
# WATER PLAN
# 2006 to 2008

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# (PART ONE)

# 1 Glossary of Terms

| | |
|---|---|
| ADWG | Australian Drinking Water Guidelines |
| AMIP | Asset Management Improvement Plan |
| AMS | Asset Management System |
| ANCID | Australian National Committee on Irrigation and Drainage |
| ANCOLD | Australian National Committee on Large Dams |
| BGA | Blue Green Algae |
| BGARC | Border Groundwaters Agreement Review Committee |
| BMP | Biosolids Management Plan |
| BOOT | Build, Own, Operate and Transfer |
| BE | Bulk Entitlement |
| BWE | Bulk Water Entitlement |
| CAG | Customer Advisory Group |
| CCC | Customer Consultative Committee |
| CMA | Catchment Management Authority |
| CPS | Customer Participation Strategy |
| CSC | Community Steering Committee (WMPP) |
| CSO | Community Service Obligation |
| D&C | Design and Construct |
| D&S | Domestic and Stock |
| DHS | Department of Human Services |
| DPI | Department of Primary Industries |
| DSE | Department of Sustainability and Environment |
| DRAP | Dams Risk Assessment Program |
| DMP | Drought Management Plan |
| DTF | Department of Treasury and Finance |
| EC | Electrical Conductivity |
| EIP | Environmental Improvement Plan |
| EPA | Environment Protection Authority |
| EMP | Emergency Management Plan |
| EMS | Environmental Management System |
| ESC | Essential Services Commission |
| EWOV | Energy and Water Ombudsman of Victoria |
| GMP | Groundwater Management Plan |
| G-MW | Goulburn-Murray Water |

| | |
|---|---|
| GRWA | Grampians Region Water Authority |
| HAA | Haloacetic Acids / Halogenated Acetic Acids |
| HRMS | Human Resource Management Strategy |
| IMS | Integrated Management System |
| IPART | Independent Pricing and Regulatory Tribunal (NSW equivalent of ESC) |
| IPEG | Investment Policy and Evaluation Guidelines |
| KPI | Key Performance Indicators |
| KRA | Key Result Areas |
| MOU | Memorandum of Understanding |
| NHMRC | National Health and Medical Research Council |
| NMP | Northern Mallee Pipeline |
| NMPS | Northern Mallee Pipeline Scheme |
| NPC | Net Present Cost |
| PPG | Project Planning Group (WMP Project) |
| RIS | Regulatory Impact Statement |
| RMP | Risk Management Plan |
| ROA | Return on Assets |
| ROE | Return on Equity |
| RUWA | Regional Urban Water Authority |
| RWA | Rural Water Authorities |
| SBA | Supply by Agreement |
| SCADA | Supervisory Control and Data Acquisition (Remote monitoring and control) |
| SDWA | Safe Drinking Water Act |
| SEPP | State Environment Protection Policy |
| SFMP | Streamflow Management Plan |
| SMP | Salinity Management Plan |
| SoO | Statement of Obligations |
| SBA | Supply by Agreement |
| TAT | Transitional Advisory Team |
| TCV | Treasury Corporation Victoria |
| TDS | Total Dissolved Solids |
| TER | Tax Equivalent Regime |
| THM | Trihalomethane |
| TWA | Trade Waste Agreement |
| VWIA | Victorian Water Industry Association |

| | |
|---|---|
| WHO | World Health Organisation |
| WIRO | Water Industry Regulatory Order |
| WTP | Water Treatment Plant |
| WSA | Water Services Agreement |
| WWMP | Wastewater Management Plan |
| WMP Project | Wimmera Mallee Pipeline Project |
| WMW | Wimmera Mallee Water |
| WSPA | Water Supply Protection Area |
| WQIP | Water Quality Improvement Plan |
| WWTP | Wastewater Treatment Plant |

# 2 Introduction

Grampians Wimmera Mallee Water (trading as GWMWater) was formed from an amalgamation of the former Grampians Region Water Authority (GRWA) and Wimmera Mallee Water Authority (WMW) on 1 July 2004.

The amalgamation was the consequence of a policy initiative identified in the Victorian Government White Paper 'Securing Our Water Future Together – Our Water, Our Future.' The White Paper acknowledged the extent that the two authorities covered similar geographical areas and that there was common infrastructure servicing most of the customer base.

The Wimmera Mallee Pipeline Project (WMP Project) impacts on much of this infrastructure and the White Paper acknowledged the importance of having a single Authority.

> *'Creating a single, larger authority will ensure that the proposed Wimmera Mallee Pipeline Project has the best opportunity to succeed. A new authority will have a greater capacity to plan for and deliver a project of the size and complexity of the proposed Wimmera Mallee Pipeline and will have a greater capacity to respond to demands for improved services and improved environmental outcomes into the future.*
>
> *Creating a single authority will also enable an integrated approach to the provision of urban and rural services and promote a more cohesive approach to regional water resource management.'*[1]

Prior to this time, both GRWA and WMW had operated independently in the region for a period of ten years.

**Grampians Water**

GRWA was formed in February 1995 bringing together 18 former water authorities and water boards. GRWA was further expanded on 1 July 1995 when it assumed responsibility from Wimmera Mallee Water for urban water and wastewater supplies to 37 Wimmera Mallee Towns.

GRWA was constituted by Order of the Minister of Natural Resources on 1 February 1995 under the powers conferred by Division 2 of Part 6 of the *Water Act 1989*.

The number of towns serviced was formally increased to 74 in May 1997, when GRWA assumed responsibility for the townships of Buangor, Westmere, Taits Lane, Clear Lake, Noradjuha, Tarranyurk and Kiata.

[1] P.147 Victorian Government White Paper – 'Securing Our Water Future Together – Our Water Our Future'

In October 1997, the Government announced a major reform package for the Water Industry. In the non-metropolitan urban water sector this amounted to a significant capital injection aimed at accelerating the implementation of the Governments water and wastewater quality initiatives and providing increased customer benefits by way of an 18% reduction in water and wastewater charges.

For GRWA this amounted to a capital injection of $26 Million, and a package of benefits to customers that gave rise to the delivery of an overall 'net customer benefit' of 18%. This was formalised by a Memorandum of Understanding (MOU) confirming GRWA's commitment to the implementation of the Government's Water Reform Package.

In its time as an independent entity, GRWA undertook water quality improvements in 15 towns and in this period the volume of water supplied that met World Health Organisation (WHO) Standards went from 28% to 76%.

Substantial improvements were also achieved in wastewater with the development of winter storages and reuse applications to meet State Environment Protection Policy (Waters of Victoria) and EPA compliance for its wastewater facilities.

**Wimmera Mallee Water**

WMW was formed from the disaggregation of the former Rural Water Commission in June 1994. WMW was constituted by Ministerial Order effective from 1 July 1994, under the powers conferred by Division 2 of Part 6 of the *Water Act 1989*.

WMW was a specialist rural water supply Authority providing water services to the regions farming community and bulk supplies to urban centres and rural water intensive industries. WMW services covered some 6.2 Million hectares or about 25% of Victoria.

The water supply system was one of the oldest in Victoria, with parts of it more than 100 years old and much of its infrastructure is nearing the end of its useful life.

WMW pioneered the piping of channel systems with the Northern Mallee Pipeline Project commencing in 1992. With State and Federal Government support, funding was secured to complete the first project of its type in Australia saving 50,000 ML/year. The piping of the Patchewollock and the Cannie Ridge areas was the first part of the WMP Project resulting in further water savings of 11,000 ML/year.

The development of the dam safety program saw the refurbishment of Lake Wartook and Lake Bellfield up to modern day standards. These storages will be the principle sources of water for the WMP Project.

Without piping, the unprecedented low rainfall of the past decade could have been catastrophic with much more severe restrictions being required to maintain an adequate water supply for the region.

## *2.1 Water Plan Overview*

This is the first Water Plan of GWMWater that has been overseen by the new Board. The Water Plan reflects the priorities of a Strategic Plan that has been developed concurrently with the Water Plan.

The Water Plan provides an integrated overview of GWMWater as a single entity and anticipates formal commitment by the Board to proceed with the WMP Project prior to commencement of the Water Plan period (that is, before 1 July 2006).

Considerable uncertainty remains, however, about the impact of the WMP Project on GWMWater and its customers. While both the State and Federal Governments have confirmed their intentions to provide funding for the WMP Project, no formal agreement has been concluded that details the terms and conditions of funding or the obligations that will be accepted by GWMWater in respect of the WMP Project.

It is clear, however, that the WMP Project will have a critical impact on the long-term sustainability of GWMWater and on the standard of service that will be to delivered to its customers.

In principle, agreement has been reached between GWMWater and the State Government that GWMWater is best placed to deliver the project. The WMP Project will dominate the financial framework of GWMWater and it is essential that the mutual obligations of Governments and GWMWater are clearly understood.

The implications of the WMP Project for both GWMWater and its customers have recently been assessed as part of a major Pricing Review undertaken by a special Committee of the Board.[2] The findings from the review have been incorporated into this Water Plan.

[2] The Board Pricing Sub-Committee was assisted by Marsden Jacob Associates (MJA). MJA's final report to the Board Committee will be made available to the Minister and the Essential Services Commission.

## *2.2 Mission, Vision and Business Objectives*

### 2.2.1 Strategic Directions

The Board, in consultation with management, staff, customers and key regional stakeholders, has developed a strategy to guide GWMWater over the next five years. The Strategic Plan is supplemented by the development of Action Plans that concentrate on the 12 month period covered by the 2005/06 Corporate Plan. The overall strategy is aimed at:

- Securing the WMP Project for the region;
- Ensuring the merger between Wimmera-Mallee Water and GRWA delivers benefits that improve outcomes for customers; and
- Ensuring that the delivery of the WMP Project does not distract the businesses from meeting its core operating objectives.

In formulating the strategy, the Vision, Mission and set of Values developed initially by the Board have been revisited and, where appropriate, amended to reflect outcomes from the Board's Pricing Review. The revised Vision, Mission and Value statements are shown below.

**Vision**

Sustainable water for regional growth and vibrant communities.

**Mission**

To provide innovative and affordable services through partnerships with customers and the community.

**Values**

***Accountability***

We will be accountable to our colleagues, stakeholders and the communities we serve for our decisions and actions;

***Caring***

We are considerate of the environment and promote sustainability for the benefit of present and future generations;

***Integrity***

We will be honest, just, fair and equitable in all our dealings;

***Teamwork***

We foster teamwork within the Authority, across Government and with the community to achieve quality outcomes;

***Professionalism***

We do the best we can, always, and seek creative, innovative solutions for continuous improvement;

***Respect***

We respect all people, celebrate diversity and uphold dignity;

***Recognition***

We recognise our staff's diverse skills and are committed to providing a fulfilling work environment;

***Safety***

We will ensure that the health, safety and well being of our people and the community are paramount.

### 2.2.2 Constitution

GWMWater was constituted by Ministerial Order with effect from 1 July 2004, under Section 98 and 100 of the *Water Act 1989* (the Act). Section 124 of the Act provides GWMWater the powers necessary or desirable to perform its functions, however, those powers can only be exercised to perform a function given to GWMWater by an Act of Parliament.

### 2.2.3 Board Membership

The current Board Members are:

- Barry Clugston, Chairman
- Max Fehring
- Peter Vogel
- Kevin Shea
- Rob McKenzie
- Jenny Grigg
- Sonia Petering
- Chris Hewitt
- Frank McClelland
- Barry Hall

To support the effective discharge of its governance obligations, the Board has established a number of Committees. These Committees are as outlined below:

- Audit, Governance and Risk
- Environment and Works
- Pipeline
- Remuneration
- Pricing

### 2.2.4 Accountability Framework

Commercial governance of GWMWater is facilitated by the development of an annual Corporate Plan. The Corporate Plan is the principle mechanism for facilitating communication between GWMWater and Government. The primary accountability of GWMWater is to the Minister for Water through the Department of Sustainability and Environment (DSE).

The Government White Paper '*Securing Our Water Future Together*' signalled a more substantial role of the Department of Treasury and Finance (DTF) in oversight of the Water Sector by the Treasurer. In preparing this Water Plan, the specific requirements of DTF have also been met.

A Statement of Obligations (SoO) has been issued by the Minister that reflects the expectations of Government for both urban and rural activities undertaken by GWMWater.[3] The SoO, in conjunction with the Water Industry Regulatory Order (WIRO), will be used by the Essential Services Commission (ESC) to assess the efficiency and performance of GWMWater. The SoO and WIRO detail the legal framework under which the ESC will oversee prices charged by GWMWater and the standards of service that GWMWater is obliged to deliver to customers.

The SoO and WIRO are the primary instruments that underpin the Minister's expectations of GWMWater. GWMWater, however, expects that the agreements with the Federal and State Governments for execution of the WMP Project will define other obligations that will impact on implementation of this Water Plan.

Despite the uncertainty that still remains in respect of the WMP Project, this Water Plan is based on GWMWater's assessment of a reasonable response to the issues and obligations facing GWMWater. In particular, the Water Plan details how GWMWater will meet the service obligations specified in the SoO and outlines actions that GWMWater has initiated in respect of consultation with customers on the outcomes of the Pricing Review undertaken by the Board Pricing Committee.

The obligations defined in the SoO extend to managing the relationship between the Department of Human Services, Environment Protection Authority and DSE itself as regulator of Dam Safety.

The Water Plan acknowledges that the ESC will establish a comprehensive performance monitoring and reporting regime and this will reflect agreed services outcomes and standards for the Water Industry.

[3] In finalising the SoO, it is assumed that GWMWater has been released from the obligations of the urban business as prescribed in the Water Service Agreement (WSA) with Government. The rural water sector was not expected to enter into a WSA.

The underlying service levels and the performance against these proposed by GWMWater are specifically addressed in this Water Plan.

An integral part of the Water Plan relates to GWMWater's obligation to effectively integrate Triple Bottom Line (TBL) of economic, environmental and social objectives into its business operations as required by SoO clause 6.

## *2.3 Main Business Undertakings*

GWMWater serves a region with a population of approximately 72,000 and its activities cover some 62,000 square kilometres, (ie. approximately 25% of Victoria).

Urban water supply is a significant activity of GWMWater, delivering around 10 Gigalitres of water to 30,000 customers in 73 towns/localities across the service area. Most water supplied to these towns is potable water that meets Government statutory microbiological standards. Water supplied to a number of the smaller towns is non-potable and a program of consultation is being undertaken with these communities to ensure that water quality issues are understood.

Wastewater services are presently supplied to 21 of the 73 towns/localities within the service area. This will be expanded to 24 towns/localities prior to the start of the Water Plan period when the sewerage schemes that have been constructed in Ouyen, Minyip and Hopetoun are fully commissioned.

Water supply for Domestic and Stock (D&S) customers is the predominant rural activity. D&S activity currently entails bulk water delivery to around 3,000 rural business enterprises through an annual channel supplied dam-fill for up to 22,000 dams over an area of some 2 Million hectares and rural pipeline services to some 820,000 hectares of the Northern Mallee region. GWMWater also supplies bulk water by agreement to some 172 rural customers across the region, typically for intensive agricultural activities such as poultry farms, piggeries and commercial feedlots.

Irrigation supply of 19,000 ML to some 3,000 hectares around Horsham and Murtoa is another significant activity for the rural part of the business. This activity, however, has been very severely impacted since 1998 by prolonged drought and historically low storage levels. No water deliveries were possible in 2002, 2003 or 2004 and only 7.5% of allocations could be delivered in 2004, with supply between 1998 and 2002 also being substantially below the full allocation amounts.

GWMWater owns and operates a number of headworks and bulk water supply assets details of which are summarised in Table 2.7.1 below. These include three manned and twelve unmanned major water storages, each of which provide recreational access.

GWMWater operates four pump stations on the Murray River at Swan Hill, Piangal, Nyah and Liparoo that supply bulk water to urban storages and rural customers through the Northern Mallee Pipeline and operates a number of groundwater bores that supply thirteen towns in the south east, south west and west of the supply area. Groundwater management, river diversion and support of key environmental management strategies are also functions of GWMWater.

A significant undertaking over the next decade will be the construction of the WMP Project. The WMP Project will convert 16,500 km of open channel to 6,500 km of pipeline infrastructure. The WMP Project will return 83,000 ML of water presently lost through GWMWater's expansive open channel network to the environment and release a further 15,000 ML of water for new developments.

GWMWater is the implementing agency for the WMP Project, but the definitive role for GWMWater in the construction of the pipeline will be influenced by the project delivery mechanism for the WMP Project. GWMWater is presently working through the development of a Procurement Strategy for the WMP Project. This is a requirement of the DTF Gateway Process[4].

### 2.3.1 Service Area

The Service Area of GWMWater is outlined below (*Figure 2.3.1):*

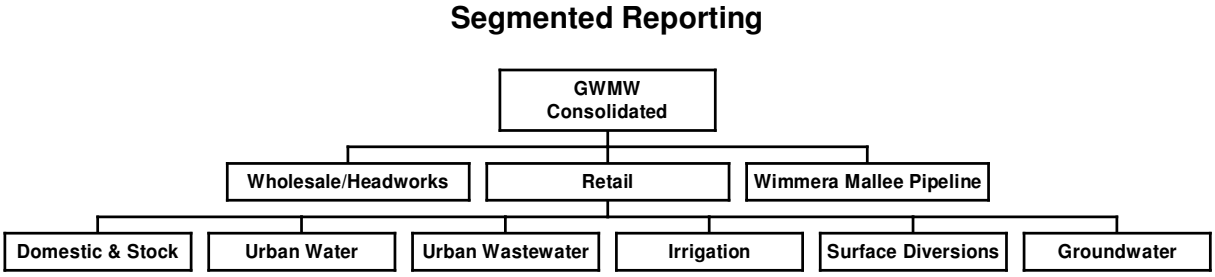
[4] The Department of Treasury and Finance Gateway Process

*Figure 2.3.1: Service Area of GWMWater*

### 2.3.2 Business Segments

GWMWater has a number of segments or lines of business where revenue and expenditure are recorded separately. Those same levels of segmentation are also used for pricing purposes.

*Figure 2.3.2: Segmented Reporting*




The reporting structure effectively divides the business into two functional areas - Wholesale/Headworks and Retail/Distribution. The Wholesale/Headworks area supplies bulk water to GWMWater's Urban storages, GWMWater rural and irrigation customers, two other rural urban authorities (Coliban and Wannon Water) and (currently) one major bulk water Supply By Agreement (SBA) customer.

Headworks operations also include a number of recreation lakes across the region, environmental releases to the Wimmera and Glenelg Rivers and compensation flows to the Glenelg River as required by the Bulk Entitlement Conversion Orders made on behalf of WMW and GRWA.

Within the Retail/Distribution area there are six lines of business or separate customer groups, with SBA customers within the D&S (rural) and urban water business lines; and trade waste agreements for major urban wastewater customers.

### 2.3.3 Service Delivery Model

GWMWater operates from headquarters in Horsham, with Regional Offices in Horsham, Ararat and Birchip; and has operational centres and work depots at St Arnaud, Warracknabeal, Nhill, Dimboola, Stawell, Murtoa, Charlton, Donald, Ouyen, Hopetoun, Sea Lake, Edenhope and Willaura.

The significant headworks storages, varying sources of water, open channel and pipeline supplies, water treatment systems and service delivery requirements are both a major challenge and an opportunity for GWMWater.

The water supply system is one of the oldest in regional Victoria with parts in excess of 100 years old. Accordingly, much of the infrastructure is nearing the end of its useful life, and many of the 8,700 km of GWMWater channels require significant maintenance and renewal activity. There is also approximately 8,800 km of private channels, a large proportion of which is also in need of upgrading and/or improved annual maintenance.

A major project was commenced by Wimmera Mallee Water in 1992 to provide piped water supplies to towns and rural customers across the Northern Mallee. Supply to these customers had previously been via a highly inefficient channel system which delivered as little as only 5% of the water diverted at the source.

Combined with the large geographical distances, GWMWater is unique in terms of the varied service delivery requirements for a Victorian based Water Authority.

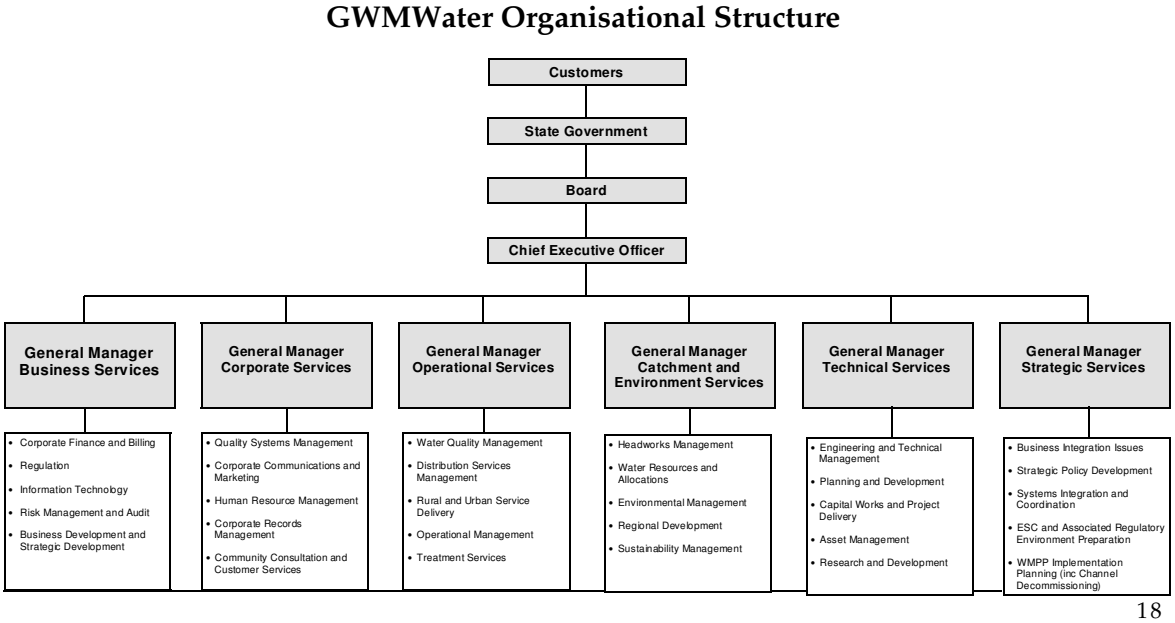
Customers play a vital role in the provision of water services and have direct input to the business via active Customer Consultative Committees. With standing and ad-hoc committees, there are about 300 customers involved.

### 2.3.4 Organisation Structure

The merger of the two former authorities (GRWA and WMW) on 1 July 2004 provided the opportunity to establish a new organisation structure to meet the changing needs of the region. Generally the aim has been to ensure that GWMWater has the resources to meet substantial capital works, customer service and consultation program requirements. More recently, issues like the new drinking water regulations and introduction of the new economic and technical regulatory environment have had a significant impact on the water sector.

The organisation structure for the GWMWater is shown below:

*Figure 2.3.3: GWMWater Organisational Structure*



This structure has been developed to meet GWMWater's current and medium-term needs and to provide the level of service expected by its extensive and varied customer base.

## *2.4 Scope of GWMWater Activity*

### 2.4.1 Demographics

The area serviced by GWMWater has a total population of approximately 72,000 people. The service area covers 13 municipalities, six of which have total coverage and a further seven have partial coverage, but in most cases the majority of these municipalities are within GWMWater's boundary.

*Table 2.4.1: Municipality Service Area*

| **Total Coverage** | **Partial Coverage** |
|---|---|
| Buloke Shire Council | Ararat Rural City Council* |
| Hindmarsh Shire Council | Gannawarra Shire Council |
| Horsham Rural City Council | Loddon Shire Council* |
| Northern Grampians Shire Council | Mildura Rural City Council* |
| West Wimmera Shire Council | Pyrenees Shire Council |
| Yarriambiack Shire Council | Southern Grampians Shire Council* |
| | Swan Hill Rural City Council* |

** Majority of municipality within GWMWater Boundary*

Of the municipalities within the GWMWater region, only three including Horsham, Ararat and Northern Grampians (Stawell), have a stable population, and only Horsham exhibits a small annual growth.

The four western and north central municipalities; West Wimmera, Hindmarsh, Yarriambiack and Buloke have been in a state of population decline. The three most northern municipalities all have stable populations, but not in the towns that fall within the GWMWater service area. Based on current projections, it is considered likely that this trend will continue.

*Figure 2.4.1: Average population loss – Victoria*

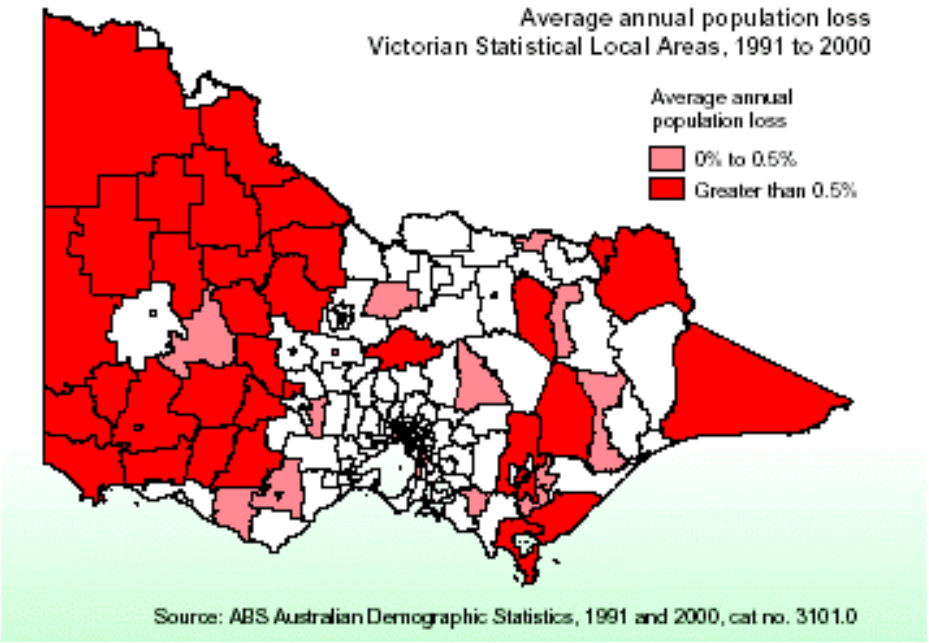
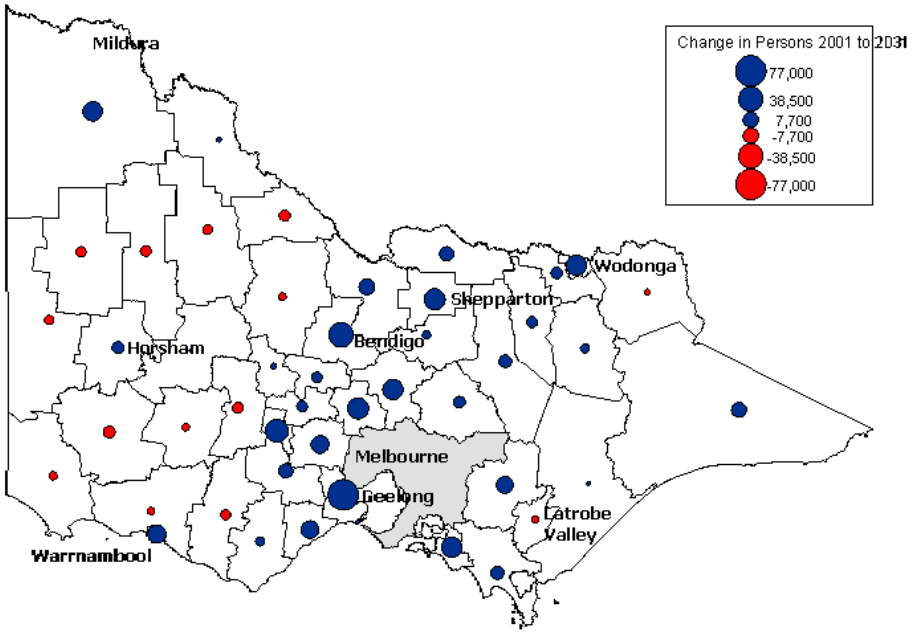
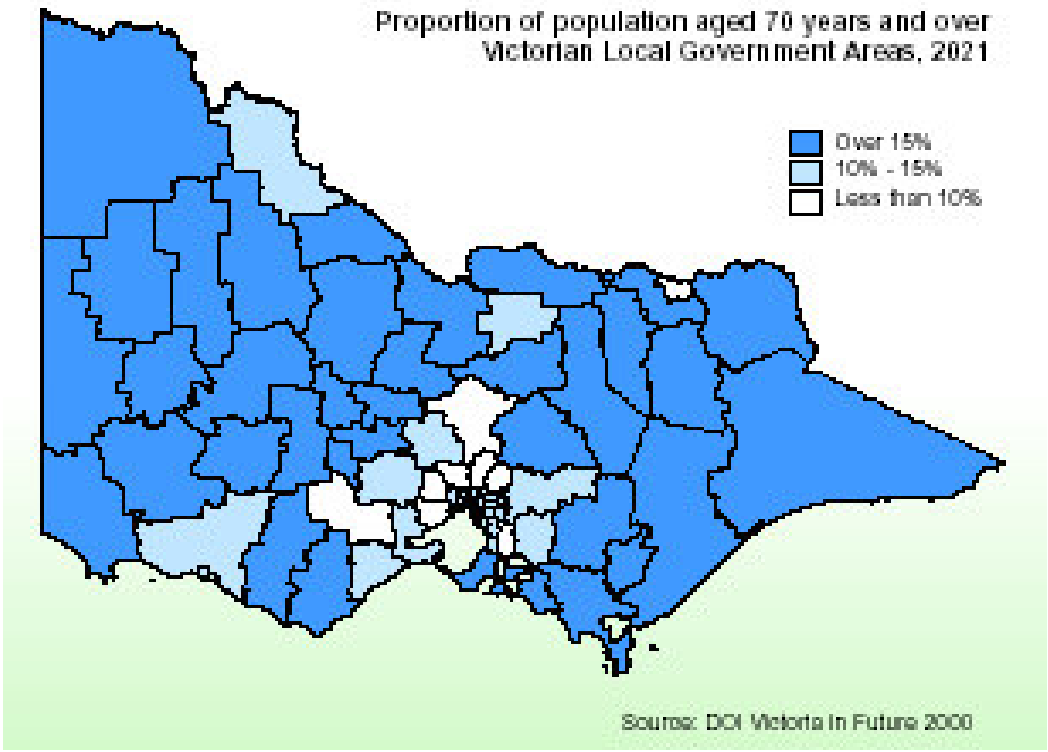



*Figure 2.4.2: Projected change in persons – Victoria 2001-2031*




A common thread of all municipalities, irrespective of whether they are in decline or stabilising, is the increase in older age groups and the decline of younger age groups.

*Figure 2.4.3: Victoria Ageing profile 2021*




*Reference:* *Department of Infrastructure 'Towns in Time' – 1999*
*Department of Infrastructure 'Victoria in Future' – 1999*
*Department of Infrastructure 'Regional Matters' - 2002*

Projections made by the Department of Sustainability and Environment (DSE) in '*Victoria in Future*' suggest that this trend will continue. This was reinforced in a more recent study titled '*Ageing in the Bush – A perspective from Victoria*' that showed the current trends projecting an increase in the number of persons aged 60 and over, and a decline in people aged 20 and under.

*Figure 2.4.4: Victorian change in persons aged 60 plus by year 2020*

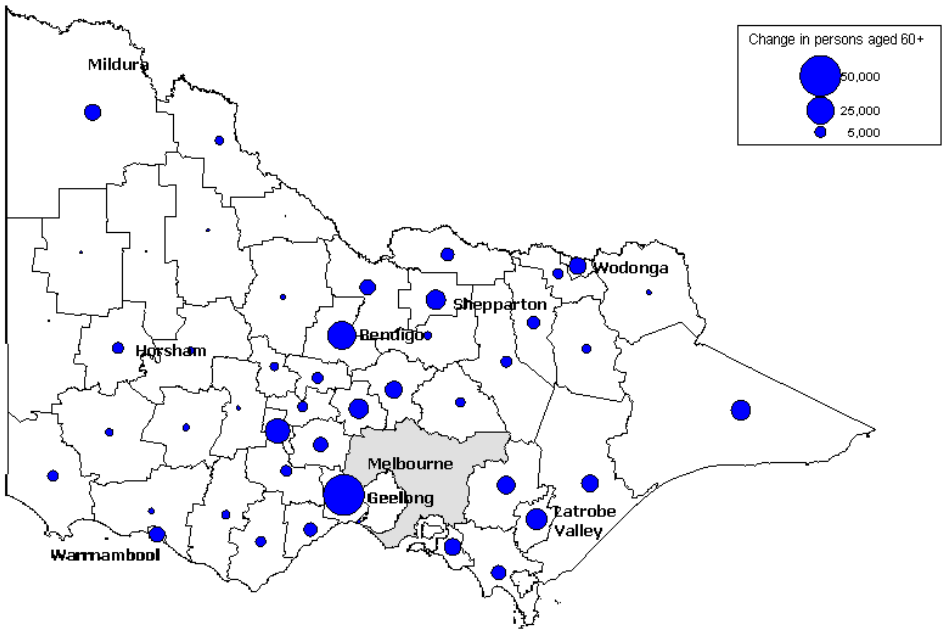
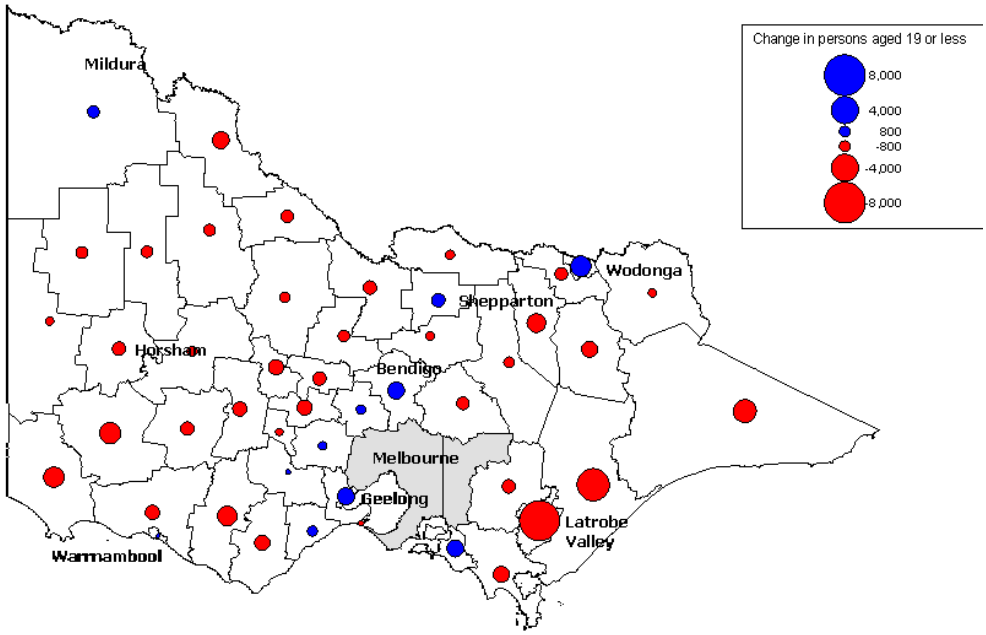



*Figure 2.4.5: Victoria Change in persons aged 19 or less by year 2020*



The WMP Project presents substantial opportunities to enhance regional development and reverse these population trends. A secure water supply will provide certainty to industries looking to establish in the region leveraging off the rich agricultural base in the area. The water returned to the environment will enhance the regional amenity and enhance the opportunities for recreational and eco-tourism in the region.

## *2.5 Socio Economic Status*

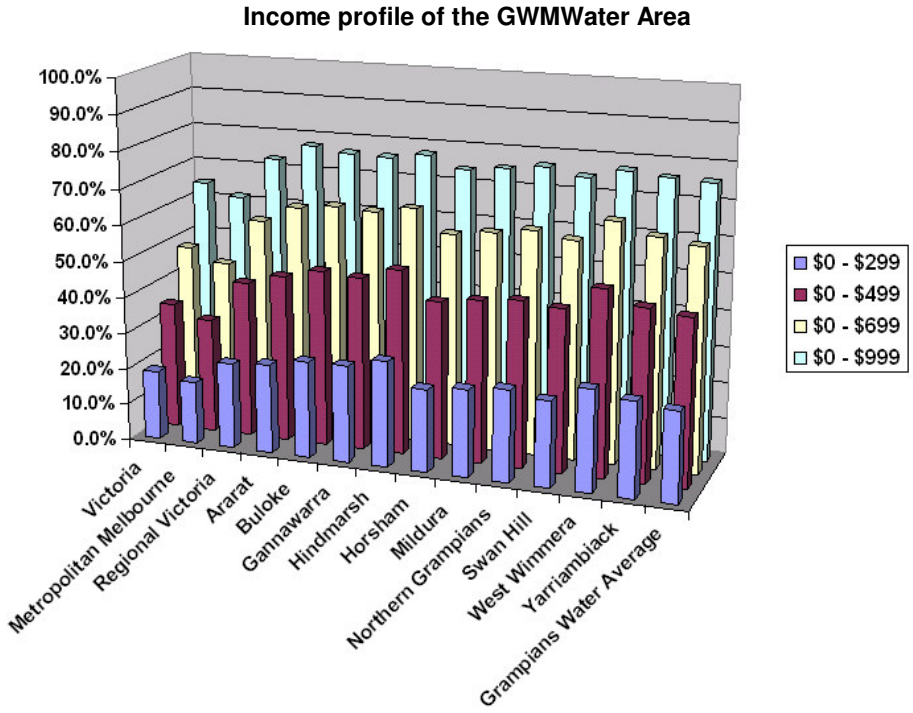
GWMWater supplies farms and towns for the predominantly agricultural base of the region. Recent changes in agricultural practice, combined with the impact of technology and sustained drought conditions, have had a substantial impact on the regional economy. Since the 1982/83 drought there has been a consolidation of agricultural activity to broad area crops. Farm sizes have been growing as properties are consolidated giving rise to a decline in the farming population.

Reduced employment opportunities for young people in the increasingly efficient rural sector have resulted in a population drift to major urban centres outside the GWMWater supply area; and produced an aging population that has a significantly lower income base than Melbourne and the remainder of regional Victoria. As a result, there is a major concern by customers in respect to affordability of infrastructure services, including water and wastewater.

The income profile shown below is for the various Local Government areas within the GWMWater region.

Regional affordability is an issue, a declining population presents a significant challenge to GWMWater where there is a smaller population base in an environment of increasing technical regulation and customer expectation as represented in the customer service standards.

*Figure 2.5.1: Income profile of the GWMWater Area*




*Department of Infrastructure 'Regional Matters' - 2002*

As at 31 March 2005, GWMWater had 10,528 urban customers who were recipients of pensioner or health care cards. This represents 42% of the total residential customer base. An additional 192 rural customers are in receipt of a pensioner concession.

The recent drought conditions have also adversely affected some sections of the community further aggravating affordability and access concerns. Rural income levels have been substantially affected by drought in recent years and the capacity to pay for water needs to be considered in the context of farm profitability.

The income levels of farmers in the Wimmera / Eastern South Australia and Mallee / Eastern South Australia have been the subject of studies undertaken by the Australian Bureau of Agriculture and Resource Economics (ABARE). ABARE produce information that reports on farm profitability. The findings of this research for grains farm profitability in the period 2000/01 to 2002/03 is summarised in the following charts.

*Figure 2.5.2: Farm Incomes*

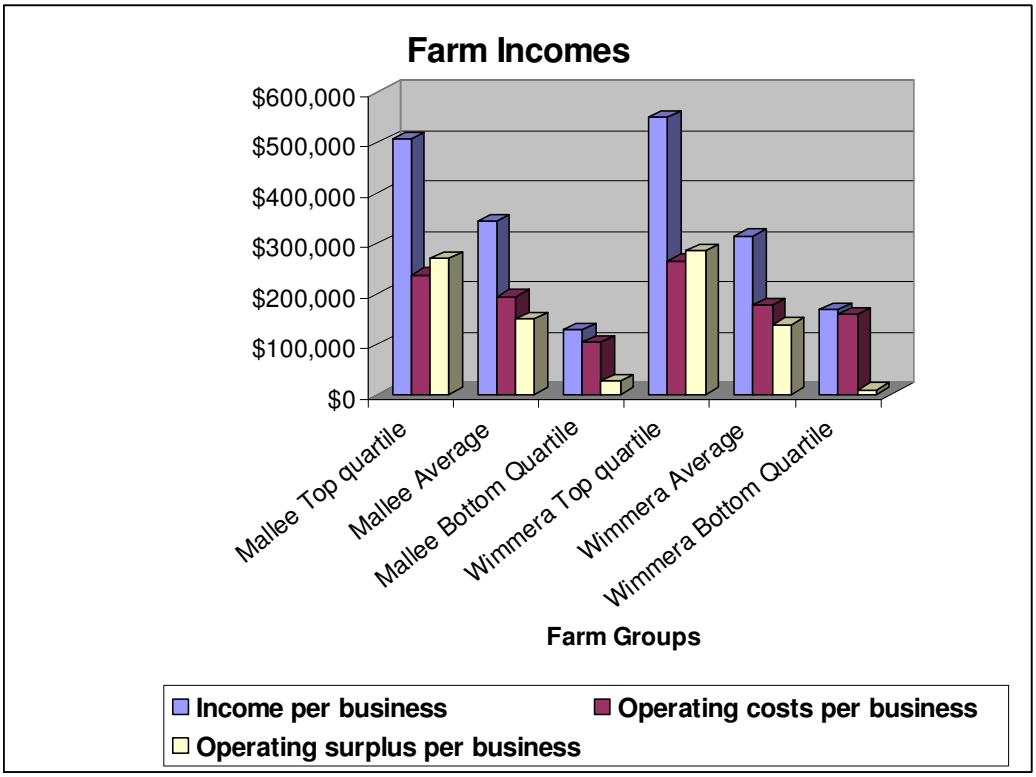
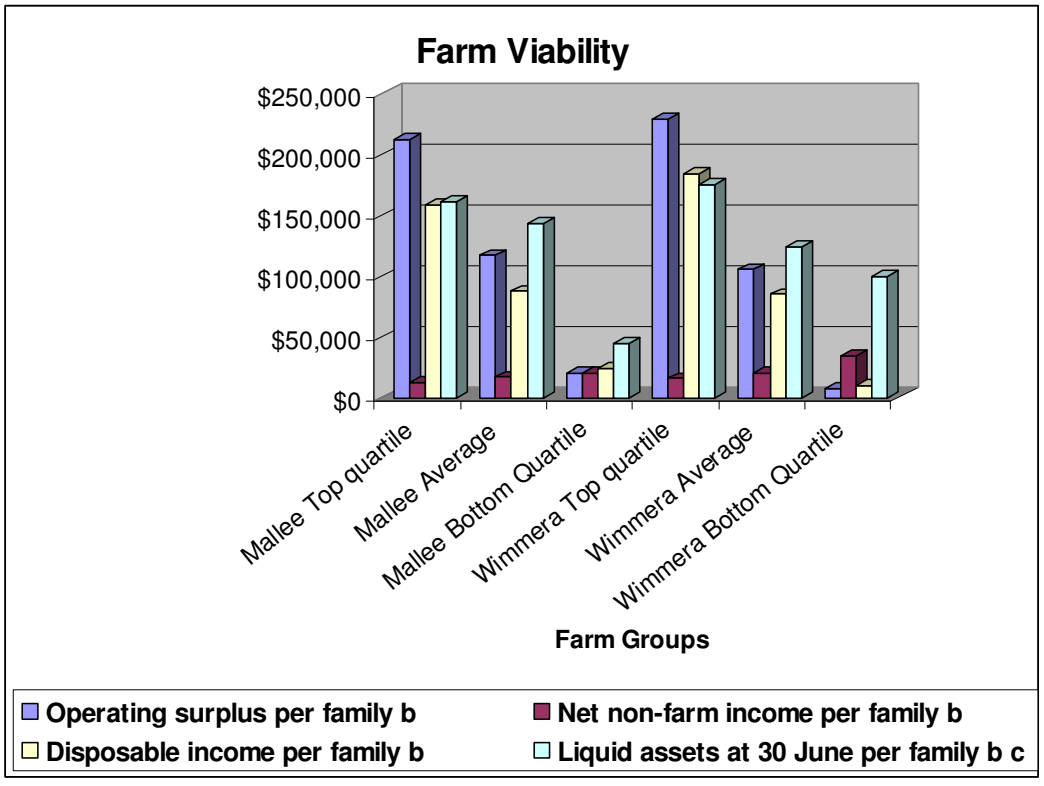
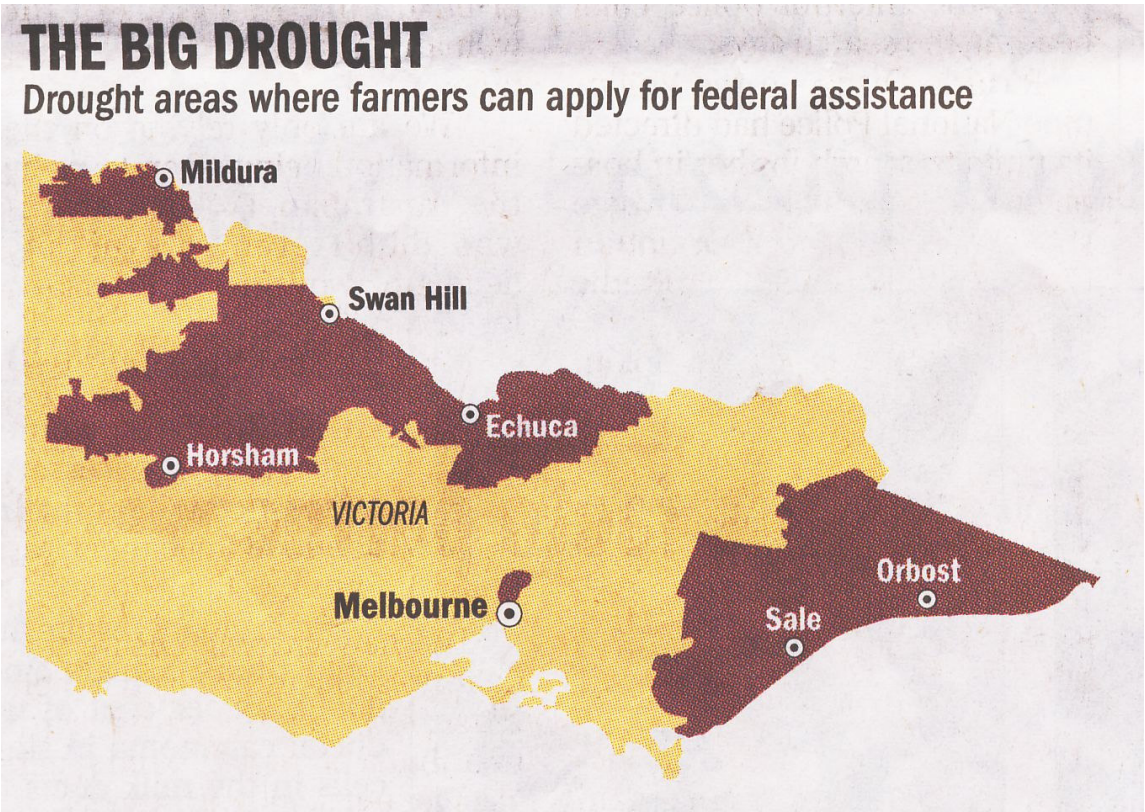



*Figure 2.5.3: Farm Viability*



Perhaps the most critical factor affecting regional affordability is the impact of the current drought. More than 50% of the area serviced by GWMWater has been declared drought affected. As a result, rural customers in drought-affected areas qualify for interim Exceptional Circumstances (EC) funding.

*Figure 2.5.4: Drought affected areas within Victoria*




There is also substantial economic inter-dependency between rural and urban communities. The economic downturn produced by the drought impacts on industries in towns that service the local agricultural sector.

## *2.6 Assessment Details*

There are a total of 17,496 water services provided to rural customers outside of the towns serviced by GWMWater. The majority of those services are D&S farm supplies to around 3,000 rural businesses and irrigation supplies centred on the city of Horsham.

Other services are groundwater, surface water diversions from streams and supplies by agreement for industry and intensive farming operations. Details of the rural assessments are as follows:

*Table 2.6.1: Summary of Rural Assessments*

| Service Type | Rated Customers | Rated Services | Rated Area | Allocation ML/a |
|---|---|---|---|---|
| Channel | 4,807 | 10,274 | 1,700,000 | 45,300 |
| Pipeline | 1,141 | 3,000 | 820,000 | 5,600 |
| Bore | 87 | 226 | 74,000 | 750 |
| Total D&S | 6,035 | 13,500 | 2,594,000 | 51,650 |
| Irrigation | 210 | 250 | 3,000 | 13,500 |
| | | | | |
| Supply By Agreement | 98 | 98 | | 7,200 |
| | | | | |
| Groundwater | 127 | 166 | - | 50,000 |
| Surface Water | 289 | 391 | - | 6,120 |
| Total Diversions | 416 | 557 | - | 56,120 |
| | | | | |
| TOTAL | 6,759 | 14,405 | 2,597,000 | 128,462 |

These figures do not include non-rated services such as Division 4, D&S customers who physically cannot gain access to the water supply system.

The major groundwater supplies involve direct investment by customers in bores, pumps and other infrastructure. GWMWater's role comprises mainly resource management and licensing undertaken on behalf of DSE.

Within the 73 towns/localities supplied by GWMWater there is a customer base of 25,288 residential water assessments (customers) and 4792 non-residential water assessments. Wastewater services are provided to 21 of these towns, with there being 21,016 residential wastewater assessments and 3,470 non-residential wastewater assessments. In addition, some 640 customers are supplied with water in areas adjacent to towns but outside declared water supply areas and some 40 customers within urban centres (including municipal sporting fields and major industrial and commercial customers) are supplied with water services by agreement.

The detail of these on a town-by-town basis is provided in the following Table.

*Table 2.6.2: Summary of Urban Assessments*

| | Water | | | | Wastewater | | | |
|---|---|---|---|---|---|---|---|---|
| Town | Residential | Non Residential | Vacant Land | Total | Residential | Non Residential | Vacant Land | Total |
| Horsham | 6442 | 933 | 377 | 7752 | 5994 | 857 | 229 | 7080 |
| Stawell | 2782 | 388 | 69 | 3239 | 2549 | 367 | 11 | 2927 |
| Ararat | 3326 | 405 | 100 | 3831 | 3069 | 399 | 41 | 3509 |
| Warracknabeal | 1220 | 218 | 0 | 1438 | 1138 | 187 | 0 | 1325 |
| Edenhope | 420 | 100 | 0 | 520 | 419 | 83 | 0 | 502 |
| Nhill | 955 | 193 | 0 | 1148 | 917 | 171 | 0 | 1088 |
| Kaniva | 401 | 107 | 0 | 508 | 397 | 87 | 0 | 484 |
| Serviceton | 28 | 6 | 0 | 34 | 23 | 4 | 0 | 27 |
| Apsley | 93 | 24 | 0 | 117 | 0 | 0 | 0 | 0 |
| Harrow | 64 | 28 | 0 | 92 | 0 | 0 | 0 | 0 |
| Goroke | 136 | 45 | 0 | 181 | 0 | 0 | 0 | 0 |
| Miram | 10 | 4 | 0 | 14 | 0 | 0 | 0 | 0 |
| Lillimur | 15 | 2 | 0 | 17 | 0 | 0 | 0 | 0 |
| Halls_Gap | 360 | 85 | 54 | 499 | 330 | 83 | 9 | 422 |
| Great_Western | 99 | 25 | 9 | 133 | 0 | 0 | 0 | 0 |
| Glenorchy | 56 | 6 | 0 | 62 | 0 | 0 | 0 | 0 |
| Pomonal | 101 | 8 | 7 | 116 | 0 | 0 | 0 | 0 |
| Birchip | 353 | 97 | 0 | 450 | 331 | 77 | 0 | 408 |
| Manangatang | 129 | 43 | 0 | 172 | 0 | 0 | 0 | 0 |
| Willaura | 197 | 50 | 0 | 247 | 161 | 39 | 0 | 200 |
| Lake_Bolac | 118 | 46 | 0 | 164 | 0 | 0 | 0 | 0 |
| Buangor | 30 | 8 | 0 | 38 | 0 | 0 | 0 | 0 |
| Elmhurst | 93 | 19 | 0 | 112 | 0 | 0 | 0 | 0 |
| Westmere | 12 | 7 | 0 | 19 | 0 | 0 | 0 | 0 |
| Moyston | 82 | 9 | 0 | 91 | 0 | 0 | 0 | 0 |
| Streatham | 39 | 12 | 0 | 51 | 0 | 0 | 0 | 0 |
| Wickliffe | 33 | 10 | 0 | 43 | 0 | 0 | 0 | 0 |
| Natimuk | 213 | 48 | 0 | 261 | 197 | 36 | 0 | 233 |
| Pimpinio | 30 | 8 | 0 | 38 | 0 | 0 | 0 | 0 |
| Dooen | 14 | 4 | 0 | 18 | 0 | 0 | 0 | 0 |
| Murtoa | 410 | 83 | 0 | 493 | 384 | 57 | 0 | 441 |
| Minyip | 234 | 50 | 0 | 284 | 230 | 32 | 0 | 262 |
| Rupanyup | 200 | 52 | 0 | 252 | 0 | 0 | 0 | 0 |
| Marnoo | 50 | 22 | 0 | 72 | 0 | 0 | 0 | 0 |
| Donald | 681 | 153 | 0 | 834 | 652 | 151 | 0 | 803 |
| St.Arnaud | 1144 | 234 | 0 | 1378 | 1061 | 208 | 0 | 1269 |
| Antwerp | 10 | 3 | 0 | 13 | 0 | 0 | 0 | 0 |
| Berriwillock | 69 | 22 | 0 | 91 | 0 | 0 | 0 | 0 |
| Beulah | 147 | 43 | 0 | 190 | 0 | 0 | 0 | 0 |
| Brim | 47 | 13 | 0 | 60 | 0 | 0 | 0 | 0 |
| Chillingollah | 6 | 3 | 0 | 9 | 0 | 0 | 0 | 0 |
| Chinkapook | 14 | 3 | 0 | 17 | 0 | 0 | 0 | 0 |
| Cowangie | 9 | 5 | 0 | 14 | 0 | 0 | 0 | 0 |
| Murrayville | 141 | 44 | 0 | 185 | 0 | 0 | 0 | 0 |
| Rainbow | 300 | 85 | 0 | 385 | 285 | 58 | 0 | 343 |
| Jeparit | 253 | 62 | 0 | 315 | 237 | 39 | 0 | 276 |
| Dimboola | 749 | 121 | 0 | 870 | 666 | 96 | 0 | 762 |
| SeaLake | 338 | 85 | 0 | 423 | 320 | 71 | 0 | 391 |
| Wycheproof | 339 | 93 | 0 | 432 | 313 | 63 | 0 | 376 |
| Charlton | 536 | 141 | 0 | 677 | 513 | 113 | 1 | 627 |
| Hopetoun | 307 | 88 | 0 | 395 | 300 | 72 | 0 | 372 |
| Ouyen | 545 | 129 | 0 | 674 | 530 | 120 | 0 | 650 |
| Ultima | 76 | 20 | 0 | 96 | 0 | 0 | 0 | 0 |
| Waitchie | 3 | 5 | 0 | 8 | 0 | 0 | 0 | 0 |
| Lalbert | 42 | 20 | 0 | 62 | 0 | 0 | 0 | 0 |
| Lascelles | 22 | 8 | 0 | 30 | 0 | 0 | 0 | 0 |
| Nullawil | 26 | 17 | 0 | 43 | 0 | 0 | 0 | 0 |
| Patchewollock | 36 | 21 | 0 | 57 | 0 | 0 | 0 | 0 |
| Quambatook | 131 | 39 | 0 | 170 | 0 | 0 | 0 | 0 |
| Speed | 28 | 11 | 0 | 39 | 0 | 0 | 0 | 0 |
| Tarranyurk | 5 | 5 | 0 | 10 | 0 | 0 | 0 | 0 |
| Tempy | 21 | 14 | 0 | 35 | 0 | 0 | 0 | 0 |
| Underbool | 107 | 29 | 0 | 136 | 0 | 0 | 0 | 0 |
| Walpeup | 58 | 20 | 0 | 78 | 0 | 0 | 0 | 0 |
| Watchem | 69 | 18 | 0 | 87 | 0 | 0 | 0 | 0 |
| Woomelang | 111 | 38 | 0 | 149 | 0 | 0 | 0 | 0 |
| Yaapeet | 29 | 8 | 0 | 37 | 0 | 0 | 0 | 0 |
| Culgoa | 58 | 20 | 0 | 78 | 0 | 0 | 0 | 0 |
| Jung | 40 | 5 | 0 | 45 | 0 | 0 | 0 | 0 |
| Nandaly | 19 | 15 | 0 | 34 | 0 | 0 | 0 | 0 |
| Noradjuha_ClearLake | 11 | 3 | 0 | 14 | 0 | 0 | 0 | 0 |
| Kiata | 16 | 4 | 0 | 20 | 0 | 0 | 0 | 0 |
| Total | 25288 | 4792 | 616 | 30696 | 21016 | 3470 | 291 | 24777 |

The Pricing Review undertaken by the Board has also identified significant differences in outcomes for residential and non-residential customers from existing tariff pricing and the lack of a clearly transparent policy in respect of price discounts to some large urban supply by agreement customers compared to other customers.

The Board has consequently initiated a review of its price discounting policy, which will also be subject to a comprehensive consultation program with customer to ensure they fully understand the outcomes from the review and to identify options for addressing these outcomes in the near term.

It is anticipated that the outcome from these consultations will result in:

- Alignment of water service tariffs for Residential and Non-Residential customers, with price differentiation based solely on the level of treatment of urban water services;
- Further review of the impact of moving to full alignment of wastewater service tariffs for all Residential and Non-Residential customers from the next Water Plan period and consultation with customers on these impacts; and
- Adoption of a price discount policy supported by urban customers that appears likely to offer discounts only to not for profit community activities.

## *2.7 Sources of Water*

GWMWater obtains water from a number of sources in order to meet the needs of its customers.

The major source of water is the extensive system of headworks in the Grampians area. There are 12 main storages in that area used to harvest and store water for supply throughout the southern parts of the region. Those storages are also used to supply environmental and compensation flows to the Glenelg and Wimmera Rivers.

The sources of water are:

- The Murray River for the Northern Mallee Pipeline system used for the supply to farms and towns in the northern area;
- The Waranga Western Main Channel used to supplement urban and rural supplies in the east of the system and the supply to the township of Quambatook through the Normanville Pipeline scheme;
- Groundwater supplies for irrigation and D&S purposes mainly in the western part of the region. Groundwater is also used to provide a water supply to 13 towns;
- Private diversions from waterways. GWMWater also manages a number of regulated and unregulated diversions for irrigation and D&S purposes from waterways in the area; and
- The Walpeup West bore area supplies a small number of customers through licensed bores in the north of the region.

*Table 2.7.1: Headworks and Catchment Overview*

| Catchment Source | Catchment Area (km^2) | Mean Annual Flow (ML) | Storage name | Year commissioned | Full capacity (ML) | Full supply level (m AHD) | Description |
|---|---|---|---|---|---|---|---|
| **McKenzie River at Wartook Reservoir** | 80 | 45,800 | Lake Wartook | 1887 | 29,360 | 441.69 | Horsham, Mt Zero and D&S via Mt Zero Channel. Also supplies water to the larger domestic and stock system when releases are made for the purpose of maintaining a sufficient flood reserve. Wartook Reservoir is located in the headwaters of the Mackenzie River. |
| **Mt William Creek at Lake Lonsdale** | 1,026 | – | Lake Lonsdale | 1903 | 65,550 | 187.62 | Lake Lonsdale is drawn upon before water from other reservoirs because of the higher evaporation from Lonsdale. Lake Lonsdale is an on-stream reservoir on Mount William Creek. |
| **Wimmera River at Glenorchy** | 1,953 | 211,000 | Taylors Lake | 1923 | 35,770 | 146.16 | Sufficient air space is maintained in Pine and Taylors Lakes to catch Wimmera River water when it is available. Water is diverted northwards at Glenorchy and to the south at Huddleston's Weirs and stored off-river at Pine and Taylors Lakes. |
| | | | Pine Lake | 1923 | 64,200 | 143.89 | |
| | | | Green Lake | 1935 | 5,350 | 135.7 | Green and Dock Lakes are part of the headworks system but are used infrequently. The main reason for this is unacceptable salinity levels in Dock Lake. Green Lake has a high recreational value to the region. |
| | | | Dock Lake | 1935 | 5,900 | 134.02 | |
| **Glenelg River at Rocklands Reservoir** | 1,355 | 131,000 | Rocklands Reservoir | 1953 | 348,310 | 195.47 | Rocklands and Toolondo are used to fill both Pine and Taylors Lakes as well as supplying water demands along the way. They are also used to supply demands further north using the Rocklands Channel. Water from Rocklands Reservoir is released in preference to releases from Toolondo Reservoir which has lower evaporation. Toolondo is an off-river storage and, apart from a very small local catchment, can only be filled by releases from Rocklands. It is filled usually during low demand periods using the Rocklands Channel. |
| | | | Toolondo Reservoir | 1953 | 106,600 | 165.93 | |
| | | | Moora Moora Reservoir | 1933 | 6,290 | 219.95 | Moora Moora Reservoir suffers high evaporation losses, and it too is used as an annual storage. Priority is given to supplying the Brimpaen and Laharum area from Moora Moora Reservoir. Remaining storage is then channelled to Pine and Taylors Lakes in most years. |
| **Fyans Creek** | | | Lake Bellfield | 1966 | 78,550 | 276.5 | Mainly used for drought reserve because of low evaporation. Last storage available (after Lake Lonsdale and Lake Fyans are emptied) which can supply the Main Central and Charlton Channels. Lake Bellfield is an on-stream reservoir on Fyans Creek. A small volume of water can be diverted from the upper reaches of the Wannon River (Glenelg tributary) into Lake Bellfield. |
| | | | Lake Fyans | 1916 | 21,090 | 204.3 | Lake Fyans is part of the headworks system, however its storage capacity is relatively small and its primary use is to supplement urban supplies to the townships of Stawell and Ararat. Fyans Lake is an off-stream storage where water is diverted from Fyans Creek. |
| **Avon/Richardson River at Donald** | 1,850 | 30,000 estimated | Lake Batyo Catyo | 1961 | 3,450 | 122.24 | Avon-Richardson Rivers' water can be diverted to Lake Batyo-Catyo, when water is available, to reduce reliance on transfers from the Grampians storages. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Second Wannon Creek at Diversion Point** | 23 | 7,500 | | | | | |
| **Avoca River diversion to Waranga Western Channel** | | 0 to 1,000; Average 500 | | | | | Avoca River water is diverted to Waranga Western Channel during high flow periods, then to GWMWater channel system. |
| **Goulburn-Murray Water via Waranga Western Channel** | | 13,000 (average) | | | | | Water supply via Waranga Western Channel is covered by the Murray-Goulburn Bulk Entitlement Order. Yield is 2 yearly average, with 22,000 ML and 2,000 ML delivered every second year. |
| **Murray River Pumping Stations** | | 4,000 | | | | | Pumping Stations located at Swan Hill, Piangal and Liparoo supply rural customers in the Northern Mallee as well as the towns of Chillingollah, Chinkapook, Manangatang, Nandaly, Sea Lake, Speed, Tempy, Ultima, Underbool, Waitchie and Walpeup. Lalbert and Patchewollock are also supplied from the Preliminary stages of the WMP PROJECT). |
| **Groundwater bores – Urban supplies.** | | 1200 | | | | | Apsley, Cowangie, Goroke, Harrow, Kaniva, Kiata, Lillimur, Miram, Nhill, Serviceton, Streatham and Westmere supplied by Bore (Untreated); Murrayville is supplied by Bore (Disinfected). |
| **Surface and pipeline supplies – South eastern areas** | | | | | | | There are 3 completely independent systems that make up the East Grampians Pipeline (EGP) supply. The Elmhurst system, The Buangor System and The Willaura system<br>Buangor, Elmhurst, Lake Bolac, Moyston, Wickliffe and Willaura supplied via the East Grampians Pipeline (EGP). (Source is harvests from local streams and ground water) |
| **Total capacity:** | | | | | **770,420** | | |

*Notes:*

Bellfield, Rocklands, and Wartook, with their better evaporation and water quality characteristics, are used to hold water for drought reserve.

The major part of the domestic, stock and irrigation system is supplied from the Charlton, Main Central, Rocklands, Lubeck and Taylors Lake channels and from the main channel from Pine Lake.

Wimmera River water can be diverted into the Main Central Channel from Glenorchy Weir or be directed to the Rocklands Lubeck Channel and to Pine and Taylors Lakes from Huddleston's Weir.

## *2.8 Infrastructure Assets*

The geographic distances associated with the service region, combined with the relatively low rainfall and the distance from the catchment of many of the population centres and customers, requires a considerable investment in infrastructure to meet GWMWater's service delivery obligations.

GWMWater currently provides fully treated water to 76% of its customers with 15 water treatment plants with a capacity of 102 ML/day, four of which have been constructed under a Build Own Operate Transfer (BOOT) agreement. This is a significant improvement from 1998 when only 28% of customers received fully treated water. A further 17 towns are supplied with water that is treated using disinfection.

The distribution of water throughout the serviced area is a major exercise conducted over an area of 3 Million hectares. The Wimmera Mallee Water Supply Channel System is used to distribute water through some 15,000 km of open channels to supply up to 20,000 farm dams and 50 town storages in the area over approximately 2 Million hectares. Water supply in the Northern Mallee part of the system is delivered through a 2,500 km pipeline network to around 3,000 supply points and 10 town storages. This pipeline system was commenced in 1992 and completed in 2002 to replace the open channels in that area.

The following table summarises the asset inventory involved in providing water and wastewater services throughout the 72,000 square kilometre area managed by GWMWater.

*Table 2.8.1: Infrastructure Assets*

| ASSET GROUP | CATEGORY | QUANTITY |
|---|---|---|
| ***URBAN WATER SUPPLY*** | | |
| Water Mains | Reticulation / Trunk Mains | 1,230 km |
| Water Pump Stations | (not including WTPs) | 96 |
| Water Treatment Plants | Dissolved Air Floatation/Flocculation # | 13 |
| | Microfiltration # | 2 |
| | Desalination and | 4 |
| | Disinfection | 32 |
| | Strainer / Sedimentation / pH correction | 1 |
| Water Storages | Dams | 2 |
| | Reservoirs | 89 |
| | Tanks | 41 |
| | Elevated Tanks | 44 |
| | Weirs | 11 |
| Water Bores | | 37 |
| Water Meters | | 29,790 |
| ***RURAL WATER SUPPLY*** | | |
| Channels | Headworks | 274 km |
| | Irrigation | 140 km |
| | Drainage | 32 km |
| | Domestic & Stock | 6,537 km |
| Pipelines | Northern Mallee Pipeline | 3364 km |
| | Rainbow West Pipeline | 63 km |
| | Headwork's | 5 km |
| Pump Stations | Domestic & Stock | 7 |
| | Drainage | 1 |
| | Northern Mallee Pipeline | 14 |
| Elevated Tanks | | 4 |
| Storages | Headworks | 12 |
| | Balancing | 5 |
| Water Bores | | 39 |
| Major Structures | | 6 |
| ***WASTEWATER SYSTEM*** | | |
| Wastewater Mains | Reticulation / Rising Mains | 625 km |
| Wastewater Wastewater Plants | Secondary WWTP | 25 |
| Wastewater | Pump Stations | 87 |
| ***REUSE SYSTEM*** | | |
| Re-Use | Mains | 32 km |
| | Tanks | 1 |

*# Includes plants under the control of BOOT operator*

** Excludes specific assets in the channel system (bridges, regulators, syphons etc) and Desalination at Edenhope, Hopetoun and Rainbow to reduce salinity. I pilot plant at Nhill to evaluate the potential of improving water quality by using chemical free technology.*

# 3 Obligations of the Authority

The obligations of GWMWater are primarily driven by the requirements of the Government as shareholder and technical regulator.

The expectations of Government are prescribed in the SoO and these generally reflect the broader water policy framework identified in the 'White Paper'. The SoO also reflects the broader governance requirements of GWMWater as expected by the shareholder.

The Department of Human Services (DHS), Environment Protection Authority (EPA) and DSE are responsible for technical regulation of GWMWater. DHS is responsible for regulating water quality, EPA is responsible for regulating environmental performance, while DSE is responsible for oversight of Dam Safety requirements and GWMWater.

In addition to the role of the ESC in monitoring performance against the customer code, the Energy and Water Ombudsman of Victoria (EWOV) also provides an advocacy service for customers.

In addition to the key regulatory requirements, GWMWater is also expected to comply with legislative obligations and these also impact on service. These include, but are not restricted to:

- Water Act 1989;
- Water Industry Act 1994;
- The Environment Protection Act 19870, associated regulations and policies;
- 'Principles to Establish EPA Environmental Obligations for Water Businesses for the 2005 Pricing Determination, December 2003' (Joint EPA/Water Industry Paper);
- The Health Act 1958,
- Safe Drinking Water Act 2003,
- Food Act 1984,
- Fluoride Act 1973;
- Occupation Health and Safety Act 1985 and other associated legislation, regulations and codes;
- Environmental Contribution Levy Act;
- Roads Management Act 2004; and
- Bulk Entitlement Orders.

## *3.1 Preparation and Delivery of a Water Plan*

*"GWMWater must develop a Water Plan that complies with the requirements of this Statement for the purpose of enabling the Commission to make a decision with respect to Prices for Prescribed Services in respect of the Regulatory Period.*

*GWMWater must deliver the Water Plan to the Commission by 1 September 2005."*

The Water Plan has been prepared in accordance with the expectations of the SoO and the Regulatory Framework established by the ESC.

It outlines in detail the governance, service, regulatory and resource management obligations of GWMWater and how these will be achieved. This has been translated into expected performance levels and a total revenue requirement for GWMWater.

This total revenue requirement has been refined into a set of detailed tariff proposals for urban water and wastewater activities. Rural tariffs have not been prescribed in this Water Plan. These will be the subject of further refinement through the GWMW Corporate Planning process and more detailed consideration of the outcomes of the GWMWater Pricing Review.

## *3.2 Procedural Requirements*

The procedural requirements of the SoO have generally been complied with.

The timeframes for the lodgement have not been met as a consequence of uncertainties relating to expectations of GWMWater and the absence of a specific regulatory framework for rural activities.

These matters have been the subject of discussion between GWMWater, DSE and the ESC.

- Matters of substance have been the subject of consultation with affected customers through GWMWater's extensive community consultation program (refer section 2.4). The specific content of the Water Plan itself has not been the subject of broader community consultation, but will be undertaken in parallel with the draft determination process of the ESC.
- Technical regulators have been engaged in relation to the content of the Water Plan and support the priorities established by GWMWater.
- The service obligations have been the subject of consultation with ESC and have been incorporated into the GWMWater Customer Charter (urban).
- DSE has been consulted on the specific issues arising from the Water Plan.
- A copy of the Water Plan has been lodged with the Minister for Water and the Treasurer for consideration and review.

## *3.3 Board Performance*

*"GWMWater must annually review and report to the Minister on the performance of the Board of the Authority."*

GWMWater is committed to good Corporate Governance and monitoring and assessing Board Performance as an integral part of the governance framework. This will be met by a combination of 'in house' and external review processes.

GWMWater has committed $10,000 per annum to the cost of meeting this obligation.

## *3.4 Customer Consultation and Community Engagement*

*"GWMWater must develop and implement open and transparent processes to engage its customers and the community in its planning processes to ensure, among other matters, that the services it provides reflect the needs and expectations of customers.*

*In relation to the provision of rural water services, GWMWater must establish and support the operation of customer committees, having regard to any principles endorsed by the Minister for that purpose."*

A combination of the geography and the diverse customer base of the region mean that almost all people in the region interface with GWMWater in some way. The issues relating to the community can, however, be very different for people in different parts of the region. This presents a challenge to the way the community interface is managed with a suite of customer and community engagement mechanisms in place.

GWMWater interfaces with the community in many and varied ways and the interface is critical to its continued success. Whether it be as a supplier, employer, constructor or the facilitator of the provision of recreational water, GWMWater will continue to pursue the goal of delivering the highest practicable and efficient level of service to the community.

GWMWater has a substantial suite of customer consultative mechanisms to ensure that the community is adequately informed and consulted in the decision making processes.

### 3.4.1 Customer Consultative Committees

GWMWater does not have a centralised Customer Consultative Committee (CCC) speaking for all customers' interests across the region as a whole because of the extent and diversity of the region, the multiplicity of different systems and varied levels of service and the diverse origins of the business.

GWMWater has 10 different active CCCs, with approximately 150 representatives that meet regularly to discuss and make recommendations about their particular service or activity to the Board. Clause 11.2 of the SoO specifically requires GWMWater to maintain CCCs that deal with the provision of rural water services.

With issues of common interest to all CCC, combined meetings are held to discuss broader issues that impact on all customers and make recommendations to the Board on their deliberations. For example, issues such as drought management arrangements including water restrictions, the bulk entitlement process, tariff structure, water quality and institutional reform are all common areas of interest and discussion.

### 3.4.2 Customer Reference Groups

GWMWater relies heavily on customer input on specific local issues. This input has been achieved by establishing Customer Reference Groups (CRGs) to investigate and evaluate service options and provide input to decisions made by the GWMWater Board and management team. Groups currently established represent Urban, Domestic & Stock, Irrigation, Diversion and Groundwater customers.

Issues such as water quality; wastewater re-use, sewerage schemes, implementation of restricted water releases and development of pipeline options (Farm Project) have all been investigated and evaluated by the CRGs.

The CRGs are elected by the community and receive technical and administrative support from GWMWater. Once a Group is in a position to make a recommendation to the Board, an independent survey of all customers is conducted to verify the Group's finding.

The CRGs have been an effective mechanism to obtaining community input to local issues relating to water and or wastewater supply and these will be continued.

### 3.4.3 Customer Surveys

The CRGs and the CCC are an effective means of facilitating communication across the whole customer base. From time to time GWMWater undertakes general polling of customers to measure the level of satisfaction amongst customers of the service being provided.

GWMWater routinely monitors customer satisfaction both with its overall performance in meeting expectations and in how it has dealt with problems that arise.

Independent surveys of both rural and urban customers indicate that 92% of all customers that had direct dealings with GWMWater are either 'satisfied' or 'extremely satisfied' with service levels and overall performance.

### 3.4.4 Customer Awareness Activities

GWMWater has undertaken a wide range of customer awareness programs, which are crucial in providing information to customers and assisting their understanding of the water supply challenges for the region and their role in managing an acceptable outcome. Some of these programs are outlined below.

#### *Field Day and Local Show Exhibits*

GWMWater is represented at the Wimmera and Mallee Machinery Field Days held at Longerenong and Speed respectively. Displays focused on water conservation and management, piping of the channel system, groundwater management and farm-dam legislation. Focal points of interest were efficient water management and piping. Exhibits for urban customers focussed on water quality, working within water restrictions, sustainable wastewater treatment and environmental management. The Field Days attract large attendance from around the whole region.

Each October agricultural shows are conducted in the region. Exhibits and displays are organised on water related issues of regional importance. Particular local issues are addressed by visiting local town shows on an as needed basis.

#### *Customer Newsletters*

GWMWater produces two regular newsletters for its customers. Urban customers receive 'Tapping In' on a quarterly basis, and rural issues are raised in 'Pipeline', which is produced monthly. These newsletters are a forum for disseminating information and raising issues with customers.

#### *Website*

GWMWater has a website that aims to keep the community informed about its activities. GWMWater will continue to develop the website as a way of facilitating effective communication with the community and its customers about all activities of the Authority.

#### *National Water Week*

National Water Week, held annually, is supported by GWMWater. It sponsors theatre productions for school children that encourages water conservation and recycling and focuses community attention on water and all its uses.

Tours of reservoirs, water treatment plants and wastewater facilities were organised for students and the general public.

***Educational Visits***

Staff visited local schools to deliver the message of water conservation, sustainable environmental management and highlight regional issues such as the WMP Project.

GWMWater sponsors a number of poster competitions for school students across the region. These include the Statewide National Water Week poster competition that regularly attracts in excess of 1,000 entries and the local WOW! Water! Competition.

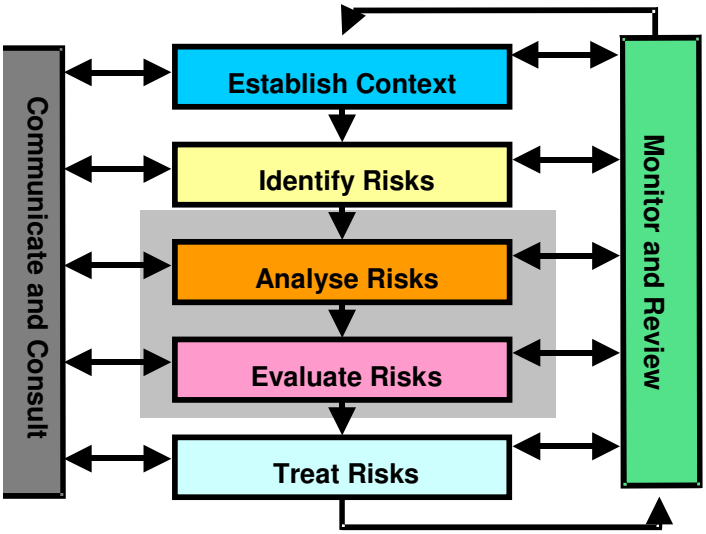
The provision of educational material is a specific obligation under Clause 11.3 of the SoO and GWMWater will continue to deliver these programs to the local community.

## *3.5 Managing Risks*

*"GWMWater must develop and implement plans, systems and processes, having regard to the Australian/New Zealand Standard AS/NZS 4360 – Risk Management to ensure that risks to the Authority's assets or services are identified, assessed, prioritised and managed."*

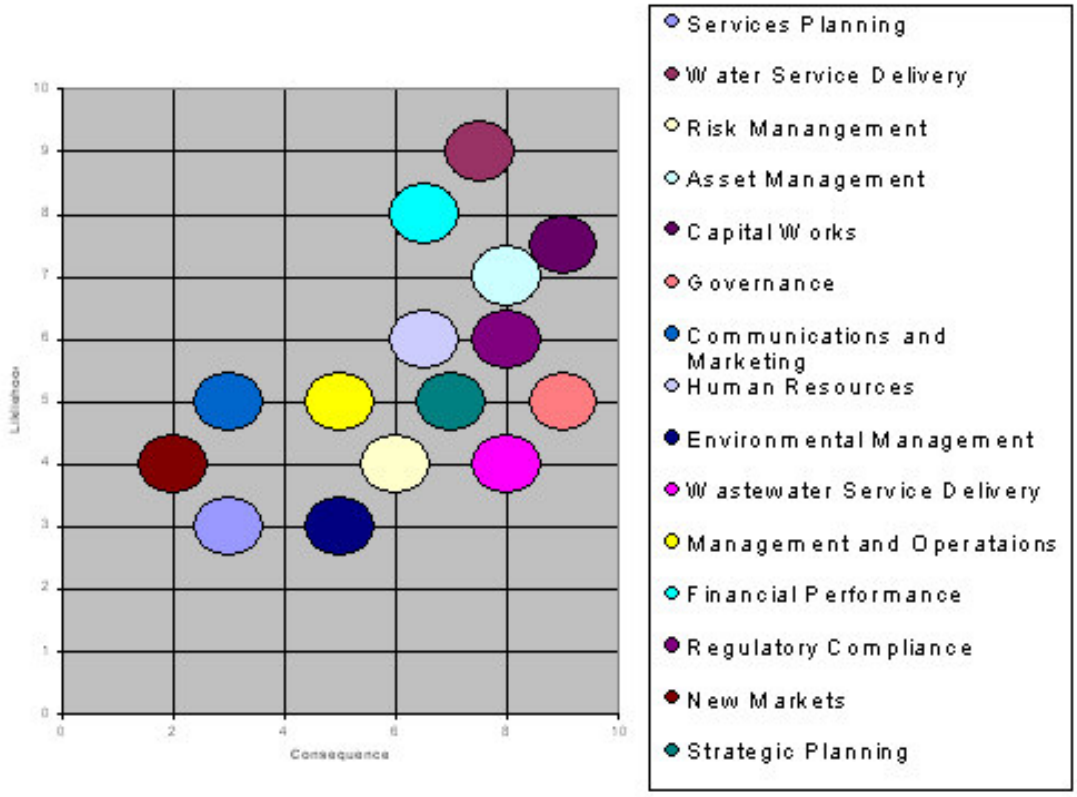
GWMWater's risk management plan outlines the approach to risk management and draws a 'line in the sand' on the present understanding of the risk profiles of the business. It establishes a framework for the ongoing identification, assessment and control of risk applying the principles of the risk management standard AS/NZS 4360 the main element of which are outlined in the Figure 3.5.1.

*Figure 3.5.1: Elements of Risk Management Standards*



Further review needs to be undertaken of all risks and the principal focus has been the assessment and development of controls for the top ten risks. The assessment of these risks has been translated into a broader representation of 15 key result areas for GWMWater.

*Figure 3.5.2: Risks by Key Result Area*




The representation of these risks is the residual risk to GWMWater in the key result areas to the extent they have been appropriately assessed. For example, the area of water service delivery is strongly influenced by the drought, whilst capital works is influenced by the pipeline.

Risk is a key consideration in all business decisions of GWMWater. Any investment should identify the risk it is seeking to address and the residual risk once the investment is made.

## *3.6 Responding to Incidents and Emergencies*

*"GWMWater must include in any plan, system or process to manage its risks, measures to deal with emergencies and incidents, including measures to deal with:*

*(a) the disruption of services; and*
*(b) incidents resulting in waste discharges to the environment; and*
*(c) a dam failure; and*
*(d) potential security risks, including but not limited to terrorist attacks."*

Water and Wastewater is an essential service and as a result plans need to be in place to ensure the continuity of service in the event of unforseen events.

The Emergency Management Plan is an integral part of the Risk Management Framework. The specific risks inherent in the Emergency Management Plan are reassessed regularly. Where there has been a shift in the risks, the responses inherent in the plan are reviewed ensure that there is an appropriate response.

The Emergency Management Plan (EMP) is reviewed and updated annually and revised in accordance with the regional Disaster Recovery Plan (DISPLAN). The plan has been refined with experience gained and covers a wide range of operating risks. The plan has been integrated with GWMWater's Environmental Management System (EMS) and Integrated Management System (IMS).

The Dams Risk Assessment Program (DRAP) work has been incorporated into the EMP. The EMP describes the linkages with local authorities, other utilities and emergency service providers and these details are updated annually. These processes are described in more detail in Section 2.8.

## *3.7 Managing Assets*

*"The Authority must develop and implement plans, systems and processes to manage its assets in ways which:*

(a) *allow the Authority to supply its services sustainably; and*
(b) *maintain the levels and standards of service;*
  (i) *specified by the Commission in a Code issued under section 4F of the* ***Water Industry Act****; or*
  (ii) *included in a Water Plan approved by the Commission; and*
  (iii) *minimise the overall whole of life costs of assets; and*
  (iv) *minimise detrimental social, economic or environmental effects of managing its assets."*

Much of the GWMWater service area was established early in the twentieth century. As a result, much of the infrastructure is at or near the end of its technical design life. The principles of good asset management have been developed in an Asset Management Improvement Plan (AMIP). GWMWater's AMP recognises that the technical life of the assets may not necessarily bear any resemblance to the remaining level of service that can be derived from the asset.

Understanding asset capability and performance is critical in establishing the key customer service performance targets and justifying any investments required to improve asset performance.

The replacement of assets needs to be based on a good understanding of the age, condition and criticality of the assets. Any replacement needs to be undertaken with reference to a clear understanding of the likelihood and consequence of asset failure. This will be underpinned by the performance of the infrastructure in meeting and continuing to meet the underlying service standards inherent in the GWMWater customer charter.

A desktop assessment of condition and criticality has been undertaken of urban assets to obtain a representative profiling of likely replacement requirements. Rural infrastructure has been managed by a structured program of field assessments of assets to assess the condition and criticality. The difference in these approaches largely reflects the fact that many urban assets are underground rural pipelines, while virtually all rural assets are above ground and can be visually inspected.

In preparing for the WMPP, GWMWater has attempted to get as much from the existing infrastructure as possible by deferring rehabilitation and replacement of assets unless this presents an unacceptable risk to GWMWater.

An important initiative arising from the merger is the need to amalgamate the asset registers of the two businesses. Both former Authorities operated integrated financial and technical asset registers, but use different systems to manage the risks of asset failure or sub-standard performance.

A decision has been made to adopt the Hansen International Information Management System as the system for asset management at GWMWater. The cost of consolidation of the underlying databases has been budgeted to cost $100,000. The consolidation of the database is programmed for completion by December 2005.

The current asset data in Hansen International includes the urban water and sewer pipeline, pump stations and treatment plants and some reservoirs and town storage asset details. The database is relatively young, having been developed over approximately five years, however the quality of information is assessed as good.

Processes are in place to continually improve the quality of the asset data to assist GWMWater to support the asset maintenance and replacement programs.

The indicative replacement requirements for both urban and rural infrastructure are outlined below.

*Figure 3.7.1: Urban Replacement Profile*

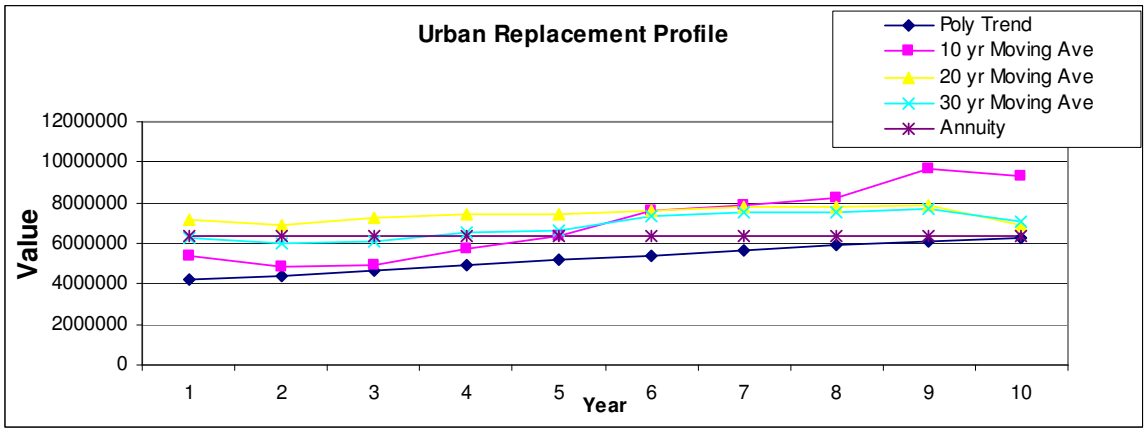
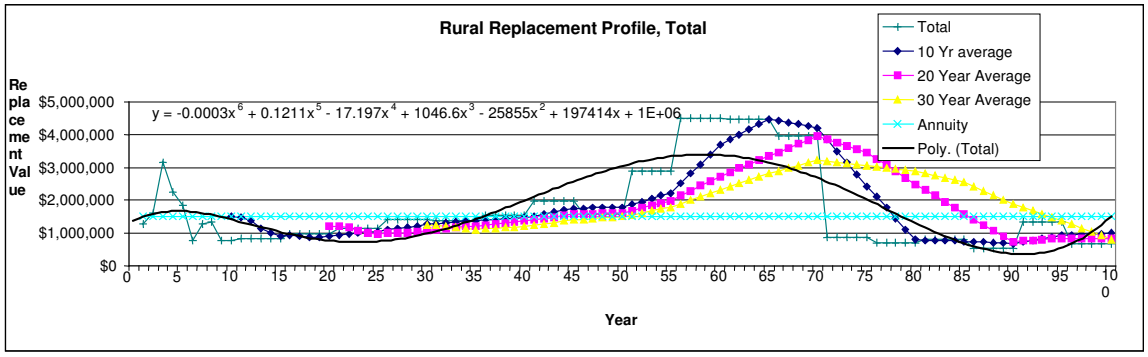



*Figure 3.7.2: Total Rural Replacement Profile (assuming WMP Project does not proceed)*




For the purpose of the preparation of the Water Plan the polynomial trend has been adopted for the first five years with any specific replacements 'netted off' against any specific replacements.

Beyond the five years a 20 year moving average has been adopted as the basis of asset replacement requirements.

## *3.8 Dam Safety*

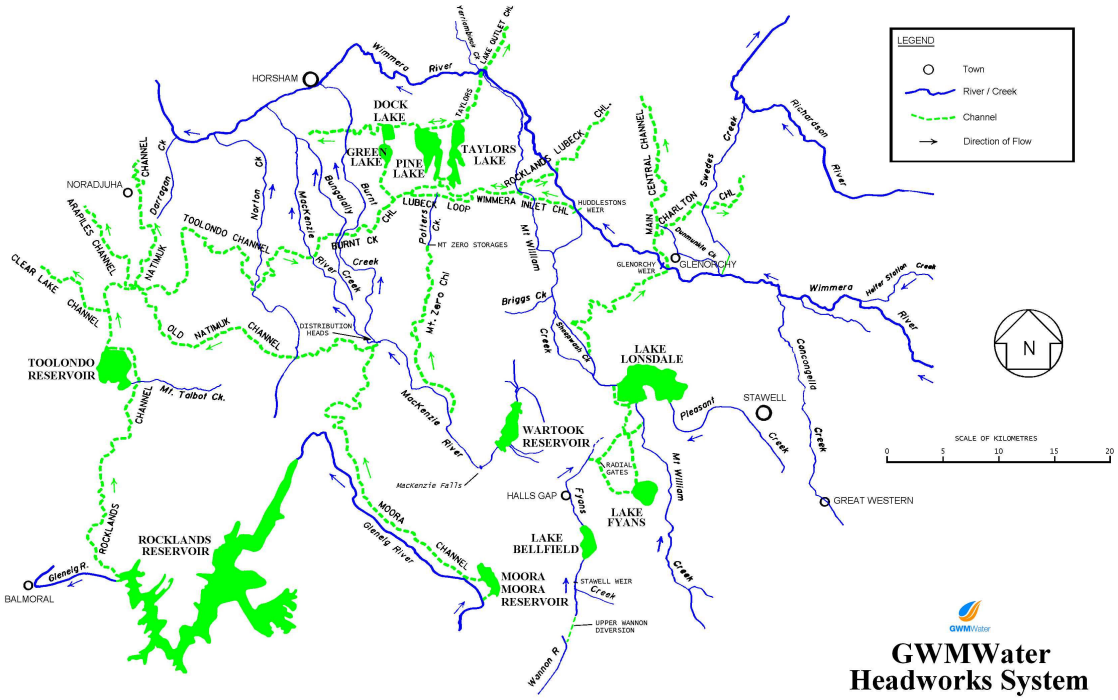
*"The Authority must develop and implement processes to identify, assess, manage, prioritise improvements to, and periodically review the safety of, dams operated by the Authority."*

GWMW has a substantial portfolio of water storage assets.

GWMWater manages over 140 reservoirs and water storage basins in western and north-western Victoria. Among this number are 'large dams' making up the headworks located in and around the Grampians.

The largest storages are Lake Wartook, Lake Bellfield and Rocklands Reservoir, which together with the other water storages provide water supplies to the towns and farming enterprises in the Wimmera and Mallee regions of the State.

*Figure 3.8.1: GWMWater Headworks System*




Three hazard categories have been applied using the Australian National Committee on Large Dams (ANCOLD) framework, namely:

Phase I – Dams with a perceived high risk;
Phase II – Dams with a perceived medium risk;
Phase III – Dams and storage's with a perceived low risk.

Within each Phase there are three distinct stages of assessment:

Stage I – Categorise dams into their hazard rating;
Stage II – Business Risk Assessment Study (BRA);
Stage III – Detailed investigation of probable deficiencies identified in Stage II and remedial works as necessary.

Substantial remedial works have already been undertaken in recent years in order to comply with ANCOLD. This includes strengthening the embankment of the Lake Wartook storage, modifications to the spillway structure at Lake Bellfield, bank strengthening at Olivers Gully in Ararat and remedial works on the spill structure at Langi Ghiran.

The risk assessment framework for dam safety is consistent with the overall risk management framework for the GWMWater. A substantial program of risk assessment continues for all major structures of GWMWater. In the immediate planning horizon, monitoring is being undertaken at Taylors Lake with an expectation that some remedial work will arise for this process.

GWMWater has undertaken an assessment of the risks posed by each storage, which was used to produce a program of prioritised expenditure to reduce the risk posed to life to acceptable levels.

The risk assessment comprised four phases:

1. Engineering assessment; in terms of varying engineering standards, eg. Static loading, earthquake, flood etc;
2. Event Tree analysis: identification of probability of events occurring and why;
3. Downstream consequence and Business Risk:
    - Cost analysis for third parties and GWMWater, for both imminent failure flood, incremental and 'sunny day' conditions;
    - Population at risk and potential loss of life.
4. Risk Analysis: Criteria based on:
    - Life safety; and
    - Economic criteria.

The WMP Project will have significant implications for the outcome of the dams risk assessment program. Current urban storages are to be replaced by smaller more efficient structures as part of the WMP Project. Fewer headworks will be required for water supply purposes as a result of the pipeline and greater flexibility will exist to operate these storages at lower than Full Supply Level (FSL) to manage dam safety risks.

## *3.9 Conserving and Recycling Water*

"To implement sustainable water resource management GWMWater must develop and implement programs for:

a) assessing and monitoring available water supplies;
b) assessing and monitoring future demands on urban water systems;
c) the efficient and effective management of demand on urban water systems;
d) reducing leakage and minimising other losses of water from urban water systems to an economically sustainable level;
e) identifying opportunities to substitute, and if appropriate substituting, potable supplies, surface water supplies and ground water supplies with water from alternative sources that are fit for purpose; and
f) the sustainable use of recycled water from its wastewater treatment plants."

The Government's White Paper – 'Our Water Our Future' has a core theme of sustainable use of Victoria's water resources, in which conservation plays an important role. The emphasis on water conservation reflects its relative scarcity and acknowledges that water for new uses can be facilitated by improved efficiency.

Water conservation and sustainability is a critical and immediate issue for GWMWater, and has been so for much of the last decade. This will be achieved through the implementation of a coherent water conservation strategy.

### 3.9.1 Recycled Water

The constraints on traditional sources of water have highlighted the benefits of recycled water as a water resource.

In early 2004, GWMWater completed a 'Reclaimed Water Strategy', which was supported by Water for Growth funding, with the aim of further developing the regional benefits of using reclaimed water. This strategy used a Triple Bottom Line (TBL) approach and was developed in consultation with DSE, to ensure its consistency with guidelines developed by that Department. The Strategy will be used as the framework for evaluating and implementing future reclaimed water schemes, and will become an integral part of the revised supply arrangements under the WMP Project.

As a value added benefit, the Strategy has been developed in a somewhat generic way enabling its adoption, as appropriate, to other wastewater supply systems.

| TOWN | Influent | On-Site Irrigation | Off-site Irrigation | Evaporation | Discharge to Waterways | Volume of Reuse | Percent Reuse excluding Evaporation | Percent Reused including Evaporation |
|---|---|---|---|---|---|---|---|---|
| Ararat | 832 | 427 | 405 | 0 | 0 | 832 | 100% | 100% |
| Birchip | 52 | 52 | 0 | 0 | 0 | 52 | 100% | 100% |
| Charlton | 37 | 37 | 0 | 0 | 0 | 37 | 100% | 100% |
| Dimboola | 89 | 89 | 0 | 0 | 0 | 89 | 100% | 100% |
| Donald | 113 | 113 | 0 | 0 | 0 | 113 | 100% | 100% |
| Edenhope | 188 | 0 | 188 | 0 | 0 | 188 | 100% | 100% |
| Halls Gap | 137 | 135 | 2 | 0 | 0 | 137 | 100% | 100% |
| Horsham | 1130 | 255 | 875 | 0 | 0 | 1130 | 100% | 100% |
| Jeparit | 42 | 0 | 0 | 42 | 0 | 0 | 0% | 100% |
| Kaniva North* | 90 | 0 | 0 | 90 | 0 | 0 | 0% | 100% |
| Kaniva South* | 90 | 0 | 0 | 90 | 0 | 0 | 0% | 100% |
| Murtoa | 88 | 88 | 0 | 0 | 0 | 88 | 100% | 100% |
| Natimuk | 23 | 0 | 0 | 23 | 0 | 0 | 0% | 100% |
| Nhill | 165 | 164 | 1 | 0 | 0 | 165 | 100% | 100% |
| Rainbow | 36 | 0 | 0 | 36 | 0 | 0 | 0% | 100% |
| Sea Lake | 55 | 55 | 0 | 0 | 0 | 55 | 100% | 100% |
| Serviceton | 5 | 0 | 0 | 5 | 0 | 0 | 0% | 100% |
| St Arnaud | 171 | 170 | 1 | 0 | 0 | 171 | 100% | 100% |
| Stawell | 444 | 279 | 165 | 0 | 0 | 444 | 100% | 100% |

| TOWN | Influent | On-Site Irrigation | Off-site Irrigation | Evaporation | Discharge to Waterways | Volume of Reuse | Percent Reuse excluding Evaporation | Percent Reused including Evaporation |
|---|---|---|---|---|---|---|---|---|
| Warracknabeal | 109 | 0 | 109 | 0 | 0 | 109 | 100% | 100% |
| Willaura | 26 | 0 | 0 | 12 | 14 | 0 | 0% | 46% |
| Wycheproof | 41 | 41 | 0 | 0 | 0 | 41 | 100% | 100% |
| **Total** | **3963** | **1905** | **1746** | **298** | **14** | **3651** | **92%** | **100%** |

## *3.10 Efficiency of Rural Distribution Systems*

"GWMWater, in consultation with the Department, must:

a) "develop and implement programs to assess the efficiency of the Authority's rural distribution systems;
b) develop interim targets for reducing losses from the Authority's rural distribution systems having regard to the Government's objective of reducing the total losses from rural distribution systems by 25% by 2020; and
c) develop programs to reduce losses from the Authority's rural distribution systems that:
    1. identify costs and funding options; and
    2. establish priorities for implementation."

The WMP Project will enable GWMWater to meet this compliance obligation.

Implementing the WMP Project is a key initiative of the Government's White Paper. The WMP Project will greatly improve distribution efficiency and will assist customers achieve more sustainable patterns of consumption. The water savings resulting from the WMP Project will enable GWMWater to exceed the 25% distribution efficiency targets.

The improvements that will accrue to the environment as a consequence of the WMP Project will substantially improve the health of the waterways of the region and improve the environmental and social amenity generally.

## *3.11 Metering*

"GWMWater must meter all new:

a) urban water supply services
b) water use under groundwater or surface water licences with volumes as specified in sub-clauses 18.2 and 18.3 of this Statement prior to the use of any water by the licensee."

An integral part of the connection process for new urban customers is the customer consent process. This involves the payment of a connection fee and an integral part of that fee relates to the provision of a domestic water meter.

The White Paper sets out a requirement that all commercial diversions from farm dams and stream diversions be metered within two years for catchments with a Stream Flow Management Plan, or three years for other catchments. This represents a major program for GWMWater, as there are a large number of existing dams and stream diversions that will need to be metered.

GWMWater will need to develop and implement a metering program that addresses meter installation, accuracy testing, meter reading and replacement. This will need to be developed and implemented during the life of this Water Plan. This process will be made much more difficult due to the preceding period of extended drought with many diverters having had no access to water for the previous four years. As such, it will be a major impost for them to fund the bulk of the meter purchase and installation cost, the Government contribution being $400 per meter.

A policy framework is presently being developed on the best way to implement this obligation.

## *3.12 Responding To Drought*

"In respect of each urban water supply system operated by the Authority, the Authority must:

a) develop and implement an effective drought response plan; and
b) make its drought response plans available to the public."

Analysis of the acute water shortage since 1996 indicates that the Wimmera-Mallee region has experienced an event which is close to a one in a thousand year recurrence; and at this stage there is no obvious end to this period of critical water shortfall.

The Bulk Entitlement (BE) will form the basis for management of GWMWater's share of the available water between the various customer groups serviced by GWMWater (Schedule 2 of the BE defines these shares).

GWMWater plans to continue to manage the drought through a number of processes that had been initiated by the two predecessor authorities. Each of these processes is outlined below.

### 3.12.1 Drought Reference Committee

The Drought Reference Committee has been reformed in the context of the requirements of the new Authority and has four key functions:

- Review on a regular basis the status of all water resource systems across the region, including the current status and the project status based on a range of inflow scenarios.
- Ensure all relevant customer groups are appropriately represented on the Committee, and are effectively consulted with.
- Review the water allocations available to each customer group according to the Bulk Entitlement restrictions schedule or equivalent management plans, and identify any areas where allocations according to these schedules may lead to disproportionate impacts on one or more customer groups.
- Recommend to the Board appropriate water management measures to ensure ongoing water supply to each customer group at appropriate levels. This may include recommending to the Board the need for the Minister to qualify rights to entitlements where the Bulk Entitlement restriction schedule either inappropriately addresses specific circumstances or does not address significant issues.

The Committee comprises representatives from the rural customer committees, two representatives from DSE, the Victorian Farmers Federation (VFF) and the Wimmera and Glenelg-Hopkins Catchment Management Authorities.

### 3.12.2 Managing Limited Rural Supply

GWMWater will continue to carry out a modest maintenance program of the channel system to ensure that, under restricted supply conditions, it operates as efficiently as possible.

This maintenance program requires significant additional expenditure at a time where income is reduced due to the restricted supply of water. However, it should be noted that GWMWater will continue to defer all major refurbishment and rehabilitation works in anticipation of progressively abandoning those parts of the channel system that will be replaced by he WMP Project.

### 3.12.3 Drought Relief Bores

As part of its drought relief package for rural landowners, the State Government provided $1.17 million across the State to ensure communal emergency water supply points were available for water carting for domestic, stock and other essential community needs.

The program provided capital for re-equipping existing drought relief bores, installing new municipal bores and installing additional standpipes on urban reticulation systems, if needed. The program was co-ordinated by the former WMW primarily in conjunction with Municipal Councils across the northwest region. A sum of $530,000 was spent on improving 15 existing supply points and in setting up 14 new facilities.

The State Government funding paid the cost of drilling and lining bores, buying and installing pumps and providing tanks and standpipes. Responsibility for operating and maintaining the bores and co-ordinating their use rests with the municipalities.

The initiative has already provided much needed access to water supply in areas where runoff or channel supply has not been available to replenish farm dams. With continuing limited availability of water supply across the region, this network of supply points will be a vital supplement to essential water supply.

### 3.12.4 Restricting Urban Water Use

GWMWater will maintain an urban restriction policy consistent with the overall constraints of water supply under the BE framework. A five-stage restriction policy is being applied to reduce water usage. The restrictions take into account the source of the water supply for the town and thus vary for different centres supplied by GWMWater.

GWMWater will also move to implement a standard state wide four-stage restriction policy currently under development by the Government as part of the White Paper reforms. This will include the consideration of permanent water savings measures.

## *3.13 Sewerage Services to Unsewered Urban Areas*

"The Authority must participate with municipal councils in the development of domestic wastewater management plans."

The policy framework for the introduction of sewerage schemes into small towns is aimed at improving the social and environmental health objectives that can be achieved by the construction of a reticulated sewerage system.

The policy position was restated in the Victorian Government White. The policy position statement in the White Paper says;

> 'All Victorians will be provided with safe and reliable drinking water and sewerage services that protect public health and the environment'.

This policy requires Local Government and the EPA to substantiate the need for sewerage and secure community support for a scheme, with water authorities becoming the service provider once the basis for a scheme is established.

GWMWater has committed to providing sewerage to the townships of Hopetoun, Minyip and Ouyen, with construction of the sewerage works for these three towns commencing in 2003. The schemes are expected to be completed and operational before the commencement of the Water Plan period (completion is expected before the end of 2005).

GWMWater will continue to work with municipal councils and EPA in assessing the viability of sewerage services for other small unsewered towns and backlog urban

areas within the region. Specific programs in the GWMWater region that have been identified under the $42 Million country water and sewerage program include Lake Bolac and Great Western. GWMWater will work with the Ararat Rural City Council and Northern Grampians Shire Council to identify the options for reticulated sewerage scheme to these two towns.

## *3.14 Trade Waste*

"GWMWater must develop policies and practices to manage trade waste:

a) to protect its sewerage systems, including treatment works and processes, and the health and safety of the public and of people working in or operating those systems; and
b) to minimise environmental impacts consistent with any licence issued under the Environment Protection Act 1970; and
c) to improve the quality of trade waste entering its sewerage systems in order to maximise opportunities for the reuse of wastewater and biosolids."

The effective management of Trade Waste is integral to protecting GWMWater's sewerage infrastructure. It is also a way of ensuring that the quality of waste is managed to ensure that the waste stream arising from its collection and treatment can be efficiently reused.

GWMWater continues to implement its Trade Waste Policy, which has involved the renegotiation of Trade Waste Agreements with seven major customers and a review of all minor trade waste customer operations.

New agreements have been implemented with four major customers, with trade waste tariffs based on a discharge quantity and quality. Minor trade premises have been inspected over a twelve-month period, the aim being to ensure customer operations comply with By-Law requirements.

| Town | Minor Customers | Estimated volume (ML) | Major Customers | Estimated volume (ML) |
|---|---|---|---|---|
| Ararat | 58 | 51.33 | 5 | 180 |
| Birchip | 10 | 7.62 | 0 | 0 |
| Charlton | 22 | 21.07 | 0 | 0 |
| Dimboola | 14 | 17.24 | 0 | 0 |
| Donald | 19 | 8.91 | 0 | 0 |
| Edenhope | 10 | 13.91 | 0 | 0 |
| Halls Gap | 34 | 35.20 | 1 | 5 |
| Hopetoun | 16 | 18.79 | 0 | 0 |
| Horsham | 151 | 143.13 | 1 | 16 |
| Jeparit | 7 | 5.13 | 0 | 0 |
| Kaniva | 13 | 12.60 | 0 | 0 |
| Minyip | 6 | 7.75 | 0 | 0 |

| Town | Minor Customers | Estimated volume (ML) | Major Customers | Estimated volume (ML) |
|---|---|---|---|---|
| Murtoa | 8 | 12.23 | 0 | 0 |
| Natimuk | 3 | 4.25 | 0 | 0 |
| Nhill | 32 | 23.63 | 0 | 0 |
| Ouyen | 20 | 19.00 | 0 | 0 |
| Rainbow | 14 | 18.46 | 0 | 0 |
| Sea Lake | 10 | 12.92 | 0 | 0 |
| Serviceton | 0 | 0.00 | 0 | 0 |
| St Arnaud | 34 | 29.54 | 1 | 24 |
| Stawell | 58 | 43.63 | 3 | 45 |
| Warracknabeal | 31 | 34.92 | 0 | 0 |
| Willaura | 4 | 2.47 | 0 | 0 |
| Wycheproof | 11 | 15.25 | 0 | 0 |
| Totals | 585 | 559 | 11 | 270 |

The minor trade waste inspection program has since been completed and 585 minor trade waste customers have been identified. Agreements have been entered into where these have not existed previously. Non-compliant premises have been advised of their compliance obligations in relation to their pre-treatment of waste.

An inspection program will accompany the minor trade waste program that will include the introduction of a new fee for minor trade waste.

The work undertaken in relation to Trade Waste is to be supplemented by a more transparent pricing framework for administering Trade Waste services.

## *3.15 Regional and Local Government Planning*

*"GWMWater must participate in and support the development and implementation of any Regional Catchment Management Strategy or catchment sub-strategy or Regional River Health Strategy which may affect, or be affected by, the Authority's activities.*

*The Authority must participate in and support the development and implementation of any municipal planning scheme, local planning policy framework or municipal strategic statement which may affect, or be affected by, the Authority's activities.*

*A principal objective of the Authority's participation will be to promote consistency of any strategy or any scheme with its planning and programs for sustainable water management."*

GWMWater actively participates with local municipalities in relation to the future development of urban and rural planning schemes within the region to ensure that infrastructure is maintained at a level appropriate for the future needs of the community.

The WMP Project has been a good example of a collaborative planning model for infrastructure in the region. The pipeline has been developed to accommodate potential growth opportunities within the region. The impact of the pipeline will need to be carefully monitored in future years to ensure that infrastructure development keeps pace with any changing regional growth patterns.

**Involvement in Town Planning Strategies**

Coordination with local shires aims to ensure that development within each town makes efficient use of existing infrastructure and that, where possible, upgrades in infrastructure can be timed to coincide with normal replacement works and support efficient development within each town.

GWMWater has liaised with Ararat Rural City Council in the preparation of their Ararat Land Use Strategy and are currently commencing a similar process with the Northern Grampians Shire Council in relation to Stawell. Similar Land Use Strategies are being discussed with Horsham Rural City Council and are expected to commence shortly.

While the town planning strategies generally have a broad scope, GWMWater is presently also evaluating the impacts of a number of specific large scale developments in Horsham and Ararat which are scheduled for staged construction over the next 10 years.

**Development of Sewer Infrastructure**

GWMWater regularly liaises with local Councils in relation to capital works projects. GWMWater is collaborating with both Ararat Rural City Council and Northern Grampians Shire in the development of concept designs for the Lake Bolac and Great Western Sewerage Schemes. Continuing development of these schemes is dependant on funding out of the State Government's 'Country Towns Water and Sewerage' program.

GWMWater is also assisting Horsham Rural City Council in the development of proposals for the provision of backlog sewer services in two separate locations within Horsham.

**Growth Infrastructure included in the Water Plan**

Within the current Water Plan infrastructure investment which is solely related to the growth within an existing water or sewage system is minimal.

The development of the asset management system has now reached a stage of maturity that will enable GWMWater to undertake reliable hydraulic modelling of the water and wastewater systems. The development of the computer models will provide a better understanding of the impacts of growth that can be incorporated into future Water Plans.

## *3.16 Environment Management System*

*"The Authority must develop and implement an Environmental Management System which:*

*a) must be in accordance with the following standards from the Standards Australia AS/NZS ISO 14000 Series of Environmental Management Systems Standards:*
   *1) AS/NZS ISO 14001: 1996 – Environmental Management Systems – Specification with Guidance for Use; and*
   *2) AS/NZS ISO 14004: 1996 – Environmental Management Systems – General Guidelines on Principles, Systems and Supporting Techniques; but*
*b) need not be accredited under those standards."*

Both the former GRWA and WMW developed Environmental Management Systems (EMS) for their water businesses' in accordance with the AS/NZS ISO 14000 series standards. A comprehensive review of these systems is being progressively undertaken. A new EMS for GWMWater is to be developed by integrating aspects from the previous EMS documents and adopting a broader environmental sustainability focus.

A new environmental policy has been developed which considers the nature of GWMW's activities and services, operational and customer considerations, and legal and regulatory requirements. The revised policy and the new Environmental Management System will provide the framework for implementation of specific environmental programs and action plans.

The Sustainability Working Group has been established to encourage the adoption of sustainability principles across the Authority's activities and supports the implementation of the EMS along with other management systems.

## *3.17 Blue-Green Algal Blooms*

*"The Authority must report any blue-green algal blooms impacting on water supply services to:*

*a) the Department of Human Services; and*
*b) the relevant Convening Agency."*

The presence of Blue Green Algae (BGA) in water bodies can require a range of management actions depending on the density of organisms present and their toxicity.

GWMWater has established a monitoring program to detect the incidence of BGA. It also has developed a response plan in the event of a BGA outbreak.

In the region, GWMWater has been designated the convening agency for coordination of BGA outbreaks.

**Monitoring**

GWMWater undertakes regular monitoring for BGA at system reservoirs in and around the Grampians, and at urban supply headworks. This monitoring includes collection of water samples, despatch to a NATA accredited water laboratory for testing and receipt and analysis of results.

This program is outlined in the GWMWater Local Response Plan.

The urban monitoring program is outlined in the BGA Emergency Response Plan. A consolidated BGA Response plan for both the rural and urban sections of GWMWater is currently being prepared.

**Convening Agency – Response Plan**

GWMWater acts as Convening Agency for coordination of BGA blooms in the GWMWater region. The definition of the GWMWater responsibility area generally follows the GWMWater boundary, however the definition of the area includes all of the Millicent Coast Basin (catchment 2-39) parts of which are within the Southern Rural Water business region.

**Management Response to BGA**

The detection of BGA invokes a number of actions by GWMWater, each of which involve a range of costs.

Outbreak of BGA in reservoirs where public access is available generally results in the installation of signs warning of its presence or closing the lake to specified uses. This is accompanied by media releases, increased monitoring and on ground patrols to police the closure.

Changes to operations are required where an on-line reservoir is impacted. These changes could involve the switching to alternative sources of water, and/or treating the affected water supply.

In some cases, water treatment plants have been built with provision for on-line removal of BGA toxins where there is a significant risk of BGA outbreaks.

Increased frequency of monitoring is also required when BGA outbreaks are detected.

## *3.18 River Health*

*"GWMWater must manage the impact of its activities on any waterway or wetland to minimise environmental impacts on and risks to the aquatic ecosystem."*

It is recognised that the regulation of rivers and streams and associated diversions, has a detrimental impact on river health.

The Authority will manage the impacts of its activities through its monitoring programs, environmental assessment of works and the delivery of environmental flows. The Authority works in close consultation with CMAs to ensure environmental flows are delivered effectively and in accordance with the 'flora and fauna' bulk entitlements.

The planned refurbishment of the Huddleston's Weir, to be funded by the Wimmera CMA, has considered requirements for passage of native fish species. This weir is currently the most important diversion point from the Wimmera River to the supply system. Works are also planned for the Horsham, Dimboola and Jeparit Weir structures on the Wimmera River.

**Monitoring River Health**

The management of water quality in the headworks system is of primary importance to GWMWater and its customers.

An environmental monitoring program has been prepared and submitted to DSE in response to the Wimmera and Glenelg Bulk Entitlement requirement to assess and manage the environmental effects of operating the weirs and storages.

GWMWater will continue to monitor, through the existing dam safety monitoring program, bed and bank erosion downstream of all structures and where necessary carry out repairs.

Under the monitoring program GWMWater will collect weekly salinity and temperature readings from the surface of all reservoirs and from released waters. Continuous temperature monitoring will be implemented for Rocklands Reservoir and Lake Bellfield in conjunction with the CMAs. The current program for algae monitoring and alert procedures will be continued.

Monitoring data will be made available through the Victorian Data Warehouse.

## *3.19 Capital Contributions by Property Owners*

*"GWMWater must offer the owner of any property who is required to make a contribution to the present day cost of works for the provision of reticulated sewerage services under section 268(1) of the Water Act 1989 the option of paying that contribution in equal instalments over 20 years as an annuity calculated by reference to the 20-year market annuity rate, as determined by the Treasury Corporation of Victoria, prevailing at the time the contribution is calculated."*

Sewerage schemes of Hopetoun, Minyip and Ouyen have been constructed and approximately 20% of customers have elected to contribute over a 20 year period. Other customers have met the cost of the scheme through an upfront payment.

GWMWater is working with the EPA, Northern Grampians Shire Council (NGSC) and the Ararat Rural City Council (ARCC) to investigate wastewater disposal options in Lake Bolac and Great Western.

## *3.20 Providing Concessions and Rebates*

*"GWMWater must administer the following Government funded programs, as applicable, in accordance with their respective requirements:*

*a) Utilities Relief Grants Scheme;*
*b) Concessions for water service and usage charges and sewerage service and sewage disposal charges;*
*c) Water concession on Life Support Machines – Haemodialysis;*
*d) Hardship Relief Grant Scheme (Sewerage Connection Scheme);*
*e) Water and Sewerage Rebate Scheme; and*
*f) Water Conservation Assistance Pilot Program."*

GWMWater presently delivers these Community Service Obligations (CSO's) on behalf of Government as an integral part of its customer service operations.

In addition to the specific government funded programs, GWMWater provides many other CSO's not formally funded. These are embedded cross-subsidies that arise from the adoption of uniform pricing policies across the service region.

Government contributions have been included in this Water Plan for GWMWater to assist the NGSC and ARCC in the development technical solutions for the two towns.

## *3.21 Complying With Obligations*

*"The Authority must monitor compliance with its obligations under Parts 5 to 8 inclusive of the Statement of Obligations."*

Compliance with the SoO has been given due recognition in the resourcing of the organisation.

A Regulation and Assurance Group has been established in the organisation with specific responsibility for monitoring organisational risk and complying with regulatory and legislative obligations.

The cost of this activity is $150,000 per year and is incorporated in the underlying budgetary framework of the Water Plan.

## *3.22 Compliance Audits*

*"GWMWater must, when requested by the Commission, at intervals of not more than once in twelve months, arrange for an audit of its compliance with:*

*a) Clause 14 of this Statement; and*
*b) Such other obligation under Parts 5 to 8 of this Statement that the Commission has been requested by the Minister to audit."*

GWMWater understands the audit obligations that accompany the regulatory framework. Budget provision for the conduct of these audits is based on $60,000 per year for the regulatory period.

## *3.23 Other Audits and Reviews*

*"GWMWater must, when requested by the Minister, after consultation with the Treasurer, arrange for an audit or review of any matter specified by the Minister in relation to the performance of its functions and the exercise of its powers."*

GWMWater is not anticipating the need to undertake any such audits during the course of the regulatory period.

## *3.24 Customer Charter*

*"Until the Commission approves a new Customer Charter for GWMWater, GWMWater must continue to comply with the Customer Charter in existence at the commencement of this Statement."*

GWMWater has developed a customer charter for its urban activities and this has been approved by the ESC. The Water Plan has been prepared in accordance with the service obligations inherent in the Customer Charter.

A 'customer friendly' version of the charter has been developed and will be distributed annually with customer accounts. The full customer charter is also published on the GWMWater website.

## *3.25 Water Quality Obligations*

*"Until New Drinking Water Standards take effect, GWMWater must monitor water supplied for human consumption in accordance any instruction from the Secretary of the Department of Human Services relating to monitoring or analysis of drinking water."*

DHS has established a regulatory framework to supplement the legislative framework of the Safe Drinking Water Act (2003). These regulations became effective on 19 July 2005. This Water Plan has been prepared in accordance with the requirements of the regulations.

Improvement in water quality for potable use is a significant social objective for GWMWater and the Government.

The policy position was restated in the Victorian Government White Paper. The policy position statement in the White Paper says;

*"All Victorians will be provided with safe and reliable drinking water and sewerage services that protect public health and the environment."*

Some 33 of the 73 towns serviced by GWMWater rely on a bulk supply from the Grampians Headworks that is delivered by an open earth channel network that generally only provides for one bulk delivery of water per year. Eight of the 33 towns receive a fully treated water supply, whilst a further 11 towns are supplied with water that is chlorinated (no filtration). A further 14 small towns receive untreated water supplies.

Other urban centres receive their water from a combination of surface water diversions and groundwater extractions. The larger towns invariably receive a fully treated water supply or have the water supply disinfected to meet microbiological water quality standards.

The majority of D&S customers also receive water supplies from the Grampians Headworks delivered by an open channel network that generally only provides for one delivery of water per year. Of the water supplied to D&S customers, only supplies form the Northern Mallee pipeline system receive any form of treatment and this is course filtration at the point of extraction from the Murray River.

The WMP will improve the quality of water from both an aesthetic perspective and a microbiological perspective. How far this will go in ensuring that the microbiological parameters can be improved to consistently meet the requirements of the Safe Drinking Water Act is yet to be determined.

### 3.25.1 Safe Drinking Water Act 2003

Legislative changes and potential bulk water infrastructure changes have recently occurred in the region, the most significant of which were the introduction of the *Safe Drinking Water Act* (SDWA) 2003.

The SDWA is underpinned by a 'catchment to tap' philosophy of water quality management and therefore impacts on all activities of GWMWater. It is accompanied by a comprehensive state-wide regulatory framework for managing drinking water supplies that also satisfies the Government's objective of creating transparent processes for measuring performance of water authorities in relation to the provision of drinking water.

The regulatory framework advocates a risk based approach, with standards for nine (seven health-related and two aesthetic) parameters to be implemented through statutory regulations. GWMWater is defined as a supplier of drinking water to the public in terms of the SDWA 2003.

A comprehensive program of analysis and sampling of water supplies underpins the SDWA. A significant program of analysis and sampling is reflected in our budget framework.

As the SDWA distinguishes between 'drinking' water and 'regulated' water, many towns supplied by GWMWater may now require additional water treatment if they are to be classified as suitable for drinking purposes, including existing supplies that are presently disinfected.

The management of supplies that will not meet drinking water standards is the subject of on-going discussions with DHS. In the interim, GWMWater will continue to adopt a risk based approach to the provision of drinking water and seek to have individual towns appropriately declared in accordance with the regulatory framework of the SDWA.

Comprehensive risk assessments of the water supply system using the Hazard and Critical Control Point (HACCP) framework are being undertaken to ensure that the water quality risks of providing drinking water is clearly understood.

### 3.25.2 Water Quality Management

As a vertically integrated water authority, GWMWater is responsible for all activities in the water supply cycle. Appropriate management practices will be implemented at all water storages to ensure the competing uses of water supply for recreational and water supply use is adequately considered.

## *3.26 Environmental Contribution*

An environmental contribution equivalent to 5% of urban revenue took effect on 1 October 2004 and an environmental contribution equivalent to 2% of rural revenue took effect on 1 July 2005.

The amount to be recovered by the Environmental Contribution for urban customers is $0.79 Million for 2004/05 with the full year amount for subsequent years being $1.05 Million. The contribution for rural customers from 2005/06 is $0.19 Million.

# 4 Wimmera Mallee Pipeline

The WMP Project is not as yet a specific obligation for GWMWater, but is a way of meeting the obligation relating to the Efficiency of Rural Distribution Systems under the SoO.

The WMP Project will save 98,000 ML/a of water by conversion of the remaining D&S channel distribution network to a reticulated pipeline solution. An amount of 15,000 ML/a of this water will be available for new users whilst the remaining 83,000 ML/a is to be permanently transferred to the environment.

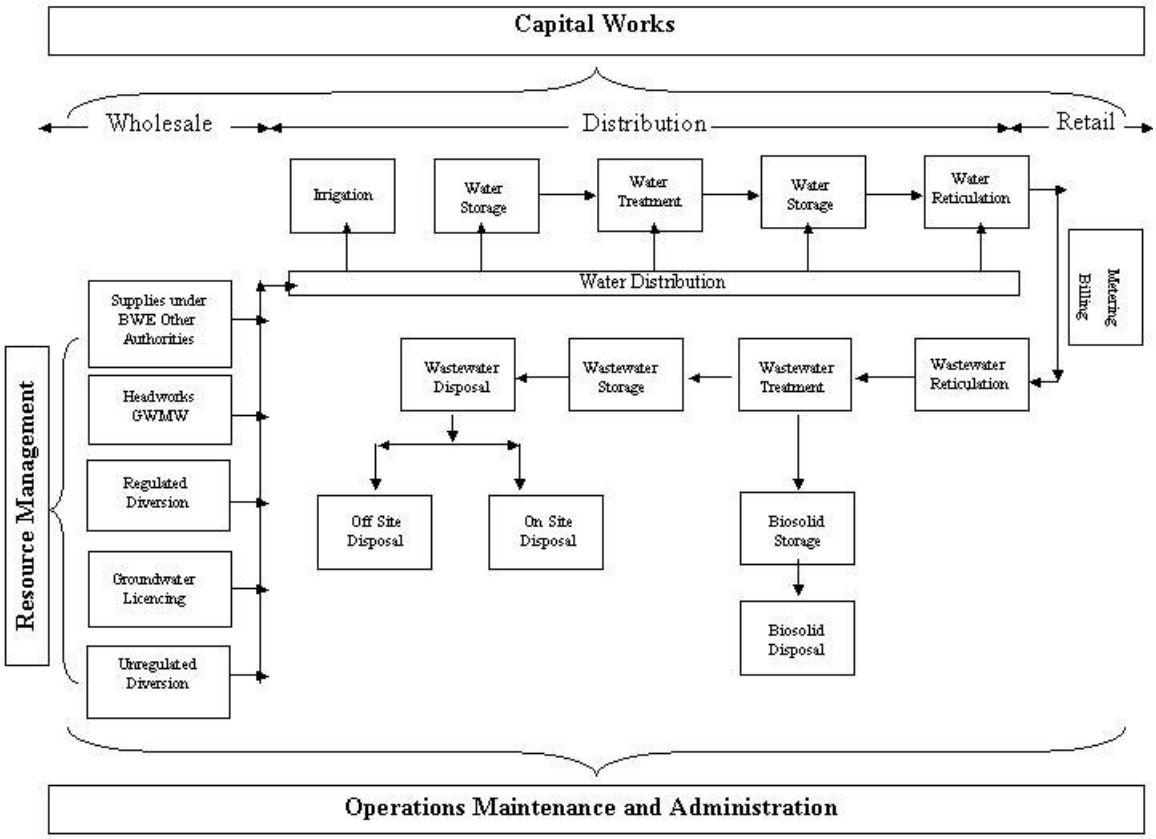
The Victorian and Commonwealth Government have both committed $167 Million to the WMP Project. The definitive nature of this funding is still to be resolved as well as the binding nature of the WMPP.

# 5 Services

As a vertically integrated Water Authority, GWMWater is involved in all activities associated with the provision of a water and wastewater services.

The services supplied by GWMWater are best summarised by the diagram below:

*Figure 5.1: Services Supply by GWMWater*




## *5.1 Service Standards*

Service Standards have been developed in consultation with customers. In the case of urban services this consultation has extended to the development of the urban customer charter. Whilst there is no formal charter for rural services, the characteristics attributed to the services have been developed on the basis of extensive consultation with the CCC.

### 5.1.1 Urban Water

The basis of urban water supply has been confirmed through the development of the urban Customer Charter.

The basic standards for supply and the procedures to be employed in the management of customers have been agreed. Unless agreed otherwise, all customers will receive the same service. This service is only differentiated by the size of the tapping providing the service.

Customers pay for water on the basis of the level of service provided.

*Table 5.1.1: Water Supply Service Standards*

| **Service Standard** | | | | | **2005-06** |
|---|---|---|---|---|---|
| **Water** | | | | | |
| Average number of unplanned water supply interruptions per 100km of water main | | | | | 100 |
| Average frequency of unplanned water supply interruptions (number) | | | | | 0.1 |
| The maximum number of unplanned water supply interruptions for each customer in any 12 month period (number) | | | | | 3 |
| Average time from notification to attend water bursts and leaks (minutes ) | | | | | 120 |
| Average time to restore an interruption to water services (minutes) | | | | | 240 |
| **Minimum Flow Rates** | **Size of pipes** | | | | |
| | 20mm | 25mm | 32mm | 40mm | 50mm |
| Flow rate (litres per minute) | 10 | 25 | 40 | 60 | 100 |

From a service perspective, low pressure and flow have been issues in the past. Substantial investment has been made to improve pressure in many of the towns serviced by GWMWater. The service is defined as being at the property boundary.

### 5.1.2 Drinking Water

Since the Minister for Water issued the SoO, DHS has finalised the water quality parameters in accordance with the Drinking Water Regulations.

## SCHEDULE 2 - Regulation 10 - DRINKING WATER QUALITY STANDARDS

| Parameter | Quality Standard | Units | Quality Standard Description |
|---|---|---|---|
| Microbiological organisms | | | |
| Escherichia coli | 0 | org/100mL | At least 98% of all samples of drinking water collected in any 12 month period contain no Escherichia coli per 100 millilitres of drinking water |
| Other parameters | | | |
| Turbidity | 5 | NTU | 95% upper confidence limit of the mean of samples of drinking water collected in any 12 month period must be less than or equal to 5.0 Nephelometric Turbidity Units. |
| Chlorine based chemicals | | | |
| Chloroacetic acid | 0.15 | mg/L | 0.15 milligrams per litre of drinking water |
| Dichloroacetic acid | 0.1 | mg/L | 0.1 milligrams per litre of drinking water |
| Trichloroacetic acid | 0.1 | mg/L | 0.1 milligrams per litre of drinking water |
| Trihalomethanes | 0.25 | mg/L | 0.25 milligrams per litre of drinking water |
| Chemicals derived from treatment with ozone | | | |
| Formaldehyde | 0.5 | mg/L | 0.5 milligrams per litre of drinking water |
| Bromate | 0.02 | mg/L | 0.02 milligrams per litre of drinking water |
| Aluminium based chemicals | | | |
| Aluminium | 0.2 | mg/L | 0.2 milligrams per litre of drinking water (acid-soluble) |

The operations and maintenance implications of the new drinking water regulations have been identified and these have been reflected in the Water Plan.

### Water Quality Management Strategy

The Safe Drinking Water Act 2003 established a new legislative framework for assuring drinking water quality in Victoria.

The Act is based on:

- The adoption of a 'catchment to tap' risk management approach.
- The specification of standards at the customer tap for key water quality criteria.
- The establishment of information disclosure obligations for water suppliers.
- The adoption of systemic community consultation processes.

This approach is consistent with regulatory best practice for the management of complex and inter-dependent risks.

The Act:

- Requires water suppliers and water storage managers to prepare and implement plans to manage risks in relation to drinking water and some types of non-potable water.
- Provides for the auditing of those plans by approved auditors.
- Requires water suppliers to ensure that the drinking water they supply meets quality standards specified by the regulations.
- Requires water suppliers to disclose to the public information concerning the quality of drinking water.
- Provides for the variation, after community consultation, of water quality standards that relate only to aesthetic factors.
- Requires the reporting of known or suspected contamination of drinking water to the Secretary to the Department of Human Services (DHS).

The Act provides the following definitions for product specification:

- *Drinking water* is water that is intended for human consumption or for purposes connected with human consumption, such as the preparation of food or the making of ice for consumption or for the preservation of unpackaged food, whether or not the water is used for other purposes.
- *Regulated water* is water that may be supplied to the public in circumstances in which it may be mistaken as being drinking water.

**Water Quality Management System**

At the March 2004 meeting of the then Board of GRWA, the ADWG Drinking Water Quality Management Framework was formally adopted as the guiding document to be used to develop a Water Quality Management System (WQMS).

Assessments of each water supply system have been undertaken, identifying hazards and existing preventive measures at each step. The overall effectiveness in preventing or reducing risk was assessed for each preventative measure.

Each identified hazard was evaluated against the HACCP 'decision tree'. This is a tool that is used to identify if an activity or step in the process is a critical control point (CCP). CCP's indicate where in the process an action needs to be taken to reduce, prevent or eliminate a significant hazard.

The 'decision tree' also identifies requirements to Modify Step Process or Procedure (MSPP). MSPP will result if the existing preventative measures are not fully effective at reducing risk to acceptable levels therefore improvement is required.

A review of existing operational procedures, monitoring plans, corrective action procedures, documentation and record-keeping systems identified the gaps where improvement was required.

The MSPP list provides an action list of required projects to be undertaken and procedures to be developed to minimise risk to drinking water supply customers. The following supporting programmes have been identified as MSPP and are seen as critical to the success of the WQMS.

**Distribution Maintenance Program**

GWMWater is developing a program for the monitoring and maintenance of distribution systems. This will include planned cleaning of water mains using air scouring, swabbing and pigging techniques as appropriate.

The capital cost for an air-scouring trailer is estimated at $50,000.

**Water Quality Sampling Program**

GWMWater has reviewed the existing water quality compliance sampling program. This has included increasing sampling frequency to weekly for drinking water towns, using dedicated operators for sampling, installing dedicated sampling taps, and reviewing procedures for collection and transportation of water samples.

Annual compliance monitoring sample analysis costs have increased to approximately $165,000 from $50,000 due to the additional parameters and weekly sampling requirements set by the Safe Drinking Water Regulations 2005.

The capital cost for specifically designed water sampling taps to be installed at the dedicated sampling locations is estimated at $10,000. Installation cost of the taps is estimated to be $10,000.

Internal resources for collection of samples on a weekly basis is estimated at $120,000, an increase of approximately $80,000 annually. Freight costs for transporting of samples has increased from an estimated $6,000 to approximately $17,000.

That is, total costs have increased from $136,000/year to $362,000/year to meet the new requirements.

**Disinfection System Review Program**

GWMWater has undertaken a review of all disinfection facilities. To date this has resulted in the replacement of chlorine dosing auto-valves and free chlorine residual analysers at several water treatment plants.

Chlorine dosing systems at the 17 disinfection only towns require work to ensure that adequate duty standby facilities and appropriate instrumentation and alarms are provided. The estimated capital cost of these works is approximately $50,000.

### 5.1.3 Regulated Water

GWMWater has 40 non-potable water supplies. All of these supplies provide reticulated water to consumers for purposes such as garden watering, toilet flushing and bathing. All 40 of these supplies are candidates for declaration as regulated water.

Regulated water is water that is not intended for drinking but which could reasonably be mistaken as being drinking water. The possibility of making this mistake would most commonly arise where a reticulated water system exists that has outlet taps accessible to the public, including household supplies to customers. This is the case in all 40 towns receiving a non-potable supply.

In these circumstances, if there were insufficient warning signs, community notices, or other mechanisms alerting people who could access the water about the intended use and quality of this water, a reasonable person could make the assumption that the water supply provided drinking water.

Section 6 of the Safe Drinking Water Act 2003 (the Act) allows the Minister for Health to declare certain water as regulated water. The purpose of declaring water as regulated water is to protect public health.

Regardless of whether or not any of these 40 non-potable water supplies are ultimately declared as regulated water, GWMWater is preparing a risk management plans for each supply. The risk management plans will identify mitigation measures to be implemented, or continued, as appropriate. These mitigation measures include:

- Having clear signage that warns the public that the water is unfit for human consumption;
- Removing publicly accessible taps or locking taps so that the water cannot be accidentally consumed;
- Advising all customers, particularly those operating food premises, health care facilities and schools that the water is not to be consumed.

### 5.1.4 Urban wastewater

Wastewater services are currently provided to 21 towns in the GWMWater service area.

From 1 July 2005, the number of towns receiving a wastewater service will increase to 24 following implementation of wastewater facilities at Ouyen, Hopetoun and Minyip being declared serviced.

All wastewater systems are conventional gravity systems involving various treatment and disposal technologies. The only exception is Natimuk, which has a Common Effluent Drainage (CED) system. The service being provided to Natimuk however is the same as other towns with septics being cleared every three years and this being organised under contract by GWMWater.

### 5.1.5 Standard Wastewater

A standard wastewater service is available to all 'declared properties' and a common fixed charge is applied to all wastewater services.

GWMWater responsibility for the service commences at the sewer stack and anything beyond this is the responsibility of the customer. There are isolated instances where customers are permitted to pump wastewater into the sewerage system where they are not directly serviced by the reticulated gravity network. For the purpose of system operation these customers are deemed to be receiving the same service as traditional gravity systems.

*Table 5.1.2: Wastewater Service Standards*

| Service Standard | 2005-06 |
|---|---|
| **Sewerage** | |
| Average number of sewerage blockages per 100km of sewer main | 25 |
| the maximum number of sewer blockages for each customer in any 12 month period | 2 |
| Average time from notification to attend sewer spills and blockages (minutes) | 120 |
| Average time to clear sewer blockages in GWMWater pipes (minutes) | 240 |
| Average time to contain a sewer spill (minutes) | 180 |

### 5.1.6 Minor Trade Waste

In addition to collection of domestic wastewater, GWMWater receives liquid waste from approximately 570 commercial and industry customers. Under the existing Trade Waste By-Law and Policy, each customer is reassessed for the nature and quality of their liquid waste discharges in an attempt to protect human safety and treatment infrastructure, as well as maximising the ability to reclaimed water and reuse biosolids.

A major review of minor trade waste arrangements has just been completed. The review was to ensure customers that produce wastes that potentially put the wastewater systems at risk have been identified and have agreements in place to minimise these risks.

These customers are required to enter into consent agreements and their ability to discharge into GWMWater's systems is contingent upon them meeting the terms and conditions of these consent agreements.

Non-compliant customers are required to invest and maintain pre-treatment technologies such as triple interceptors and grease traps.

An inspection program has now commenced, where follow-up visits will be made to all those customers identified during the survey as needing to install grease traps and triple interceptors.

*Table: 5.1.3: Trade Waste Schedule as of 30 July 2005*

| | |
|---|---|
| Number of businesses surveyed | 1,619 |
| Number who are not trade waste customers | 1,034 |
| Number of business that are trade waste customers who already comply with GWMWater requirements | 307 |
| Number of businesses that need to do work to comply with bylaw | 264 |
| Outstanding | 14 |

The elements in which GWMWater assesses tradewaste include: Flow Rate, BOD, Suspended Solids, Nitrogen, Phosphorus, Total Dissolved Solids, Sodium and Oxidised Sulphur.

### 5.1.7 Wastewater Treatment

Operation of wastewater facilities must comply with EPA discharge licences.

Wastewater services will be provided to 24 of the 74 towns serviced. Most of the wastewater facilities have an integrated agricultural disposal application. This practice is being increasingly supplemented and/or replaced by third party re-use applications with wastewater being supplied on commercial terms to off-site re-users.

### 5.1.8 Recycled Water

Around 3,900 ML/a of urban wastewater is currently collected and treated at 22 wastewater treatment facilities each year, with around 1,100 ML/a collected from the largest urban centre of Horsham and 4 ML/a collected from 26 sewered properties in the small rural settlement of Serviceton. In addition, three small town sewerage schemes are presently under construction, and scheduled for completion by the end of 2005.

Over the years, GWMWater has been able to supply reclaimed water for community benefit and regional development, with 30 third party customers currently supplied with reclaimed water for:

- Irrigation use, through the development of eight vineyard operations, including Montara Winery in Ararat which commenced the watering of grape vines in 1972, and the Grains Innovation Park plant breeding and research facility based in Horsham; and

- Watering of community facilities, including six golf clubs, three racetracks, two cemeteries and seven other recreational facilities such as public gardens, sporting ovals and tennis courts.

Reclaimed water is also applied to land at 15 treatment facilities to irrigate pasture and woodlots.

Wastewater is treated to a secondary standard at all wastewater treatment plants, with the level of service for reclaimed water customers based on supplying Class C effluent quality under the environmental management guidelines that apply.

In 2002/03, only 3.5% of the total volume of wastewater collected was discharged to natural surface water systems, and this was further reduced to around 1% in 2003/04 and 2004/05. GWMWater has almost reclaimed in full the urban wastewater generated within the region, with several noteworthy schemes in operation at Horsham, Ararat, Charlton and Warracknabeal. It is recognised, however, that scope exists to improve the way in which reclaimed water is beneficially used within the region.

### 5.1.9 Biosolids

GWMWater's Biosolids Management Plan (BMP) aims to achieve 100% beneficial use of current biosolids stockpiles by June 2009. Provisions will be made for beneficially using new stockpiles of biosolids within four years of stockpiling.

The BMP also provides flexibility in management to ensure new and emerging issues are adequately dealt with and the most appropriate beneficial reuse option is chosen.

GWMWater has been an active participant in the Water Industry's Biosolids research projects sponsored by VicWater and the CSIRO. In addition, several proposals for sustainable reuse of biosolids on mine site rehabilitation and other construction site remediation works are being investigated.

The EPA and Victorian Water Industry Association are committed to facilitating and encouraging the sustainable and safe use of biosolids. This will be a key part of managing the environmental risks associated with wastewater sludge management activities.

In July 2002, the EPA amended all GRWA's then wastewater treatment plant discharge licences to require a comprehensive biosolids risk assessment and beneficial use plan to be developed and submitted to EPA. This was completed in July 2003 and included a detailed evaluation of potential beneficial use options that was based on TBL principles.

The assessment has indicated a minimal to low environmental risk with current sludge management practices at wastewater treatment facilities.

### 5.1.10 Irrigation

The Wimmera Irrigation Area is an informal area that is part of the Wimmera-Mallee Waterworks District. Irrigation water is supplied on the basis of individual Supply By Agreement terms and conditions under Section 124(7) of the Water Act.

Unlike Irrigation Districts in other parts of Northern Victoria, the Wimmera Irrigation Area is not a formal Irrigation District. Irrigation Districts elsewhere in the State were

established prior to the creation of the Water Act 1989 and are subject to specific legislation in Part XI of the Act.

**Size of the Irrigation sector**

As the Irrigation Area is not a formally constituted District under the Water Act, there is no clearly defined geographical boundary. Irrigation is constrained by the extent customers can be serviced by the irrigation channel network.

The irrigation sector has a total maximum annual seasonal entitlement under the Wimmera Mallee Bulk Entitlement (BE) of 27,000 ML, of which 8,000 ML covers losses in the irrigation channel distribution network. This provides up to 19,000 ML for consumptive use by the sector.

There are 220 irrigation customers serviced. About half of these customers have entitlements of between 12 and 50 ML per annum, 35 have entitlements of less than 12 ML per annum, and three have entitlements greater than 300 ML per annum.

**Rights to and Ownership of Water**

Irrigation customers are Supply by Agreement customers and their right to water was formalised in 1993 with the introduction of tradeable water entitlements. This occurred prior to the conversion of the Wimmera Mallee System under the Wimmera Mallee Bulk Entitlement (BE). These rights need to be adjusted to reflect the specific details of the BE.

The total volume of entitlements (Water Right) defined in the Supply by Agreement documentation is 13,000 ML per annum, substantially less than the maximum water releases available under the BE of 19,000 ML per annum .

**Security to Water**

The security of irrigation water is less than all other consumptive users in the Wimmera Mallee System. The security of supply of irrigation entitlements is about 86% for Water Right (13,000 ML per annum) or 74% for Water Right plus Equivalent Sales (19,000 ML per annum) based on long term historical supply.

Under the WMP Project proposal piping of irrigation water (ie. not the D&S component) is not envisaged. Detailed analysis of the headworks operating regime under the WMP has not yet been completed. Preliminary analysis, however, suggests there will not be any increase in the volume of water available for irrigation purposes nor any benefits of increased security.

### 5.1.11 Domestic and Stock

Provision of a D&S water supply is the most significant rural customer activity.

The settlement of the Wimmera and Mallee region was facilitated by the development of a D&S water supply. This was achieved by the construction of headworks in the

Grampians and the development of the most extensive gravity channel network in Australia that distributed water as far north as Ouyen and Manangatang.

Since 1992 much of the northern channel network has been replaced by a reticulated pipeline supply from the Murray River. Under the proposed WMP Project the remainder of the D&S channel network is to be replaced with a reticulated water supply.

In addition to channel and pipeline supplies, there are a small number of D&S customers that are supplied by bores and by river diversions.

### 5.1.12 Pipeline

There are two existing rural pipeline systems; the Rainbow West pipeline district and the NMP district.

Customers on these pipeline systems are in receipt of a different level of service compared to other D&S customers. These customers have an all year round reticulated water supply that is underpinned by a lesser service level than urban customers on a reticulated water system.

Following a breakdown or maintenance activity, customers are only assured to have water supply restored within 72 hours. As a consequence customers are required to have three days on-site storage to accommodate any sustained interruption to supply.

The NMP provides a minimum 10m pressure head at the highest point of a property. The Rainbow pipeline was constructed in the 1950s and is a gravity fed system that was designed to deliver to each landowner approximately 4,500 litres for every 260 ha (1,000 gal per square mile) per day.

The underlying security of supply is generally reflective of the water source. Northern Mallee Pipeline customers have been the beneficiary of a more secure supply given the source is from the Murray River.

### 5.1.13 Bore

The Walpeup West D&S bore supply is a small region in the Northern Mallee area. It covers an area of approximately 100,000 hectare of which 74,000 hectare is rated.

The same level of reliability underpins the 'Walpeup Bore' supply as other D&S customers on the Northern Mallee Pipeline. Current issues relating to the quality and sustainability of the aquifer are now requiring the need to investigate replacing this supply with Murray River Water through the Northern Mallee Pipeline.

The tariff charged to bore supplied customers is area based and is determined by the location of, and dependence upon, GWMWater owned and operated bores.

### 5.1.14 Channel

The channel network is operated intermittently to supply water during a winter and a summer channel run.

Under current supply arrangements, there is a winter and summer channel run and the supply to customers under these arrangements is given the dig prevailing period currently restricted to one supply per year. The infrequency of delivery requires customers to have substantial on-farm dam storage capability to receive a service.

D&S customers have a minimum required allocation of 2.5 ML/a with a design system capability of 6 ML/a per 250 hectares of land. Water is available to fill dams. The level of service is determined by the proximity of the property to the channel infrastructure (ie. water is supplied to dams and the GWMWater register indicates that in normal seasons there are 20,000 dams that need to be filled with the average dam size of 2.5 ML).

D&S channel customers are charged a two part tariff comprised of an area charge plus a charge per dam fill. The area charge per hectare varies depending upon the level of service afforded to the property (eg. a property only capable of being serviced by pumping will only pay half the area charge applied to a gravity supplied holding).

### 5.1.15 Stream Diversions

Private D&S diverters are licenced under the provisions of the *Water Act 1989* and are required to install, maintain and operate their own water supply works including pumps and pipelines. They are not metered, but have a nominal allocation of 2.2 ML which is controlled by a limit on the allowable size of pipes and the purpose for which the water is used.

Private diverters are not guaranteed the quality of quantity of the available water, but rely solely on the availability of water in the waterway which is in turn reflected in a seasonably low annual charge.

In addition to channel based irrigation, there are 125 private irrigation diversion licences holding a total volume of around 5,400 ML/a. These diverters are also required to install and maintain their own water supply works and are largely located in weir pools on the Wimmera and Avoca Rivers. All Wimmera River Irrigation Diverter's supplies are currently metered and, under the provisions of the 'White Paper', all Irrigators with licensed volumes greater than 10 ML/a must be metered.

The majority of the area serviced south and east of Stawell is also serviced by diversions from mainly unregulated waterways.

### 5.1.16 Groundwater

GWMWater has the delegated responsibility for managing groundwater extractions throughout the region. Historically, this has been a low resource requirement as there has been minimal commercial extraction. Over the last 5 to 10 years, however, this has

changed dramatically with large scale irrigation occurring in the west of the service area.

Groundwater resource management is complicated as the majority of the high yielding aquifers with suitable water quality occur along the South Australian – Victorian State Border. The sharing of the resource is managed through the interstate Border Groundwaters Agreement, with associated reporting and liaison requirements.

Overlaying the Border Agreement arrangement within Victoria are the Water Supply Protection Areas (WSPA). The WSPA regions are defined on hydrogeological boundaries and do not align with the administrative boundaries of the Border Groundwaters Agreement. This results in significant administrative issues when reporting use and allowing extraction licences to be moved within a single property or traded between properties.

Groundwater volumes are also held under licence and all infrastructure required to irrigate from this source is provided by the landowner. A total of 5,300 ML/a is currently allocated to licence holders.

WSPAs have been declared for Murrayville and Neuarpur and while a plan has been prepared for Telopea Downs is yet to be declared. Two further areas, Kaniva and Apsley, require plans to be developed and implemented within the Water Plan period.

The WSPAs are managed to a 5-year time horizon. A review must be conducted at the end of each plan period and the plan amended to allow for new and improved knowledge of the available resource to ensure that the level of extraction is sustainable. The first of these reviews are currently underway for Murrayville and Neuarpur.

The management of the WSPAs is to be funded from charges collected from groundwater users. At present, the true cost of implementing and managing the plans is unclear, but appears to have been under-estimated. Over the life of the Water Plan it will be necessary to adjust the charges for groundwater diversions to meet the costs of establishing and administering the plans.

In addition to these areas, applications are being received for large volumes of groundwater extraction as soon as a new resource is 'discovered'. This represents a significant issue as the magnitude of the available resource is not known and determining this is an expensive process with costs estimated to be between $300,000 to $500,000.

The other major issue that needs to be addressed in relation to groundwater management is that of metering. All commercial groundwater extractions are metered but there is no current a program for checking the accuracy of meters or for funding the replacement of meters. This is a significant issue, especially as some of the water being extracted is of comparatively high salinity (2,000 EC) and is quite corrosive.

This issue will need to be addressed over the life of this Water Plan and will result in increases in charges for extraction.

### 5.1.17 Bulk Water

The nature of bulk water supply varies according to the location of the customers.

These customers are generally known as 'Supply by Agreement' customers and the commercial terms for supply will vary depending upon the point of supply.

Customers can either source supply 'direct from headworks' or from part of the distribution network. The underlying security of supply is generally consistent with that of D&S customers.

### 5.1.18 Headworks

A significant part of this activity relates to regulating public access to Headworks facilities.

Only three of the reservoirs; Rocklands Reservoir, Lake Bellfield and Lake Wartook are permanently manned to operate these facilities. The remaining eight reservoirs are not manned on a permanent basis.

### 5.1.19 Resource Management

The resource management activities are also a part of the Catchment and Environment Group. Many of these activities are funded directly by Government. Such activities include salinity management, groundwater monitoring and bulk water entitlement management.

### 5.1.20 Bulk Water Entitlement

The Bulk Entitlement (BE) process has been completed for the Wimmera and Glenelg River systems with five BE conversion orders being defined for the system. These are:

- GWMWater (rural system, including compensation flows to the Glenelg River and water supplied to recreational lakes across the service area);
- GWMWater (urban system, including direct supply off headworks to major supply by agreement customers);
- Glenelg Water (for supply to Balmoral and Glenthompson - now part of Wannon Water);
- Coliban Water (for supply to Wedderburn); and
- Flora and Fauna (or environmental releases).

In addition, GWMWater holds entitlement from the Murray River and the Goulburn River systems for water supplied to the northern region through the Northern Mallee Pipeline and the Waranga Western Channel.

The BEs detail specific entitlements for the holders based on an analytical method for determining the available water resource. GWMWater, as the manager of the

headworks, is defined in the Wimmera-Glenelg BEs as the Storage Operator and has responsibility for managing the process of calculating the available water and announcing allocations. GWMWater also operates the channel system that delivers water to urban storages and to rural customers.

The BE process has fundamentally altered the access to water of different water users and will set in place a strong base for water trading in the non-urban D&S and Irrigation customer areas.

The management of the seasonal allocation process and the administration of the BEs is a new task that will further develop and mature over the next few years.

GWMWater is still to finalise BEs for the five smaller urban centres (Buangor, Elmhurst, Lake Bolac, Moyston, Wickliffe and Willaura ) that are supplied through three independent pipeline systems (eg. diversion from a stream and then through the East Grampians Pipelines) in the south east part of the service area. In addition, major revisions to existing BEs will be required to reflect changes in entitlements and operating regime as the WMP Project is rolled out.

While the details are still be resolved with Government and other beneficiaries, it is intended that 'water savings' achieved from the recovery of channel system losses due to construction of the WMP will be assigned to increased environmental flows in the Wimmera and Glenelg Rivers, increased allocations to recreational lakes and environmental water bodies within the WMP distribution system and additional water for growth of GWMWater's business.

#### 5.1.20.1 Upper Catchment Dams and Stream Diversions

GWMWater contributes to the Government's River Health Strategy by participating in the Bulk Entitlement (BE) process. The conversion of the Wimmera Mallee system under a BE will clearly define the resource sharing arrangements for the environment, rural and urban users of water.

Major amendments to the *Water Act 1989* in April 2002 led to the requirement for farmers to register all existing irrigation dams by the end of June 2003. Wimmera Mallee Water received 350 applications to register more than 800 existing irrigation dams by that date. Three-quarters of these applications were lodged in the last six weeks before the deadline. This backlog of applications is currently being processed.

#### 5.1.20.2 Groundwater Management

The groundwater management functions relate primarily for the protection of aquifers by way of monitoring and licensing.

#### 5.1.20.3 Water Trading

GWMWater acts as a facilitator of Trading of water in the GWMWater service district.

The trading of water is a relatively small activity due to the relatively small volumes of water available in the Wimmera Mallee system. Trading generally happens in three markets; these being irrigation / diversions, groundwater and 'sale of savings'.

**Irrigation / Diversions**

Trading of irrigation water can presently take place but is currently restricted to transfers within the existing irrigation customer base / service area. Such trades are subject approval, but exercise of this power is restricted to hydrological constraints or broader environmental management implications (eg. the requirements of the Wimmera Salinity Management Plan).

The restriction to trade outside the Irrigation Area is based primarily on preserving the economic base of the current irrigation customer base.

There also appears to be some constraint on water transfer to other consumptive users because Pine Lake is the lowest storage in the system. Once in Pine Lake, water delivery to other headworks storages or other customers not connected to the channel outlet from Pine Lake is limited.

The current constraints on trading of irrigation water allocations needs to be assessed in the context of the current physical constraints of the water supply system. A preliminary review of the headworks operating regime suggests it would be possible to retain some or all of the irrigation allocation in the upper storages once piping of the Wimmera Mallee System is completed.

Some limited transfers to other storages such as Taylors Lake may also be possible.

These transfers could allow water to be delivered to customers outside the Irrigation Area. Further analysis, however, is required to confirm how security of supply may be affected by changes in headworks operation.

The underlying characteristics of the water entitlements (reliability, security etc.) also need to be better identified before they can traded outside the Irrigation Area.

**Groundwater**

Groundwater transfers can take place on either a temporary or permanent basis. This is currently the subject of review by DSE.

Transfers to new customers involve more effort as GWMWater is required to assess the application for the sustainability of any new irrigation development and the associated groundwater resource.

**Sale of Savings**

'Sale of Savings' is the mechanism that has enabled water efficiency savings to be transferred to new and existing water users across the region.

Any such transfers are based on a suite of conditions and are to be purchased from the 'Sale of Savings' register held by GWMWater.

## *5.2 Customer Involvement in Setting Standards*

All of the outcomes and feedback received from the suite of consultative mechanisms employed by GWMWater have provided essential input into the development of the Water Plan.

In particular, our eight major Customer Advisory Groups (CAGs) continue to be actively involved in the development of the Water Plan.

A special Pricing Sub-Committee, which comprises two members drawn from each of the eight CAGs, was established and met on three separate occasions over a three month period to review and provide input into the recent Pricing Review.

During September 2005, the draft Water Plan will be presented to meetings of each of the major CAGs, seeking their comment and input.

A series of public community information sessions will also be held throughout the region during October 2005 to provide the opportunity for all customers of GWMWater to be involved in the consultation process.

## *5.3 Measuring Service Performance*

GWMWater measures and analyses specific performance indicators, to assess and benchmark the quality of services to its customers.

Reports are prepared on a quarterly and annual basis to shareholder and regulatory stakeholders. These include:

- Essential Services Commission
- Department of Sustainability and Environment
- Environment Protection Authority
- Department of Human Services
- Essential Services Commission
- Department of Treasury and Finance

Regulation and Compliance across the water sector in Victoria ensures compliance with water quality and wastewater standards to maintain, continually attain a high level of customer service and continually seeking a continuous improvement outcome.

GWMWater maintains documented processes and systems to ensure compliance and provides regular reports as required to all of the above Victorian Agencies.

*Table 5.3.1: Key Performance Indicators*

| KEY PERFORMANCE INDICATORS | | | | | |
|---|---|---|---|---|---|
| **Measurable indicator** | **2003/2004[3]** | | **2004/2005** | | **2005/2006** |
| | **Target** | **Actual** | **Target** | **Actual** | **Target** |
| Restoration of water supply [1] | 97.5 | 99.3 | | 98.1 | TBD |
| Containment of sewer spills[2] | 93.8 | 95.3 | | 98.1 | TBD |
| Bursts & Leaks (Total number) | | 743 | | 677 | TBD |
| Total (annual average) time to respond to Bursts & leaks Priority 1 (minutes) | | 23.48 | | 24.64 | |
| Total (annual average) time to respond to Bursts & leaks Priority 2 (minutes) | | 38.20 | | 80.24 | TBD |
| Total (annual average) time to respond to Bursts & leaks Priority 3 (minutes) | | 509.51 | | 652.80 | TBD |
| Time(annual average) taken to rectify bursts & leaks Priority 1 (minutes) | | 238.8 | | 304.80 | TBD |
| Time(annual average) taken to rectify bursts & leaks Priority 2 (minutes) | | 184.2 | | 250.80 | TBD |
| Time(annual average) taken to rectify bursts & leaks Priority 3 (minutes) | | 631.2 | | 819.60 | TBD |
| **Customer complaints (per 1,000 customers)** | | 17.7 | | | TBD |
| Water quality | 7.0 | 5.3 | | 4.4 | TBD |
| Water supply reliability | 41.2 | 51.2 | | | TBD |
| Sewerage Service quality & reliability | 15.0 | 20.2 | | | TBD |
| Affordability | 2.8 | 2.5 | | | TBD |
| Other | 2.0 | 2.8 | | | TBD |
| **Water Quality (Drinking Water)** | | | | | TBD |
| Bacteriological – E.coli samples passed (%) | | | 98 | 99 | 98 |
| | | | | | |

*[1] Number of unplanned interruptions restored within 5 hours x 100/Total unplanned interruptions*
*[2] Number of sewer spillages (priority 1 and 2) contained within 5 hours x 100/Total sewer spills*
*[3]Data collated during this period does not comply with updated ESC criteria*

## *5.4 Proposed Service Improvements*

### 5.4.1 Water Quality

The original Water Quality Improvement Plan was prepared in year 2000 (WQIP 2000). The WQIP 2000 reviewed the capital works requirements of the 1997 Memorandum of Understanding (MoU) with the Victorian State Government. The WQIP 2000 overcame the short comings of the MoU by providing a broad regional perspective as well as developing options for improved water quality and service delivery over nominated time horizons and priority ratings.

In 2004, the WQIP was reviewed and the Interim Revised Water Quality Improvement Plan (WQIP 2004) was adopted by the Board. This plan reviewed progress against the WQIP2000 priorities and updated the direction based upon the changed environment at that time. The plan was identified as an Interim Plan only as it identified significant levels of uncertainty resulting from the status of the WMP PROJECT at the time and level of understanding relating to the SDWA.

In light of the advancement of the WMP PROJECT since 2004 and the current understanding of GWMWater's obligations under the SDWA, the WQIP has been again been reviewed to align capital works associated with water quality improvements to GWMWater's strategic direction.

In identifying the water quality improvements proposed consideration has been given to:

1. Minimising identified public health risks in major towns (High Priority);

2. Finalising MOU obligations (High Priority);

3. Meeting GWMWater's obligations under the Safe Drinking Water Act for 'drinking water' supplies (High Priority) ,

4. Meeting GWMWater's internal standards for water quality supplied to 'regulated' water supplies (Medium Priority) ,

5. Developing standards for water quality delivered to rural customers and regulated supplies throughout the region (Low Priority)

Major influences on the development of the current WQIP include:

**Wimmera Mallee Pipeline Project**

The WMP PROJECT promises major improvement to water quality throughout the region through prevention of deterioration of water quality through evaporation and contamination from surface flows, by effectively 'drought-proofing' the region and permitting flexibility in harvesting of water at optimal quality.

Key variables relating to this project (staging, timing, water quality) are yet to be confirmed and result in uncertainty in relation to the extent of future treatment options for water supplied through the pipeline. Consequently, implementation of treatment for towns to be supplied by the WMP has been deferred pending a more detailed understanding of the overall WMP impacts on water quality.

**Safe Drinking Water Act (SDWA)**

The implication of the SDWA in distinguishing between 'drinking' water and 'regulated' water is that many towns will now require additional treatment of their water if it is to be classified as viable for drinking purposes, particularly supplies that are presently disinfected only. Extensive community consultation is required before it can be established whether regulated water supplies would be acceptable to the consumer in each of the towns or whether treatment options need to be considered further.

**Catchment to Tap Water Quality Control**

Equally important to GWMWater's strategy is the impact of the merger of GRWA and Wimmera Mallee Water in June 2004, shortly after the adoption of the WQIP 2004. The combined Authority now permits an integrated 'catchment to tap' approach to water quality which was not previously possible and the potential to derive significant water quality improvements through operational practices such as selective harvesting of streamflows, adjustment of channel runs and rationalising water storage operations.

These processes are of most benefit to rural customers and non-potable towns, however, they relate mostly to the physical water quality deliverable.

**Drought**

The ongoing drought conditions severely limit GWMWater's ability to operate the existing channel system in the most effective manner with respect to water quality. The drought, and in particular, increasing levels of salinity have necessitated several 'emergency' capital projects to maintain water quality standards in several towns. Most notable of these is the installation of reverse osmosis systems at Edenhope Hopetoun and Rainbow to treat elevated salinity levels.

**Population Trends**

Population trends show a general negative growth throughout the region with only two towns (Horsham and Halls Gap) showing a positive growth over the past 20 years and a further two towns (Ararat and Nhill) showing positive growth over the past five years. The remaining towns in the region are expected to continue to exhibit a negative trend in population growth and decrease by an average of 0.6% per annum over the ten year forecast period.

The approach adopted through this plan is to:

1. Finalise outstanding water quality improvements identified in WQIP2000 where they are unaffected by the WMP Project.
2. Commence community consultation in all formerly 'disinfection only' towns to determine community expectations in relation to future water quality.
3. Where the community considers a 'regulated' supply to be unacceptable treatment options are to be programmed in coordination with the WMP Project.
4. Review region-wide requirements for water treatment following completion of community consultations and determine optimal delivery options (including centralised water treatment of the WMP Project).

Consequently, within the current Water Plan period July 2005 – June 2008 capital works on water quality improvements is limited to the completion of a small number of existing projects. Extensive community consultation shall commence in 2005 in relation to the impacts of the SDWA on drinking water supplies.

The WQIP is detailed in Table 4.4.1 below. Priority works emanating from this WQIP are given in Table 4.4.2. In developing this new WQIP the following assumptions have been made:

- The extent of water quality improvements is uncertain pending the outcome of community consultation with individual towns in relation to their expectations and needs.

- GWMWater will undergo a consultation program in all formerly 'disinfection only' towns to determine the community needs for water quality and where desired will program for future implementation of water treatment.

- As the water treatment technology applicable is dependent on the raw water supply utilised, the future water supply for each town will have very significant impacts on the timing of water treatment projects. In particular, the implementation of water treatment for towns to be supplied from the WMP Project will be programmed to coincide with the delivery timeframe of the WMP.

- A 'management' solution will address the risks associated with the provision of regulated water and will be detailed in an Integrated Risk-Based Water Quality Management Program. This management solution will include an intensive community consultation and information dissemination campaign regarding the requirements of the SDWA and its implications on each community's water supply.

- The option of centralised water treatment has yet to be fully evaluated and is dependant on the outcome of community consultation noted above.

Innovative treatment technologies will be adequately researched and developed in the long-term to be universally applicable to the provision of cost-effective drinking water to small communities.

**Specific Water Quality Improvements to be Undertaken**

There are a number water quality improvement projects that have been identified and supported by the community as a consequence of the consultative processes established by GWMWater.
These projects include the construction of a Water Treatment Plant to service the communities of Willaura and Lake Bolac. Work will also be undertaken in Underbool to initially improve the aesthetic parameters of the water supply and ultimately improve the microbiological compliance of water supplied.

Other water quality improvement projects that have been supported by the community include Natimuk and Jeparit. These have been deferred in the overall capital expenditure program as a consequence of the WMP Project.

Also included in the planning framework for the Water Plan has been the upgrade of the WMPP to service Nhill. This is outside the scope of the WMPP but has been identified as the most cost effective way of improving water quality in Nhill.

*Table 5.4.1 - Water Quality Improvement Plan Priorities*

| Town | Future Water Source | Population Trend | SDW Act Classification | Interim Strategy Recommendation | Proposed Future Work |
|---|---|---|---|---|---|
| **High Priority Projects – unaffected by WMP** | | | | | |
| Willaura/Lake Bolac | Surface & Groundwater | Declining | Regulated | Management | Treatment Plant at Willaura scheduled for 2005/2006. |
| Underbool | NMP | Declining | Regulated | Management | Staged treatment plant installation to commence in 2005/2006 |
| Kaniva | Ground | Declining | Regulated | Management | Community consultation to be revistited in 5 years |
| Ultima | NMP | Declining | Regulated | Management | Review of options 2005/2006. Community Consultation 2005/2006[1] |
| **High Priority Works – Deferred Pending WMP Outcomes *** | | | | | |
| Nhill | WMP PROJECT | Increasing | Regulated | Management | Treated Water Supply from WMP with extension from Dimboola |
| Natimuk | WMP PROJECT | Declining | Regulated | Management | Treated Water Supply |
| Jeparit | WMP PROJECT | Declining | Regulated | Management | Treatment Plant |
| **High Priority Works – SDWA Compliance** | | | | | |
| Wycheproof | WMP PROJECT | Declining | Drinking | Management | Community Consultation 2005/2006[1] |
| Rupanyup | WMP PROJECT | Declining | Drinking | Management | Community Consultation 2005/2006[1] |
| Brim | WMP PROJECT | Declining | Regulated | Management | Community Consultation 2005/2006[1] |
| Donald | WMP PROJECT | Declining | Drinking | Management | Community Consultation 2005/2006[1] |
| Berriwillock | WMP PROJECT | Declining | Regulated | Management | Community Consultation 2005/2006[1] |
| Culgoa | WMP PROJECT | Declining | Regulated | Management | Community Consultation 2005/2006[1] |
| Minyip | WMP PROJECT | Declining | Drinking | Management | Community Consultation 2005/2006[1] |
| Watchem | WMP | Declining | Drinking | Management | Community Consultation 2005/2006[1] |

| Town | Future Water Source | Population Trend | SDW Act Classification | Interim Strategy Recommendation | Proposed Future Work |
|---|---|---|---|---|---|
| Lalbert | PROJECT WMP | Declining | Drinking | Management | Community Consultation 2005/2006[1] |
| Beulah | PROJECT WMP | Declining | Regulated | Management | Community Consultation 2005/2006[1] |
| Murrayville | PROJECT Ground | Declining | Drinking | Management | Community Consultation 2005/2006[1] |
| Walpeup | NMP | Declining | Drinking | Management | Community Consultation 2005/2006[1] |
| Manangatang | NMP | Declining | Drinking | Management | Community Consultation 2005/2006[1] |
| Sea Lake | NMP | Declining | Drinking | Management | Community Consultation 2005/2006[1] |
| Quambatook | Normanville | Declining | Drinking | Management | Community Consultation 2005/2006[1] |
| Wickliffe | Surface & Groundwater | Declining | Regulated | Management | Community Consultation 2005/2006[1] |
| **Low Priority Works and Resolved Issues** | | | | | |
| Streatham | Ground | Declining | Regulated | Management | Innovative Technologies[1] |
| Buangor | Surface | Declining | Regulated | Management | Innovative Technologies[1] |
| Nandaly | NMP | Declining | Regulated | Management | Innovative Technologies[1] |
| Tempy | NMP | Declining | Regulated | Management | Innovative Technologies[1] |
| Patchewollock | NMP | Declining | Regulated | Management | Innovative Technologies[1] |
| Chinkapook | NMP | Declining | Regulated | Management | Innovative Technologies[1] |
| Cowangie | Ground | Declining | Regulated | Management | Innovative Technologies[1] |
| Dooen | WMP PROJECT | Declining | Regulated | Management | Innovative Technologies[1] |
| Kiata | Ground | Declining | Regulated | Management | Innovative Technologies[1] |
| Miram | Ground | Declining | Regulated | Management | Innovative Technologies[1] |
| Waitchie | NMP | Declining | Regulated | Management | Innovative Technologies[1] |
| Westmere | Ground | Declining | Regulated | Management | Innovative Technologies[1] |
| Lillimur | Ground | Declining | Regulated | Management | Innovative Technologies[1] |
| Chillingollah | NMP | Declining | Regulated | Management | Innovative Technologies[1] |
| Serviceton | Ground | Declining | Regulated | Management | Innovative Technologies[1] |
| Speed | NMP | Declining | Regulated | Management | Innovative Technologies[1] |
| Antwerp | WMP PROJECT | Declining | Regulated | Management | None[2] |
| Harrow | Ground | Declining | Regulated | Management | None[2] |
| Marnoo | WMP PROJECT | Declining | Regulated | Management | None[2] |
| Woomelang | WMP PROJECT | Declining | Regulated | Management | None[2] |
| Elmhurst | Surface | Declining | Regulated | Management | None[2] |
| Glenorchy | WMP PROJECT | Declining | Regulated | Management | None[2] |
| Goroke | Ground | Declining | Regulated | Management | None[2] |
| Moyston | Srf & Grd | Declining | Regulated | Management | None[2] |
| Apsley | Ground | Declining | Regulated | Management | None[2] |
| Pimpinio | WMP PROJECT | Declining | Regulated | Management | None[2] |
| Noradjuha(2) | WMP PROJECT | Declining | Regulated | Management | None[2] |
| Tarranyurk | WMP PROJECT | Declining | Regulated | Management | None[2] |
| Yaapeet | WMP PROJECT | Declining | Regulated | Management | None[2] |
| Jung | WMP PROJECT | Declining | Drinking | Management | None[2] |
| Lascelles | WMP PROJECT | Declining | Regulated | Management | None[2] |
| Nullawil | WMP PROJECT | Declining | Regulated | Management | None[2] |
| Clear Lake(2) | WMP PROJECT | Declining | Regulated | Management | None[2] |

*Notes :* *(1) Community consultation yet to be undertaken. Assumption that treated water to be provided in future utilising low cost treatment technologies when available.*

*(2) Community consultation undertaken. Community has accepted 'non potable' water supply. To be revisited after 5 years. No further work proposed.*

*Table 5.4.2 - Capital Works within Current Water Plan*

| Town | Future Water Source | Population Trend | SDW Act Classification | Outcome of previous community consultation | Proposed Works | Estimated Cost |
|---|---|---|---|---|---|---|
| Willaura / Lake Bolac | Surface &Ground | Declining | Regulated | Consultation completed (Willaura & Lake Bolac) | Treatment Plant under development | $2.5Million |
| Underbool | NMP | Declining | Regulated | Requested potable water | Treatment Plant | $ 434,000 |
| Ultima | NMP | Declining | Drinking | To be completed | Subject to consultation/risk | Awaiting consultation & risk analysis outcome |
| Wickliffe | Surface &Ground | Declining | Regulated | None | Awaiting consultation | Awaiting consultation & risk analysis outcome |

### 5.4.2 Wastewater

GWMWater's original Wastewater Management Plan (WWMP 2000) was completed in March 2000 as a review of the Memorandum of Understanding between the State Government and GRWA signed in 1997. The WWMP sets out the priority projects required to meet wastewater collection, treatment and disposal/reuse requirements and obligations.

A revised WWMP was prepared in 2004, reviewing progress against the priorities set out in the WWMP 2000. The WWMP 2004 identified additional projects resulting out of revised legislative requirements, asset replacements, capacity augmentation requirements, OH&S and changing expectations from customers relating to the use of recycled wastewater.

A further review undertaken in 2005 in preparation for the Water Plan confirmed that the relative priorities of remaining projects set out in the WWMP 2004 remain valid.

GWMWater currently operates sewerage systems in 23 separate towns with a further town expected to be declared (following completion of the Hopetoun New Town Sewerage Scheme) in August 2005.

Wastewater projects are driven by many factors including changing performance and legislative requirements.

Wastewater projects identified through the WWMPs and through ongoing site risk assessments, system reviews and performance evaluation have been assessed under nine categories to determine their relative priority. The categories selected were:

- Improvement in Effluent Quality;
- Reduction in Discharge to Surface Waters;
- Improvement in Groundwater Quality;
- Reduction in Off-site Odour Impacts;
- Improvement in OHS for Plant Operator and Need for Asset Replacement;
- Reduction in Current O&M Costs and Improvement in Plant Operability;
- Likely Community Support for Project and Whether the Project Benefits the Local Community (Social Issues);
- Environmental Risk and Sustainability (If don't proceed);

- Need for Augmentation of Capacity.

**WWMP Priorities**

Table 5.4.1 below highlight the current wastewater projects with estimate expenditure in excess of $50,000 which are expected to have work undertaken during the current Water Plan.

The WWMP does not seek to put timeframes to the delivery of wastewater projects, nor define the precise scope of work required to address GWMWater's needs. Rather it aims to set relative priorities to enable projects to be progressed as part of a capital works program in conjunction with GWMWater's other capital works obligations. Nevertheless, the implementation of wastewater projects has generally followed in priority order and the current capital works program continues this trend. GWMWater's wastewater projects identified in the Water Plan have been submitted to EPA for review.

**Delivery of Wastewater Projects under Current Water Plan**

In comparison to the WWMP 2004 there are no significant changes to the priority order of projects however a number of issues have been identified with the highest priority projects which have deferred their implementation. Most notably are:

**Nhill Wastewater Treatment and Irrigation Upgrades**

The works are impacted by the proposal to deliver treated water to Nhill via the Wimmera Mallee Pipeline leading to significant reduction in wastewater salinity and consequent significantly increased potential for beneficial reuse. Consideration of alternative treatment and identification of potential reuse options have warranted a complete system review prior to confirmation of scope.

**Dimboola Wastewater Treatment System**

Withdrawal of the preferred reuse option (olive plantation) has required the review of reuse options and consequent treatment process changes leading to delays in implementing the works.

Nevertheless, the capital works program highlights significant progress on the highest priority wastewater projects within the current Water Plan period.

*Table 5.4.3: Progress on Wastewater Projects during Water Plan period*

| Town | Project Description | Ranking (Aug 2005) | Current Status | Expected Status June 2008 |
|---|---|---|---|---|
| Warracknabeal | Replace existing WWTP | 1 | Preliminary Design Stage | Complete |
| Nhill | WWTP Upgrade | 2 | System review to be undertaken 2005. | Complete |
| Nhill | Off site reuse and wet weather storage | 7 | | Complete |

| Town | Project Description | Ranking (Aug 2005) | Current Status | Expected Status June 2008 |
|---|---|---|---|---|
| Nhill | Maturation and sludge lagoons | 9 | | |
| Ararat | Desludging Aerated Lagoon | 3 | Not yet commenced | Completed |
| Ararat | WWTP Upgrade (High priority items) | 8 | Not yet commenced | 50% complete |
| Dimboola | Off-site reuse | 4 | Options being revisited | Design completed |
| Dimboola | Winter Storage/Tailwater collection | 4 | Pending outcome of reuse options | Complete |
| Dimboola | Maturation Lagoon (to be included with WWS) | 10 | | |
| Horsham | SPS No 1 Upgrade | 4 | Preliminary work commenced | High priority work completed |
| Halls Gap | Additional WWS | 10 | COMPLETED 2005 | |
| Stawell | No 1 PS and rising main | 10 | Contract Awarded | Complete |
| Horsham | WWTP (high priority items) | 10 | Not yet commenced | Preliminary investigation commenced |
| Halls Gap | Additional Reuse to Golf Course | 17 | Preliminary works commenced | Completed |
| Horsham | Study of minor PS discharges to rising main | 18 | Not yet commenced | Preliminary investigation commenced |
| Natimuk | Beaching of WWTP batters | 18 | Project review underway | Deferred outside Water Plan timeframe |
| Willaura | Off site reuse | 18 | Preliminary review commenced | 80% complete |
| Halls Gap | Reline existing leaking storage | 23 | COMPLETED 2005 | |
| Ararat | Outfall Sewer – Trunk main upgrade | 23 | Not yet commenced | Stage 1 complete |
| Horsham | Upgrade 600mm rising main | 23 | Preliminary review commenced | Minor works only programmed in Water Plan |
| Ouyen | Reuse Scheme | | Community consultation progressed | Complete |
| Hopetoun | Reuse Scheme | | Preliminary design completed | Complete |
| Minyip | Reuse Scheme | | Not yet commenced | Complete |

### 5.4.3 Domestic and Stock

Other than the WMPP there are no proposed improvement works for D&S customers.

The only investment to be made in this area will be linear asset renewals on the Northern Mallee Pipeline.

### 5.4.4 Diversions

The only proposed improvements for the diversion service relates to the obligations arising from the SoO to implement metering of Diversions.

This was a policy initiative of the White Paper and the extent of this obligation was recently confirmed by the Minister for Water.

This obligation is limited to licences that exceed 10 ML/a. The extent of this obligation will be limited to licences on the Avoca and Richardson Rivers.

### 5.4.5 Groundwater

The only service improvements that relate to groundwater are once again restricted to metering obligations.

### 5.4.6 Headworks

The main work planned for headworks relates to the Dam improvements at Taylors Lake.

### 5.4.7 Recycled Water

GWMWater has a specific policy relating to the framework for the development of recycled water proposals. This policy identifies a benchmark disposal option for any given wastewater treatment facility.

Any 'off site' proposals that are identified will be evaluated against this policy.

# 6 Supply Demand Outlook

The Grampians headworks system has been recognised as being overcommitted and the below average rainfall that has occurred since 1997 has led to prolonged restriction on a supply of water.

The general lack of capacity has constrained the development of the region with the only new water being sourced from savings realised from efficiency improvements in the distribution system or improved conservation.

For the past five years most of the customer base has been under some form of restriction as a result of the extended period of below average rainfall that has substantially reduced storage levels.

In the context of this the whole supply-demand balance is critical to the planning framework for GWMWater.

## *6.1 Supply Capability*

### 6.1.1 Grampians Headworks Systems

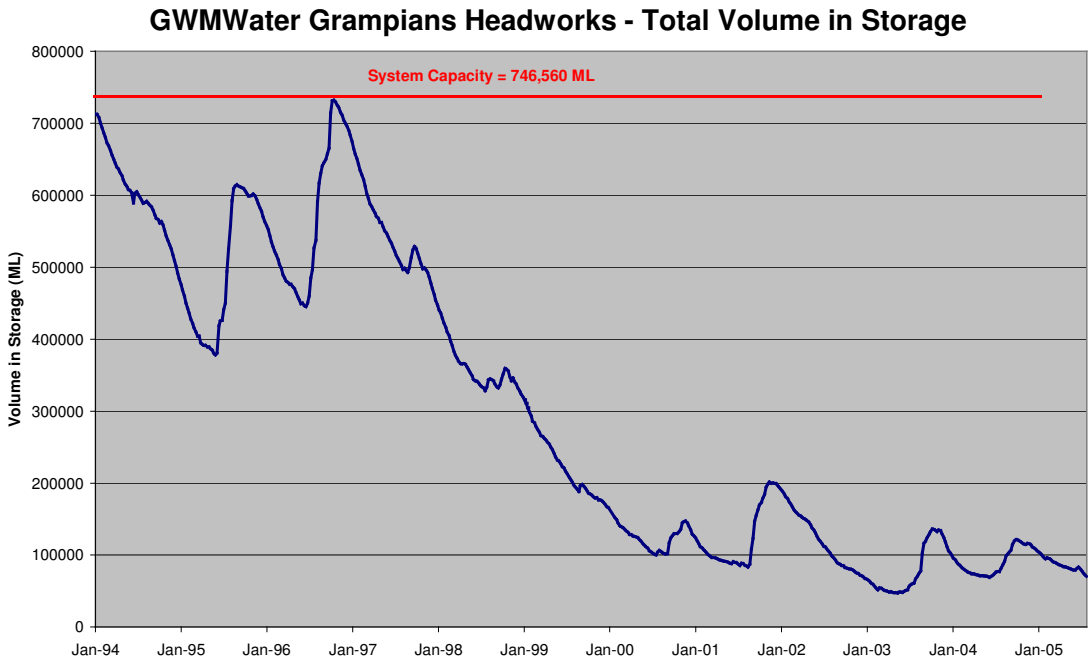
The majority of water supplied to customers is sourced from the Grampians headworks system.

An understanding of the current water resource status and inflows in recent years is required to provide context to the current and projected allocations.

The reservoirs for the Wimmera-Mallee channel system are currently holding 8.6% (as at 24 August 2005).

The graph below shows the volume in storage over recent years. The total volume in storage was last close to full in late 1996. Since then the volume in storage initially declined, and since 2000 has been hovering at critically low levels.

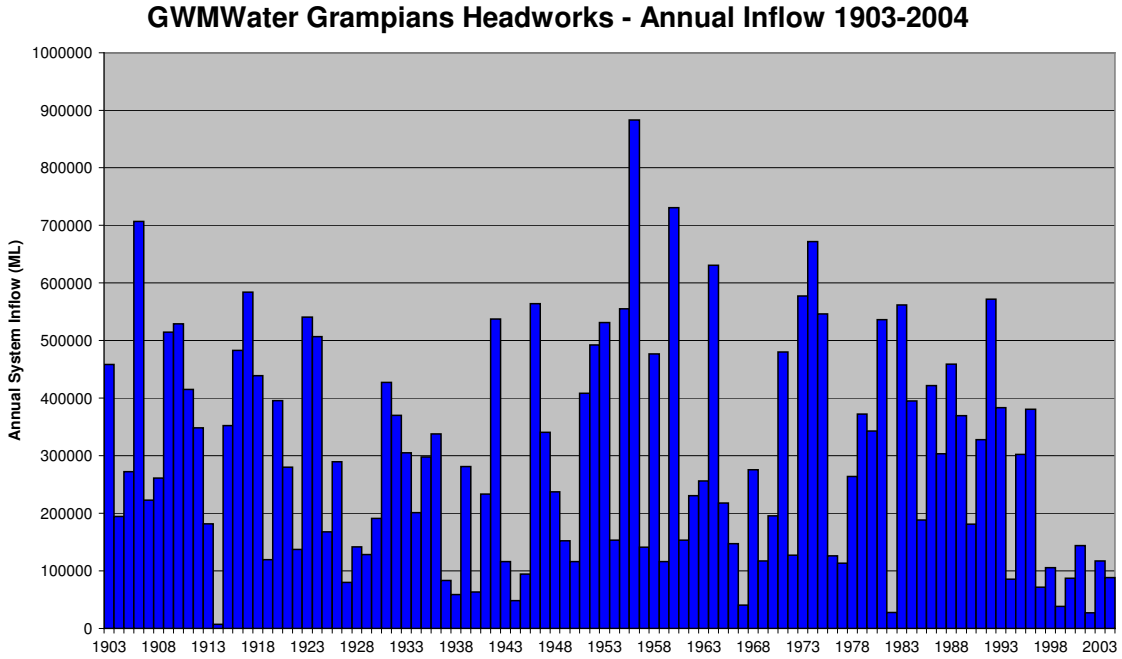
*Figure 6.1.1: GWMWater Grampians Headworks – Total Volume in Storage*




This sequence of low storage volumes has been due to extremely low inflows over the period since 1997. The graph below shows the annual inflows since the commencement of records in 1903 through to 2004. Since records have been collected, there has been no such extended period of extremely low inflows.

In the initial years of drought, 1997-99, full allocations could be provided for most services owing to the reserve volume in storage. As the reserve volume has diminished, however, progressively increased restrictions have been required.

*Figure 6.1.2: GWMWater Headworks System – Annual Inflow 1903-2004*




Inflows in the 2002 year were critically low, being the second lowest since the period of record commencing in 1903. At the end of the 2002 season (November 2002), the volume in storage was only 10%. At that time it was projected that the volume in storage by May 2003, i.e. the normal start of the channel supply season, would only be approx 6%. This would not have been enough water to supply any farm dams, with water only available to supply town storages as a basis of an emergency water-carting program for rural households. Detailed plans were made for this water-carting program.

The 2003 channel run was delayed as long as possible in anticipation of inflows that may have enabled a supply to farm dams as well as town storages. These inflows did not eventuate, with only very low inflows occurring in the early part of the 2003 winter.

The channel run started in August 2003 initially for town storages, but following a minor inflow event shortly after, supply to house dams only on farms also became possible. By that stage the water-carting program had commenced, and was able to be terminated owing to the commencement of this minimal supply to house dams.

The ultimate supply to farm dams in the 2003 season was house dams plus an additional dam supply on farms with significant stock numbers.

Consultation with customers following that season indicated that the supply in 2003 had not been sufficient to meet basic needs, and that as a guide for subsequent years,

the minimum level of supply that should be planned for, if possible, is to fill one-third of dams.

This approach has been reflected in subsequent seasons, whereby if it is not possible to supply more than one-third of dams, all available water is allocated according to the BE restriction schedule, without provision for accumulation of a reserve for subsequent seasons.

Table 6.1.1 below summarises the way water allocations have translated to restrictions applied in the Wimmera-Mallee system. Irrigation supplies were also restricted in the 1998-99 season to 80% - other supplies were not restricted in that season.

*Table 6.1.1: Water Allocations Vs Restrictions Applied in the Wimmera-Mallee System*

| Customer Group | **1999-00** | **2000-01** | **2001-02** | **2002-03** | **2003-04** | **2004-05** |
|---|---|---|---|---|---|---|
| Winter D&S | 50% | 33% | 50% | 18% | 35% | 35% |
| Summer D&S | 50% | 33% | 50% | 18% | 38% | 35% |
| Urban - General | 1 | 3 | 1-3 | 3-4 | 3-4 | 2-3 |
| Urban – Horsham | 3 | 1 | 1 | 1-3 | 3 | 3 |
| Irrigation | 50% | 15% | 25% | 0% | 0% | 2.5% |
| Environment | 50% | 33% | 50% | 3% | 13% | 13% |
| Recreation Lakes | 0% | 0% | 0% | 0% | 0% | 0% |
| Irrigation Diversions | 100% | 0% | 0% | 0% | 0% | 0% |

Throughout this period, supply to urban storages has been provided in full. Urban storages are generally larger and hence more efficient in terms of minimising evaporation losses. Supply of full volume to urban storages ensures urban supplies, while providing an important regional resource for water carting should emergency measures be required.

**Current status and planning framework**

The 2005 channel supply season is currently underway with restrictions for D&S customers currently at one dam per 400 hectares of property equating to about one-third of dams across the region.

Inflows to date have been quite low and if this continues for the remainder of the winter-spring period, the GWMWater reservoirs could be holding as little as 3% in storage by November 2005. The start of the 2005-06 water allocation year is 1 November 2005. Initial allocations for each customer group will be established at that date in accordance with the BE schedule.

Table 6.1.2 below provides a summary of the likely range of allocations available or restrictions imposed for each customer group based on inflows of different probabilities (using historical data as the basis for these inflow probabilities). These probabilities are for the period from August to October inclusive.

*Table 6.1.2: 2005-06 Season Allocations (Inflow Percentiles)*

| | Allocations for the Inflow percentiles 2005-06 Season | | | |
|---|---|---|---|---|
| **Customer Group** | **0%** | **10%** | **25%** | **50%** |
| **Urban** | Stage 5 | Stage 3 | Stage 3 | Stage 1-2 |
| **D&S** | Nil | 15% | 30% | 50% |
| **Irrigation** | 0% | 0% | 0% | 60% |
| **SBA – Channel** | 3% | 6% | 27% | 75% |
| **SBA – Headworks** | 3% | 6% | 23% | 70% |
| **Environment** | 3% | 10% | 25% | 87% |
| **Glenelg River** | Nil | Nil | 100% | 100% |
| **Recreation Lakes** | Nil | Nil | Nil | Nil |
| Allocations expressed in terms of user allocations, i.e. D&S is percentage of dams filled, Irrigation is percentage of 'Water Right' equivalent demand, i.e. percentage of 13 400 ML of SBA base volume, SBAs as percentage of entitlement. | | | | |

Short to medium term weather forecasts suggest there is significant likelihood of inflows in the lower range, however certainty of allocations will not be known until the end of the 2005 spring period.

The significant likelihood of low inflows has implications for allocations for subsequent seasons. As there is likely to be little or no accumulation of a reserve volume in storage this winter-spring, allocations for the 2006-07 season, and subsequent seasons, will be entirely dependent on inflows in that season. Table 6.1.3 indicates the range of likely allocations for different customer groups based on different probability inflows in the 2006 winter-spring period, assuming 25% inflow for the remainder of the 2005 winter-spring period.

There are also a number of assumptions used in developing this table, in particular the potential for early inflows in winter 2006 to increase allocations in the 2005-06 BE season needs to be considered in evaluating this table.

*Table 6.1.3: 2006-07 Season Allocations (Inflow Percentiles)*

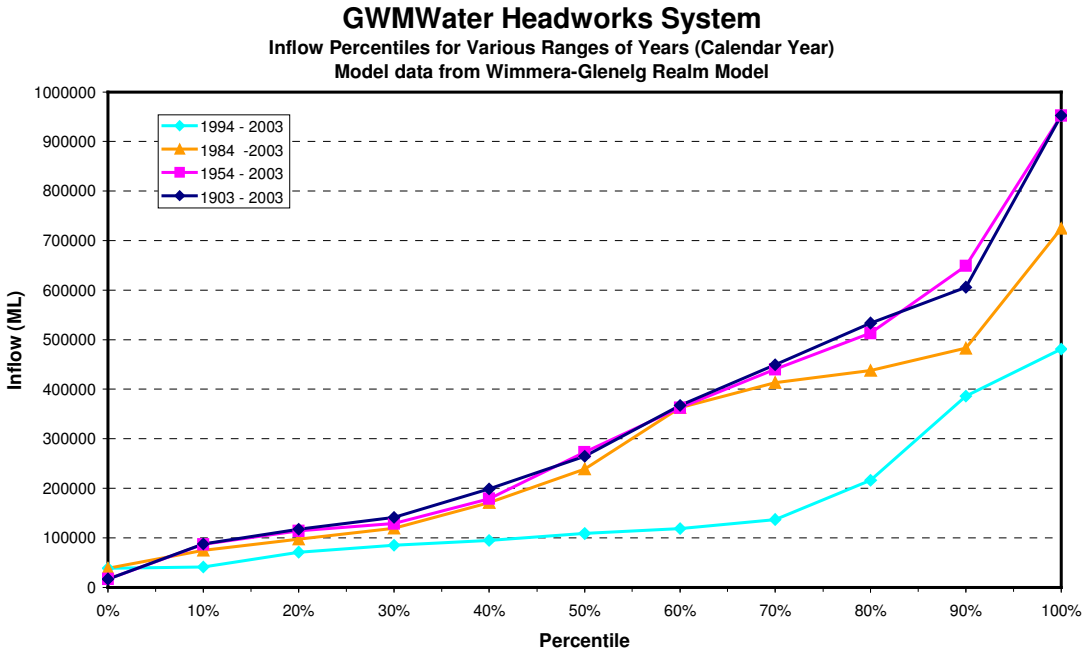
| | Allocations for the Inflow percentiles 2006-07 2007-08 Season | | | |
|---|---|---|---|---|
| **Customer Group** | **0%** | **10%** | **25%** | **50%** |
| **Urban** | Stage 5 | Stage 3 | Stage 3 | Stage 1-2 |
| **D&S** | Nil | 15% | 30% | 50% |
| **Irrigation** | 0% | 0% | 8% | 71% |
| **SBA – Channel** | 3% | 6% | 32% | 76% |
| **SBA – Headworks** | 3% | 6% | 32% | 75% |
| **Environment** | 3% | 6% | 24% | 75% |
| **Glenelg River** | Nil | Nil | 100% | 100% |
| **Recreation Lakes** | Nil | Nil | Nil | Nil |
| Allocations expressed in terms of user allocations, i.e. D&S is percentage of dams filled, | | | | |

Irrigation is percentage of 'Water Right' equivalent demand, i.e. percentage of 13 400 ML of SBA base volume, SBAs as percentage of entitlement.

Projected water allocations for the 2005-06, 2006-07 and 2007-08 seasons have been based on the 25 percentile inflows, as highlighted in tables 6.1.2 and 6.1.3.

The graph below, figure 1 shows the volume of inflows for different percentiles, and for different time periods. There is a pronounced difference between the pattern of inflows for the past 10 years compared to the previous 20, 50 or 100 years, with the inflows over the past 10 years being approximately 40% below the corresponding level of longer periods of inflows over the range of percentiles.

*Figure 1- GWMWater Headworks System Inflows*




While there is no proof that this reduction in inflows will perpetuate, the pattern is consistent with CSIRO predictions of reductions in runoff of 5%-40% for the Wimmera Region as a result of climate change associated with global warming (source - "Climate change in the Wimmera" DSE 2004). This pattern also reflects well-documented experience in Western Australia, for example in the report "Securing our water future - A State Water Strategy for Western Australia" which states on p3 that "climate change has contributed to a 10-20 per cent reduction in rainfall in the south west of the State alone over the last 28 years, and a subsequent 40-50 per cent reduction in run-off into our dams and reduced recharge of groundwater". The report also indicates "that the dry conditions are likely to continue". Further reference to

this change in runoff is described in the CSIRO publication "Land and Water News", Issue 12, May 2002.[5]

The inflows adopted as the basis for the Water Plan for the next two years, i.e. the 25 percentile level for the 100 year inflow data set, equate to the 50 percentile level for the 10 year inflow data set. Adoption of higher levels of inflow would impact on GWMWater business viability should these higher inflows, and allocations associated with these, not eventuate. It is proposed that subsequent Water Plans would similarly consider the updated 10 year set of inflows, and projections of allocations would be amended in line with future information about levels of inflows as impacted by climate change.

The allocations described for individual customer groups in tables 6.1.2 and 6.1.3 have been determined directly from the restriction schedule for the Wimmera-Glenelg BEs. The allocations adopted as the basis for revenue projections are highlighted in these tables. Note that there is considerable sensitivity in allocations for irrigation and supply-by-agreement customers associated with small changes of inflow from the 25 percentile level shown in the table. The exact allocation level can only be determined during the relevant supply season as the levels of inflows and losses from reservoirs become known.

### 6.1.2 Northern Mallee Pipeline

The Northern Mallee Pipeline (NMP) is supplied by the Murray system, with pumps located at Swan Hill, Nyah, Piangil and Liparoo near Wemen. The system supplies primarily urban and rural D&S customers. Other customer types include SBAs at the Lake Walpeup recreation lake supply.

The NMP was constructed between 1992 and 2002 to replace the previous channel system supply, that was part of the broader Wimmera-Mallee channel system. Extensions to the NMP have been constructed subsequently, i.e. the Patchewollock-Speed extension completed in 2003 and the Cannie Ridge area completed in 2004. These extensions are considered to be part of the NMP system from the perspective of water supply as they are sourced from existing works of the NMP system.

GWMWater currently has a Bulk Entitlement for supply to the NMP from the Murray River for a volume of 2,500 ML/a issued in 1999. Owing to increasing demands GWMWater purchased additional entitlements totalling 1,092 ML/a in 2003. This volume has not been fully utilised, enabling the selling of unused entitlement on the temporary water market in two years. A volume of 106.16 ML/a has recently been the subject of an application to convert to an urban security entitlement on the Goulburn system of 100 ML/a for Quambatook. Hence the remaining Murray system entitlement is 3485.84 ML/a.

[5] p.1-2 CSIRO Land and Water News, Issue No. 12 May 2002

All usage in the NMP system is metered. Experience to date has been that rural demand on the NMP system is initially below design demand levels, with farmers only initially installing tappings or extending their on-farm reticulation systems to their houses and areas where stock are grazed in the particular seasons.

Additional tappings or extensions to on-farm reticulation systems occur in subsequent seasons as finances or stocking requirements dictate. Note that in some areas stock numbers have been below normal owing to drought conditions and limitations on feed and water availability from the channel system that has been replaced by the NMP system.

Overall, usage to date in the NMP system has been below design demands. Capacity in the system exists to supply up to about 5,000 ML/a of demand. To date, the focus of development of the NMP system has been on replacement of existing supply arrangements. There has been limited attention to date given to investigating opportunities to promote development to utilise. As plans develop for promoting new water use in the WMP Project area, application of similar development principles to the NMP area may also lead to increased usage in this area.

**Water Allocations**

Water allocations for the Murray River system are set by Goulburn-Murray Water (G-MW) based on Victoria's share of water resource availability in the Murray River system. Allocations are announced on a monthly basis commencing in July each year. The allocations are expressed as a percentage of entitlement, with individual entitlement holders being responsible for managing their system usage within the available allocation.

Allocations typically increase during Spring if inflows are above planned levels. In addition to advising of the current allocation level, G-MW provides advice of likely subsequent levels based on analysis of inflow scenarios.

The most recent (August 2005) allocation for 2005-06 was 96%. Preliminary advice from G-MW is that there is a high probability (greater than nine chances in ten) of receiving normal supplies (ie. 100% allocation) for the Murray system. Over the last two years GWMWater has not required the full allocation from the Murray, hence it can be assumed that no restrictions will be required in the NMP area in 2005-06.

Allocations beyond 2005-06 are difficult to project. Based on 96% reliability of supply for the Murray River entitlements, it is considered reasonable to assume full availability of entitlement volumes. Note that in years of lower allocations, temporary entitlements can be purchased to top-up entitlements, however, in these years the cost of temporary entitlements increases. An assessment would need to be made each season on whether it is more economically efficient for both GWMWater and customers, for GWMWater to secure temporary entitlement to moderate the impact of any allocations less than 100%.

### 6.1.3 Rainbow Pipeline System

The Rainbow pipeline system is a small (9 700 ha) being serviced from one of the urban storages at Rainbow. The system relies on storage fills from the Wimmera-Mallee channel system and hence is required to comply with allocations for the BEs from that system.

Usage in the pipeline system is metered and restrictions have been in place since 1999-2000 in parity to the urban restrictions in Rainbow township.

### 6.1.4 Lalbert Pipeline System

The Lalbert pipeline system is a small (1 200 ha) pipeline system which is serviced from the urban supply system at Lalbert, which is supplied from the Northern Mallee Pipeline system, and hence is required to comply with allocations for the BEs from the Murray River system. The supply to Lalbert was from the channel system up until 2004.

Usage in the pipeline system is metered. Note that while restrictions have been in place since 1999-2000, the move to supply from the Northern Mallee Pipeline is not considered to have a major impact on demands given total typical consumption of about 2-3 ML per year.

### 6.1.5 Haysdale, Annuello and Kooloonong Private Pipeline Schemes

These three private pipeline schemes are supplied from the Murray system under GWMWater's Murray River BE. GWMWater has supply agreements with these customers in relation to licensing costs for diversions from the Murray River, but all operational costs are met directly by the members of the schemes.

### 6.1.6 Willaura System

The Willaura system is adjacent to the southeast corner of the Grampians range and is supplied by six weirs on small streams, with two each located on Stoney Creek, Mt. William Creek and Masons Creek. The supply is supplemented during the summer months by a groundwater supply comprising three bores.

The Willaura system services the townships of Willaura, Moyston, Lake Bolac and Wickliffe and provides bulk water to the Wannon Region Water Authority township of Glenthompson under a supply by agreement arrangement between the two Authorities . The Willaura system also supplies a number of rural customers which draw water from the pipelines between the various towns. Altogether the system services approximately 1,000 GWMWater customers.

The system has proven to be a very reliable due to the availability of the backup groundwater bores. Restrictions have not yet been required in response to the current drought even during the very dry 2002-03 season.

If required all users on the system would be subject to the uniform statewide restrictions soon to be implemented.

### 6.1.7 Groundwater-Supplied Systems

GWMWater operates or manages a number of groundwater supplied systems. These systems include:

Urban supplies to a number of towns, including Nhill, Kaniva, Murrayville and others;

- The Walpeup West D&S system;
- Irrigation areas, including Murrayville, Telopea Downs, Neuarpurr and others; and
- Management of the groundwater resource generally, with responsibilities for licensing new bores.

The majority of these systems are supplied from the Murray Group Limestone Aquifer that extends in the west from near Harrow on the Glenelg River, northwards following an alignment approximating the Wimmera River to the northern limit of the GWMWater area, and the area west of this to beyond the South Australian State Border.

Other groundwater systems of smaller extent exist around the Grampians, and in particular on the eastern flanks of the region, these are consistent of a limited number of D&S and irrigation bores, and supplement town supply systems. The deep lead system of the Avoca River is also of note.

Groundwater systems are managed on a priority basis, based on the level of utilisation of the aquifer system compared to the sustainable yield of that system. Within the Murray Group Limestone Aquifer system, specific management areas have been set up as follows:

- Apsley
- Neuarpurr
- Gymbowen
- Kaniva
- Balrootan
- Telopea Downs and
- Murrayville

Within these areas, formal Permissible Annual Volumes (PAV) have been declared by the Minister. GWMWater is required to manage utilisation of irrigation and commercial extractions within the PAV limits.

In addition, a strip of land extending 20km east from the South Australian border is managed according to the Victorian-South Australian Border Groundwater Act. The provisions of this Act are essentially similar to the management arrangements in the above listed groundwater management areas.

Generally underlying the same area, a deeper aquifer, the Tertiary Confined Sands Aquifer has also been segmented into management areas, with PAVs set in some cases. Usage of water from this aquifer is virtually zero, as the greater depth makes utilisation of water from this aquifer largely un-economic.

The Walpeup West bore system is an adjunct to the Wimmera-Mallee D&S system and is also sourced from the Murray Group Limestone Aquifer

**Water Allocations - Groundwater**

Water allocations in groundwater systems in the GWMWater area are not set annually as the systems respond, typically, in periods greater than one year.

Groundwater management plans in the Water Supply Protection Areas (WSPA) are reviewed formally every five years to determine, amongst other things, the appropriateness of the PAV and whether it needs to be changed.

Reviews of the Murrayville and Neuarpurr WSPAs are currently underway. These reviews are highlighting issues associated with trends in groundwater levels that could lead to reductions in the PAVs in these areas. However, it is premature to reach a conclusion in this regard.

No existing WSPAs have provision for implementation of restrictions based on water availability, however there are other WSPAs within Victoria where the management plans for the WSPA allow for the introduction of restrictions based on observed water levels or other factors.

Accordingly, for these WSPAs and other groundwater management areas it is considered reasonable to plan for water allocations being 100% of current entitlement levels for the period of the Water Plan.

### 6.1.8 Surface Water Diversions Systems

GWMWater is also responsible for managing diversion licences for irrigation and D&S purposes from surface water resources across the region.

Most of the licensed diversion is from the Avoca and lower Wimmera Rivers. In recent years, these streams have barely flowed in their lower reaches and irrigation diversions have generally been prohibited. In other locations sources of water, such as lakes, have also been dry. Hence there has been very limited irrigation activity from surface systems in recent years. Licence fees for irrigation and diversion services are related to entitlement volumes and not actual usage levels, hence revenue projections are currently not reliant on levels of usage.

There are a number of towns where surface water is harvested into independent storages that supply single townships. All but two of these towns (Elmhurst and Buangor) have alternative sources of bulk water. Based on data available, both of those towns have historically shown responsive catchments that enable reasonable levels of water harvesting even in the most dry winter conditions.

**Water Allocations - Surface Water Supplied Systems**

It is possible, however, that with low rainfall this winter and limited water harvesting, there may be a requirement for supplementing supply to these towns (eg. by water carting), although the likelihood of this occurring is considered to be low at this time. For example, during the winters of 1999 and 2002, when inflow to surrounding storages was extremely low, the storages for these two towns had sufficient inflow to secure the system under severe levels of restriction.

Allocations are based on seasonal conditions and are not supplemented by any available water from GWMWater reservoirs. Hence the future seasonal allocation levels cannot readily be projected. Where water resource availability allows, allocations of up to 100% of entitlement will be provided for these systems.

### 6.1.9 Water Allocations to Urban Authorities

In addition to direct supplies to customers, bulk water is provided to Wannon Water and Coliban Water as described below:

*Wannon Water*

Balmoral township is supplied by direct pumping from Rocklands Reservoir. The entitlement and allocations for Balmoral are defined in the Wimmera-Glenelg BEs.

Glenthompson township is supplied from the Willaura system which, as outlined above, has not been subject to restrictions to date.

*Coliban Water*

Coliban Water is supplied water from the Wimmera-Mallee channel system to storages at Borung, Wychitella and Korong Vale. The storages at Korong Vale are the major source of water for the township of Wedderburn, water for which is piped from Coliban Water's treatment plant at Korong Vale. The Coliban Water entitlement for these towns and seasonal allocations are defined in the Wimmera-Glenelg BEs.

The table below shows projected allocations for Coliban and Wannon supply (Balmoral only) based on the Wimmera – Glenelg BE and different inflow levels. Volumes in ML, inflows shown as percentile. Recommend use of 25% inflow level. Data for Glenthompson is pending.

*Table 6.1.4 Urban (Non GWMWater) Allocations 2005-08*

| | 2005-06 | | 2006-07 | | 2007-08 | |
|---|---|---|---|---|---|---|
| | Coliban | Wannon | Coliban | Wannon | Coliban | Wannon |
| 0% | 382 | 92 | 382 | 92 | 382 | 92 |
| 10% | 397 | 98 | 389 | 95 | 389 | 95 |
| 25% | 400 | 99 | 404 | 101 | 404 | 101 |
| 50% | 424 | 109 | 430 | 112 | 430 | 112 |

The water supply to Glenthompson is part of the Mt William headworks system and is yet to be converted under a bulk entitlement order.

Supplies to Glenthompson are expected to reflect recent delivered volumes of water that have averaged 43 ML of water over the past seven years.

## *6.2 Projected Demands*

Demand for water is influenced by a range of factors, including water availability, climate / weather patterns, demographics, price and education.

Water services reliant on the Grampians Headworks system have been constrained by water availability over the past five years. This constraint has been the most significant factor in determining water demands and, based on the assumption of 25 percentile inflows, dominates GWMWater's assessment of demands for the Grampians system for the period of this current Water Plan.

Water availability for enterprises in the D&S, Irrigation and SBA customer groups effectively constrains the operations of these businesses. During the current period of restrictions, GWMWater has experienced demands which have fully utilised the available allocations. It is projected that over the period of the Water Plan this pattern of demands will continue, i.e. demands will equal the available allocation for these services.

Urban demands have been constrained by water restrictions, based on available water allocations, but have also been significantly driven by an extremely effective communication program. GWMWater has continued to collect detailed information of water use in each town over this period. Within the GWMWater area population trends are not expected to lead to short term trends in water demands.

The WMPP has been premised on a set of growth projections that provided for an increase in consumptive water use of 15,000 ML per annum.

### 6.2.1 Customer Growth

In preparing growth projections, data from the Department of Infrastructure population series has been referenced with municipal planning data to generate expected numbers of customers for shorter-term projections on customer numbers.

The growth of new urban customers is predominantly in the larger centres in the south of Horsham, Ararat and Stawell. For smaller towns in the north and west the planning assumption have been underpinned by an anticipated decline.

In the rural customer base the changes to agricultural farming, particularly in broad acre serial farming, has substantially reduced the number of farming enterprises. This has not impacted on revenue due to the hectare based charging structure applied to the rural customer base. In the current regulatory period it is not proposed that GWMWater move away from hectare based charging.

Urban growth is marginal and the number of new properties declared serviced across the Authority best represents the growth in customers.

*Table 6.2.1: Urban Water Allotments*

| | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 |
|---|---|---|---|---|---|
| | Actual | Actual | Projected | Projected | Projected |
| Declared Properties | 302 | 295 | 275 | 275 | 275 |

The number of new declared properties will be less than water foe wastewater. The number of new wastewater customers ignoring the increase associated with new town sewerage schemes is included below.

*Table 6.2.2: Urban Wastewater Allotments*

| | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 |
|---|---|---|---|---|---|
| | Actual | Actual | Projected | Projected | Projected |
| Declared Properties | 291 | 285 | 270 | 270 | 270 |

These will be used as the basis of developer contributions and ignore the offset of any discontinuation of service.

### 6.2.2 Consumption

The underlying consumption of water has been constrained as a consequence of the continued dry conditions that have prevailed throughout the region over the past eight years.

The restriction policies implemented have been implemented in different ways but the advent of the bulk water entitlement provides a more effective and equitable framework for sharing water resources. Estimates of consumption are underpinned by the expected level of restriction that are expected to apply and these are outlined below.

*Table 6.2.3: Urban Water Consumption*

| | **2003/04** | **2004/05** | **2005/06** | **2006/07** | **2007/08** |
|---|---|---|---|---|---|
| | **Actual** | **Actual** | **Projected** | **Projected** | **Projected** |
| Water Consumption | 9,440 | 9,840 | 9,200 | 9,240 | 9,470 |

A significant impact on urban restrictions will be the impact of permanent water savings in town not previously affected by restrictions. These towns are typically groundwater and Northern Mallee pipeline towns.

*Table 6.2.4: Rural Dam Fills*

| | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 |
|---|---|---|---|---|---|
| | Actual | Actual | Projected | Projected | Projected |
| Water Consumption | 3,939 | 6,636 | 6,500 | 6,500 | 6,500 |

Table 6.2.4 above reflects restricted volumes of water supplied with around 35% of dams to be filled over the Water Plan period.

**Restrictions**

GWMWater is required to operate the Wimmera-Mallee channel system so that the volumes released from reservoirs and received at various measuring points do not exceed the volumes specified in the BE.

The restrictions for each customer group are designed to meet the volumes for that group as defined within the BE.

In the case of D&S demands, this is problematic as the actual volume supplied to dams is not able to be accurately measured. The volume for D&S customers is taken as the balance of total releases less supplies to other, measured demands, inclusive of system channel losses, provision for which is made in the BE restriction schedule.

Allocating this volume to D&S customers also poses problems, as individual customers do not have volumetric entitlement. Further, the water supply circumstances of different D&S customers may vary considerably, for example:

- Farms in the Mallee tend to have larger average dam sizes than those in the Wimmera.
- Farms in the Mallee tend to have fewer dams than those in the Wimmera.
- Farms have different water needs depending on their enterprise mix, e.g. cropping compared to stock.
- Ownership of farms is complex, with single farming enterprises having often multiple owners (eg. husband/wife, company, brothers).
- Small rural allotments often have a single dam which is used for household and other purposes.

Rural properties have seen a range of forms of restrictions over recent years to provide a fair apportionment of available water, with changes on occasions to address perceived anomalies. For example, in early years of the current drought restrictions were based on supplying a percentage of the number of dams on farms, e.g. 50% or 33% of dams on farms.

It is not practical to supply a fraction of a dam, as most of the losses are incurred in conveying water to the dam, hence dams have not been part-filled. This raises an anomaly where farms have a single dam – these farms have not experienced any restriction over the period of drought.

The restrictions for D&S customers are governed by Section 141 (1) (a) and (b) of the *Water Act 1989*.

This Section also provides the basis of restrictions to irrigation and supply-by-agreement customers. These customers are allocated a percentage of their volumetric entitlement according to the volume available as defined in the restriction Schedule 2 of the BE.

Restrictions for urban customers are currently based on a five-stage restriction by-law. Changes associated with the White Paper will lead to the introduction of a common statewide four-stage restriction policy and a range of permanent water saving measures. The timing of introduction of these new measures is anticipated to be in late 2005.

The objectives of urban restrictions vary between towns within the Wimmera-Mallee system for a range of reasons. A Drought Management Plan has been prepared that describes management of each town's water supply system. Some of the issues that are considered in this plan include the following:

- Some towns that receive a once-per-year supply do not have sufficient water in storage to supply the town for a full 12 month period, depending on weather conditions and other factors. For these towns drawdowns in storage are monitored against a range of target curves to trigger the introduction of restrictions at various levels to extend the town's supply.
- Under extreme conditions, town storages are also used as an emergency resource for water carting for surrounding rural areas as well. Under these circumstances, the volume allowed for rural use is managed separately (within the same storage), using a different set of target curves.
- In drought conditions, the start of the channel season has been deferred on some occasions for a number of operational reasons. Under these circumstances the town storages may be required to last more than 12 months. The target curves are modified under this scenario based on the estimated supply town for storages.
- Some towns, in particular those supplied direct from headworks reservoirs, may require a lower level of restriction than that generally applying across the region to comply with the allocated volume according to the BE, however, in some cases it is considered appropriate to apply a common set of restrictions to improve the communication of restriction levels with customers and to maintain equity between different town systems.

Restriction arrangements have been complemented with extensive public communication, both through direct mail-outs to customers as well as general media information.

The form of rural and urban restriction arrangements are the result of extensive consultation with customer groups over recent years.

The actual levels of demand have often been below the allocated volumes due to a range of factors, including:

- Entitlement volumes for towns were developed based on historic maximum supply volumes. These volumes exceed the recent pattern of demands in some towns.
- The extensive communication campaign by GWMWater has led to generally effective adoption of restrictions.
- There is a strong understanding of customers of the effect of drought on water availability and hence they are committed to preserving the water resource.

Likely demand levels in towns will be significantly influenced by allocations available within the BE. Under low-inflow scenarios there is a significant probability that restrictions as high as Stage 5 (current by-law) could be required which would lead to demands lower than those experienced in recent years. Modelling of likely demand levels under each stage of restriction has been undertaken and is also summarised in attachment.

Urban supplies within the NMP area will be subject to the uniform statewide restrictions when they are implemented. Currently, restrictions are based on GWMWater's 5-stage restriction policy.

Rural supplies within the NMP area were previously subject to restrictions based on seasonal supply allocations, expressed as a percentage of dam fills. With the advent of the pipeline system, the historic supply-based restriction arrangements require replacement with a usage-based restriction by-law. This by-law has not yet been developed.

Since the implementation of NMP, supplies on the Murray River system have not been restricted and there has not been a need to impose restrictions.

**Planning for Critically Low or Emergency Water Supply**

The continuation of low inflows in 2005 has led to the reactivation of the Drought Reference Committee to assist in the planning of potential emergency supply arrangements. The Drought Reference Committee comprises representatives of all BE holders and the various customer groups defined within the GWMWater entitlements.

While the BE defines allocations for restrictions down to very low water availability levels, some of these low allocation levels are beyond the limits of experience. In the event of very low inflows for the remainder of the 2005 winter-spring period, the available volume of water will be at these unprecedented low levels. As such, it may be determined that the allocations as defined in the BE are not appropriate to address urgent needs.

Provision exists for the Minister to qualify rights to water under extreme circumstances. One of the Terms of Reference of the Drought Reference Committee is

to assess whether grounds exist to qualify rights and to recommend this to the Minister for Water.

The Drought Reference Committee is also considering what additional measures might be required to manage through this period of drought.

Under a low-inflow scenario, there will potentially be no water or very little water available for:

- The summer D&S run;
- The following winter D&S run, which will be reliant on inflows in the 2006 winter-spring for a late D&S season as in 2003;
- The irrigation area; and
- Supplies-by-Agreement.

At its first meeting for this supply period on 29 July 2005, the Drought Reference Committee considered potential supply arrangements for these customers and also raised a range of related issues that need to be considered by GWMWater. No recommendations have yet been developed to refer to the GWMWater Board.

One of the potential emergency supply arrangements involves the use of water carting as in 2003.

Limited water availability also creates additional impacts on GWMWater's operations. These impacts include:

- Pumping may be required to extract 'dead' water from storages where the water is below the gravity level of the outlet works. Consideration is currently being given to pumping arrangements that might be required at Rocklands, Taylors, Wartook and Fyans reservoirs. GWMWater has previously undertaken significant pumping at Toolondo and Pine reservoirs in 2000 and 2001.
- Water quality tends to deteriorate during periods of limited supply, in part because there is less opportunity to be selective in the sources of water harvested, but also due to the concentrating effect of water held in storages. GWMWater has installed reverse osmosis plans at Rainbow and Hopetoun to offset this impact. (Desalination has also been required at Nhill and Edenhope, however these towns are not part of the Wimmera-Mallee channel system).
- Reservoirs that are dry or become dry have a range of environmental issues that require management by GWMWater. In recent years GWMWater has had to expend considerable funds managing weeds on dry lake beds to mitigate the potential for fire (as was experienced in February 2002 at Dock and Green Lakes). There are also a range of adverse impacts as storages dry, e.g. in relation to fish kills and loss of community values such as recreation. Management of these factors also require extensive public interaction and consultation.

# 7 Revenue Requirements

## *7.1 Introduction*

As part of the preparation for the ESC review of the Water Plan, consultants Marsden Jacab Associates (MJA) were commissioned to undertake a review of pricing policies and prices (Pricing Review) to identify areas that may be inconsistent with the obligations specified in the Water Industry Regulatory Order (WIRO) and the Statement of Obligations (SoO).[6]

An important component of the Pricing Review was the development of an integrated financial model of the business that incorporated the proposed roll-out of the WMP Project. A prime focus of the modelling was to ensure that the underlying costs incurred in owning, constructing, operating and maintaining the assets required to provide services to customers were efficient. Accordingly, the modelling took explicit account of cost savings and business efficiency improvements that were considered achievable through the merger of Wimmera-Mallee Water and GRWAand from investment in the WMP Project. A key output of the model is the allocation of aggregated costs and revenues to customer serments in a manner that MJA believes is consistent with the ESC's interpretation of the WIRO and SoO.

The outcomes from the Pricing Review have been used as input to this section of the Water Plan. The key financial regulatory issues are discussed in Section 8.1 and Section 8.2 provides outputs from the integrated financial model of the business relating to the establishment of an opening Regulatory Asset Value (RAV) for the business.

## *7.2 Long-term Commercial Viability*

An important finding of the Pricing Review was that the business was not commercially viable at the pricing levels specified in the 2005/06 Corporate Plan and that real price increases of between 1.2% to 1.4% per annum for 10 years would be required to ensure the business remained commercially viable.[7]

This finding is consistent with the results from regulatory building block modelling that indicated real price increases over the next 10 years of 1.6% and 4.5% for water and wastewater respectively, the two main business segments accounting for around

6 Refer Marsden Jacob Associates (2005) *Water and Wastewater Pricing Review – Final Report*.

7 For the purpose of the modelling, commercial viability was largely determined by the FFO Interest Cover remaining above a coverage of 2 times for most years. Whilst the ESC has set a level for this parameter of 1.5 to 3 times, it is prudent to be at the upper level of this bound, given the large debt associated with the WMP and uncertainties surrounding actual demand levels and uptake of the growth components and uncertainties over supply availability, at least in the short to medium term.

70% of GWMWater's regulated revenue. The main driver for the price increases being the return on, and of, capital derived from substantial investment required to improve service standards.

## *7.3 Expenditure Outlook 2006 - 2008*

The outlook for 2006 – 2008 is dominated by expenditure that relates to compliance obligations of the Authority and to a lesser extent asset renewal. An integral part of many of the investments to be undertaken, irrespective of their nature, is about driving efficiency improvements.

### 7.3.1 Capital Expenditure

The Wimmera Mallee Pipeline Project (WMPP) has a substantial impact on the Capital Expenditure Program moving forward.

The Capital Expenditure Program is consistent with our current understanding of the likely timing of the WMPP.

The Capital Expenditure Program has been strongly linked to the Risk Management Plan (RMP) with clear priority given to projects that provide the best cost benefit outcome to GWMWater from a risk perspective.

A significant focus of the Capital Expenditure Program is extending the planning horizon from the current timeframe to beyond the regulatory period in the Water Plan. To this end, significant resources have been set aside for the revision of key planning documents including;

- The Water Quality Improvement Plan (WQIP);
- The Wastewater Management Plan (WWMP); and
- The ongoing development of the Asset Management Improvement Plan (AMIP).

In the absence of a formal review of these plans, the preexisting plans has been used as the basis for the development of the Water Plan.

***Retail Water***

*Water Quality*

Water quality projects that are most affected by the WMPP and the Authority's Water Quality Improvement Plan (WQIP) have been made been made largely obsolete through a combination of factors including:

- The progress of the WMPP;
- Merger of rural and urban water authorities giving catchment to tap control; and
- Introduction of Safe Drinking Water Act and impacts on towns previously defined as 'disinfection only'.

The WMPP is expected to provide the backbone of widespread water quality improvements throughout the region over the next five to ten years.

Given the current level of development of the WMPP it is reasonable to defer water quality improvements in many towns pending a better understanding of project impacts and timing and the Authority's strategic direction.

The Willaura Water Treatment Plant and Underbool Water Quality Upgrade (including relocation of filtration equipment from Nhill) are the most significant construction projects programmed and will continue the trend which has seen the number of urban customers on treated water supplies rise from 26% in 1998 to approximately 76% currently.

The ongoing Water Quality Management Strategy (WQMS) project identifies capital works required to ensure the reliability and efficiency of the Authority's current water supplies to meet the requirements of the drinking water regulations.

There remains a need to consult with a number of communities about water quality improvements and this may lead to works beyond the current program. This will then feed into the redevelopment of WQIP.

*Water Network:*

Projects within the water network category are generally characterized as asset replacements and are typically driven by financial performance relating to excessive ongoing maintenance requirements of aged mains.

The only significant expenditure that relates to meeting growth requirements relates to Horsham and this expenditure is included in the capital expenditure program.

The replacement program can be influenced by the availability of suitable contractors within the region. The Authority has generally had difficulty attracting contractors from outside the region. This is presently affecting mains replacement activity and the future program reflects this constraint.

The ongoing refinement of the AMIP, particularly in relation to capture of actual asset maintenance history, the assessment of main replacements is expected to become more precise with a better understanding of the underlying condition and criticality of assets.

*Retail – Wastewater*

The relative priority of the majority of wastewater projects is set within the WWMP that is prepared in consultation with the EPA.

The current WWMP was revised in 2004 and significant progress has been made against the highest priority project identified in that document. A preliminary review suggests that the overall priority of wastewater projects has not changed significantly since the adoption of the previous WWMP, however, several key factors have led to

the re-assessment of the optimal solutions for a number of the highest priority sites. Consequently several projects have been deferred pending further review of options and/or a system based assessment of the complete wastewater cycle (e.g. Nhill).

Similar assessments undertaken for Ararat, Stawell and Horsham in 2003 greatly enhanced the Authority's understanding of the extent of wastewater issues it faces in each of the towns and enabled a more detailed program to be put in place to rectify issues identified. The projects and underlying priority of these projects are reflected in this Water Plan.

Under the current program, resources have been allocated to revise the WWMP again in line with the current understanding of the WMP and the Authority's Strategic Plan and this will be completed in time for the preparation of the 2006/2007 CWP.

The major construction projects to be undertaken during 2005/2006 relate to the Stawell Number One Pump Station, Rising Main and WWTP Inlet Work.

The condition assessment and remediation of the Authority's gravity sewer network is recognized as an area which needs further attention. Relatively small number of sewer failures are identified each year and a project to remediate/replace sections of sewer known to be in poor condition has been included under the CWP.

As the maturity of the asset data in the asset system improves in relation to sewer assets, the asset system has progressively become a more reliable framework for identifying sewer replacements.

In addition to the network replacement several key sewerage pump stations will be upgraded in order to alleviate OHS and operational shortcomings.

***Groundwater***

Few groundwater projects are identified for the upcoming financial year.

Groundwater bores at the Willaura headworks were identified to be in extremely poor condition in 2004 and have been programmed for replacement in the 2005/2006 financial year.

***Headworks***

Expenditure on headworks projects in 2005/2006 has been reduced significantly from that identified in the previous 'combined' CWP as a result of the reduction in scope of work at Taylors Lake.

The preliminary report received in March 2005 included a significant revision of the work required at Taylors Lake to ensure compliance with ANCOLD guidelines. Of particular note was the confirmation of the stability of a large proportion of the embankment. Further investigation has been proposed and work will be undertaken in 2005/2006 to finalise the assessment of Taylors Lake.

The future operation of Taylors Lake, and in particular the off-take structure (which is the subject of concerns under earthquake loading), is impacted dramatically by the WMPP. Levels in Taylors Lake may need to be maintained at lower than normal in the medium term to minimise risk of failure until a definitive outcome (incorporating future operation of the WMPP) can be determined.

Other major work to be undertaken in the 2005/2006 CWP includes:

- The re-assessment of the viability of the Mt Cole/Langi Ghiran system in order to confirm both the justification and extent of future pipeline replacement works.
- Seepage remediation in the Toolondo and Rocklands Channels.

**Stock and Domestic Systems**

***Channels***

The projects identified under the Stock and Domestic Channel category are largely unchanged from the 'combined' Corporate Plan submitted to the Board in November 2004. The channel replacements are identified out of the Authority's 'Asset Life' program and are subject to a detailed review by operational staff. Over the past few years a deliberate approach of deferring all but essential replacements has been adopted pending the outcome of the WMPP. Where replacement cannot be avoided, a minimal capital solution is generally adopted.

***Pipelines***

Work on the Northern Mallee Pipeline (NMP) and Cannie Ridge section of the WMPP has been mostly finalized with minor works only remaining. The work identified in the 2005/2006 CWP relates to completion of connections to the pipelines and finalisation of asset and operational documentation.

***Irrigation***

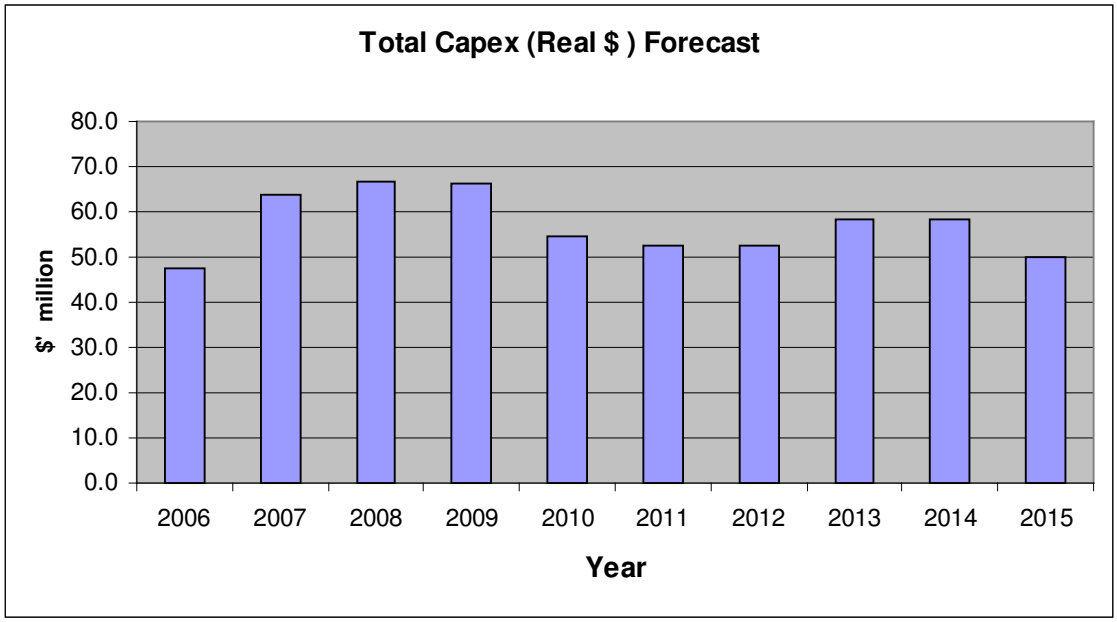
A small number of irrigation structures have been identified for replacement in the 2005/2006 CWP. The replacement of these structures is necessary for the efficient operation of the irrigation network and will need to be undertaken prior to the next irrigation season.

The replacement of these structures has been repeatedly deferred over the past three years as the irrigation season has been cancelled. The replacement of these structures is dependant on a 2005 irrigation season being confirmed.

The decision on whether the irrigation run will proceed in 2005 is expected to be made in August and the works will be scheduled to commence immediately thereafter if necessary, or deferred to 2006/2007 if not required.

Total capital expenditure including the proposed expenditure on the WMPP is summarized in the Figure 7.1.1 below.

*Figure 7.1.1 Real Capital Expenditure 2006-15*




### 7.3.2 Recurrent Expenditure

The merger and uncertainty of the timing of the WMPP provided several challenges in the preparation of the recurrent expenditure budget. Whilst there are some savings in the recurrent budget attributable to the merger, it is not anticipated that these will be significant until the 2007/08 when many of the strategies arising from the merger are fully implemented.

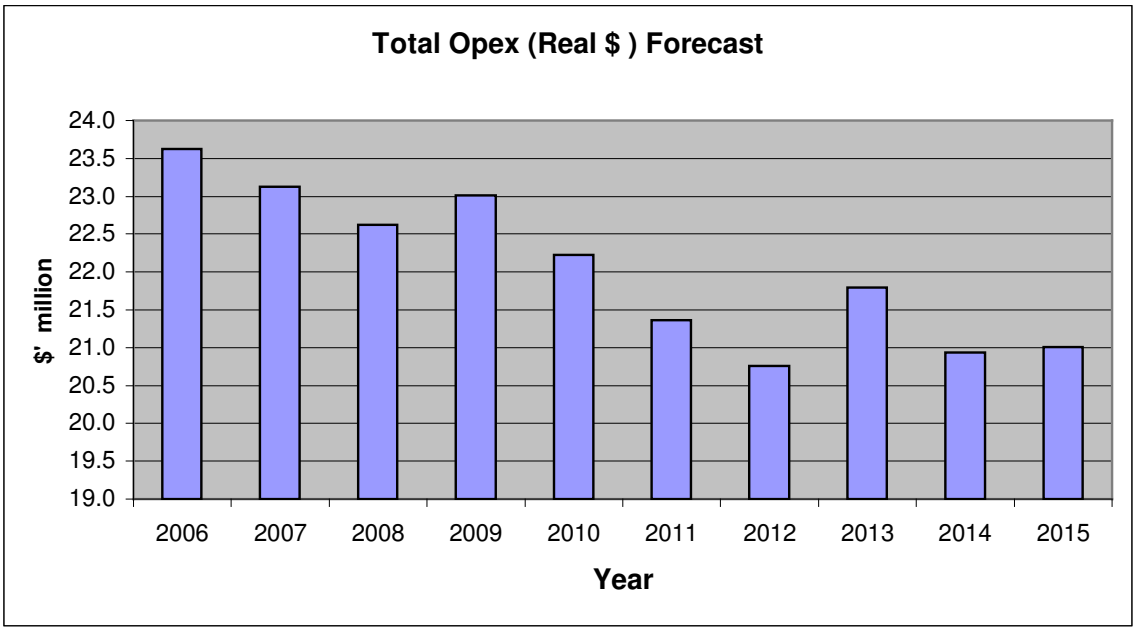
Costs savings have been included where identified, however, many of the opportunities to implement ongoing cost savings have already been recognised and applied in previous years by Grampians Water and Wimmera Mallee Water.

Further to the issue of sustainability is the potential issue of a future 'backlog' of expenditure. The budgets have been prepared under the assumption that pipelining the remainder of the system will occur. Should pipelining not eventuate, a more intense level of maintenance activity may be required over the planning period.

The recurrent budget does not reflect unprecedented costs such as a water carting program for Domestic and Stock channel filled customers, similar to what was almost required in 2003. Water storage levels are still precariously low and while there has been a winter channel run in 2004/05, the situation beyond this season is unknown. If such a program was required in the planning period, a significant recurrent cost increase of up to $7.5 Million could be incurred.

Total recurrent expenditure being programmed in real terms is summarised in Figure 7.3.2 below.

*Figure 7.3.2Real Recurrent Expenditure*




## *7.4 Wimmera Mallee Pipeline*

The proposed construction of the WMP Project is a major water infrastructure project by Victorian standards that will require a substantial investment by GWMWater. The project raises a number of unique regulatory issues not encountered by the ESC in its previous review of other water businesses, or indeed regulation of gas and electricity distribution businesses.

Pricing for services delivered by the WMP Project will not be covered by this first Determination by the ESC, as it is unlikely the first stage will have been completed by the end of the regulatory period in 2007-08. However, given the scale of the project and long-term implications for the business, GWMWater considers it important to raise pertinent regulatory and financial issues relating to the WMP Project in this Water Plan. These issues include:

**Cost Uncertainty**

Both the State and Commonwealth governments and GWMWater have provided substantial funding through the development of the Interim Business Case (IBC) and completion of detailed design for the initial 25% of the scheme. This funding commitment was intended to minimise investment risk associated with the project.

Uncertainties, however, still remain as to:

- The cost of project management and governance arrangements;
- The extent to which the detailed design for the first 25% of the scheme is reflective of the costs for the remainder of the scheme; and

- Price escalation risk for key components such as the long lengths of plastic pipe required over the construction period.

**Funding Arrangements**

Whilst there is still some uncertainty over whether or not any component of the government funding is to be indexed, the important regulatory issue relates to contributed assets and pricing effects under the ESC's revenue building block approach. In the review of other businesses' Water Plans, the ESC adopted an eight year period for the revenue building block models used to develop initial regulatory asset value recommendations to the Minister.

Under the proposed funding arrangements, the majority (94%) of the project cost in the first five years will be financed utilising government funds. From a regulatory perspective, the assets constructed in this five year period will be treated as Contributed Assets, and therefore not eligible for a return on, or of, capital.

Application of an eight year revenue building block model to GWMWater's business would mean that pricing for WMP Project services would commence at relatively low levels, sufficient to cover fixed and variable operating costs only, but rapidly increase from Year 6 of the WMP Project as project costs are funded by GWMWater through debt raisings.

Given that the WMP Project will result in substantial labour and other operational and maintenance efficiencies compared with the current channel system, the situation could arise where customers connecting to the scheme in the early years would have a significant initial decline in pricing (compared to current channel prices) but face substantial price increases as the WMP Project is rolled out.

By contrast, customers located in areas serviced by the later stages of the WMP Project would not be subject to the same level of price volatility. Rather, their starting prices (or their total annual bills) would be higher and remain closer to the final price (annual bills) compared to those in areas serviced by the initial stages of the pipeline.

**Growth**

The WMP Project design includes 5,000 ML/a additional capacity during peak months for growth by existing or new customers. It is highly unlikely that this growth will be taken up immediately. Experience with the NMP suggests a more probable scenario is that growth will be progressively taken up over an extended period (10 to 15 years), with a lag occurring between completion of a stage and the take-up of the growth water.

How this growth water is incorporated into the regulatory pricing regime is an important issue which is addressed below.

However, another important outcome is that the Maximum Allowable Revenue (MAR) for the WMP Project, hence MAR for the whole business, will not be achieved

until all growth water has been taken up. As indicated, this period could be 10 to 20 years after completion of the WMP Project.

**Demand Uncertainty**

The WMP Project, apart from its sheer scale has a number of other unique facets.

First, the WMP Project will provide a completely different service compared with the channel system:

- Water will be provided under pressure 24 hours per day every day of the year (apart from maintenance outages on parts of the WMP) compared with the single seasonal supply each year for the channel system;
- Security of supply will be enhanced with the prospect of restrictions substantially reduced; and
- Improved water quality will be achieved compared with the channel system where among other things, salinity progressively increases along the length of the channel.

Second, the WMP will replace a system where there has been no volumetric metering at a retail level. As a consequence, neither customers nor GWMWater have a good understanding of actual usage of water.

Third, implementation of the WMP requires Domestic and Stock (D&S) customers on the channel system to undertake substantial investment to provide on-farm storage and reticulation infrastructure, which is certain to have an impact on current usage patterns. Moreover, such investment may act as a catalyst for changing farm enterprise activities. Both are likely to lead to long-term changes in usage pattern and demand.

The issue for GWMWater is that, unlike most other water businesses, there is no history of actual usage so it is impractical to develop meaningful conventional pricing arrangements that would comply with the ESC's interpretation of the WIRO.

## *7.5 Headworks and Bulk Water Cost Allocation*

The rollout of the WMP will cause a fundamental change in the basis for allocating headwork and distribution costs. This is due to the fact that distribution losses that are currently funded by D&S and Urban customers will be substantially reduced by the WMP. By contrast, losses relating to irrigation customers will remain unchanged. As a result, costs allocated on an Exchange Rate Adjusted entitlements (ie., a common currency for water held within the headworks system that reflects differences in security of supply) combined with a move away from tariffs based largely on Area Charges to tariffs based on entitlement volumes will have varying price implications for customer segments.

The general impacts can be summarised as follows:

- Urban – slight increase
- Domestic & Stock – decrease
- SBA – increase
- Irrigation – increase

From a regulatory perspective, there are some fundamental issues surrounding the attribution of the Regulatory Asset Value (RAV). The revenue streams that have been factored into the funding model for the WMPP to meet the commercial viability objectives. These can be justified on the basis of recent investments made by both GRWA and WMW on infrastructure projects that are effectively new service obligations. The issues relating the RAV are described in more detail below.

In 2005/06 the notional revenue attributable to the headworks business is around $4.1 Million. This notional revenue is, in effect, the cost of headworks allocated to the various customer segments utilising water from the headworks system. The current direct and allocated operational, maintenance and administration costs amount to around $2.6 Million leaving around $1.5 Million as a return of and to the capital employed in the headworks.

A write-down of headworks asset values to zero for regulatory purposes would mean that the amount of $1.5 Million would need to be generated from another part of the business (eg. by a higher regulatory value for urban water or wastewater). Importantly, as highlighted in Section 8.2, the current pricing levels are not sufficient to assure long-term commercial viability for the business and there needs to be a general price increase in order to achieve that goal in any case.

A write-down of the regulatory value of headworks assets would also breach the requirement of WIRO clause 14(a)(viii) as it would lower the price of bulk water which, in turn, would act as an incentive for increased use of water resources in the region that are physically constrained. Unlike most other business segments, the headworks business has undergone recent upgrading/dam safety improvements and further major capital expenditure is not planned in the short to medium term. This would act to keep bulk water costs artificially low.

## *7.6 Implications for Regulatory Asset Values*

This section outlines the results of modelling aimed at determining an appropriate RAV for GWMWater.

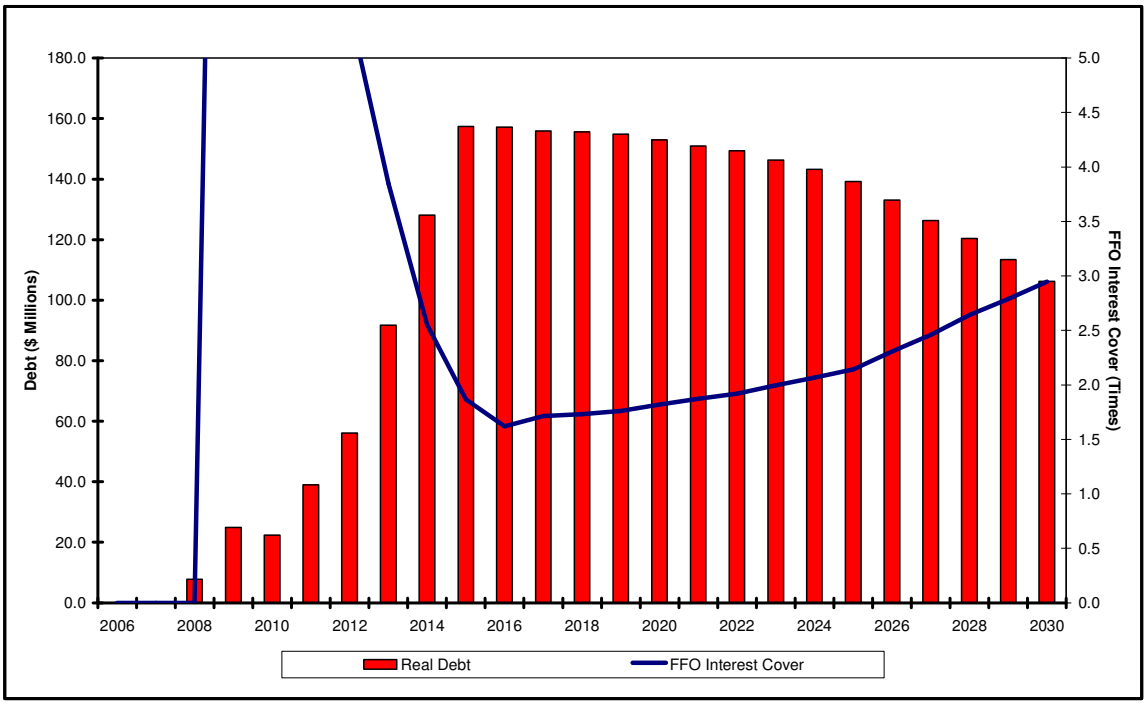
Key assumptions underpinning the analysis include:

- A real post tax WACC of 5.2% consistent with that established by the ESC in its Final Decision for other businesses;
- A pipeline cost of $440.1 million, constructed over 10 years with Government funding of $334 million of which $17.2 million is committed to prior works including the Speed Patchewollock Pipeline, the development of the IBC and the Final Design of the first 25% of the WMP Project;

- No escalation for inflation for the government funds (ie. the above values are in nominal dollars); and
- Pipeline cost allocation and tariff structures as outlined above.

The total real debt and FFO Interest Cover for the 25 year period ending 2030 illustrated in Figure 6.2.1 indicates maximum debt levels reaching around $160 million in 2015 with the completion of the WMP. At this time the FFO Interest Cover would be around 1.6 times gradually increasing towards the upper level of the ESC's preferred bound in 2030.

*Figure 7.2.1 : Real Debt and FFO Interest Cover Under Minimum Commercial Viability*

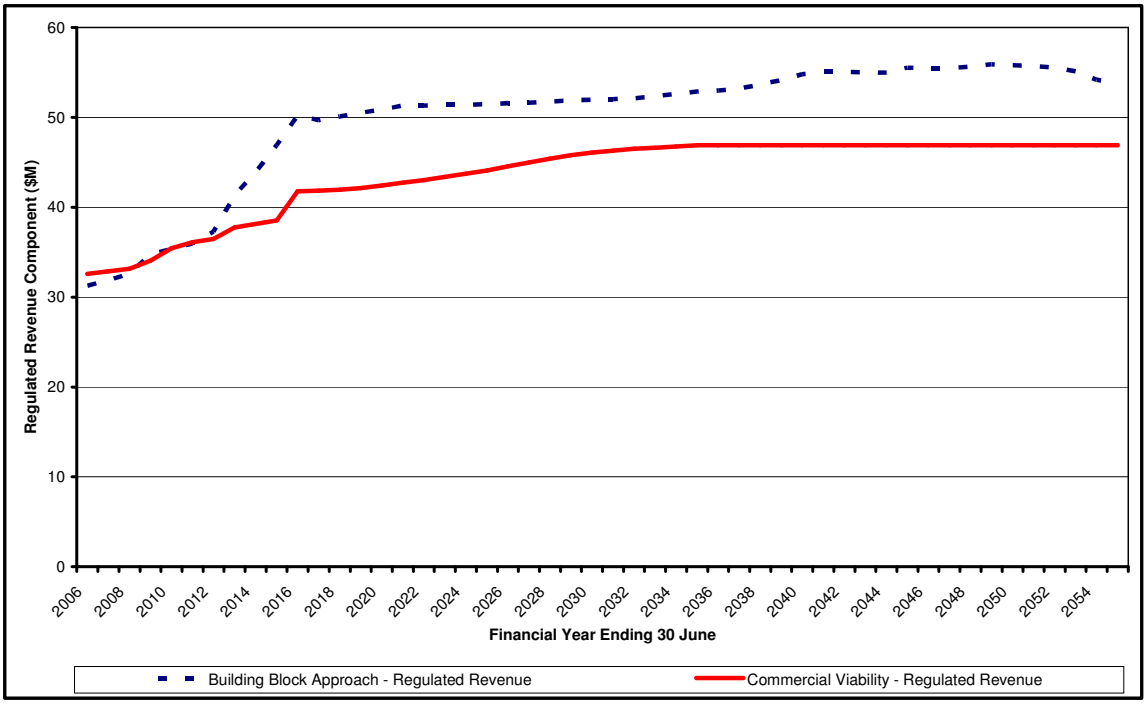



It is important that GWMWater is able to enter the construction of the WMP with sufficient financial strength to withstand any potential downside factors that may come into play, eg., rural growth not occurring as quickly as predicted or increase in project costs.

In assessing an appropriate RAV for the business, GWMWater developed a regulatory building block model identical to that used by the ESC. This allowed the reserves generated under the building block model for a range of RAV to be compared with those assumed as being the minimum required to ensure commercial viability. The impact of establishing too low a risk on future commercial viability was also examined. For the purpose of the assessment and to maintain consistency with the pricing and financial assessments, all regulatory costs, revenues and RAVs are expressed in July 2005 dollar terms.

Figure 7.2.2 shows the real regulated revenue component of the business as assessed through the financial analysis (Commercial Viability Approach) and compares this with the regulated revenue derived using the regulatory building block approach assuming an opening RAV of $50 million.

*Figure 7.2.2 : Comparison of Regulated Revenue Under Building Block Approach and Commercial Viability Approach.*

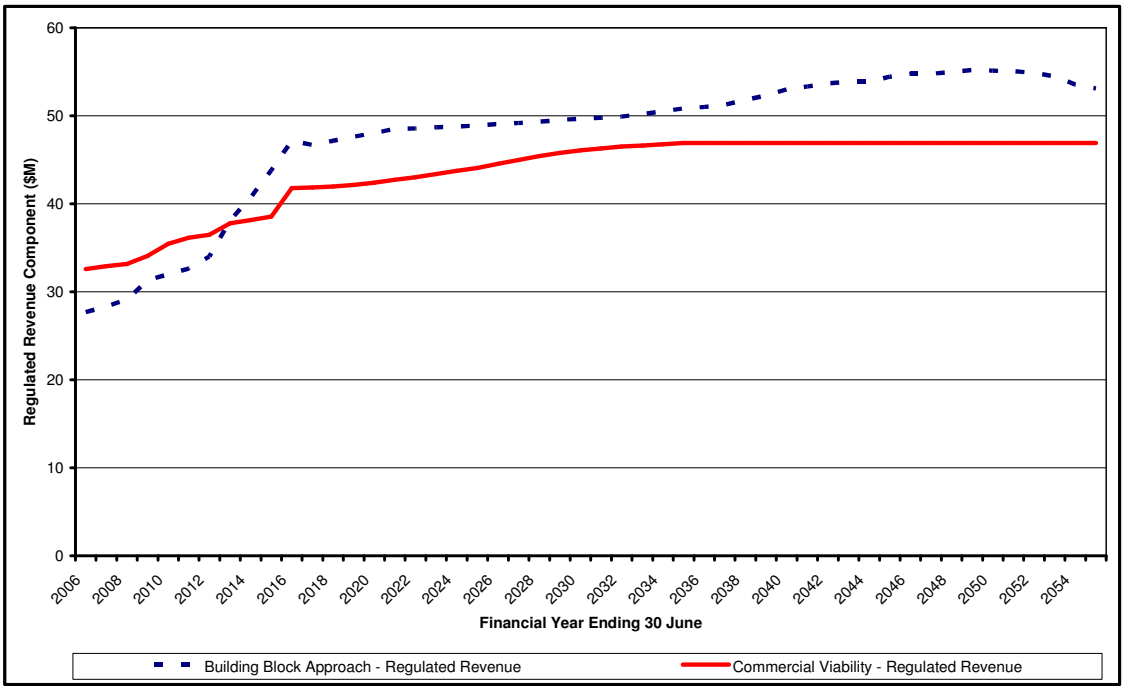



As shown in Figure 7.2.2, at a RAV of $50 million generates the level of regulated revenue under the building block approach that effectively mirrors the 'regulated revenue' component assessed under the commercial viability approach up until 2012. Thereafter, the building block regulated revenue increases sharply before plateauing from 2016. The sharp increase from 2012 is due to GWMWater's expenditure on the WMP. Importantly, the difference between the two revenue lines reflects:

- The commercial viability approach based on assumed take-up of growth entitlements with revenue not being generated until entitlements are taken up. In contrast, the building block approach is simply based on capital and operating expenditures; and
- As noted, the commercial viability modelling assumed price increases for wastewater of 1% for 10 years. Under the building block approach, however, the forecast capital expenditures would result in substantially higher price increases.

This same pattern is repeated irrespective of the assumed RAV, with one major exception. That is, for lower RAVs the regulated revenue under the building block approach falls below the commercial viability revenue in the initial years. This is illustrated by assuming a zero RAV (Figure 7.2.3).

*Figure 7.2.3 : Comparison of Regulated Revenue Components Under Building Block and Commercial Viability approaches*




Over the next three regulatory periods, ie., up to 2013/14 the shortfall in revenue would amount to around $16 Million in present value terms.

It is imperative therefore that, in setting the RAV for GWMWater, appropriate consideration is given to:

- The need to ensure revenue adequacy, in the short-term (particularly) as well as the longer term;
- The fact that under the building block approach the assessed MAR may not be recovered, particularly given the likely take-up of growth-related entitlements for the WMP Project; and
- The need for financial resilience within the organisation to manage downside risks associated with the construction of the WMP Project.

The Board of GWMWater believes that a RAV equivalent to $50 million in July 2005 is appropriate for the business.

# 8 Prices

## *8.1 Introduction*

The proposed amendments to the WIRO to modify the regulatory arrangements for the rural water sector, restrict GWMWater of the ESC to making a determination in relation to rural activities of a total revenue requirement.

The regulatory role of the ESC of the urban water sector remains unchanged. Not only can the ESC make a determination in relation to a total revenue requirement, the ESC can make a specific determination on tariffs in the context of this total revenue requirement.

This Water Plan has introduced the findings of the Pricing Review. The highest priority recommendations arising from the review relate to addressing the anomalies in the urban tariff structure. These recommendations relate to the rebalancing of tariffs to provide a more consistent basis for the charging of customers.

There is no underlying basis for the many of the differential pricing arrangements. The tariff rebalancing is aimed at eliminating price differentials where they cannot be justified on the grounds of differing levels of services.

These differentials exist between:

- Residential and non residential customers; and
- Wastewater prices.

It is proposed to transition the urban tariff rebalancing over the two year regulatory period. This will enable GWMWater to establish a more rational tariff base upon which to enter the second regulatory period.

In the case of rural customers, the determination on a total revenue basis will provide GWMWater greater flexibility to set rural prices on the basis of a broader context of the outcomes of the pricing review.

The differing approaches to pricing by the former GRWA and Wimmera Mallee Water have highlighted the need to undertake an overall Pricing Review.

The need for the Pricing Review was considered in the context of the need to prepare a Water Plan that could provide a cohesive representation of the costs and service obligations of the merged authority including the delivery of the Wimmera Mallee Pipeline.

### 8.1.1 Pricing Review

The Pricing Review has been undertaken by the Board to ensure that the pricing policies of the merged Authority reflect the efficient cost of providing services to all customers.

A special Pricing Committee of the Board was established to oversee the Pricing Review and Terms of Reference established.

The Terms of Reference required a review of the current pricing policies of GWMWater and assess these policies in the context of the estimates prepared for:

- Operating expenditures;
- Funding future capital expenditure requirements;
- Measurement of asset service capability consumption;
- Projected revenues and price paths; and
- Projected cashflow.

This will encompass the provision of independent comment and advice regarding the appropriateness of Grampians Wimmera Mallee Water's pricing policies and models and suggest any improvements and/or changes.

Specific areas to be covered by the Pricing Review included:

- Cost Allocation Practices
- Methods of Capital Recovery
- Market Segmentation
- Tariff Design
- Service Standards
- Industrial and Bulk Water Pricing
- Industrial Wastewater and Trade Waste Pricing
- Recreational Water Pricing
- Pricing for Growth and New Customers

The Terms of Reference also asked for any other recommendations based on observations made during the conduct of the Pricing Review.

The Pricing Review was to be undertaken in the context of the current operations of GWMWater, but also in terms of the operating model to apply under the WMP Project.

Wimmera Mallee Water and GRWA had differing approaches to the development of pricing for water and wastewater services. The review has developed a consistent framework for the allocation of costs and revenue across all product lines and customer segments.

An exhaustive consultative process of customer groups supported the review and individual customers were invited to make submissions to GWMWater in relation to pricing.

The process of cost/revenue allocation will be considered by GWMWater to develop prices and the design tariffs. The Pricing Review ensures that the pricing framework in the Water Plan is consistent with the requirements specified in the WIRO and SoO and sufficiently robust to accommodate the WMP Project.

The Pricing Review undertaken by the Board has identified substantial difference in outcomes for irrigation customers and rural supply by agreement customers compared to all other customers.

The Board has consequently initiated a comprehensive consultation program with these customer segments to ensure they fully understand the outcomes from the review and to identify options for addressing these outcomes in the near term. In effect, the review raised questions about:

- Whether there was a sound basis (consistent with a reasonable interpretation of clause 14 of the WIRO) for differentiating between irrigation supplies and supplies to other rural and urban customers; and
- The impact of pricing outcomes created by Area Charges for rural supplies (and the price discounts made in favour of some, but not all, large rural supply by agreement customers) that result in D&S customers contributing substantially more to the costs of providing a common rural bulk water supply service than most supply by agreement customers.

## *8.2 Current Pricing Arrangements*

The current pricing arrangements generally represent the underlying pricing polices adopted by the former rural and urban businesses.

The pricing for the rural business is based on the concept of full cost recovery including the recovery of a renewal annuity. The approach to urban pricing is premised on long term commercial viability including the recovery of projected operating and capital costs.

When translated into tariffs, there is a significant number of tariffs that make up the revenue base of GWMWater. These are described below and are expressed in 2005/06 dollars.

## 8.2.1 Current Pricing Framework

*Table 8.2.1 – Urban Charges - Schedule of Tariffs Water*

| TOWN | VOLUMETRIC | FIRE SERVICE | RESIDENTIAL | NON RESIDENTIAL | CONCESSIONAL | VACANT LAND |
|---|---|---|---|---|---|---|
| Antwerp | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Apsley | $ 0.4518 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Ararat | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $122.40 |
| Berriwillock | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Beulah | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Birchip | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $ - |
| Brim | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Buangor | $ 0.5530 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Charlton | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $ - |
| Chillingollah | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Chinkapook | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Cowangie | $ 0.4518 | $ 306.00 | $ 158.10 | $ 200.40 | $ 153.00 | $ - |
| Culgoa | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Dimboola | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $ - |
| Donald | $ 0.7338 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Dooen | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Edenhope | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $ - |
| Elmhurst | $ 0.5530 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Glenorchy | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Goroke | $ 0.4518 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Great_Western | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $122.40 |
| Halls_Gap | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $122.40 |
| Harrow | $ 0.4518 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Hopetoun | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $ - |
| Horsham | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $122.40 |
| Jeparit | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Jung | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Kaniva | $ 0.4518 | $ 306.00 | $ 169.07 | $ 236.69 | $ 153.00 | $ - |
| Kiata | $ 0.4518 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Lake_Bolac | $ 0.5530 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Lalbert | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Lascelles | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Lillimur | $ 0.4518 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Manangatang | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Marnoo | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Minyip | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Miram | $ 0.4518 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Moyston | $ 0.5530 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Murrayville | $ 0.4518 | $ 306.00 | $ 158.10 | $ 200.40 | $ 153.00 | $ - |
| Murtoa | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $ - |
| Nandaly | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Natimuk | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Nhill | $ 0.4518 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Noradjuha_ClearLake | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Nullawil | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Ouyen | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $ - |
| Patchewollock | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Pimpinio | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Pomonal | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $122.40 |
| Quambatook | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Rainbow | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $ - |
| Rupanyup | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| SeaLake | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Serviceton | $ 0.4518 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Speed | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| St.Arnaud | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $ - |
| Stawell | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $122.40 |
| Streatham | $ 0.4518 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Taits_Lane | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $122.40 |
| Tarranyurk | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Tempy | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Ultima | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Underbool | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Waitchie | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Walpeup | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Warracknabeal | $ 0.9521 | $ 306.00 | $ 227.58 | $ 318.61 | $ 153.00 | $ - |
| Watchem | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Westmere | $ 0.4518 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Wickliffe | $ 0.5530 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Willaura | $ 0.5530 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |
| Woomelang | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Wycheproof | $ 0.8304 | $ 306.00 | $ 208.01 | $ 291.21 | $ 153.00 | $ - |
| Yaapeet | $ 0.7749 | $ 306.00 | $ 189.66 | $ 265.51 | $ 153.00 | $ - |

*Table 8.2.2 – Urban Charges - Schedule of Tariffs Wastewater*

| TOWN | NON RESIDENTIAL | RESIDENTIAL | NON RESIDENTIAL | CONCESSIONAL | VACANT LAND |
|---|---|---|---|---|---|
| Antwerp | $ - | $ - | $ - | $ - | $ - |
| Apsley | $ - | $ - | $ - | $ - | $ - |
| Ararat | $ 1.01 | $ 263.08 | $ 236.76 | $ 153.00 | $ 122.40 |
| Berriwillock | $ - | $ - | $ - | $ - | $ - |
| Beulah | $ - | $ - | $ - | $ - | $ - |
| Birchip | $ 1.01 | $ 214.14 | $ 192.72 | $ 153.00 | $ - |
| Brim | $ - | $ - | $ - | $ - | $ - |
| Buangor | $ - | $ - | $ - | $ - | $ - |
| Charlton | $ 1.01 | $ 263.08 | $ 236.76 | $ 153.00 | $ - |
| Chillingollah | $ - | $ - | $ - | $ - | $ - |
| Chinkapook | $ - | $ - | $ - | $ - | $ - |
| Cowangie | $ - | $ - | $ - | $ - | $ - |
| Culgoa | $ - | $ - | $ - | $ - | $ - |
| Dimboola | $ 1.010 | $ 263.08 | $ 236.76 | $ 153.00 | $ - |
| Donald | $ 1.01 | $ 263.08 | $ 236.76 | $ 153.00 | $ - |
| Dooen | $ - | $ - | $ - | $ - | $ - |
| Edenhope | $ 1.01 | $ 338.13 | $ 304.32 | $ 153.00 | $ - |
| Elmhurst | $ - | $ - | $ - | $ - | $ - |
| Glenorchy | $ - | $ - | $ - | $ - | $ - |
| Goroke | $ - | $ - | $ - | $ - | $ - |
| Great_Western | $ - | $ - | $ - | $ - | $ - |
| Halls_Gap | $ 1.01 | $ 338.13 | $ 304.32 | $ 153.00 | $ 122.40 |
| Harrow | $ - | $ - | $ - | $ - | $ - |
| Hopetoun | $ 1.01 | $ 306.00 | $ 275.40 | $ 153.00 | $ - |
| Horsham | $ 1.01 | $ 263.08 | $ 236.76 | $ 153.00 | $ 122.40 |
| Jeparit | $ 1.01 | $ 214.14 | $ 192.72 | $ 153.00 | $ - |
| Jung | $ - | $ - | $ - | $ - | $ - |
| Kaniva | $ 1.01 | $ 180.34 | $ 162.30 | $ 153.00 | $ - |
| Kiata | $ - | $ - | $ - | $ - | $ - |
| Lake_Bolac | $ - | $ - | $ - | $ - | $ - |
| Lalbert | $ - | $ - | $ - | $ - | $ - |
| Lascelles | $ - | $ - | $ - | $ - | $ - |
| Lillimur | $ - | $ - | $ - | $ - | $ - |
| Manangatang | $ - | $ - | $ - | $ - | $ - |
| Marnoo | $ - | $ - | $ - | $ - | $ - |
| Minyip | $ 1.01 | $ 306.00 | $ 275.40 | $ 153.00 | $ - |
| Miram | $ - | $ - | $ - | $ - | $ - |
| Moyston | $ - | $ - | $ - | $ - | $ - |
| Murrayville | $ - | $ - | $ - | $ - | $ - |
| Murtoa | $ 1.01 | $ 263.08 | $ 236.76 | $ 153.00 | $ - |
| Nandaly | $ - | $ - | $ - | $ - | $ - |
| Natimuk | $ 1.01 | $ 214.14 | $ 192.72 | $ 153.00 | $ - |
| Nhill | $ 1.01 | $ 214.14 | $ 192.72 | $ 153.00 | $ - |
| Noradjuha_ClearLake | $ - | $ - | $ - | $ - | $ - |
| Nullawil | $ - | $ - | $ - | $ - | $ - |
| Ouyen | $ 1.01 | $ 306.00 | $ 275.40 | $ 153.00 | $ - |
| Patchewollock | $ - | $ - | $ - | $ - | $ - |
| Pimpinio | $ - | $ - | $ - | $ - | $ - |
| Pomonal | $ - | $ - | $ - | $ - | $ - |
| Quambatook | $ - | $ - | $ - | $ - | $ - |
| Rainbow | $ 1.01 | $ 263.08 | $ 236.76 | $ 153.00 | $ - |
| Rupanyup | $ - | $ - | $ - | $ - | $ - |
| SeaLake | $ - | $ - | $ - | $ - | $ - |
| Serviceton | $ 1.01 | $ 214.14 | $ 192.72 | $ 153.00 | $ - |
| Speed | $ - | $ - | $ - | $ - | $ - |
| St.Arnaud | $ 1.01 | $ 263.08 | $ 236.76 | $ 153.00 | $ - |
| Stawell | $ 1.01 | $ 263.08 | $ 236.76 | $ 153.00 | $ 122.40 |
| Streatham | $ - | $ - | $ - | $ - | $ - |
| Taits_Lane | $ - | $ - | $ - | $ - | $ - |
| Tarranyurk | $ - | $ - | $ - | $ - | $ - |
| Tempy | $ - | $ - | $ - | $ - | $ - |
| Ultima | $ - | $ - | $ - | $ - | $ - |
| Underbool | $ - | $ - | $ - | $ - | $ - |
| Waitchie | $ - | $ - | $ - | $ - | $ - |
| Walpeup | $ - | $ - | $ - | $ - | $ - |
| Warracknabeal | $ 1.01 | $ 263.08 | $ 236.76 | $ 153.00 | $ - |
| Watchem | $ - | $ - | $ - | $ - | $ - |
| Westmere | $ - | $ - | $ - | $ - | $ - |
| Wickliffe | $ - | $ - | $ - | $ - | $ - |
| Willaura | $ 1.01 | $ 214.14 | $ 192.72 | $ 153.00 | $ - |
| Woomelang | $ - | $ - | $ - | $ - | $ - |
| Wycheproof | $ 1.01 | $ 214.14 | $ 192.72 | $ 153.00 | $ - |

| | | | | | |
|---|---|---|---|---|---|
| Yaapeet | $ - | $ - | $ - | $ - | $ - |

*Table 8.2.3 – Rural Charges - Schedule of Tariffs*

| | | Charge |
|---|---|---|
| ***Domestic and Stock*** | | |
| Channel Supply | | |
| General Rate (per hectare) | | $ 2.97 |
| Minimum Fee | | $ 230.00 |
| Damfill (per dam) | | $ 85.00 |
| Pipeline Supply | | |
| General Rate (per hectare) | | $ 1.59 |
| Minimum Fee | | $ 230.00 |
| Usage (per kl) | | $ 0.66 |
| Meter Charge | | $ 100.00 |
| ***Irrigation*** | | |
| Allocation Charge # | < 50ML entitlement | $ 600.00 |
| | 50 ML or more | $ 1000.00 |
| Usage Charge (per ML) # | | $ 50.00 |
| ***Diversions*** | | |
| Diversions from regulated streams, weir pools and storages (per ML) | | $ 11.30 |
| Minimum Charge | | $ 169.50 |
| Diversions from unregulated streams and lakes (per ML) | | $ 5.36 |
| Minimum Charge | | $ 80.40 |
| ***Groundwater*** | | |
| Groundwater Licence Application Fee | | $ 650.00 |
| Bore Construction Licence Application Fee | | $ 345.00 |
| Groundwater Licence Renewal | | $ 270.00 |
| Groundwater Licence Transfer | | $ 68.00 |
| Annual Licence Fee | | $ 71.00 |
| Annual Volumetric Fee (per ML) | | |
| | Non-WSPA/GMA | $ 1.93 |
| | Neuarper WSPA | $ 2.78 |
| | Murrayville WSPA | $ 6.42 |
| | Telopea Downs GSPA/GMA | $ 4.47 |
| | Kaniva WSPA/GMA | $ 1.93 |
| | Apsley WSPA/GMA | $ 1.93 |

# These tariffs are premised on a continuation of the drought and a carryover of arrangements for the irrigation service of previous years.

## *8.3 Proposed Pricing Arrangements*

### 8.3.1 Overall Financial Outlook

Urban and rural compliance requirements dominate pricing policy of GWMWater.

Urban compliance is dominated by environmental and water quality obligations whilst rural obligations are premised upon improving water quality and distribution efficiency. The associated pricing implications of the WMP Project have been factored into the pricing outcomes of this Water Plan.

A further consideration in developing the Water Plan is the impact of the continued drought that is affecting the water supplies of the region. This is impacting on the underlying revenues of GWMWater and the recovery of these revenues will be dependant upon there being sufficient rainfall to allow the storages to recover.

It has been assumed that the current supply situation will prevail for the two year regulatory period and the underlying consumption patterns reflect this expectation.

Irrespective of the underlying seasonal outlook, there is a need to consider the extent that there is a sustained behavioural change caused by the imposition of restrictions. There is also the overlay of permanent urban water restrictions arising from the White Paper that will impact on towns that to date have not been impacted by the recent water restrictions.

### 8.3.2 Urban Tariffs

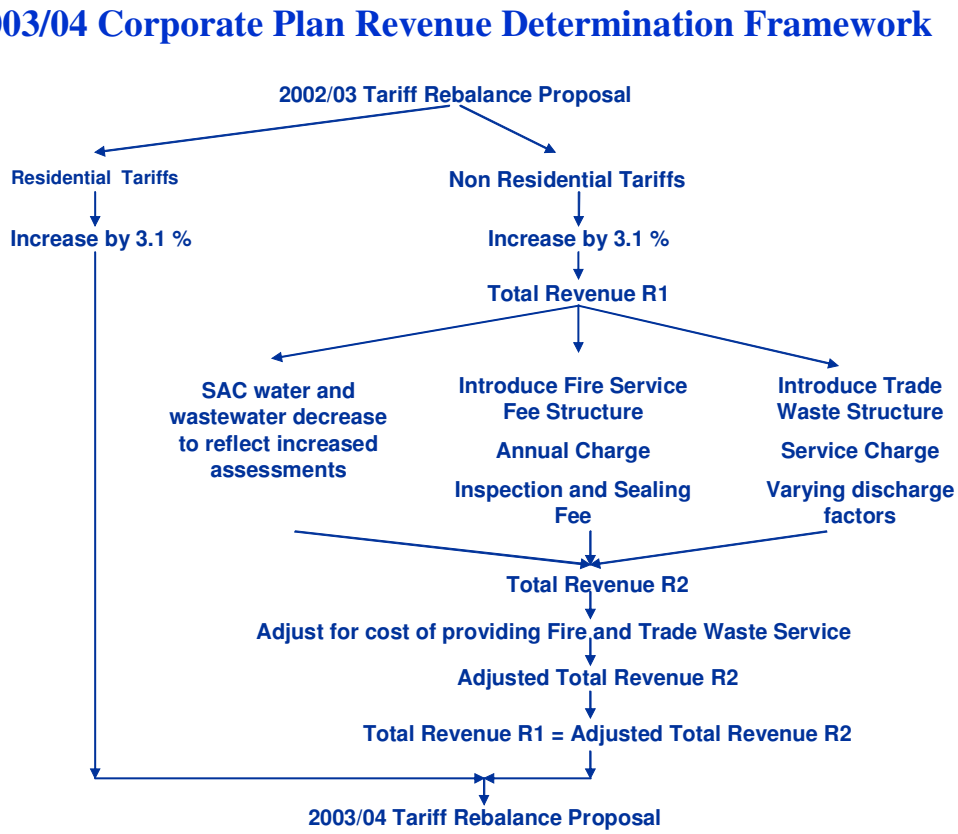
Urban tariff rebalancing has been a policy priority for a number of years.

The need to eliminate the differential tariffs was identified as a priority in recommendations arising from the Review of Regulatory Preparedness by PriceWaterhouseCoopers in December 2003. This has been reinforced by the interim findings of the Pricing Review being undertaken by Marsden Jacob and Associates.

The process of structural change commenced in 2003 when the fire service was unbundled from the non-residential water charge. Accompanying this change was the introduction of non residential occupancy based charging and the removal of cistern charges as the basis for rating non residential wastewater services in Halls Gap, Stawell and, more generally, as the basis for charging municipal toilet blocks in all towns receiving a wastewater service.

The tariff rebalancing of 2003 was to coincide with the introduction of a broader structural change for the charging of wastewater services. This was deferred until the completion of the Trade Waste Audit Program that will be completed by end of the 2005 financial year.

*Figure 8.3.1: 2003/04 Corporate Plan Revenue Determination Framework*



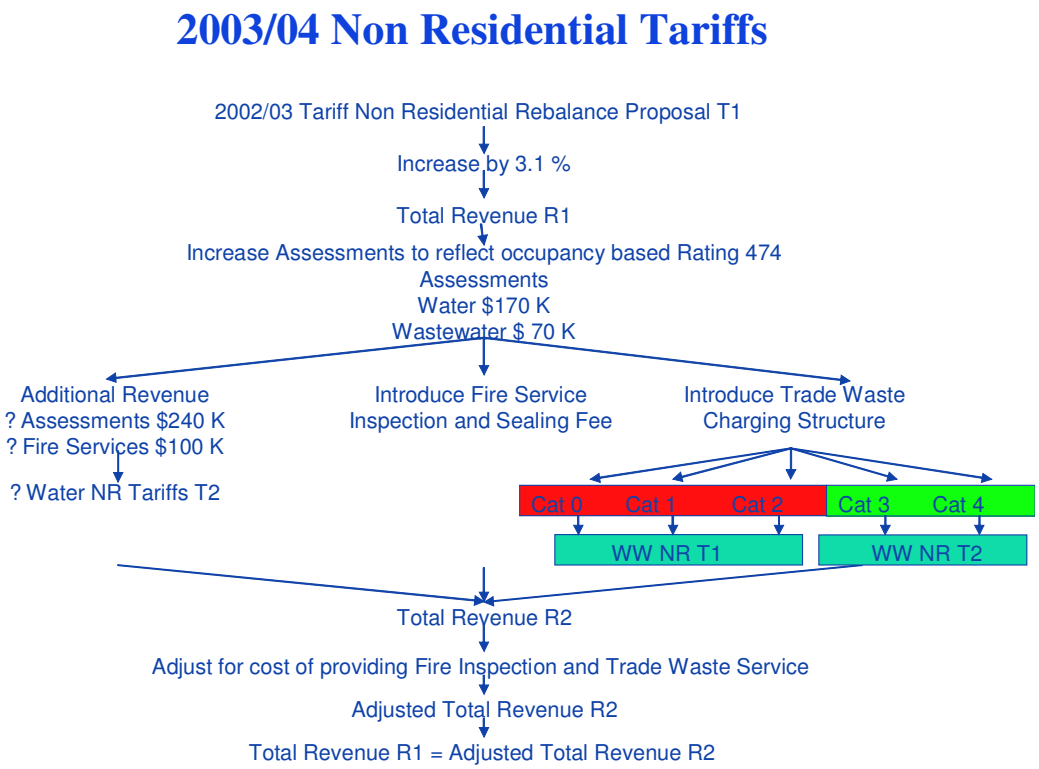

The structural changes to Service Availability Charges (SAC) that were introduced in 2003/04 did not eliminate the anomalies in the tariff structure and there remains a differential pricing structure for 'like services' received by residential and non-residential customers. This anomaly has been exacerbated in recent times by the decision to apply the Environmental Contribution to all urban customers, residential and non-residential uniformly.

The differential between residential and non-residential water customers averages around $80. Modelling undertaken by Marsden Jacob as part of the Pricing Review indicate that when applying revenue neutral principles, increases of $15 are required on the SAC. This is before any general price increases. In its application however, this gives rise to a number of extreme outcomes and this needs to be transitioned over the regulatory period.

The residential wastewater service charge is presently marginally higher than non-residential wastewater charges. Residential customers do not, however, attract a disposal charge as is the case for non-residential customers. The structural changes to wastewater that were to be implemented in 2003/04 can now be implemented as a result of the completion of the trade waste audit program.

It is proposed that these structural changes be implemented in accordance with the principles established by the table below.

*Figure 8.3.2: 2003/04 Corporate Plan  Non Residential Tariff Principles*




Under the proposed structural changes to wastewater charges, the service charge for residential and non-residential customers will be made uniform. Disposal charges will still only apply to non-residential customers however this charge will be reduced. All customers with waste loads that have the potential to adversely affect the wastewater system, categories 1 – 4, will also incur a new trade waste service fee.

This philosophy of charging has been part of the communication process established for trade waste customers and provides a more transparent framework for the basis of charging wastewater services.

Non-residential customers will generally not receive an increase over the regulatory period. The consequence of this, however, is that residential customers will receive price increases above the general price increases of 3.9% being anticipated.

In summary, the implications of the proposed structural changes before applying any escalation are outlined below.

*Table 8.3.1: Impact on Proposed Structure Changes to Wastewater Charges*

| | Water | Wastewater |
|---|---|---|
| Non Residential SAC | —no change | ↑ increase |
| Residential SAC | ↑ increase | ↑ increase |
| Non Residential Volumetric | —no change | ↓ decrease |
| Residential Volumetric | —no change | N/A |
| Fire Service | —no change | N/A |
| Trade Waste (Non Residential Only) | N/A | ↑ New Charge |

### 8.3.3 Water Service Levels

The level of treatment received underpins water services and pricing for these services. The services and the relevant towns are summarised below:

***Group 1 – Treated Water***
Common 'treated water tariff' for all towns supplied with fully treated water, regardless of source of supply:

| | | | |
|---|---|---|---|
| Birchip | Ouyen | Great Western | Warracknabeal |
| Charlton | Rainbow | Halls Gap | Murtoa |
| Dimboola | St Arnaud | Pomonal | Ararat |
| Hopetoun | Edenhope | Stawell | Horsham |

***Group 2 – Partially Treated Water***
Common 'disinfected water tariff' for all towns supplied with partially treated water, regardless of source of supply:

| | | | |
|---|---|---|---|
| Beulah | Minyip | Watchem | Lalbert |
| Brim | Manangatang | Woomelang | Ultima |
| Walpeup | Nullawil | Wycheproof | Rupanyup |
| Donald | Quambatook | Sea Lake | Jung |

***Group 3 – Untreated Supplies***
Common tariff for all towns supplied with non-potable/untreated water via channel/surface water/Northern Mallee Pipeline:

| | | | |
|---|---|---|---|
| Antwerp | Marnoo | Pimpinio | Culgoa |
| Berriwillock | Nandaly | Speed | Lascelles |
| Clear Lake | Chillingollah | Tarranyurk | Patchewollock |
| Dooen | Underbool | Tempy | Chinkapook |
| Glenorchy | Natimuk | Waitchie | Yaapeet |
| Jeparit | Noradjuha | | |

***Group 4 – Eastern Grampians Pipeline***
Non-potable water supplied by Eastern Grampians Pipeline:

| | | | |
|---|---|---|---|
| Buangor | Lake Bolac | Wickliffe | Willaura |
| Elmhurst | Moyston | | |

***Group 5 - Groundwater***
A common tariff has been applied for all towns supplied with non-potable/untreated water via groundwater/bore water supply:

| | | | |
|---|---|---|---|
| Apsley | Kiata | Serviceton | Kaniva |
| Cowangie | Lillimur | Streatham | Nhill |
| Goroke | Miram | Westmere | Murrayville # |
| Harrow | | | |

# Murrayville is presently disinfected

### 8.3.4 Urban Water and Wastewater Tariffs 2006/07

The urban water and wastewater tariffs are underpinned by a philosophy of the underlying level of service differentiated by the underlying water resource.

***Water***
Water charges are underpinned by the product quality philosophy identified above with all values expressed in nominal dollars.

*Table 8.3.2: 2006/07 Tariffs Proposed for Water Services*

| | ***Full Treatment*** | | ***Partial Treatment*** | | ***Untreated*** | |
|---|---|---|---|---|---|---|
| | **SAC** | **Vol** | **SAC** | **Vol** | **SAC** | **Vol** |
| Pipeline/Channel | $260.00 | $0.96 | $230.00 | $0.84 | $200.00 | $0.80 |
| Groundwater | N/A | N/A | N/A | N/A | $200.00 | $0.48 |
| Eastern Grampians | N/A | N/A | N/A | N/A | $200.00 | $0.65 |
| Cowangie and Murrayville | | | | | $180.00 | $0.48 |
| Kaniva | | | | | $180.00 | $0.48 |

*Table 8.3.3: 2007/08 Tariffs Proposed for Water Services*

| | *Full Treatment* | | *Partial Treatment* | | *Untreated* | |
|---|---|---|---|---|---|---|
| | **SAC** | **Vol** | **SAC** | **Vol** | **SAC** | **Vol** |
| Pipeline/Channel | $295.00 | $0.96 | $260.00 | $0.84 | $228.00 | $0.80 |
| Groundwater | N/A | N/A | N/A | N/A | $228.00 | $0.50 |
| Eastern Grampians | N/A | N/A | N/A | N/A | $228.00 | $0.65 |
| Cowangie and Murrayville | | | | | $215.00 | $0.50 |
| Kaniva | | | | | $215.00 | $0.50 |

These charges reflect a convergence of the service charges for both residential and non-residential customers. These charges are all based on standard 20 mm service with incrementally higher service charges.

***Wastewater***

The proposed wastewater tariffs have been underpinned by a more significant philosophy of rebalancing. The differential between residential and non-residential service charges has been removed, the disposal charge for non-residential customers reduced and a trade waste service fee introduced.

The interim findings of the Pricing Review also highlighted the potential problems of defending the differential in wastewater charges for 'small towns' and 'large towns'. The differential between 'large towns' and 'small towns' has been narrowed, but not totally eliminated. Wastewater charges to the town of Kaniva remain an outlier whilst the charges for wastewater in Edenhope and Halls Gap have been brought into line with the New Town Sewerage charge.

*Table 8.3.4: Wastewater Charges for Small and Large Towns 2006/07*

| **Towns on Higher Level Tariff $268.00 Disposal Charge $0.50 (Non Residential) Trade Waste Fee $80** | **Towns on Lower Level Tariff $235.00 Disposal Charge $0.50 (Non Residential) Trade Waste Fee $80** | **New Town Sewerage Tariff $310 Disposal Charge $0.50 (Non Residential) Trade Waste Fee $80** |
|---|---|---|
| Ararat | Birchip | Ouyen |
| Charlton | Jeparit | Minyip |
| Dimboola | Natimuk | Hopetoun |
| Donald | Sea Lake | Edenhope |
| Horsham | Willaura | Halls Gap |
| Murtoa | Serviceton | |
| Rainbow | Wycheproof | |
| St Arnaud | Nhill | |
| Stawell | | |
| Warracknabeal | | |

*Table 8.3.5: Wastewater Charges for Small and Large Towns 2007/08*

| **Towns on Higher Level Tariff $270.00 Disposal Charge $0.20 (Non Residential) Trade Waste Service Fee $100** | **Towns on Lower Level Tariff $240.00 Disposal Charge $0.20 (Non Residential) Trade Waste Service Fee $100** | **New Town Sewerage Tariff $320 Disposal Charge $0.20 (Non Residential) Trade Waste Service Fee $100** |
|---|---|---|
| Ararat | Birchip | Ouyen |
| Charlton | Jeparit | Minyip |
| Dimboola | Natimuk | Hopetoun |
| Donald | Sea Lake | Edenhope |
| Horsham | Willaura | Halls Gap |
| Murtoa | Serviceton | |
| Rainbow | Wycheproof | |
| St Arnaud | Nhill | |
| Stawell | | |
| Warracknabeal | | |

Tariff rebalancing in Kaniva will continue to be transitioned. A rate of $220 (2006/07) and $245 (2007/08) will be applied to wastewater.

The reference tariff for the New Town Sewerage Scheme towns of Hopetoun, Minyip and Ouyen will provide modest increases to produce tariffs of $310 (2006/07) and $320 (2007/08). Special tariffs apply to Edenhope and Halls Gap to reflect the compliance obligations associated with servicing these two towns.

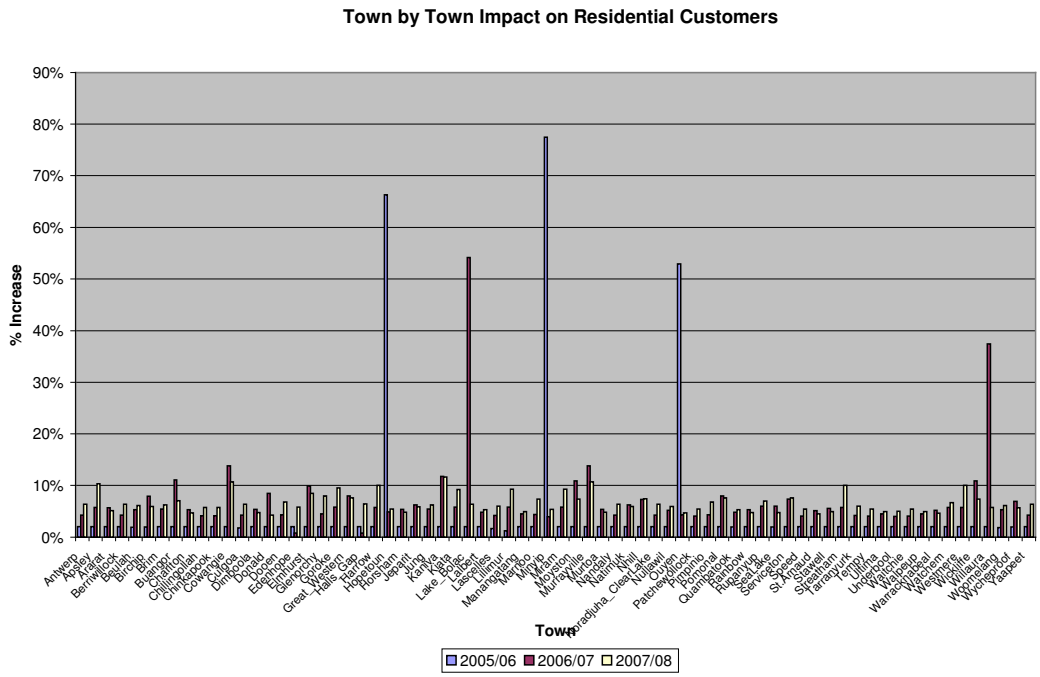
As was the case with water, the relativity between residential and non-residential wastewater tariffs will be narrowed.

***Common water and wastewater charges***
It has also been assumed that all concessional customers will continue to attract a lesser service charge for both water and wastewater services but this charge has been increased from $150 to $170 (2006/07) and $190 (2008/09).

The development rate for newly subdivided land is $125 (2006/07) and $130 (2008/09) per assessment.

***Impact of Changes in Urban Water and Wastewater Charges***
A consequence of the tariff rebalancing exercise is that all residential customers of the region will incur a greater share of the proposed 1.4% real price increase.

*Figure 8.3.3: Town by Town Impact on Residential Customers*




When expressed in dollar terms the increase for residential customers on a town by town basis is outlined below.

The overall impact in Ouyen, Hopetoun and Minyip is skewed by the introduction of the New Town Sewerage Schemes. Halls Gap and Edenhope receive the benefit of a reduction in sewerage to a rate that is commensurate with the New Town Sewerage Scheme rate.

Pressure points include the townships of Donald and Kaniva where tariff anomalies have existed to date with increase in the order of $50 per residential customer. Other affected towns include the smaller sewerage towns of where rates are being increased with a view to achieving a more common wastewater tariff. These towns include Birchip, Jeparit, Natimuk, Nhill, Serviceton, Willaura and Wycheproof.

*Figure 8.3.4: Town by Town Impact on Customer Charges*

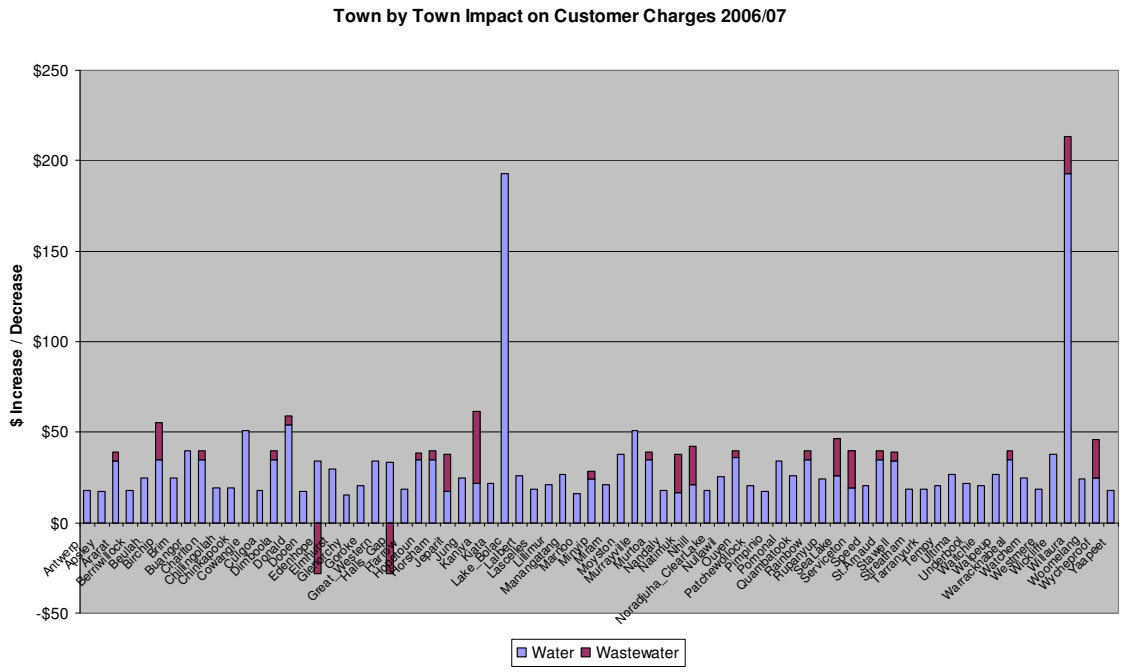
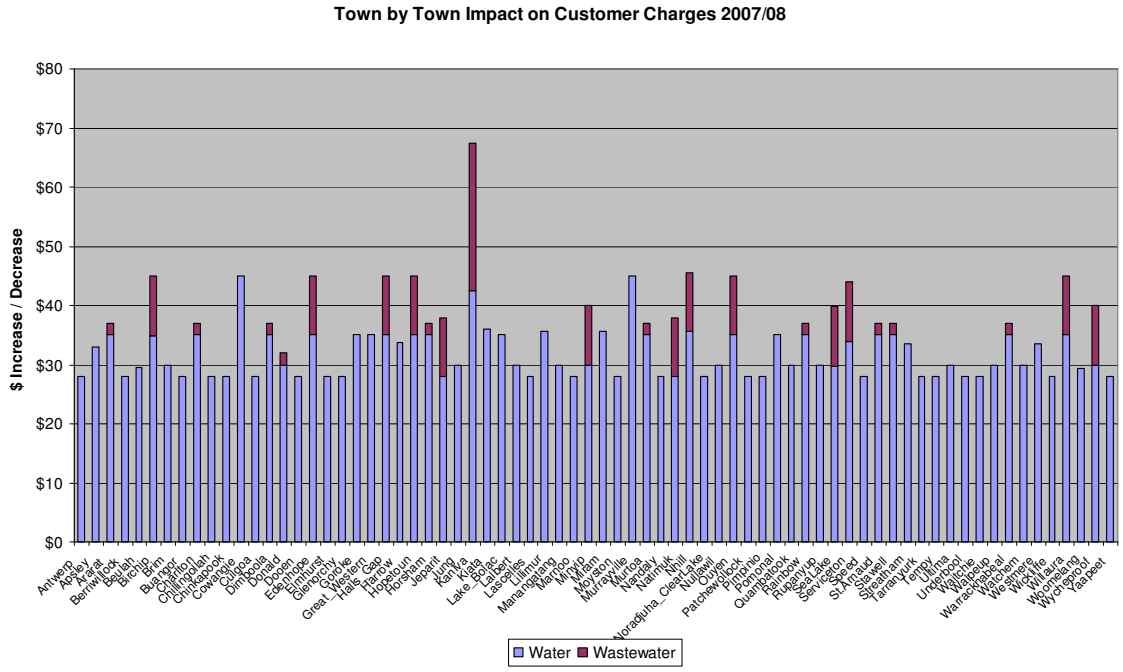



*Figure 8.3.5 Town by Town Impact on Customer Charges 2007/08*




### 8.3.5 Rural Water Services

There is an expectation that rural water service prices will increase in accordance with the global increase required in the total revenue requirement.

In line with the objectives of the proposed amendments to the WIRO, there has been no articulation of prices for individual customers services in the Water Plan. These are to be resolved in the context of the broader consultative arrangement that need to take place as a part of the public release of the Pricing Review and the WMP Project.

In developing prices to rural customers it is expected that some significant impacts will be introduced for some customer segments. This will reflect where the individual segments do not make contributions to the total revenue requirements that are consistent with uniform application of a consistent cost allocation methodology under current pricing arrangements. For example, there is a distortion in the current area based charging for rural water services that assigns a lower portion of costs to those customers with small land holdings but large consumption.

The outcome of the consultative processes of the Pricing Review identified substantial concerns about the equity of the current tariff structures for rural water services of GWMWater.

## *8.4 Proposed Tariffs*

GWMWater Tariff proposals are being progressed in the context of a total revenue requirement for the Authority.

For rural pricing the specific tariff detail is to be the subject of further consultation with the community.

For urban tariffs this is being expressed in terms of a total revenue requirement within a framework of tariff rebalancing. The urban tariffs being proposed expressed in nominal dollars are summarised in Figure 8.3.6 to 8.3.9.

*Table 8.3.6 – Urban Water Charges - Schedule of Tariffs 2006/07*

| | Water | | | | | |
|---|---|---|---|---|---|---|
| Town | VOLUMETRIC | FIRE SERVICE | RESIDENTIAL | NON RESIDENTIAL | CONCESSIONAL | VACANT LAND |
| Antwerp | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Apsley | $ 0.4800 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Ararat | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ 125.00 |
| Berriwillock | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Beulah | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Birchip | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Brim | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Buangor | $ 0.6500 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Charlton | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Chillingollah | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Chinkapook | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Cowangie | $ 0.4800 | $ 306.00 | $ 180.00 | $ 220.00 | $ 170.00 | $ - |
| Culgoa | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Dimboola | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Donald | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Dooen | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Edenhope | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Elmhurst | $ 0.6500 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Glenorchy | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Goroke | $ 0.4800 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Great_Western | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ 125.00 |
| Halls_Gap | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ 125.00 |
| Harrow | $ 0.4800 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Hopetoun | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Horsham | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ 125.00 |
| Jeparit | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Jung | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Kaniva | $ 0.4800 | $ 306.00 | $ 180.00 | $ 250.00 | $ 170.00 | $ - |
| Kiata | $ 0.4800 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Lake_Bolac | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Lalbert | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Lascelles | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Lillimur | $ 0.4800 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Manangatang | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Marnoo | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Minyip | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Miram | $ 0.4800 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Moyston | $ 0.6500 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Murrayville | $ 0.4800 | $ 306.00 | $ 180.00 | $ 220.00 | $ 170.00 | $ - |
| Murtoa | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Nandaly | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Natimuk | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Nhill | $ 0.4800 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Noradjuha_ClearLake | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Nullawil | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Ouyen | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Patchewollock | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Pimpinio | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Pomonal | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ 125.00 |
| Quambatook | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Rainbow | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Rupanyup | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| SeaLake | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Serviceton | $ 0.4800 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Speed | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| St.Arnaud | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Stawell | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ 125.00 |
| Streatham | $ 0.4800 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Taits_Lane | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ 125.00 |
| Tarranyurk | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Tempy | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Ultima | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Underbool | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Waitchie | $ 0.8000 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Walpeup | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Warracknabeal | $ 0.9600 | $ 306.00 | $ 260.00 | $ 318.61 | $ 170.00 | $ - |
| Watchem | $ 0.8400 | $ 306.00 | $ 230.00 | $ 291.21 | $ 170.00 | $ - |
| Westmere | $ 0.4800 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |
| Wickliffe | $ 0.6500 | $ 306.00 | $ 200.00 | $ 265.51 | $ 170.00 | $ - |

*Table 8.3.7 – Urban Sewerage Charges - Schedule of Tariffs 2006/07*

| | Sewerage | | | | | |
|---|---|---|---|---|---|---|
| Town | NON RESIDENTIAL | RESIDENTIAL | NON RESIDENTIAL | CONCESSIONAL | VACANT LAND | TRADE WASTE |
| Antwerp | $ - | $ - | $ - | $ - | $ - | $ - |
| Apsley | $ - | $ - | $ - | $ - | $ - | $ - |
| Ararat | $ 0.50 | $ 268.00 | $ 268.00 | $ 190.00 | $ 125.00 | $ 80.00 |
| Berriwillock | $ - | $ - | $ - | $ - | $ - | $ - |
| Beulah | $ - | $ - | $ - | $ - | $ - | $ - |
| Birchip | $ 0.50 | $ 235.00 | $ 235.00 | $ 190.00 | $ - | $ 80.00 |
| Brim | $ - | $ - | $ - | $ - | $ - | $ - |
| Buangor | $ - | $ - | $ - | $ - | $ - | $ - |
| Charlton | $ 0.50 | $ 268.00 | $ 268.00 | $ 190.00 | $ - | $ 80.00 |
| Chillingollah | $ - | $ - | $ - | $ - | $ - | $ - |
| Chinkapook | $ - | $ - | $ - | $ - | $ - | $ - |
| Cowangie | $ - | $ - | $ - | $ - | $ - | $ - |
| Culgoa | $ - | $ - | $ - | $ - | $ - | $ - |
| Dimboola | $ 0.50 | $ 268.00 | $ 268.00 | $ 190.00 | $ - | $ 80.00 |
| Donald | $ 0.50 | $ 268.00 | $ 268.00 | $ 190.00 | $ - | $ 80.00 |
| Dooen | $ - | $ - | $ - | $ - | $ - | $ - |
| Edenhope | $ 0.50 | $ 310.00 | $ 310.00 | $ 190.00 | $ - | $ 80.00 |
| Elmhurst | $ - | $ - | $ - | $ - | $ - | $ - |
| Glenorchy | $ - | $ - | $ - | $ - | $ - | $ - |
| Goroke | $ - | $ - | $ - | $ - | $ - | $ - |
| Great_Western | $ - | $ - | $ - | $ - | $ - | $ - |
| Halls_Gap | $ 0.50 | $ 310.00 | $ 310.00 | $ 190.00 | $ 125.00 | $ 80.00 |
| Harrow | $ - | $ - | $ - | $ - | $ - | $ - |
| Hopetoun | $ 0.50 | $ 310.00 | $ 310.00 | $ 190.00 | $ - | $ 80.00 |
| Horsham | $ 0.50 | $ 268.00 | $ 268.00 | $ 190.00 | $ 125.00 | $ 80.00 |
| Jeparit | $ 0.50 | $ 235.00 | $ 235.00 | $ 190.00 | $ - | $ 80.00 |
| Jung | $ - | $ - | $ - | $ - | $ - | $ - |
| Kaniva | $ 0.50 | $ 220.00 | $ 220.00 | $ 190.00 | $ - | $ 80.00 |
| Kiata | $ - | $ - | $ - | $ - | $ - | $ - |
| Lake_Bolac | $ - | $ - | $ - | $ - | $ - | $ - |
| Lalbert | $ - | $ - | $ - | $ - | $ - | $ - |
| Lascelles | $ - | $ - | $ - | $ - | $ - | $ - |
| Lillimur | $ - | $ - | $ - | $ - | $ - | $ - |
| Manangatang | $ - | $ - | $ - | $ - | $ - | $ - |
| Marnoo | $ - | $ - | $ - | $ - | $ - | $ - |
| Minyip | $ 0.50 | $ 310.00 | $ 310.00 | $ 190.00 | $ - | $ 80.00 |
| Miram | $ - | $ - | $ - | $ - | $ - | $ - |
| Moyston | $ - | $ - | $ - | $ - | $ - | $ - |
| Murrayville | $ - | $ - | $ - | $ - | $ - | $ - |
| Murtoa | $ 0.50 | $ 268.00 | $ 268.00 | $ 190.00 | $ - | $ 80.00 |
| Nandaly | $ - | $ - | $ - | $ - | $ - | $ - |
| Natimuk | $ 0.50 | $ 235.00 | $ 235.00 | $ 190.00 | $ - | $ 80.00 |
| Nhill | $ 0.50 | $ 235.00 | $ 235.00 | $ 190.00 | $ - | $ 80.00 |
| Noradjuha_ClearLake | $ - | $ - | $ - | $ - | $ - | $ - |
| Nullawil | $ - | $ - | $ - | $ - | $ - | $ - |
| Ouyen | $ 0.50 | $ 310.00 | $ 310.00 | $ 190.00 | $ - | $ 80.00 |
| Patchewollock | $ - | $ - | $ - | $ - | $ - | $ - |
| Pimpinio | $ - | $ - | $ - | $ - | $ - | $ - |
| Pomonal | $ - | $ - | $ - | $ - | $ - | $ - |
| Quambatook | $ - | $ - | $ - | $ - | $ - | $ - |
| Rainbow | $ 0.50 | $ 268.00 | $ 268.00 | $ 190.00 | $ - | $ 80.00 |
| Rupanyup | $ - | $ - | $ - | $ - | $ - | $ - |
| SeaLake | $ 0.50 | $ 235.00 | $ 235.00 | $ 190.00 | $ - | $ 80.00 |
| Serviceton | $ 0.50 | $ 235.00 | $ 235.00 | $ 190.00 | $ - | $ 80.00 |
| Speed | $ - | $ - | $ - | $ - | $ - | $ - |
| St.Arnaud | $ 0.50 | $ 268.00 | $ 268.00 | $ 190.00 | $ - | $ 80.00 |
| Stawell | $ 0.50 | $ 268.00 | $ 268.00 | $ 190.00 | $ 125.00 | $ 80.00 |
| Streatham | $ - | $ - | $ - | $ - | $ - | $ - |
| Taits_Lane | $ - | $ - | $ - | $ - | $ - | $ - |
| Tarranyurk | $ - | $ - | $ - | $ - | $ - | $ - |
| Tempy | $ - | $ - | $ - | $ - | $ - | $ - |
| Ultima | $ - | $ - | $ - | $ - | $ - | $ - |
| Underbool | $ - | $ - | $ - | $ - | $ - | $ - |
| Waitchie | $ - | $ - | $ - | $ - | $ - | $ - |
| Walpeup | $ - | $ - | $ - | $ - | $ - | $ - |
| Warracknabeal | $ 0.50 | $ 268.00 | $ 268.00 | $ 190.00 | $ - | $ 80.00 |
| Watchem | $ - | $ - | $ - | $ - | $ - | $ - |
| Westmere | $ - | $ - | $ - | $ - | $ - | $ - |
| Wickliffe | $ - | $ - | $ - | $ - | $ - | $ - |

*Table 8.3.8 – Urban Water Charges - Schedule of Tariffs 2007/08*

| | Water | | | | | | |
|---|---|---|---|---|---|---|---|
| Town | VOLUMETRIC | OFF PEAK | FIRE SERVICE | RESIDENTIAL | NON RESIDENTIAL | CONCESSIONAL | VACANT LAND |
| Antwerp | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Apsley | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Ararat | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ 130.00 |
| Berriwillock | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Beulah | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Birchip | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Brim | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Buangor | $ 0.6500 | $ 0.4700 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Charlton | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Chillingollah | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Chinkapook | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Cowangie | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 215.00 | $ 250.00 | $ 200.00 | $ - |
| Culgoa | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Dimboola | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Donald | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Dooen | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Edenhope | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Elmhurst | $ 0.6500 | $ 0.4700 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Glenorchy | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Goroke | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Great_Western | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ 130.00 |
| Halls_Gap | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ 130.00 |
| Harrow | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Hopetoun | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Horsham | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ 130.00 |
| Jeparit | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Jung | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Kaniva | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 215.00 | $ 250.00 | $ 200.00 | $ - |
| Kiata | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Lake_Bolac | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Lalbert | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Lascelles | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Lillimur | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Manangatang | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Marnoo | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Minyip | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Miram | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Moyston | $ 0.6500 | $ 0.4700 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Murrayville | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 215.00 | $ 250.00 | $ 200.00 | $ - |
| Murtoa | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Nandaly | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Natimuk | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Nhill | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Noradjuha_ClearLake | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Nullawil | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Ouyen | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Patchewollock | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Pimpinio | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Pomonal | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ 130.00 |
| Quambatook | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Rainbow | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Rupanyup | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| SeaLake | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Serviceton | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Speed | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| St.Arnaud | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Stawell | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ 130.00 |
| Streatham | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Taits_Lane | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ 130.00 |
| Tarranyurk | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Tempy | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Ultima | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Underbool | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Waitchie | $ 0.8000 | $ 0.6587 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Walpeup | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Warracknabeal | $ 0.9600 | $ 0.8093 | $ 306.00 | $ 295.00 | $ 320.00 | $ 200.00 | $ - |
| Watchem | $ 0.8400 | $ 0.7059 | $ 306.00 | $ 260.00 | $ 300.00 | $ 200.00 | $ - |
| Westmere | $ 0.5000 | $ 0.3840 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |
| Wickliffe | $ 0.6500 | $ 0.4700 | $ 306.00 | $ 228.00 | $ 270.00 | $ 200.00 | $ - |

*Table 8.3.9 – Urban Sewerage Charges - Schedule of Tariffs 2006/07*

| | Sewerage | | | | | |
|---|---|---|---|---|---|---|
| Town | NON RESIDENTIAL | RESIDENTIAL | NON RESIDENTIAL | CONCESSIONAL | VACANT LAND | TRADE WASTE |
| Antwerp | $ - | $ - | $ - | $ - | $ - | $ - |
| Apsley | $ - | $ - | $ - | $ - | $ - | $ - |
| Ararat | $ 0.20 | $ 270.00 | $ 270.00 | $ 190.00 | $ 130.00 | $ 100.00 |
| Berriwillock | $ - | $ - | $ - | $ - | $ - | $ - |
| Beulah | $ - | $ - | $ - | $ - | $ - | $ - |
| Birchip | $ 0.20 | $ 245.00 | $ 245.00 | $ 190.00 | $ - | $ 100.00 |
| Brim | $ - | $ - | $ - | $ - | $ - | $ - |
| Buangor | $ - | $ - | $ - | $ - | $ - | $ - |
| Charlton | $ 0.20 | $ 270.00 | $ 270.00 | $ 190.00 | $ - | $ 100.00 |
| Chillingollah | $ - | $ - | $ - | $ - | $ - | $ - |
| Chinkapook | $ - | $ - | $ - | $ - | $ - | $ - |
| Cowangie | $ - | $ - | $ - | $ - | $ - | $ - |
| Culgoa | $ - | $ - | $ - | $ - | $ - | $ - |
| Dimboola | $ 0.200 | $ 270.00 | $ 270.00 | $ 190.00 | $ - | $ 100.00 |
| Donald | $ 0.20 | $ 270.00 | $ 270.00 | $ 190.00 | $ - | $ 100.00 |
| Dooen | $ - | $ - | $ - | $ - | $ - | $ - |
| Edenhope | $ 0.20 | $ 320.00 | $ 320.00 | $ 190.00 | $ - | $ 100.00 |
| Elmhurst | $ - | $ - | $ - | $ - | $ - | $ - |
| Glenorchy | $ - | $ - | $ - | $ - | $ - | $ - |
| Goroke | $ - | $ - | $ - | $ - | $ - | $ - |
| Great_Western | $ - | $ - | $ - | $ - | $ - | $ - |
| Halls_Gap | $ 0.20 | $ 320.00 | $ 320.00 | $ 190.00 | $ 130.00 | $ 100.00 |
| Harrow | $ - | $ - | $ - | $ - | $ - | $ - |
| Hopetoun | $ 0.20 | $ 320.00 | $ 320.00 | $ 190.00 | $ - | $ 100.00 |
| Horsham | $ 0.20 | $ 270.00 | $ 270.00 | $ 190.00 | $ 130.00 | $ 100.00 |
| Jeparit | $ 0.20 | $ 245.00 | $ 245.00 | $ 190.00 | $ - | $ 100.00 |
| Jung | $ - | $ - | $ - | $ - | $ - | $ - |
| Kaniva | $ 0.20 | $ 245.00 | $ 245.00 | $ 190.00 | $ - | $ 100.00 |
| Kiata | $ - | $ - | $ - | $ - | $ - | $ - |
| Lake_Bolac | $ - | $ - | $ - | $ - | $ - | $ - |
| Lalbert | $ - | $ - | $ - | $ - | $ - | $ - |
| Lascelles | $ - | $ - | $ - | $ - | $ - | $ - |
| Lillimur | $ - | $ - | $ - | $ - | $ - | $ - |
| Manangatang | $ - | $ - | $ - | $ - | $ - | $ - |
| Marnoo | $ - | $ - | $ - | $ - | $ - | $ - |
| Minyip | $ 0.20 | $ 320.00 | $ 320.00 | $ 190.00 | $ - | $ 100.00 |
| Miram | $ - | $ - | $ - | $ - | $ - | $ - |
| Moyston | $ - | $ - | $ - | $ - | $ - | $ - |
| Murrayville | $ - | $ - | $ - | $ - | $ - | $ - |
| Murtoa | $ 0.20 | $ 270.00 | $ 270.00 | $ 190.00 | $ - | $ 100.00 |
| Nandaly | $ - | $ - | $ - | $ - | $ - | $ - |
| Natimuk | $ 0.20 | $ 245.00 | $ 245.00 | $ 190.00 | $ - | $ 100.00 |
| Nhill | $ 0.20 | $ 245.00 | $ 245.00 | $ 190.00 | $ - | $ 100.00 |
| Noradjuha_ClearLake | $ - | $ - | $ - | $ - | $ - | $ - |
| Nullawil | $ - | $ - | $ - | $ - | $ - | $ - |
| Ouyen | $ 0.20 | $ 320.00 | $ 320.00 | $ 190.00 | $ - | $ 100.00 |
| Patchewollock | $ - | $ - | $ - | $ - | $ - | $ - |
| Pimpinio | $ - | $ - | $ - | $ - | $ - | $ - |
| Pomonal | $ - | $ - | $ - | $ - | $ - | $ - |
| Quambatook | $ - | $ - | $ - | $ - | $ - | $ - |
| Rainbow | $ 0.20 | $ 270.00 | $ 270.00 | $ 190.00 | $ - | $ 100.00 |
| Rupanyup | $ - | $ - | $ - | $ - | $ - | $ - |
| SeaLake | $ 0.20 | $ 245.00 | $ 245.00 | $ 190.00 | $ - | $ 100.00 |
| Serviceton | $ 0.20 | $ 245.00 | $ 245.00 | $ 190.00 | $ - | $ 100.00 |
| Speed | $ - | $ - | $ - | $ - | $ - | $ - |
| St.Arnaud | $ 0.20 | $ 270.00 | $ 270.00 | $ 190.00 | $ - | $ 100.00 |
| Stawell | $ 0.20 | $ 270.00 | $ 270.00 | $ 190.00 | $ 130.00 | $ 100.00 |
| Streatham | $ - | $ - | $ - | $ - | $ - | $ - |
| Taits_Lane | $ - | $ - | $ - | $ - | $ - | $ - |
| Tarranyurk | $ - | $ - | $ - | $ - | $ - | $ - |
| Tempy | $ - | $ - | $ - | $ - | $ - | $ - |
| Ultima | $ - | $ - | $ - | $ - | $ - | $ - |
| Underbool | $ - | $ - | $ - | $ - | $ - | $ - |
| Waitchie | $ - | $ - | $ - | $ - | $ - | $ - |
| Walpeup | $ - | $ - | $ - | $ - | $ - | $ - |
| Warracknabeal | $ 0.20 | $ 270.00 | $ 270.00 | $ 190.00 | $ - | $ 100.00 |
| Watchem | $ - | $ - | $ - | $ - | $ - | $ - |
| Westmere | $ - | $ - | $ - | $ - | $ - | $ - |
| Wickliffe | $ - | $ - | $ - | $ - | $ - | $ - |

### 8.4.1 Developer Contributions

The Asset Management system has now evolved sufficiently to provide information to support the hydraulic modelling that is used to determine the pricing framework for developer contributions. This will be supported by the completion of the Bulk Water Entitlement conversion process that will clearly establish the yield of the Grampians storage system.

The output of the hydraulic modelling is yet to be applied to a Developer Contribution framework. Developer Contributions have been increased marginally with the exception of Developer Contribution for the Halls Gap – Pomonal water service and wastewater contributions.

The Essential Services Commission (ESC) is currently advocating an alternative approach to the determination of developer contributions. This is generally **not** supported by the water industry and is presently the subject of a consultative process with the ESC.

A unique consideration for GWMWater is how the approach to pricing for Developer Contributions relates to the principles that should to apply to the determination of Developer Contributions in towns where there is declining population.

These principles will be articulated in the development of the Water Plan and after further consultation with the ESC.

### 8.4.2 Trade Waste

The Trade Waste pricing of GWMWater has been developed for Category 3 and 4 customers and is presently part of a two-year implementation process.

The minor trade waste audit is presently being completed and the information being used to ascertain whether these customers are Category 1 or Category 2 Trade Waste customers collected will be used as the basis of any future rebalancing of urban charges.

### 8.4.3 Other Charges

Many of the miscellaneous charges of GWMWater are prescribed as a multiple of charge units under the Water Act.

As these are effectively statutory charges, the prices for these services have been held constant.

A schedule of these charges is outlined in Figure 8.3.10

*Figure 8.3.10 – 2005/06 Schedule of Charges*

| Details | 2005/06 ($) | 2006/07 ($) | 2007/08 ($) |
|---|---|---|---|
| **Fire Service (per service)** | $306.00 | $306.00 | $306.00 |
| **Urban Developer Charges (per lot)** | | | |
| Developer Charge – Water 'Growth Corridor' | $840.00 | $512.50 | $525.00 |
| Developer Charge – Wastewater 'Growth Corridor' | $800.00 | $512.50 | $525.00 |
| Developer Charge – Water - Non 'Growth Corridor' | $610.00 | $512.50 | $525.00 |
| Developer Charge – Wastewater Non 'Growth Corridor' | $430.00 | $512.50 | $525.00 |
| Developer Charge – Wastewater (Halls Gap) | $2,100.00 | $512.50 | $525.00 |
| Developer Charge – Water (Halls Gap Pomonal) | $3,000.00 | $512.50 | $525.00 |
| Developer Charge – Water (Halls Gap Pomonal) | $1,500.00 | $512.50 | $525.00 |
| **Charge Unit (Units): Urban Charges** | $8.50 | $9.00 | $9.00 |
| **Connection Charge – Water #** (tapping size 20 mm) – 17 Charge Units | $144.50 | $153.00 | $153.00 |
| Tapping Charge – Water # - 12 Units | $102.00 | $108.00 | $108.00 |
| **Connection Charge – Wastewater** | | | |
| Residential - 10 Units | $85.00 | $90.00 | $90.00 |
| Commercial & Small Industrial – 15 Units | $127.50 | $135.00 | $135.00 |
| Large Industrial – 30 Units | $255.00 | $270.00 | $270.00 |
| Fire Service Inspection Fee – 5 Units | $42.50 | $45.00 | $45.00 |
| Fire Service Sealing Fee – 5 Units | $42.50 | $45.00 | $45.00 |
| Resealing Service Fee – 20 Units | $170.00 | $180.00 | $180.00 |
| Copy of Block Plan – 1 Unit | $8.50 | $9.00 | $9.00 |
| Meter Readings (Urban/Irrigation) – 3 Units | $25.50 | $27.00 | $27.00 |
| Meter Testing Fee (20 mm and 25 mm) # 7 Units | $59.50 | $63.00 | $63.00 |
| Backflow Prevention Assessment Application - 14 Units | $119.00 | $126.00 | $126.00 |
| Backflow Prevention Renewal – 6 Units | $51.00 | $54.00 | $54.00 |
| Disconnection Fee/Reconnection of Water Supply – 3 Units<br># Higher Charge for Larger Tappings | $59.50 | $27.00 | $27.00 |
| Trade Waste /Administration Fee – 10 Units | | $80.00 | $100.00 |
| **Trade Waste Application Fees** | | | |
| Expected Discharge up to 20 kL/day – 10 Units | $85.00 | $90.00 | $90.00 |
| Expected Discharge >20 kL/day but <100 kL/day – 25 Units | $212.50 | $225.00 | $225.00 |
| Expected Discharge >100 kL/day but <500 kL/day – 50 Units | $425.00 | $450.00 | $450.00 |
| More than 500 kL/day or Special Trade Wastes | On | On | On |

| | application | application | application |
|---|---|---|---|
| **Miscellaneous:** | | | |
| Information Statements | $40.00 | $42.00 | $44.00 |
| Information Statements - Priority | $90.00 | $94.00 | $98.00 |
| Special Meter Reading - Pipeline | $53.00 | $55.00 | $57.00 |
| **Major Trade Waste:** | | | |
| Stawell | Agreement | Agreement | Agreement |
| Ararat | Agreement | Agreement | Agreement |
| St Arnaud | Agreement | Agreement | Agreement |
| Horsham | Agreement | Agreement | Agreement |

# ANNEXURE 1 – CUSTOMER SERVICE STANDARDS

**APPROVED CUSTOMER SERVICE STANDARDS**
**This Schedule expires, and will be automatically deleted from the CUSTOMER CHARTER ON JUNE 2006**

| Approved Service Standard | 2005/2006 Target |
|---|---|
| **Water** | |
| Average number of unplanned water supply interruptions per 100km of water main | 100 |
| Average frequency of unplanned water supply interruptions (number) | 0.1 |
| The maximum number of unplanned water supply interruptions for each customer in any 12 month period (number) | 3 |
| Average time from notification to attend water bursts and leaks (minutes) | 120 |
| Average time to restore an interruption to water services (minutes) | 240 |
| **Sewerage** | |
| Average number of sewerage blockages per 100km of sewer main | 25 |
| The maximum number of sewer blockages for each customer in any 12 month period | 2 |
| Average time from notification to attend sewer spills and blockages (minutes) | 120 |
| Average time to clear sewer blockages in GWMWater pipes (minutes) | 240 |
| Average time to contain a sewer spill (minutes) | 180 |

| **Minimum Flow Rates** | **Size of Pipes** | | | | |
|---|---|---|---|---|---|
| | 20mm | 25mm | 32mm | 40mm | 50mm |
| Flow rate (litres per minute | 10 | 25 | 40 | 60 | 100 |

| **Calculations and Definitions of Service Standards** | |
|---|---|
| Ave 'unplanned' customer minutes off supply = | Total number of unplanned customer minutes to restore water supply/ total number of customers |
| Ave 'unplanned' frequency of water supply interruption = | Total number of unplanned customer-interruptions/total number of customers |
| Ave 'unplanned' frequency of water supply interruption = | Total number of unplanned customer minutes to restore water supply/ total number of unplanned customer - interruptions |
| Total number of customers = | A water customer is a property which at the end of the reporting period is connected to GWMWater's water system; and receives a fixed and/or usage account. |