2012 10:21 AM
24	I do not agree with trying to justify the desalination plant by pumping the water to Korumburra. The Korumburra reservoirs (3) do not run out of water in a normal season they are generally running over by the end of July. It would be much cheaper to up-grade No 3 to hold more water than to pump water from Wonrthaggi. How much on top of power, will cost us a fortune in power which will be needed to pump it to Korumburra.	Aug 29, 2012 10:18 AM
25	Plan is quite complicated most of us cannot really understand how pricing etc is arrived at.	Aug 29, 2012 10:10 AM
26	Tariff increases for volumetric component should be accompanied by reduction in the fixed charge and the latter should not be increased without sound cause. It is to be hoped that this survey is not for the purpose of justifying price hikes. Apologies for the cynicism but corporatisation of public services has a sorry history of rapid price increases.	Aug 27, 2012 11:08 PM
27	Pensioners & self funded retirees cannot afford these increases, money would be better suited to funding water tanks & grey water recycling	Aug 26, 2012 6:14 PM
28	When consumers are trying to reduce water usage, what incentive is there when the price will be increased? I would like to see builders/plumbers plan hot water distribution more efficiently. Our hot taps run off 2 litres of cold water before the water is hot (which we save for other uses)	Aug 25, 2012 6:25 PM
29	Maintain and expand our existing water supply infrastructure and do NOT rely on the Melbourne supply.	Aug 24, 2012 1:41 PM
30	charge more for water and less service charge	Aug 24, 2012 10:10 AM
31	Would agree with increasing the volumetric share but only if service costs do not increase & drop in proportion to total costs. Volume costs proportion - no incentive to save water. Don't use this as an excuse/reason to increase overall costs. Will make water too expensive.	Aug 23, 2012 10:33 AM
32	Have concerns regarding costs to residents on low incomes, especially pensioners.	Aug 23, 2012 10:11 AM
33	Farmers use more water - thus higher costs. We take the price for our product - we cannot set it. Stock and domestic we access from rivers is certainly cheaper than if it flows through your meter. The ever increasing price of water will eventually make it harder to sell our rural land. You tend to treat cattle differently to people - big users of water. How about a farm rate? Ask yourself how many people will not be able to pay your charges in 10 years time - or is this already happening. Are we in Yarram liable for the desal plant? Q1) Why do workers who are not 'on call' have the right to use their supplied vehicle for collecting firewood, raising calves at various locations around the district, going to sporting evets etc etc? All at the	Aug 22, 2012 12:34 PM

Page 7, Q8. Do you have any further comments regarding our Water Plan you would like to add?

	ratepayers expense!. Backflow prevention meters another cost burden on individuals for installation and yearly review - what next meter rental? Q2) We have a farm which has outfall sewerage main from Yarram passing through it. No mention if we have acres affected and unable to use this section of our land? Q4 Consultation with ratepayers is a no 1 priority. Call a public meeting and make your organisation accountable now.	
34	It is going to be a lot of work to get the water plan to catch up on the putting the operation of the water authority forward to catch up on infrastructure that get put in the basket of what we will do that later because somebody maybe upset about that project but time has shown that type of policy does not work in the long run it has to be done it has to be done later, at considerable extra expense.	Aug 22, 2012 12:12 PM
35	Wastewater! Safely disposed of - could we have an article in Pipeline with details of the use of this water - available for public parks? Sports ovals? through purple pipes/hoses for new development in our area? If not used this way - why not?	Aug 22, 2012 12:06 PM
36	No need for change	Aug 22, 2012 11:54 AM
37	I repeat that we have NOT seen a justification for the reported proposal to de-commission the existing storages - either in details, economics or risk (drought) management!	Aug 22, 2012 11:52 AM
38	Volumetric charges I believe should be in stages. I.e. 0-Average Use - Same as now Average use to say 40% above - At an increase of 25% Above this at 400%(?) extra. I believe this would virtually eliminate wastage which is often evident during spring/autumn.	Aug 22, 2012 11:46 AM
39	Question 7 is loaded. Whilst we support the need to increase the volumetric charges, we want the service charge to be correspondingly reduced. This might allow our thrifty use to avoid us having to pay for use by others.	Aug 22, 2012 9:59 AM
40	I've always thought that the volumetric component of water charges should be increased BUT I think it is insidious that the other water service charge and wastewater service charge have increased so much - slyly - over the past 12 years (since 2000 when we were in the early days of the 10 year(?) drought the volumetric charges should have been increased then and there. So much water is wasted in commercial premises where there isn't even dual flush and a leak (e.g. restaurants) from cisterns isn't ever addressed! because the water is so cheap. I don't want my bills to increase at ALL because I am a self funded CONSERVATIVE LIVING retiree!!!! With water tanks on both properties Inverloch and Upway.	Aug 20, 2012 1:22 PM
41	Q7: Good step but too small. Q8: As I have argued to my local MP, we all need to reduce our water consumption further. That we can easily do that was demonstrated during the restrictions applied in the recent multi-year drought. Sure, the taste of switch to an emphasis on more user pays \$ in the bill has limits, but I believe doubling the proposed rate of increase would disadvantage no-one, but rather stimulate their attention to personal and family water conservation. Just do it, and tell clients why!!	Aug 20, 2012 1:11 PM
42	At present we are quite happy with the quality of water services provided (if needed) and the payment plan at the post office with SGW card. Thank you.	Aug 20, 2012 1:04 PM
43	It is far too expensive. Get very little value for a very lot of money. A rip off!	Aug 20, 2012 1:01 PM

Page 7, Q8. Do you have any further comments regarding our Water Plan you would like to add?

44	Re Q1: I was most impressed that within 30 mins of reporting a leak at my water meter there was a man repairing the problem.	Aug 20, 2012 12:59 PM
45	I am very happy with the water quality and service we receive. I am however not happy with all Gov't spin and need proposals to be spelt out. You have done this with this document and I thank you for that.	Aug 20, 2012 12:55 PM
46	against any plan that involves the use of Desal Water. Environmentally unfriendly policy	Aug 20, 2012 9:55 AM
47	I/WE agree with the increase for consumption with a reduction in supply charge of the same % as we are on mains supply but have not drawn off the supply since May 2010 as we use TANK WATER ONLY. The increase in the consumption charge will/should make people more water wise	Aug 19, 2012 5:31 PM
48	Your water quality is so poor - I changed 1/3 of my water in fish tank and it killed all my fish, plants and snails worth more than \$400 it also makes my skin on arms itch after showers. Really I feel you should be compensating me as the tank was my hobby and pride and joy. I had thought of taking legal action, but Gov't depts, have too powerful layers, head against a brick wall. Disgusted invalid pensioner: Martain Anthony DeZwart U No 2, No 7 St Kilda Street, Inverloch 3996. Ph 0411051200	Aug 16, 2012 10:48 AM
49	The increase of population does not seem to be a factor you have considered, we need to have more storage so that excess water can be stored to provide a back up for extreme conditions. The last drought certainly showed that we did not have enough back up supply. Treatment of water has concerns for us as drinking water we realise there would be standards to meet but a lot of the products used are highly poisonous to humans. Put a teabag in tank water and one in town water and see the difference.	Aug 16, 2012 10:44 AM
50	The price is too high should be a bit low or reduce it a bit.	Aug 16, 2012 10:27 AM
51	The water at Inverloch quite often has an unpleasant taste, can this be rectified?	Aug 16, 2012 10:24 AM
52	Yes, I'd like to see a fairer billing system. I've photocopied my bills, as you can see, my consumption is around 28-37 each quarter. I know there are other things to pay for, but this seems very exorbitant for one person in a unit with one pension. I do know I get a rebate but the bill is still very high. I now have direct debit for water, \$40 per pension, also power, insurance for house and contents and car debited from my pension. Only for Human Services helping me, I don't know how I'll manage as I can't have them help me all the time. By the time all the debit's are taken out of my pension there is not a lot left to live on per fortnight. I also pay site fees as rent for land.	Aug 15, 2012 1:22 PM
53	I find it very hard to visualize costs and volume of water needed. The average volumetric being 119 KLPA, I would imagine that there would be a big difference between the highest and lowest user.	Aug 15, 2012 1:01 PM
54	This is based on the resident being a working family. If, as I am, a pensioner, the costs are to me unbelievable. Can't work out how, if I try to not use too much water and now you want to increase the volumetric water charge. Again unbelievable.	Aug 15, 2012 12:48 PM
55	This survey is a complete waste of SGW finances. It is not possible to make considered judgements based on the amount of information, or lack of, provided in this survey. It is just a "tick the boxes" approach to consultation.	Aug 15, 2012 12:36 PM

Page 7, Q8. Do you have any further comments regarding our Water Plan you would like to add?

	Who ever designed the survey did not run it past a few ratepayers to see if they could complete it satisfactorily.	
56	What you pay yourselves-wages and super will never be enough. If you are lucky to survive a few years because the next greedy lot will want more and ruin your existing super like the present lot have ours. Please advise well in advance when? You decide to take the so called water from the desal so I can turn off the meter. Another huge mistake.	Aug 15, 2012 12:28 PM
57	Water pressure too slow, needs to be increased.	Aug 15, 2012 12:15 PM
58	If you do not construct pipelines from Lance Creek to Korumburra and northern towns there will be far less expenditure by SGW. Leave these towns to maintain their own supply instead of the government pushing you into using water from the desalination plant. Melbourne may need it, but we do not.	Aug 15, 2012 12:06 PM
59	Water taste not up to standard.	Aug 15, 2012 11:53 AM
60	For what water used, the other charges are outrageous.	Aug 14, 2012 1:14 PM
61	I feel the volumetric component should reflect a higher percentage of water charges than is currently proposed in the Water Plan. To me, it is a fairly simple way to encourage water saving measures.	Aug 14, 2012 1:06 PM
62	I would like to know the costs of TREATING our water and exactly what chemicals are added eg: FLUORIDE etc or NOT?? Presence of blue/green algae in 2 bowls of water in rooms in my house??? (I don't have a computer, is there a fact sheet?)	Aug 14, 2012 12:55 PM
63	The people using the water should pay more, I understand there should be a service charge, however I should be rewarded for saving water.	Aug 14, 2012 12:47 PM
64	I question the proposal of closing existing reservoirs and the cost of connecting to desal water. For the cost of connection and ongoing water purchase, additional holding reserves (dams) could be provided at a cheaper cost. The desal plant only has a commercial life span of 25 years (not long).	Aug 14, 2012 12:37 PM
65	There is no justification for increasing volumetric charges in the way proposed. Both service charges and volumetric should reflect actual costs and if customers have low usage, their costs should remain low. Service charges should not be going up ahead of the CPI- they should be capped at this level.	Aug 14, 2012 12:29 PM
66	If possible have advertising campaigns on TV & Radio describing how to reduce volume usage. Leaflets often get left unread. Short Ads ie: Shower once every two days if you are not very active, have a bird bath Do the dishes once a day only, if doing by hand If using a dishwasher, make sure ALL kitchen equipment is dishwasher safe so pots etc don't need to be washed separately- or else wash all dishes by hand Promote: If it's yellow let it mellow, if it's brown flush it down. ? Plaques for toilet walls Teach kids in school how long a 3 min shower is by practicing ,role playing?	Aug 14, 2012 11:02 AM
67	Thank-you for the excellent water quality and when it required, your prompt service.	Aug 13, 2012 2:27 PM
68	Higher charges MIGHT make people use water more wisely.	Aug 13, 2012 2:19 PM

Page 7, Q8. Do you have any further comments regarding our Water Plan you would like to add?

69	General note: Please provide notice before carrying out maintenance work, especially to residential addresses. I have frequently turned our water on, only to find it is "brown". This makes preparing food/drink for my baby and children difficult. A note through our letter box in advance of routine maintenance would be much appreciated. Thank-you.	Aug 13, 2012 1:54 PM
70	You have given plenty of information. I may not like the price increases but feel that it will be necessary to both install and maintain infrastructure. What percentage of money raised will go on wages?	Aug 13, 2012 1:13 PM
71	How about increasing the volumetric component a lot more and reducing service charges. As we are all trying to conserve water, why aren't we offered incentives? At present, we reduce water consumption but service charges increase exponentially so there is no reason to be "Green", as our bills keep increasing at an exorbitant rate.	Aug 13, 2012 1:04 PM
72	Build new dams on the Mitchell River	Aug 13, 2012 12:47 PM
73	Not sure what existing legislation is, but would like to see a water storage tank catching rainfall on every house in the region - this could require substantial financial inducements.	Aug 12, 2012 4:55 PM
74	Even greater emphasis on water consumption should be reflected in charges. This should be accompanied by a reduction in fixed and wastewater charges.	Aug 10, 2012 5:49 PM
75	Why do the connected customers fund the full cost of connection and if so, why is this shown as an overall cost increase? Are we all "paying" because of Govt policy? I find the staff at the authority responsive, respectful and ready to help from the top down. However, I do have concerns relating to your charging. Australia is a "lucky country" we turn on the taps in our extravagant residential properties and the water flows, thanks to organisations such as yours. When I use motor vehicle fuel (ie) \$6000 for a year, which includes a significant tax component, no one says, because I use more, I should pay less, which is what you are alluding to in your plan. Why don't you show exactly the total cost per unit of supply to ALL users and then show how we subsidise certain groups. I wish my income increased by the amounts you guys charge. Frankly, I believe that there will be NO change as a result of this survey, which in my view, is merely carried out to satisfy yourselves that you have undertaken an extensive community consultation, wasting thousands of dollars of customer money. From the unjust user pays view.	Aug 10, 2012 2:26 PM
76	The Board should retain all reservoirs and explore the option of selling irrigation water from facilities not needed once the area is connected to metro system. Can the waste ponds be used to grow algae which can then be used as a fuel for power reduction? No mention in Plan on energy consumption.	Aug 10, 2012 1:32 PM
77	Good idea to have a water plan, however, general public feedback would be more authentic/useful to SGW if it was asking for simpler responses. ie: GET PEOPLE AWARE THEY CAN SAVE MONEY BY SAVING WATER. eg: Given that the population is increasing what do you see as the best way to save water? A. Increase tariffs/volume B. Decrease tariffs for properties with rainwater toilet flush etc C. Decrease sewage charge for properties with composting toilets PROVIDE SELF ADDRESSED ENVELOPE FOR RETURN MAIL.	Aug 10, 2012 12:54 PM

Page 7, Q8. Do you have any further comments regarding our Water Plan you would like to add?

78	I think it is important to get 0 towns up with Wastewater services also.	Aug 10, 2012 12:41 PM
79	It is important to maintain the service to cope with increased population, therefore usage. Mains are to be upgraded to cater with increased volume throughout the year, regardless of weather conditions. It's not until you encounter problems and defects until you are personally effected. I appreciate the concern shown during the recent deluges. I wish the Board success in the coming years.	Aug 10, 2012 12:31 PM
80	User paying!	Aug 10, 2012 12:17 PM
81	Service level guarantee- agree with sewer component but surely we can all put up with a bit of inconvenience when supply is interrupted to keep costs down- \$75 not necessary. Concerns about non-productive work practices that would not be tolerated in private practice.	Aug 10, 2012 12:09 PM
82	Customers should pay for usage-no more no less. Why did I waste my money on tanks? No one expects these services for free, but the fixed income does not cover the increases. Comparing Murray Goulburn with Gippsland is like chalk and cheese. Could you please inform us how many times and amount paid in compensation? When residents have to sell their properties and shift because service fees in all utilities are pricing them out of the area they have helped create and love. Instead of telling us how effieient you are, be the first to tell us the rates are to be reduced. I guess that will never happen.	Aug 10, 2012 12:01 PM
83	As to the Capital Expenditure Projects- how would I know without a full engineering report (independantly) done to prove or otherwise, sustainability or a bureaucrats dream.	Aug 10, 2012 10:51 AM
84	We do not agree that some reservoirs should be closed down. We do not want Desal Water when we have very good water from Lance Creek and more than enough rain fall to keep it full. We do not want to pay exhorbitant fees for an unnecessary water plant.	Aug 10, 2012 10:44 AM
85	I have twice reported a leak in supply mains adjacent to my property and have not had any feedback nor have I seen any action taken. The reports were several months apart, the last being several months ago. I believe feedback should always be given so the person is informed on proposed action, if any and they don't feel ignored.	Aug 10, 2012 10:34 AM
86	Should have supplied a Postage Paid envelope	Aug 10, 2012 10:26 AM
87	I don't agree with expenditure on Major Capital Expenditure Works for Lance Creek to Korumburra- Stage 1 or Korumburra to Poowong- Stage 2. It would be extremely foolish to close down Korumburra and Leongatha reservoirs- it would drain Kongwak and make us all dependant on expensive desal water.	Aug 10, 2012 10:15 AM
88	It should be "user pays" I'll bet I'll pay for the pipeline. The desalinated water approach is expensive, despite your studies. The \$14.3 million would have been better spent on dam upgrades. 1. The Guaranteed Service Levy matters little, it's the price that counts. 2. When you mention Melbourne Water Supply you should have been honest and said "Desalinated Water- very expensive". 3. You have already "factored in" the above mentioned pipeline even though the results of the recent survey haven't been published. This means that this isn't really a survey but rather an outline of what's to come. 4. Little is being spent on Wonthaggi- so our rates should be fairly stable- this is not the case. 5. How many of your Board members survive on	Aug 10, 2012 10:06 AM

Page 7, Q8. Do you have any further comments regarding our Water Plan you would like to add?

	the "Old Age Pension"? 6. I support the proposal to gradually increase the volumetric component of water charges by approx .6% per year over 5 years- ONLY if it is accompanied by a corresponding drop in fixed costs.	
89	Nil	Aug 10, 2012 9:41 AM
90	I feel that SGW has taken their eye's off the ball in the last 20 years in regard to storage and supply upgrades. The current plan to connect to desal water is a damning indictment of SGW and it's policies over these years.	Aug 10, 2012 9:27 AM
91	The water plan should be lower for untits in the Grange, around 5%, as we are all retiree's. Water rates you should be able to pay bu bank card in your area.	Aug 10, 2012 9:17 AM
92	Volume charge should be 2 tiered. Northern towns supply connection works is not neccessary	Aug 8, 2012 4:05 PM
93	Volumetric charges should be a much higher % of the bill - so increase volumetric use and decrease the service charge to encourage water use savings. Would like to know about if we will be charged for the desalination plant and if we use it's water.	Aug 7, 2012 5:54 PM
94	I dont see why we should pay more if we use more water.We are just subsidising people who use less.The supply charge has nothing to do with the level of consumption.It wont be long untill a garden will be unafordable.	Aug 7, 2012 1:23 PM
95	The increase is too high, and the volumemetric price of water should be increased to a far larger part of the water bill - users should pay for what they use and the costs should not spread over the whole community.	Aug 7, 2012 12:13 PM
96	Whilst agreeing with the proposal to gradually increase the volumetric component of water charges I would also like to see a corresponding decrease in the service charge component which is extremely high in relation to the overall bill - I would rather pay more for usage and far less for service charges. If population growth is driving the need for greater expenditure then surely the additional users will be assisting in meeting these costs - utility increases seem to be totally out of hand and unsustainable when people's wages are not growing at anywhere near the same rate.	Aug 7, 2012 10:40 AM
97	NO	Jul 31, 2012 5:49 PM

Page 8, Q10. What customer groups do you feel you represent?

1	semi retired	Aug 26, 2012 6:16 PM
2	pensioners	Aug 22, 2012 10:03 AM
3	Very conscientious about water use. It is drinking water (although not always easy to drink without lemon barley in it or boiled for tea/coffee!!)	Aug 20, 2012 1:25 PM
4	Grandparent with ward.	Aug 15, 2012 12:49 PM
5	Disability income	Aug 14, 2012 11:24 AM
6	War Pension	Aug 10, 2012 1:10 PM
7	Pensioners	Aug 10, 2012 12:02 PM
8	couple	Aug 7, 2012 5:55 PM
9	Landlord	Aug 7, 2012 10:41 AM

Page 8, Q11. What is your work status?

1	Voluntary Work	Aug 23, 2012 10:11 AM
2	Retired 1 year only and find increasing bills depressing	Aug 20, 2012 1:25 PM
3	Invalid pensioner after stroke	Aug 16, 2012 11:11 AM
4	Self Employed	Aug 16, 2012 10:26 AM
5	Pensioner carer	Aug 15, 2012 12:49 PM
6	Self employed	Aug 14, 2012 12:40 PM
7	Unable to work due to disability	Aug 14, 2012 11:24 AM
8	Volunteer	Aug 13, 2012 1:15 PM
9	Self employed	Aug 12, 2012 1:25 PM

Page 8, Q13. In what town do you live?

1	Mirboo North	Aug 23, 2012 10:34 AM
2	langsborough	Aug 22, 2012 10:03 AM
3	& Upwey	Aug 20, 2012 1:25 PM
4	Wonthaggi North	Aug 16, 2012 10:28 AM
5	Yarram, where instead of replacing infrastructure you reduce the pressure in the lines.	Aug 10, 2012 2:26 PM
6	Bass Coast	Aug 10, 2012 1:22 PM

Page 8, Q14. If applicable, in what town or district do you work?

1	Melbourne	Aug 30, 2012 4:18 PM
2	Inverloch/Wonthaggi	Aug 26, 2012 6:16 PM
3	Traralgon	Aug 14, 2012 8:51 PM
4	Melbourne	Aug 14, 2012 1:00 PM
5	Kongwak	Aug 14, 2012 12:40 PM
6	Casey	Aug 10, 2012 1:35 PM
7	Black Warry	Aug 10, 2012 12:56 PM
8	Retired	Aug 10, 2012 10:27 AM
9	All over	Aug 10, 2012 10:17 AM
10	N/A	Aug 10, 2012 9:20 AM

