

Rural City of  
Wangaratta

Sustainable  
Water Use Plan

January 2007

## TABLE OF CONTENTS

<b>MAYOR'S FOREWORD</b> .....	<b>III</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>IV</b>
<b>1. INTRODUCTION</b> .....	<b>1</b>
1.1 About the Rural City of Wangaratta.....	1
1.2 Water Management within the Rural City .....	1
1.3 The Purpose of the Sustainable Water Use Plan .....	3
<b>2. POLICY AND LEGISLATIVE FRAMEWORK</b> .....	<b>4</b>
2.1 State Policy .....	4
2.1.1 Securing Our Water Future Together: Securing Our Water Future Together - White Paper (2004) .....	4
2.1.2 Supply Demand Strategy – North East Regional Water Authority (NERWA).....	5
2.1.3 Victorian Uniform Drought Water Restriction Guidelines – Victorian Water Industry Association.....	6
2.2 WANGARATTA RURAL CITY COUNCIL PLANS AND STRATEGIES.....	7
2.2.1 Council Plan 2005-2009.....	7
2.2.2 Stormwater Management Plan 2003 (SWMP).....	8
2.2.3 Recreation Strategy (2005) .....	8
<b>3. INVENTORY OF CURRENT WATER CONSUMPTION</b> .....	<b>9</b>
3.1 Wangaratta Rural City Council's Corporate Water Use.....	9
3.2 Council's Major Water Consumers .....	10
3.2.1 Swimming Pools .....	11
3.2.2 Open Space.....	12
3.2.3 Playing Fields .....	13
3.2.4 Airport (Aerodrome) .....	14
3.2.5 Cemeteries .....	15
3.2.6 Toilet Facilities.....	16
<b>4. ANALYSIS OF WATER CONSUMPTION DATA</b> .....	<b>17</b>
4.1 The Base Year – 2000-01 .....	17
4.2 Future Water Consumption for Council .....	19
<b>5. WATER CONSUMPTION TARGET AND OBJECTIVES</b> .....	<b>20</b>
5.1 Development of Council's Water Conservation Target.....	20
5.2 Council's Water Conservation Target.....	20
5.3 Objectives to Reduce Council's Water Consumption .....	21
5.4 Water Use Actions Already Undertaken.....	21
5.5 Performance Indicators.....	22
5.6 Costs Associated with Implementation.....	23
<b>6. OVERVIEW OF THE KEY ACTIONS TO REDUCE COUNCIL'S WATER CONSUMPTION</b> .....	<b>23</b>
<b>7. THE WATER CONSERVATION ACTION PLAN</b> .....	<b>27</b>

7.1	Objective One – To be a Leader as a Sustainable Water Manager .....	28
7.2	Objective Two – To Reduce Water Consumption and Encourage Greater Water Efficiency in All Council Operations and Outsourced Activities .....	29
7.3	Objective Three – Continue to Build a Working Relationship with Water Authorities to Develop Water Conservation Programs.....	36
7.4	Objective Four – Increase the Awareness and Understanding of Sustainable Water Use Principles Among Staff and in All Sectors of Council .....	37
7.5	Objective Five – Actively Seek Funding to Facilitate Implementation of Water Saving Actions and to Help Purchase Water Efficient Devices .....	37
7.6	Objective Six – Monitor and Report Annually on Council’s Water Consumption Levels and Their Progress Towards Reaching the Water Reduction Targets .....	38
8.	<b>MONITORING AND REVIEW .....</b>	<b>39</b>
9.	<b>GLOSSARY.....</b>	<b>39</b>
10.	<b>REFERENCES .....</b>	<b>40</b>
11.	<b>APPENDICES.....</b>	<b>41</b>
	Appendix A – Water Use per ICLEI Landuse Category .....	41
	Appendix B – Policy and Legislative Framework that Guides the Development of the SWUP.....	42
	1. International Agreements .....	42
	2. National Water Policy.....	42
	3. Victorian Policies and Strategies.....	42
	Appendix C - Council’s Corporate Water Consumption Percentage and Volume Change Since the Base Year 2000-01 .....	45
	Appendix D – Overview of Funding Opportunities for Sustainable Water Use Projects .....	46

## **MAYOR'S FOREWORD**

Australia is one of the driest places on Earth however despite this fact, we have in the past taken for granted the security of our future water supplies. It is now evident that the impacts of climate change will increasingly act to restrict the availability of water into the future for our region and its communities. As conditions are predicted to become drier, less water will be available for use in the Rural City and it is imperative that immediate action is taken by Council and the community to improve the way we utilise our diminishing water supplies.

The Wangaratta Rural City Council has shown a commitment to addressing the current unsustainable use of regional water resources by joining the Sustainable Water Use Plan Program for Local Government. The Program is delivered by the Department of Sustainability and Environment and has provided Council with the resources and support required to audit Council's water consumption activities and develop a detailed action plan to address priority water management issues for Council.

Council is now in a good position to influence community water consumption and to reduce the demand it places on the Rural City's water resources through implementing this corporate Sustainable Water Use Plan. Through determining where priority actions are needed to address inefficient Council operations and assets, Council's water consumption will be reduced over time and its overall water use efficiency will be improved.

It gives me great satisfaction in presenting the Wangaratta Rural City Council's Sustainable Water Use Plan, a Plan which will not only provide considerable economic savings on future water bills for Council, but more importantly will help Council succeed in reducing the pressure being placed on the region's vital yet increasingly scarce water resources.

We embrace the 35% reduction target for Council's corporate water consumption and are confident that by implementing the recommended actions identified in the Plan, we will significantly improve the availability of water resources for the most vital of uses within our community.

Cr Don Joyce  
Mayor

## EXECUTIVE SUMMARY

Water is an increasingly finite resource; in fact less than 1% of the Earth's fresh water resources are readily accessible for human use. Australia is also the driest inhabited continent on the planet.

Australia's variable rainfall patterns and resultant drought conditions are set to become more extreme. Scientific modelling relating to Australia's changing climate is projecting that there will be drying trends over much of the southern part of the country. Reduced rainfall, higher temperatures and increased evaporation means less water will be available for human consumption and environmental purposes. Human demand is also likely to increase as population growth and development places further stress on Australia's diminishing water supplies.

Recent improvements in our understanding of the need to reduce water consumption, in conjunction with the increasing frequency and severity of drought events across the country, have led to the development of a number of initiatives from governments and industry to better manage our use of water. In Victoria the State Government's *Securing Our Water Future Together* policy sets the framework to achieve sustainable water management. This includes an initiative to assist all councils to produce Sustainable Water Use Plans to better manage their corporate water usage and ultimately reduce their water consumption.

The Wangaratta Rural City Council has developed the Sustainable Water Use Plan to acknowledge and build on Council's current plans and strategies that aim to achieve an environmentally responsive and sustainable municipality. The purpose of the Sustainable Water Use Plan is to provide direction in achieving more sustainable levels of water consumption in Council operations and to encourage the adoption of best practice management among the highest water consuming facilities and operations within Council.

As part of the Plan, the Wangaratta Rural City Council has completed a detailed inventory of all areas of corporate water consumption performance including Council buildings, toilets, public spaces and other enterprises. In doing so Council has developed a greater understanding of its water use. The inventory of Council's water consumption included corporate water consumption data from July 2000 to June 2005, supplied by the North East Regional Water Authority.

This inventory enabled Council to determine where the greatest water consumption was occurring and highlighted various efficiency improvements that could reduce Council's consumption of precious potable water resources. The main water consuming activities of the Wangaratta Rural City Council include the irrigation of open spaces and playing fields, water use within the public swimming pool facilities and the maintenance of reserves.

There are a number of opportunities to achieve water efficiencies and to substitute stormwater for some uses. A consumption reduction target of 35% has been set by Council for its corporate water consumption from the base year (2000-01) to lower consumption levels by 2015. Council has already

implemented measures that resulted in significant reduction in water use in recent years. Implementation of the Plan will build on this work and advantage the community by saving valuable water resources.

The reduction target and the actions proposed in this Plan are flexible, as progress towards the target may be limited to some degree by circumstances that are out of the control of Council. Regular monitoring and a review of the Plan will take place every three years. This will ensure that water saving actions and objectives contained within the Plan remain consistent with Council's goals and will identify if changes need to be incorporated into the Plan to account for other external impacts on water consumption.

The actions contained within the Sustainable Water Use Plan focus on six key objectives (see section 6.3). In the Plan (section 7) actions for each objective describe how Council should reduce its water consumption, the responsibilities involved, estimated costs and savings for each action (where available), and the priority for each action. The actions include initiatives to improve water management in Council operations, reduce consumption through efficiencies and reuse and to increase the awareness of staff and other users of actions to save water at Council facilities.

The Sustainable Water Use Plan approach provides the Wangaratta Rural City Council with an opportunity to lead by example in the community through better water saving awareness, technologies and management practices in Council operations. Additionally, reducing water consumption is also good business, as savings on water bills will only increase as water prices are likely to rise to better reflect the value of potable water to the community.

The Wangaratta Rural City Council would like to acknowledge and thank the North East Regional Water Authority for assistance with water consumption data and advice, and the Department of Sustainability and Environment for their funding support and input which made it possible for Council to develop this Sustainable Water Use Plan.

# 1. INTRODUCTION

## 1.1 *About the Rural City of Wangaratta*

The Rural City of Wangaratta is a thriving municipality located in Victoria's north east region, approximately 235 kms north east of Melbourne. The Rural City is bordered by the municipalities of Indigo, Alpine, Benalla, Mansfield, Moira and Wellington. The town of Wangaratta is the Rural City's largest urban centre with an approximate population of 18,000 people. Other significant rural centers include Everton, Glenrowan, Oxley, Milawa, Moyhu, Peechelba, Springhurst, Whitfield, Whorouly and Eldorado.

The Rural City of Wangaratta consists of a diverse range of beautiful and productive landscapes with the predominant industries in the region including agriculture, forestry, manufacturing, business/retail and tourism. The region is well known for its world class wineries, gourmet food, spectacular scenery, cultural heritage and is an access point to the region's popular State and National Parks. The Rural City also contains an extensive river system. The most significant rivers are the Ovens and King Rivers, which flow through several townships and meet at Wangaratta, before flowing on to the Murray River. The Ovens River has special status as an icon natural river and has been recognised as a Heritage River through the Victorian River Health Strategy. The Lower Ovens River is listed under the Heritage Act.

Management of the municipality's natural resources is vital if future growth is going to be economically and socially sustainable. Resource management needs to be at the forefront of Council's management efforts given its location within a region that is valued for and highly dependent on its natural resource base for tourism, community health and social wellbeing.

## 1.2 *Water Management within the Rural City*

***“Australia is the driest inhabited continent in the world and yet, per capita, we are among the highest users of water in the world. As a nation we are facing one of the biggest challenges of our time: to maintain and sustain water supplies for tomorrow’s Australia”<sup>1</sup>***

The state of Victoria is continuing to get drier. The predicted impacts of global warming and associated climate change are also likely to mean increasingly drier and warmer weather patterns for Australia. The long term trend for north east Victoria is for a decrease in available water as temperatures and evaporation increase.

In light of these forecasts, communities are becoming more aware about the need to be smarter in managing our available water supplies. Water is indeed an increasingly finite resource, for instance

---

<sup>1</sup> State of Victoria 2004: Premiers Foreword - Securing Our Water Future Together; White Paper pg3

of all the fresh water resources on Earth, only 1% is readily available for human use<sup>2</sup>.

***“Water is essential to our everyday lives: we use it for drinking, washing and watering – the very basic human needs. Our communities thrive on it, our economy relies on it and our environment survives on it”<sup>3</sup>***

The Wangaratta Rural City Council recognised the essential importance of water in its 2030 Community Plan, where Council’s objective is to: *“Promote responsible use of resources, particularly water and energy”*.

Council intends to achieve this through its own actions by introducing targets for Council’s water use and implementing actions to achieve targets, and by promoting and implementing best practice water use across the Rural City of Wangaratta. Council also aims to seek cooperative programs with North East Water to reduce water use. The development of a Sustainable Water Use Plan is a key step to implement these actions.

As a response to drought conditions, North East Regional Water Authority (NERWA) initiated voluntary and low level water restrictions between December 2002 and June 2004. NERWA then moved to introduce permanent water saving efforts in 2005 in the form of a Smart Water By-Law, which restricts certain water consuming behaviours among the community, including:

- No sprinklers or watering systems between 10am and 5pm;
- No hosing of paved areas and other impervious surfaces, except in an emergency situation; and
- The compulsory use of a bucket or trigger nozzle on hoses when washing vehicles.

Since 2002 Council has complied with water restrictions and the NERWA Smart Water By-Law. Council’s water consumption was positively influenced by these actions and fell from a peak usage level of 188,570 kilolitres (kL) in 2002-03 to just 129,141kL in 2004-05 when summer rain also reduced use. It must also be noted that a new aquatic centre was constructed in 2003-04, thus the reduction in consumption would be much greater if this high consuming new asset was not included in the 2004-05 data.

There have already been considerable efforts made by Council to abide by the restrictions and to reduce its corporate water consumption. The actions outlined in this Sustainable Water Use Plan will adhere to By-Law requirements and will further contribute to improving Council’s corporate water use by introducing tighter controls and innovative solutions to Council’s water using operations.

As highlighted in the *“Secure Our Water Future Together” White Paper* a target of reducing consumption of potable water by 15% by

---

<sup>2</sup> Water Partners International 2006; Water Facts; Did You Know

<sup>3</sup> State of Victoria 2004: Foreword - Securing Our Water Future Together; White Paper pg5.

the year 2010 has been introduced. A key response is to conserve current water supplies and reduce demand by ensuring fit-for-purpose water supplies are sourced to set aside potable water supplies for the more essential uses among communities.

Local government can play a significant role in the push to conserve the state's water resources. The core actions of councils often consume large amounts of water and there is great potential for improvements in council operations to greatly reduce the pressure on potable water supplies.

The main water consuming functions for the Wangaratta Rural City Council include the irrigation of open spaces and playing fields, water use within the public swimming pool facilities, the maintenance of reserves and water use at the Wangaratta Aerodrome site.

### **1.3 The Purpose of the Sustainable Water Use Plan**

The future of growth of the Rural City of Wangaratta is reliant on a safe and dependable water supply system that is used in a sustainable way. In its operations, Council can contribute to water conservation and demonstrate its commitment to water-wise use. The purpose of this Plan is to provide a strategic framework to help Council improve water management across its various corporate operations. The Sustainable Water Use Plan has:

- Undertaken a thorough inventory of water consumption within Council owned or operated facilities;
- Established a target to guide the reduction of water consumption among Council's corporate operations;
- Identified opportunities to reuse or recycle water through possible fit-for-purpose options for water within the various Council assets and facilities and to reduce the demand for high quality potable water;
- Developed an action plan that provides Council with strategic direction to reduce water consumption within Council's corporate functioning; and
- Facilitated a coordinated approach to achieving more sustainable water management practices across Council departments and the relevant State agencies.

This Plan outlines the actions that the Wangaratta Rural City Council will implement to reduce Council's corporate water consumption rate. In doing so, the demand that Council places on potable water supplies and the costs associated with inefficient water use will be reduced.

Council will determine which facilities are suitable to use alternative water sources such as recycled water or rainwater.

The plan also provides for ongoing monitoring and triennial review. This is crucial to ensure continuous advances are made in Council's understanding of water saving technologies and to maintain best

management practice for water use across the Rural City of Wangaratta. Continual development of the Plan will also allow for changes to be made that ensure the Plan's goals are achieved in a manner that best satisfies Council's situation at the time each action is undertaken.

## **2. POLICY AND LEGISLATIVE FRAMEWORK**

The importance of conserving and protecting water resources and monitoring their consumption within urban and rural communities has become an integral part of the natural resource management framework. The increasing demand being placed on our water resources as a result of continued development and ongoing drought conditions has seen a recent emphasis by governments to address the water resource problem. The future of water management is not unique to Australia, with international agreements now in place to encourage more sustainable water consumption on a global scale to help secure Earth's water resources.

In Australia, sustainable water resource management is recognised by Commonwealth and State legislation. There are a variety of policies and programs in place at all levels of Government to better address the management of our water resources. This Plan recognises and supports the various water management initiatives, as listed in detail in Appendix B, many of which have combined to influence the strategic framework for the Wangaratta Rural City Council's Sustainable Water Use Plan. The key policies and strategies that have led to the development of this Plan are listed below.

### ***2.1 State Policy***

#### **2.1.1 Securing Our Water Future Together: Securing Our Water Future Together - White Paper (2004)**

The *Securing Our Water Future Together* White Paper is a 50 year plan that sets the Victorian Government's agenda for water policy.

The White Paper was developed in recognition of current and future threats to the State's water resources. The White Paper introduces 110 actions that cover all aspects of water resource management including water allocation, smarter uses for irrigation and urban water, protection of rivers and aquifers, better pricing systems and improvements to the water industry.

Water saving initiatives of the White Paper include the introduction of permanent water saving measures, increased re-use of greywater, greater capture and reuse of stormwater, changes to pricing structures and improved provisions to encourage water sensitive urban development.

The White Paper Progress Report states that: *"The reliability of water supply for Victoria's cities and towns continues to be a major focus of the State's reform process. Securing Our Water Future Together is designed to manage the challenge*

*by firstly becoming smarter with how we use existing supplies in cities and towns, while concurrently investing in our water supply system and in alternative supplies such as recycled water and stormwater. Under Securing Our Water Future Together, water supply and demand strategies and sustainable water strategies are driving future resource planning while initiatives such as water saving campaigns are proving highly effective in encouraging smarter water use*<sup>4</sup>.

Since the release of the White Paper, the State's water managers including the water authorities, catchment management authorities and local councils have all made significant progress towards implementing water saving initiatives.

Approximately 17% of Victoria's water is being used in urban areas. Local councils have a major role in encouraging and demonstrating efficient water management practices, and many are now leading the way towards more sustainable practices. The Sustainable Water Use Program was launched by the Department of Sustainability and Environment (DSE) in May 2005 and provides an opportunity for Victoria's 48 regional councils to apply for funding of up to \$10,000 to help develop water conservation strategies to reduce their corporate water use. The main water using facilities within councils can include parks and gardens, pools, municipal buildings and sporting fields.

The Sustainable Water Use Plans aim to identify the consumers of water within councils and the respective amounts of water used. The plans also set reduction targets and investigate and recommend water saving actions to help reduce the corporate water consumption of participating councils.

### **2.1.2 Supply Demand Strategy – North East Regional Water Authority (NERWA)**

The *Securing Our Water Future Together* White Paper set a requirement that all Victorian water authorities prepare a Supply Demand Strategy (SDS) to guide developments towards more sustainable water use into the future.

NERWA is developing a Water Supply Demand Strategy to plan for the sustainable management of water in north east cities and towns over the next 50 years. The draft SDS will be submitted to DSE by November 2006, and will satisfy the

---

<sup>4</sup> State of Victoria 2005, Progress Towards Securing Our Water Future 04-05; Our Water Future – p.27

Victorian Government's framework for water supply planning outlined in the White Paper.

NERWA has a bulk entitlement for sourcing surface water that is issued by the Victorian Government, and provides for the region's potable water needs. Water entitlements are granted under the Murray Darling Basin CAP to regulate the water being extracted from the river system. These entitlements set out limits of water that NERWA can extract and treat to Australian drinking water standards. Entitlements are divided up across the state to allow water use by urban customers, agricultural industries and the environment. NERWA also sources groundwater under license to supply some rural locations.

The role of the SDS is to ensure that future water supply allocations are able to meet future demand for potable water. The SDS incorporates population growth figures and the impact of climate change to gauge the future demand likely to be placed upon potable water in north east Victoria. At the same time the volume of water that can be extracted from rivers and groundwater is limited by NERWA's bulk entitlements and groundwater licenses. To ensure that demand for potable water does not exceed supply in the future NERWA, through the implementation of numerous actions within the SDS, will address the challenges of providing a long-term reliable potable water supply plan for north east Victorian communities.

### **2.1.3 Victorian Uniform Drought Water Restriction Guidelines – Victorian Water Industry Association**

The continuing dry conditions over the past 8 to 9 years for most of the state have seen many water authorities implement water restrictions in accordance with their Drought Response Plans.

The Victorian Water Industry and the State Government felt that the different levels of restrictions and policies between water authorities resulted in a degree of confusion among Victorian communities. As a result, the Government, the Victorian Water Industry and the State's numerous water authorities have coordinated to develop a uniform water restriction policy that will be applied across the State in times of drought.

The Uniform Drought Water Restriction Guidelines contain a four-stage approach to restrict certain water uses and behaviours, with tighter restrictions placed on the less essential uses for water as the stages progress. Level four is the highest stage of water restriction during which only the most essential uses for water are permitted.

Some of Council's corporate operations have the potential to be influenced by the water restrictions, particularly the irrigation of open spaces and playing fields, the filling and top-up of Council's swimming pools and the cleaning of equipment and machinery.

There is potential for Council, through the development of this Plan, to be permitted certain exemptions from some of the restrictions imposed on the community. For instance, by showing the water authority that Council has improved its water management efficiency to the best possible standards for its various operations, then Council may be permitted to continue to irrigate certain open spaces or high use playing fields, or continue to top-up pools during the earlier stages of restrictions.

**It is therefore vital that Council act to implement as many reduction actions as possible in this Plan, as evidence of improved water efficiency will permit Council to apply for a reduction in restrictions that could otherwise interrupt some of Council's core operations.**

## **2.2 WANGARATTA RURAL CITY COUNCIL PLANS AND STRATEGIES**

The Wangaratta Rural City Council has a number of policy documents and strategies that guide the Council's operations and its approach to sustainable water management. The most relevant strategies to this Plan are detailed below.

### **2.2.1 Council Plan 2005-2009**

The Council Plan 2006-2010 is the primary strategic document that defines the strategies required to drive the operations of Council. Every time a Council is elected, it must prepare a Council Plan within six months of the election date. This Council Plan, which was adopted in June 2006, outlines the main goals that the Wangaratta Rural City Council wants to achieve over the next four years and outlines the actions required to achieve their vision and goals. Council's vision is: 'The Rural City of Wangaratta - A vibrant, diverse and secure place to live'. One component of the Rural City's mission is to 'preserve and enhance our heritage and the environment'.

The Council Plan has eight key result areas which are the focus of Council's activities over the next four years to help advancement towards achieving Council's objectives.

The most relevant key result areas for this Sustainable Water Use Plan are the 'Environmental Management' and 'Infrastructure Services' result areas. Under the Environmental

Management key result area, Council efforts are targeted to ensure the community will gain an enhanced quality of life by:

- Experiencing and valuing a healthy, diverse and exciting natural environment;
- Conserving and enhancing the natural landscape; and
- Using natural resources responsibly.

Under the key result area of Infrastructure Services, Council will provide infrastructure appropriate to community needs that are managed in a sustainable way.

### **2.2.2 Stormwater Management Plan 2003 (SWMP)**

The Wangaratta Rural City Council adopted its Stormwater Management Plan (SWMP) in March 2003. Stormwater is run-off from urban areas and can potentially carry pollutants into waterways and adversely impact our creeks, rivers and lakes.

The key objective of the SWMP is to improve the management of stormwater in urban areas across the Rural City in order to protect and enhance the environments of receiving waters. The Rural City of Wangaratta contains two major waterways which receive stormwater, the Ovens and King Rivers, as well as two streams of significance, the One Mile Creek and Three Mile Creek.

The SWMP includes measures to reduce stormwater pollutants at their source and implement treatment measures on major drainage outfalls. The Sustainable Water Use Plan is linked with the SWMP as the former will contain actions that can reduce flows into stormwater systems, thereby contributing Council to progress towards achieving the targets within the SWMP.

### **2.2.3 Recreation Strategy (2005)**

The Wangaratta Rural City Council adopted its Recreation Strategy in August 2005. Recreation is an important ingredient in Wangaratta's community life.

The Strategy identifies with the philosophy that the provision of quality recreation opportunities will enhance the Rural City of Wangaratta as a desirable place to live and to visit. The focus of the Strategy is to encourage recreation participation at all levels.

The Rural City of Wangaratta has vibrant sporting and recreation activities that depend on the maintenance of aquatic facilities, sports grounds and reserves. These sites are major water users that have been affected by water restrictions. This Plan identifies actions to maintain these recreational facilities in a more sustainable way.

### 3. INVENTORY OF CURRENT WATER CONSUMPTION

The most significant component of this Plan is a thorough inventory of the Wangaratta Rural City Council's corporate water consumption, which was undertaken during April and May 2006.

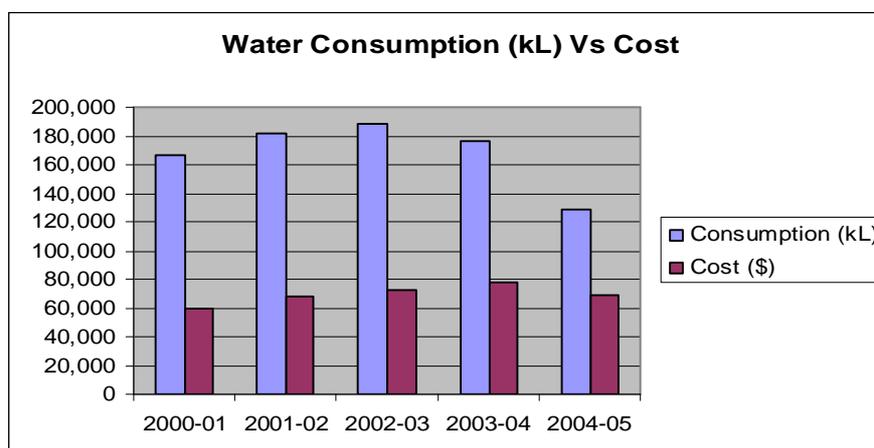
Water consumption data for Council's operations was obtained from NERWA for the financial years of 2000/01, 2001/02, 2002/03, 2003/04 and 2004/05. The data relates to potable water that is supplied by NERWA to metered sites. Analysis of the data enabled an understanding of the issues surrounding Council's water management and highlighted the importance of continued reporting and monitoring of water consumption data to ensure future trends in water consumption can be acted upon where required.

#### 3.1 Wangaratta Rural City Council's Corporate Water Use

The water consumption pattern over the last five years for the Wangaratta Rural City Council's corporate operations shows an initial increase in water consumption from 2000-01 levels to a peak in consumption of 188,570kL in 2002-03 (see Figure 1 below).

After this peak was reached, water consumption gradually declined across Council, with the majority of facilities and operations managing reductions in their consumption. The decline in consumption during 2003-04 was caused mainly by water restrictions being enforced within the district which impacted on the irrigation of parks, ovals, gardens and median strips.

Further reductions in water consumption were made during 2004-05 under the influence of the restrictions, the introduction of the Smart Water By-Law by NERWA and the other water efficiency efforts incorporated into Council's operations. The total water consumption for Council operations for the 2004-05 financial year was 22% lower or 36,806kL less than the total consumption figure for the base year (2000-01).



**Figure 1.** Water Consumption and Cost for the Wangaratta Rural City Council  
(Data Source: NERWA)

Note: In 2003-04 a pool leak increased consumption by approximately 25,000kl. Normal consumption was approximately 150,000kl.

### 3.2 Council's Major Water Consumers

The Wangaratta Rural City Council's main water-consuming landuse category in 2004-05 was swimming pools, for which 33% of Council's water consumption total during that period can be attributed. Some other high water-consuming categories include open spaces (22% of 2004-05 consumption), playing fields (21%), airport (7%), cemeteries (4%) and toilet facilities (3%) (see Figure 2 below) Other uses are toilets, cemetery, saleyards and gardens.

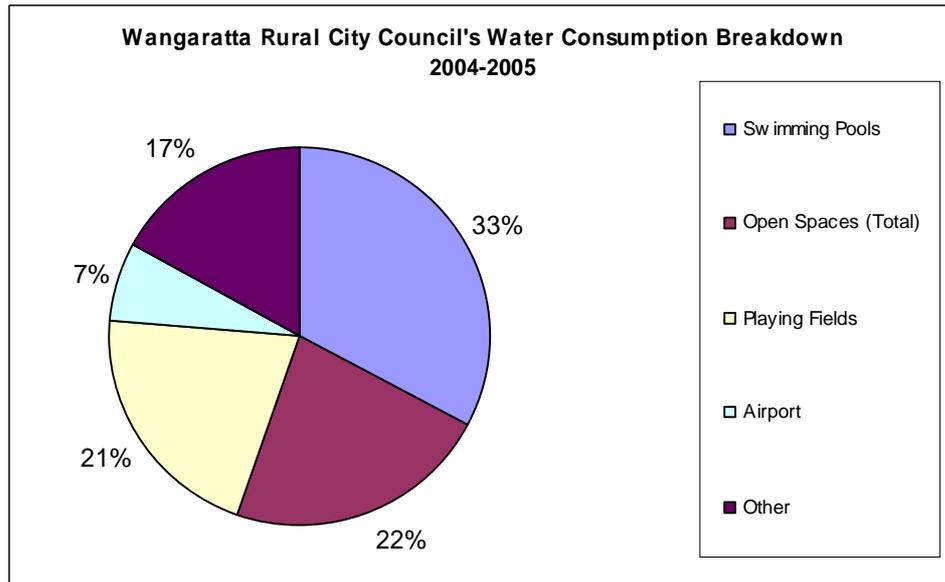


Figure 2. Council's Major Water Consuming Categories for 2004-05

Council's landuse categories that have increased their levels of water consumption from 2000-01 to 2004-05 are highlighted in Appendix C, and include the cemetery, cultural buildings, miscellaneous buildings and the public toilet facilities. The increase in consumption by public toilets, however, may be misleading as there were three new toilets developed by Council since 2001-02 which combined to use 1,017kL in 2004-05. Therefore if the new facilities were not included in the 2004-05 data, then consumption by the toilet facilities would not have experienced a dramatic increase.

The categories that have had the most significant reductions in water consumption between 2000-01 and 2004-05 include playing fields (ovals and soccer fields), gardens, swimming pools (despite a new indoor pool being added to Council assets in 2002-03), open spaces (reserves, medians and roundabouts), the depot and the airport (Aerodrome).

Interestingly, some of the biggest reductions in water use were made among the categories where irrigation was the main water use (open spaces, playing fields and gardens), which are traditionally Council's highest water users (see Appendix C for changes in consumption).

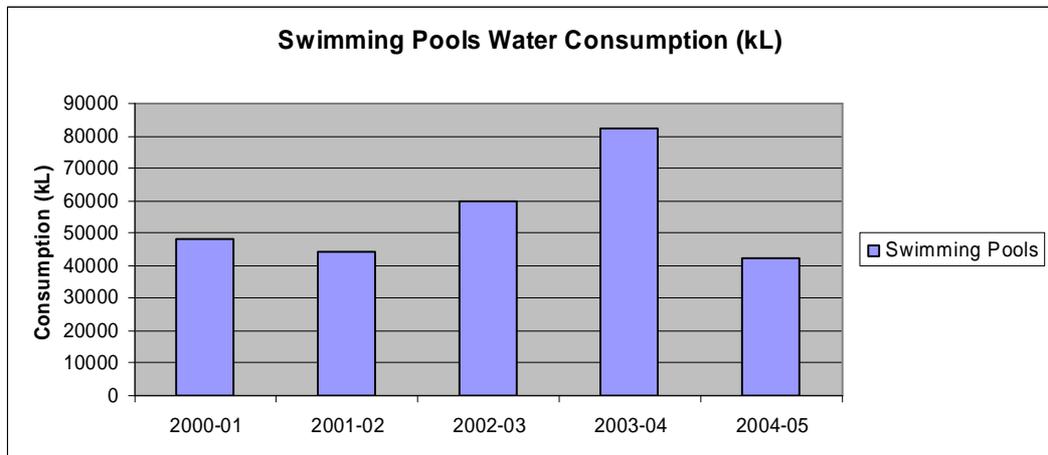
The highest individual water users (individual metered sites) within the high water-use categories among Council are summarised in Table 1 below. The high water-use categories across Council's operations are described in more detail in the following sections.

**Table 1.** High Using Individual Facilities for the High Water-using Categories

<b>Category</b>	<b>2004-05 Usage</b>
<b>Pools</b>	42,304kL
<b>Open Spaces</b>	15,149
<b>Playing Fields</b>	26,896
<b>Airport</b>	8,670kL
<b>Cemeteries</b>	4,678kL
<b>Toilet Facilities</b>	2,788
<b>Saleyards</b>	2,643kL
<b>Gardens</b>	645kL

### **3.2.1 Swimming Pools**

The Wangaratta Rural City Council's three swimming pool facilities combined to be the highest water consuming landuse category during 2004-05, with 33% of Council's total consumption of 42,304kL in usage (see Figure 3 below). Council also developed a new indoor pool facility at the Barr Reserve which opened in 2002-03, hence data for this facility only exists from the 2002-03 financial period onwards. Despite an additional pool being added to this category, in 2004-05 the swimming pool category's water consumption still dropped from the base year level of water use.



**Figure 3.** Water Consumption Trends at Council’s Swimming Pools

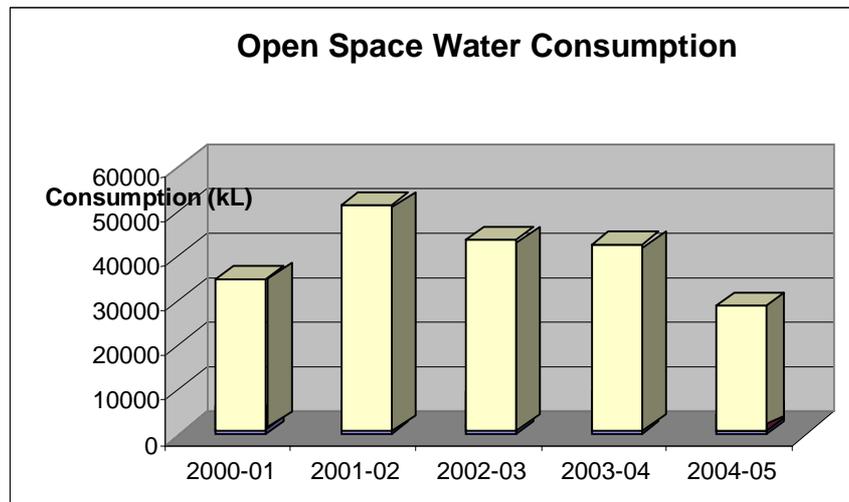
Overall consumption for swimming pools has reduced since the spike during 2003-04 of 82,380kL in usage. This may be attributed in part to restrictions and reduced irrigation at the pools, but predominantly because of leak remediation works that have recently been completed at the Swan Street swimming pool.

There is scope to further reduce the water consumption at these facilities through retrofitting water efficient fittings and devices into pool change rooms, leak identification programs, repairs and maintenance, and investigation of fit-for-purpose use of alternative water sources such as rainwater and recycled backwash water.

### 3.2.2 Open Space

The open space category includes reserves, parks, playgrounds, median strips and roundabouts, where irrigation is the predominant use for water. Open spaces account for 22% of Council’s 2004-05 water consumption or 28,998kL in usage (see Figure 4). The Wangaratta Rural City Council has numerous open space areas that consume water and play an important role in providing the community and visitors to the region with beautiful parklands and settings.

The most significant water consuming open spaces for 2004-05 are the parks and playgrounds, and include Merriwa Park (10,805kL), Rotary Park (2,719kL), Brien Crescent Reserve (1,625kL) and Batchelors Green (1,255kL). Medians and roundabouts were much smaller water users than reserves, however when combined over the Rural City, they do consume significant amounts of water.

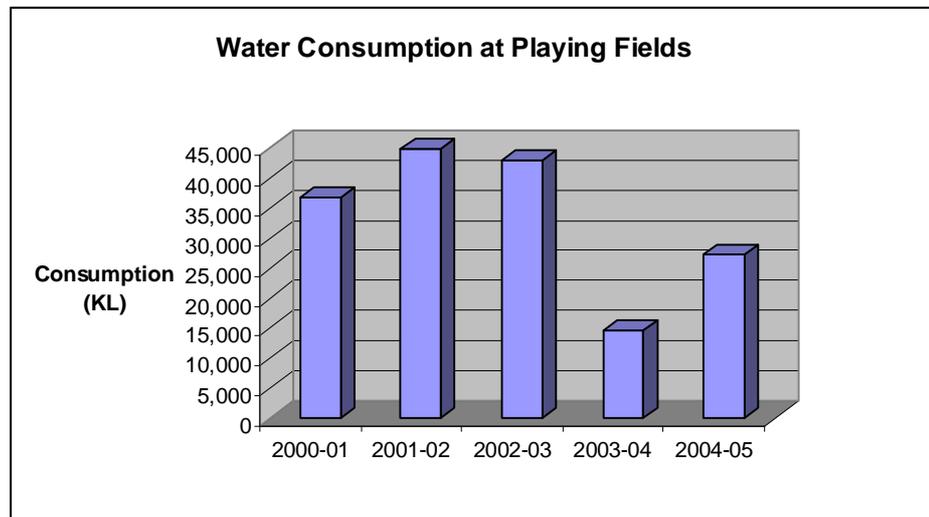


**Figure 4.** Water Consumption Trends at Council's Open Space Facilities

Total water consumption for Council's open space category has reduced by 16.4% or 5,708kL from 2000-01 levels of consumption. This reduction is likely a result of water restrictions and the influence of the permanent Smart Water By-Law. Despite some reduction in consumption for open space, there is still scope for further reductions to be made in this area by methods that may include but are not restricted to reducing grassed areas, encouraging replanting with xeric (low water dependence), species and landscapes and improving the efficiency of irrigation systems.

### 3.2.3 Playing Fields

The playing field category accounted for 21% of Council's 2004-05 usage and includes consumption at the South Wangaratta Sports Complex and Speedway (14,389kL usage for 2004-05), Appin Street Athletics Reserve (6,556kL), Bindall Avenue Oval (3,567kL), Wareena Oval (2,384kL) and Wonga Park Oval (383kL) (see Figure 5). Playing fields are traditionally very large consumers of water which is predominantly used for the purposes of irrigation. However, there have been considerable reductions in consumption by these facilities since the peak usage levels that occurred during 2001-02.



**Figure 5.** Water Consumption Trends at Council’s Playing Fields

There was a dramatic reduction in consumption during 2003-04 by Council’s playing fields caused by the introduction of water restrictions during the drought and some irrigation improvements. The restrictions limited the times that ovals were able to be watered (not allowed to irrigate between 10am and 5pm) and dramatically lowered water consumption.

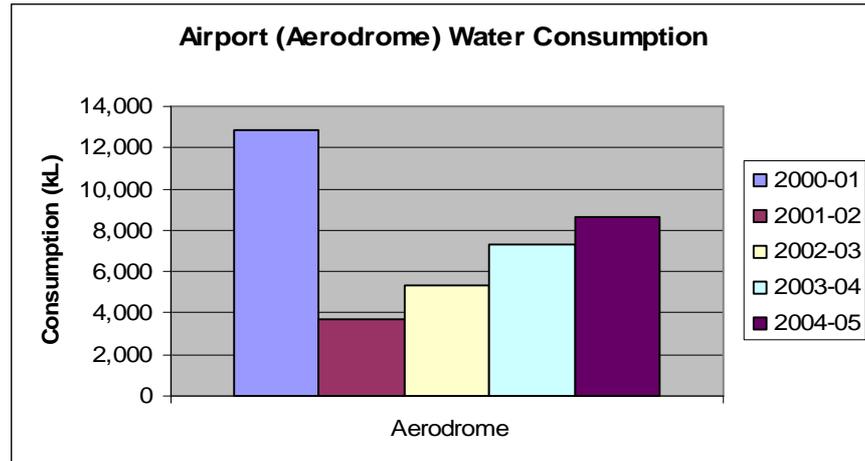
The restrictions were lifted initially after 2002-03 however, the introduction of the permanent Smart Water By-Law soon after this time has seen consumption by these facilities remain lower than the peak levels achieved before the water restrictions came into force. Consumption for 2004-05 was 26% lower or 9,580kL less than consumption levels during the base year (2000-01).

Despite considerable headway being made into water consumption at these sites, there are still issues that can be resolved to further reduce consumption. Possible improvements include the investigation of solutions to current low water pressure issues which are limiting the effectiveness of irrigation systems, investigation of other water sources, introduction of automated systems for all ovals, incorporation of rain sensors or soil moisture sensors to control the timing of irrigation systems and studies into the feasibility of using water retention crystals or similar turf technologies to improve irrigation efficiency.

### 3.2.4 Airport (Aerodrome)

The consumption total for the airport category (Wangaratta Aerodrome) includes the airport building, aeroplane hangers, public toilet facilities and a residential building. Consumption at the site peaked in 2000-01 at 12,853kL (see Figure 6) and was likely the result of major leakages in the pipeline that runs from South Wangaratta, where the meter is located, to the airport

site some distance away. Repairs were made to the pipe in 2001-02 to address the leakage problems however, the gradual increase in consumption that occurred in the years following 2001-02 is likely to be caused by additional leakage problems occurring along the pipeline.



**Figure 6.** Water Consumption Trends at the Airport Facility

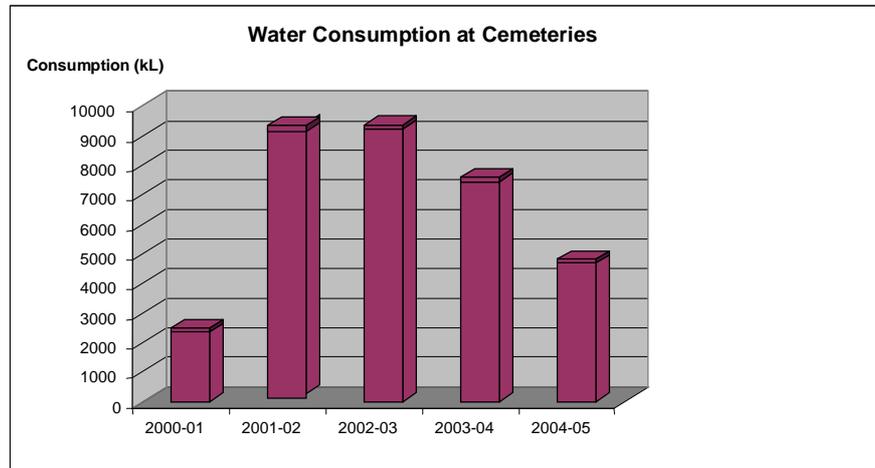
There is great scope for reducing consumption at this site, at the forefront of which is the possibility of drawing from an alternative water source(s) such as rainwater and/or treated bore water to replace the use of potable water at the site. This may allow the removal of the pipeline that has in the past had, and continues to have, leakage issues and will therefore save a large volume of potable water.

### 3.2.5 Cemeteries

Total consumption for the cemetery category in 2004-05 was 48.5% higher or 2,340kL more than consumption levels for the base year (see Figure 7). This increase is likely a result of increasing land being used for the cemetery and the introduction of a new irrigation system at Tone Road.

After two consecutive years with water consumption levels over 9,000kL, the Tone Road Cemetery accessed a storage dam for stormwater flows from a nearby industrial area, with dam water now contributing to the water that is used for irrigating the cemetery's lawns. This alternative supply has helped reduce potable water consumption at the Tone Road site.

Despite improvements being made, further improvements are possible through introducing better irrigation technology and by investigating opportunities to source greater volumes of stormwater in the place of potable water for irrigation purposes.



**Figure 7.** Water Consumption Trends at Council's Cemetery Facilities

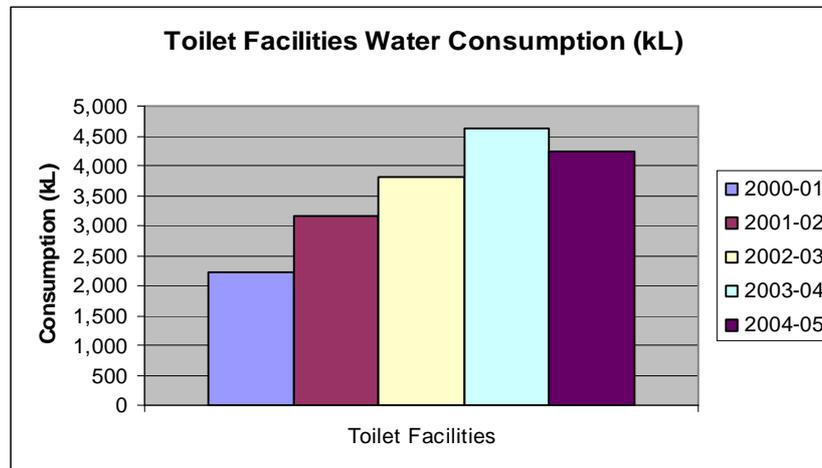
### 3.2.6 Toilet Facilities

The toilet facility category includes all public toilet facilities in the municipality where the toilet is the greatest consumer of water at the metered site. Some sites in this category also have limited irrigation that may influence consumption at the site, but the majority of water consumption for a normal year is attributed to use within the toilet itself. Public toilets accounted for 3% of Council's total consumption for 2004-05 with a total usage of 4,242kL (see Figure 8).

The apparent increase in consumption since 2000-01 by this category can be misleading as there have been three new toilet facilities added to Council's assets since 2000-01 which combined used 1,017kL in 2004-05, but were not included in 2000-01 figures. If these new facilities are taken from the 2004-05 consumption total, then water consumption among the toilets would only have increased by 1,012kL from 2000-01 levels.

The increase in consumption by public toilets is still considerable and needs to be addressed. Given that some toilet facilities have outdated fittings and appliances, there is considerable scope for reducing consumption across public toilet facilities in the municipality.

The increases in water consumption, other than those caused by the new facilities, may have been caused by some increased usage of toilets by the public, as well as increased leakages within the toilet facilities.



**Figure 8.** Water Consumption Trends at Council’s Public Toilet Facilities

Possible solutions to consumption problems at the toilet facilities may include, but are not limited to actions such as retrofitting high use toilets with water efficient fittings, sourcing alternative water supplies for toilet and urinal flushing, introducing an ongoing monitoring program to identify and quickly repair leakages, and introducing an education, awareness and related signage program to explain the importance of water efficiency to the public. Additionally, contact numbers should be provided on site to facilitate reporting of amenity leakages or vandalism by members of the public.

## 4. ANALYSIS OF WATER CONSUMPTION DATA

### 4.1 The Base Year – 2000-01

A data baseline profile has been established to give context to Council’s normal water use levels. The financial year of 2000-01 was selected as it best reflects Council’s water usage before it was influenced by drought, water restrictions and the introduction of the permanent Smart Water By-Law.

Water consumption patterns are influenced by numerous elements and it is important that the collection of data remains consistent. The financial year of 2000-01 was selected as the base year against which future consumption will be measured, because this best reflects Council’s “business as usual” water use being a year of average annual rainfall before drought conditions in 2001 to 2003. However, it must be noted that Council developed a new pool facility which opened in 2002-03, hence this pool’s consumption data is not represented in the 2000-01 data list. Council’s base year water usage would therefore have been slightly higher if this facility existed in 2000-01.

When comparing annual rainfall levels over the past five years (see Table 2), the base year (2000-01) experienced close to average annual rainfall totals (Wangaratta’s average is 638mm) according to

Bureau of Meteorology rainfall data for the weather station at the Wangaratta Airport.

The driest year was 2002-03 with a rainfall total of only 433mm. Table 2 shows that Council's water consumption increased initially in 2001-02 and increased further in 2002-03, in-line with reduced rainfall, to a peak usage of 188,570kL.

Council's potable water consumption then dropped during 2003-04 with increasing rainfall, and then reduced further in 2004-05 with Council using 129,141kL under the influence of closer to average rainfall levels. *\*Note that the 2000-01 rainfall total includes an average to account for one month's rainfall data that was missing from the Bureau of Meteorology's records.*

**Table 2.** Council's Water Consumption vs Annual Rainfall for Wangaratta

<b>Financial Year</b>	<b>Council Consumption (kL)</b>	<b>Rainfall Total for Period (mm)</b>
<b>2000-01</b>	<b>165,947</b>	<b>620</b>
<b>2001-02</b>	<b>181,497</b>	<b>490</b>
<b>2002-03</b>	<b>188,570</b>	<b>433</b>
<b>2003-04</b>	<b>175,915</b>	<b>923</b>
<b>2004-05</b>	<b>129,141</b>	<b>619</b>

*Note:*

Rainfall total adjusted for one month's missing data.

Normal usage estimated as 150,000kl. Excess use due to pool leak.

(Source: Bureau of Meteorology 2006)

The initial increase in consumption during 2001-02 is likely to have been a result of increasingly dry conditions which caused Council to use more water for irrigation to maintain open spaces and playing fields.

With increasing rainfall in 2003-04 and average levels in 2004-05, the demand for water for irrigation purposes within the municipality was reduced. However, this dramatic reduction in water consumption was also caused by the introduction of varied levels of water restrictions between 2002 and 2003 and the introduction of the permanent Smart Water By-Law by NERWA. This is the reason 2000-01 was selected as the base year as it shows Council's water use behaviour before drought and associated restrictions had any influence on Council's operations.

It is also worth noting that there are difficulties when comparing annual water consumption with annual rainfall figures, as it is seasonal (summer) rainfall totals that have the greatest influence over water consumption. The figures in Table 2 represent annual rainfall totals for the financial year however, the variances in rainfall during the summer months would have the greatest effect on Council's water consumption.

With less rainfall, Council would normally irrigate more to maintain open space areas and sporting grounds, therefore one would assume consumption levels would normally increase, as was indeed the case. In 2003-04, water usage was inflated due to a pool leak (Swan Street pool). Normal usage in 2003-04 has been estimated to be 150,000kl.

Comparing future water consumption to base year levels will facilitate greater consistency in reporting of Council's corporate water consumption and will allow for comparisons to be made between water consumption among different councils and regions. Reporting from 2000-01 will also take into account the good work that has already been achieved by Council.

Reliable water consumption data was vital for the development of this Plan, as this data was used to guide the development of water conservation objectives and the reduction target, and will facilitate Council's ongoing monitoring of progress that is made from the Plan's specified actions. The target is long-term and has been set with consideration of the effects of annual rainfall and climatic variations.

The continual collection and analysis of consumption data will provide a better understanding of Council's water consumption patterns, identify any anomalies that need to be addressed and provide evidence of water savings made across Council's activities as actions from the Plan are implemented.

#### **4.2 Future Water Consumption for Council**

If there are no water saving actions undertaken and operations remain unchanged across Council, then it is likely that Council's future water consumption will either remain relatively stable or slightly increase with growing populations and increased demand for services by the Rural City community and visitors to the region. With increasing costs associated with water use and decreasing water availability, it is in the best interest of Council to work towards reducing its water consumption.

At this stage there are few planned acquisitions such as land purchases or building developments for Council in the near future that may significantly increase Council's water consumption. There may be developments in the future that do place greater demand on water resources. For any council led development that does occur within the municipality in the future, it is expected that it will incorporate water saving features and result in only slight increases in water demand over time.

As Council's water use is expected to remain relatively stable, the possible impact of water saving measures can be predicted without having to allow for future growth.

The reduction target set by Council will take into account the possibility of slight increases that may occur to future consumption levels, and the flexible nature of the Plan will absorb and adapt to any future developments that do eventuate and act to influence Council's future water consumption levels.

## 5. WATER CONSUMPTION TARGET AND OBJECTIVES

### 5.1 *Development of Council's Water Conservation Target*

The water consumption inventory has provided Council with a clear picture of the amount of water used across the municipality in different locations and land use types. From the information gathered by the inventory, Council has developed water conservation objectives and a target to aspire to in managing Council's water resources more sustainably into the future.

The water use reduction target is an endorsed public statement of Council's approach to water conservation throughout its operations. The reduction target is expressed as a percentage of the base year's (2000-01) total water consumption. The target was developed in consultation with relevant Council managers, officers, water authorities and DSE. The water conservation targets are quantified and justified by actions to ensure that Council can achieve the set target. In establishing the reduction target, the following elements were taken into account:

- Trends in water consumption levels among Council's assets over the last five years;
- State Government target of 15% per capita reduction in drinking water consumption by the year 2010;
- North East Regional Water Authority per capita reduction target for drinking water of 20% by the year 2015;
- Rainfall trends for the region (assumed to average out over time);
- Improvements in water management already made by Council (pool repairs, reduced irrigation of parks, open spaces and playing fields);
- Possible additions to Council assets that may impact on water consumption including acquisition of buildings and open spaces: and
- The water savings available from the actions that are most likely to be introduced by Council as part of the action plan within this Plan.

### 5.2 *Council's Water Conservation Target*

The Wangaratta Rural City Council realises the importance of leading by example, and the water use reduction target below will challenge this.

***To reduce the Wangaratta Rural City Council's corporate water consumption by 35% from 2000-01 base-year levels by 2015.***

Monitoring of progress towards achieving the reduction target will be made against the Council's 2000-01 consumption level of 165,947kL. Achieving the 35% reduction target will result in a saving of approximately 58,081kL of potable water from 2000-01 levels by the

year 2015, with Council's target corporate water consumption being 107,866kL.

Over the past 5 years, the Wangaratta Rural City Council has achieved a 22% reduction in its water use (from 2004-05 to 2000-01). This reduction can be attributed to a number of water saving initiatives undertaken by Council and the introduction of mandatory water restrictions. Council will continue to enhance its sustainable water management efforts to maintain the current water savings, and implement actions from this Plan to achieve a total 35% reduction in water consumption by 2015.

It must be noted that the amount of water consumed for irrigation purposes is highly dependant on rainfall, hence there is expected to be some annual variations in water savings. However, Council is confident that it can reduce its total water consumption by 35% from 2000-01 levels by the year 2015. To ensure that progress is being made, the reduction target will be reviewed by Council every three years and altered where necessary to reflect any changes in Council's circumstances.

### **5.3 Objectives to Reduce Council's Water Consumption**

There are six key objectives that have been established to help guide the water consumption reduction actions that are detailed in the remaining sections of this Plan and are as follows:

1. To be a leader in the community as a sustainable water manager;
2. To reduce water consumption and encourage greater water efficiency in all Council operations and outsourced activities;
3. Continue to build a working relationship with water authorities to develop water conservation programs for Council;
4. Increase the awareness and understanding of sustainable water use principles in all sectors of Council;
5. Actively seek funding to facilitate implementation of water saving actions and to help purchase water efficient appliances and devices for Council assets; and
6. Monitor and report annually on Council's water consumption levels and their progress towards reaching the water reduction targets.

### **5.4 Water Use Actions Already Undertaken**

The Wangaratta Rural City Council has already begun to address its water consumption by undertaking significant actions to reduce consumption in several key areas. In fact, all but five land use types for Council (cemeteries, toilet facilities, town halls, cultural buildings and miscellaneous buildings) have reduced their water consumption since 2000-01 (see Appendix C).

The greatest reductions in water consumption across Council activities have occurred in those land use types that use water predominantly for irrigation purposes (see Figure 2). As previously

mentioned, Council has adapted its irrigation practices to move in-line with the requirements of the new Smart Water By-Law.

In addition to reduced irrigation and rationalising of Council's open spaces, considerable reductions have also been achieved across some of the other land use categories including the swimming pool category, the depot category, the airport category and the recreation centres category.

Table 3 below highlights the most significant actions that have recently been undertaken by the Wangaratta Rural City Council in an attempt to reduce its corporate water consumption and to improve water use efficiency.

**Table 3.** Recent Significant Actions Taken to Reduce Water Consumption

COUNCIL ACTION	DATE COMPLETED	ESTIMATED SAVING
Reduced irrigation frequency of some reserves and open spaces	On-going	Dependant on climatic conditions
Repair of leaks in outdoor pool at Swan St Swim Centre	2004	39,000kL reduction from previous year (2003-04)
Investigation of the feasibility of alternative water sources at facilities	On-going	To be determined (TBD)
Water fountain decommissioned at Ryley St (Merriwa Park)	2003-04	2500kL
Water fountain at Reid St / Murphy St roundabout repaired	2006	TBD
Replacement of cooling towers at Wangaratta Offices and Town Hall	2005-06	TBD
Use of stormwater run-off at the Wangaratta Cemetery to supplement potable water for irrigation	2003-04	TBD
Monitoring of Brash Avenue Swimming Pool to identify source of leakages	On-going	TBD

## 5.5 Performance Indicators

It is important that Council's progress towards the water use reduction target be monitored using performance indicators. The performance indicators are listed in Table 4 below and will measure the success of the water saving actions in achieving Council's water conservation objectives and target.

In order to measure the success of reduction actions, Council will benchmark water consumption data annually against baseline consumption data to provide an analysis of the progress being made towards the reduction target and to ensure continued adoption of more sustainable water management practices by Council.

**Table 4.** Indicators to Show Advancement in Water Efficiency by Council

Performance Indicators	Target for 2015
Reduction in annual water consumption (kL)	Council water consumption to decrease 35% from baseline 2000-01 consumption rate
Increase in the annual amount of water	All suitable sites investigated for reuse /

reused / recycled (kL)	recycling potential
Increase in the amount of water efficient/AAA+ rated water appliances (or better if available)	All high use facilities (>50kL pa) to have water efficient fittings/ appliances. All new buildings and renovations to have water efficient fittings and appliances.
Increase the number of education and awareness raising opportunities at Council facilities	All public facilities where water conservation or substitution has occurred to have educational signage.

## **5.6 Costs Associated with Implementation**

The ongoing implementation of this Sustainable Water Use Plan will occur over the next 9 years. Where it was possible and when sufficient information existed, estimated costs of implementing each reduction action have been noted in the action plan. Given there are multiple variables associated with a number of the reduction actions, some actions are not fully priced in the Plan, and must be more thoroughly investigated prior to implementation.

Funding for the water reduction initiatives will be sought through various Federal and State Government funding opportunities as detailed in Appendix D (Stormwater and Urban Water Conservation Fund, Smart Water Fund, Community Water Grants and/or Sustainability Fund) and through the Wangaratta Rural City Council's annual budgeting process and capital works program.

While the potential return on Council's investment may be considered low with regards to the cost of water saved by reduction actions compared with the capital costs involved with implementation, Council needs to take a leadership role in the community to demonstrate a shift in attitude and management.

The true cost of water is expected to significantly increase and there will be considerable savings for Council in the long term. Furthermore, water is increasingly being recognised as an important resource for sustainable populations and Council's practices and policies need to change to provide long-term social and environmental benefits to the Rural City's community.

## **6. OVERVIEW OF THE KEY ACTIONS TO REDUCE COUNCIL'S WATER CONSUMPTION**

Table 5 below provides a brief overview of the main water consumption reduction actions that are to be implemented through this Plan. Note that the Table only provides a summary of the various actions included in this Plan. Please refer to Tables 7.1 to 7.6 in the following action plan section for more detail on specific actions, assets or land use categories.

A key option of the Plan is the appointment of a program facilitator to coordinate implementation of the Plan. Current staff resources in Council do not allow for an existing staff member to adopt this role.

An application has been made to the Commonwealth Smart Water Fund for funding to employ a joint facilitator with Alpine, Benalla and Indigo shires. If this application is unsuccessful in early 2007, Council

will need to consider Council funds to employ a facilitator in the future budget process.

**Table 5. Summary of the Actions to Reduce Council's Water Consumption**

Action Type	Action	Description	Priority
<b>Administration</b>	SWUP Facilitator	Hire a regional SWUP Facilitator, or give the responsibilities to an existing staff member.	High
	Develop database	Develop a database to track water consumption and works at each Council asset.	High
	NE Water data	NERWA to send electronically to facilitate entry into consumption database.	High
	Funding applications	SWUP Facilitator to seek grants funding to help implement priority reduction actions.	Ongoing
	Water restrictions	Council to ensure restrictions are being met by staff and Oval Management Committees.	Ongoing
	Water Use Group	Form a multi-disciplinary group to oversee the implementation of the SWUP.	Med
	Regular monitoring	Monitor meters and water data regularly to quickly ID and repair leakages at sites.	Med
<b>Policy</b>	Procedural regulations	Develop regulations for pool management that conform to best practice pool operations.	High
	Update building guidelines	Include water efficiency requirements for all designs and developments.	Med
	Update purchasing policy	Water efficiency to be considered for all future purchases / developments by Council.	Med
	Update planning policy	WSUD and water efficiency to be promoted / enforced through new planning policy.	Med
	Review tendering process	Tender process to include criteria that address water efficiency and sustainability.	Med
	Review lease agreements	Include water efficiency requirements and/or payment for water used by lessee.	Med
	Cleaning contracts	Include requirement to use high pressure for outdoor toilets and leak ID training.	Med
	Irrigation policy	Develop an irrigation policy that limits the time water can be applied to open spaces.	Med

**Table 5. Summary of the Actions to Reduce Council's Water Consumption**

<b>Education</b>	Support staff training	Ongoing notification/support for staff about relevant courses on water efficiency, reuse and recycling.	High
	Encourage sweeping	Reduce the occurrence of hosing practices where possible and encourage sweeping instead.	High
	Alternative sources	Staff and contractors to be encouraged to source truckfill from non-potable sources.	High
	Contractor briefings	Contractors to be briefed on water efficiency and importance of reporting leakages.	High
	Hanger sprinkler system	Encourage the owner of the Aerodrome hanger to decommission the sprinkler system on the roof.	High
	Reduce irrigation	Less irrigation in low public-use parks with signage to explain reasoning for action.	High
	Education program	Signage for toilets and high use areas. Water efficiency material to be made available.	Med
	Publicise efforts	Actions by Council and SWUP results to be publicised through various media channels.	Med
	Water Use Plans	Encourage Oval Management Committees to develop their own Water Use Plans.	Med
	Staff induction sessions	To have a water-wise component, explain Council policy and have water saving tips.	Med
	Information sessions	Council to hold regular staff information sessions on water use and SWUP outcomes.	Med
	Website links	Council website to have outcomes from recent water-wise actions and useful links.	Med
	Regular publications	SWUP progress / outcomes to be promoted via various promotional media.	Med
	Best practice example	Develop a showcase water efficient site (toilet, building, garden, reserve etc).	Low
<b>Investigations</b>	Raintanks for Depot Sheds	Install tanks with rainwater to be used for truckwash, truckfill and toilet flushing if possible.	High
	Water pressure issues	Investigate (with NEW) solution to water pressure issues to solve the related irrigation problems.	High
	South Wang Reserve	Investigate options and other water sources (bore, stormwater, recycled) for ovals and speedway.	High
	Aerodrome water source	Investigate other source (bore water / rainwater for use at site – remove meter if possible).	High
	Pool management	Review current management practices to ensure best practice pool management is occurring.	High
	Keep pools full	Investigate the savings possible from keeping pools full over winter – with auto pump to circulate water.	High
	Stormwater usage	Investigate potential for increasing the volume of stormwater used by the Tone Rd Lawn Cemetery.	High
	Wonga Park Oval	Investigate other water source (bore, rainwater) for irrigation use on Oval and school toilet flushing.	Med
	Raintanks for Pools	Install tanks with rainwater to be considered for pool top-up and/or toilet and urinal flushing.	Med
	Raintanks general	Investigate suitability for all buildings where adequate roof and use for water exists.	Med
	Retrofit program	Investigate retrofitting of all high use toilet/ kitchen/ shower facilities with water efficient fittings.	Med
	Waterless urinals	Trial waterless urinals in a suitable building, if successful, use for all future urinal installations.	Med
	Soil moisture sensors	Trial use for high irrigation area(s) and monitor savings made. Roll out across Council if successful.	Med
	Chemical treatments	Trial water retention crystals or similar water-saving technology at high use irrigation sites.	Med
	Appin St Athletics Oval	Investigate alternative sources and options for site including bore, stormwater or rainwater.	Low
	Greywater re-use	Investigate the use of greywater for irrigation or other use at all suitable sites across Council.	Low
	Depot recycling unit	Investigate purchasing a recycling unit to recycle truckwash water for reuse at Depots.	Low
	Saleyard recycling unit	Investigate potential for installing a recycling unit for truckwash and yard hose-down water for reuse.	Low
	Truckwash water source	Investigate alternative sources of water for the Saleyard truckwash and/or yard hose-down.	Low
	Backwash recycling unit	Treat and reuse pool backwash water for pool top-up and/or toilet and urinal flushing.	Low
	Machinery purchase	Investigate purchase of turf renovating machinery (corer etc) to improve water efficiency of irrigation.	Low
	Revolving fund	Investigate feasibility of starting a revolving fund with water savings to fund future works.	Low

**Table 5. Summary of the Actions to Reduce Council's Water Consumption**

<b>Works</b>	Trigger nozzles	Purchase nozzles for all hosing applications and make their use mandatory.	High
	Flow restriction valves	Install valves on all taps and showers where high flows are not required.	High
	Audit high users	Audit high use sites, especially those using more water but with little change to past management.	High
	Review all water features	Check for leaks, ensure water is re-circulated, seek alternative water source, ban operation during drought and cut-off non-essential water features.	High
	Decommission meters	Identify and cut off meters that are not required i.e. those that have not been used for some time.	High
	Remove showers	Remove unused showers from public toilets.	High
	Reduce grassed areas	Stop irrigating and/or convert grass to native gardens or pavers etc where suitable.	High
	Review mowing heights	Ensure optimum grass length is maintained over summer to reduce evaporation and stress.	High
	Mulch program	Use mulch on all suitable plantings.	High
	Drought species	Replant suitable ovals, parks and grassed areas with drought tolerant grass species.	High
	Replant gardens	Use native and or low water-use species in all future plantings, replant where suitable.	Ongoing
	Grouped plantings	Future plantings to be grouped according to water requirement to reduce over watering.	Ongoing
	Irrigation system updates	Automate all irrigation systems. High users to have additional water wise technology.	Med
	Replace tap heads	Key-style tap heads for all non-essential taps to prevent taps from being turned on by public.	Med
	High pressure cleaner	To be used for all suitable hose cleaning practices i.e. hosing out public toilets. Frequency of all hose cleaning practices (depots, toilets) to be reduced.	Med
	Install check meters	Install at sites with numerous water users at the one meter (i.e. reserves with toilets and pools).	Med
	Dual flush toilets	Replace all single flush cisterns with 6/3 duals or the most suitable dual cistern for the pan.	Med
	Low-flow shower heads	Replace all inefficient heads with low-flow types with flow rates of 9 litres per minute or less.	Med
	Aerated taps	Place aerators on all hand-wash taps and all other suitable taps across council.	Med
	Push-button taps	Install timed push-button taps for all high use toilets and hand wash stations.	Med
	Sani-sleeve system	Install sani-sleeve style product in high use urinals to reduce flush to 4 times per day per urinal.	Med
	Alternative sources	Other water sources to be sought for all suitable high use sites/ assets (tanks, river, bore water etc).	Med
	Leak ID programs	Regular leak audits for Council's irrigation systems, toilets and pools to facilitate quick repairs.	Med
Drip irrigation	Convert spray irrigation to drip systems where suitable (gardens, medians etc).	Med	

## **7. THE WATER CONSERVATION ACTION PLAN**

The water conservation action plan (Tables 7.1 to 7.6) details the actions that Council can take to ensure its own operations and facilities are water efficient. In doing so will reduce Council's annual potable water consumption. This includes reduction of water use through actions such as training, changes in operation and installation of water efficient devices and reuse and recycling at appropriate facilities. Actions should also be extended to facilities that currently use water sourced through license agreements (river or bore water) as improved efficiencies in this area are also important for securing our water future.

The Plan actions are organized within six key water consumption activities:

1. To be a leader in the community as a sustainable water manager;
2. To reduce water consumption and encourage greater water efficiency in all Council operations and outsourced activities;
3. Continue to build a working relationship with water authorities to develop water conservation programs for Council;
4. Increase the awareness and understanding of sustainable water use principles in all sectors of Council;
5. Actively seek funding to facilitate implementation of water saving actions and to help purchase water efficient appliances and devices for Council assets; and
6. Monitor and report annually on Council's water consumption levels and their progress towards reaching the water reduction targets.

The reduction actions contain indicative costs associated with implementation where possible, although site specific projects and actions need to be costed in detail before implementation. The priority column in the action table indicates the recommended importance/timing of each action's implementation depending on the potential water savings versus the potential costs of the action. High priority actions have greater potential for reductions or are less expensive and take priority over medium and low priority actions.

The time-line for the priorities is recommended as:

- 'High' – investigate or implement as soon as possible
- 'Medium' – investigate/implement within 5 years
- 'Low' – investigate/implement when possible but before 2015
- 'Ongoing' - the action needs to be continued for the life of the Plan.

The exact timing of many projects will depend on other programs and opportunities. Council's maintenance and refurbishment program will be expanded to include water saving improvements as projects occur. Major projects will often depend on external funds from State and Federal governments to improve affordability. Investment by Council is offset in part by water cost reductions and also has a positive influence on community attitudes to the sustainable use of water by Council.

## 7.1 Objective One – To be a Leader as a Sustainable Water Manager

Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Water Saving	Details	Priority
1.1	Assign portfolio responsibilities of SWUP facilitator to an employee who will develop database (see action 1.2), investigate & develop projects & procedures, apply for funding and monitor all actions. Apply for a funding grant to fund a regional position in cooperation with other councils – Or monitor water consumption data using existing staff resources.	Environment		Internal cost (or \$30,000 pa for part-time SWUP Officer).	Not Available (NA)	Assign staff member / Officer by mid 2007.	High.
1.2	Develop a water consumption database that incorporates meter locations, consumption volumes and associated costs provided by NE Water, and track works that have been put in place to address water use at metered sites. Update database with new installations or changes as they occur.	SWUP Facilitator/ Information Technology	Base data established	SWUP Facilitator	NA	Develop database by 2008.	High.
1.3	Provide for water saving considerations to be included in sustainable building guidelines to ensure that all new and refurbished Council buildings consider ways to reduce potable water consumption and increase water reuse and harvesting opportunities.	SWUP Facilitator Planning Unit/ Facilities	Saving methods considered, document required	SWUP Facilitator	NA	Guidelines to be updated by 2008.	Med.
1.4	Incorporate water efficiency into the purchasing policy criteria of council to ensure new appliances are water efficient (e.g. Dual flush toilets, waterless urinals, AAA+ rated showerheads, push-button and aerated on taps, AAA+ rated dishwashers and washing machines).	SWUP Facilitator Environment	Saving methods considered, document required	SWUP Facilitator	NA	Policy to be updated by 2008.	Med.
1.5	Investigate a policy that promotes water efficiency in new residential developments including the principles of Water Sensitive Urban Design (WSUD), compulsory installation of water efficient fittings and appliances, use of on-site water retention in tanks and the the potential for the storage and reuse of greywater, stormwater and other waste water for fit-for-purpose uses such as toilet flushing and irrigation of gardens. Potential for large scale storm/waste water storages should be investigated where water stores can be diverted from storage for use on nearby reserves or sporting facilities in the place of potable water. Such a policy when developed will be incorporated into the Wangaratta Rural City Council Planning Scheme, and accord with State Government policy	SWUP Facilitator/ Planning Department		SWUP Facilitator	NA	Planning policy to be updated by 2009.	Med, Ongoing.
1.6	Review the Council's tendering process to ensure that criteria address the need for water efficiency and sustainable measures including water efficient devices.	SWUP Facilitator/ Facilities		SWUP Facilitator	NA	Criteria to be updated by 2008.	Med.
1.7	Review lease agreements on Council owned properties (pools, sports grounds etc) to include payment for water consumption and/ or requirements for lessees to meet specific water conservation requirements.	SWUP Facilitator/ Infrastructure		SWUP Facilitator	NA	Lease agreements to be updated by 2008.	Med.
1.8	Develop a best practice example(s) (office building, community centre, toilet, gardens etc) to show the community a workable demonstration of a state of the art water efficient facility and irrigation system (include efficient appliances and fit-for-purpose water sources).	TBD		To be determined (TBD)	NA	A best practice example to be developed by 2015.	Low.
1.9	Construct and install educational signage about water saving and provide explanations where water saving actions or devices have been implemented i.e. low-flow showerheads, waterless urinals, rainwater for toilet flushing etc. Signage to include a contact number that people can call to notify Council about leakages or problems with public toilet facilities to facilitate fast identification and repairs of leaks.	Public Relations/ Parks & Gardens/ Facilities		TBD	TBD	Signs to be designed by 2008. Installation ongoing in-line with works undertaken.	Med, Ongoing.
1.10	Report / publicise annually to the community via a Council newsletter or other public relations effort regarding Council's water consumption reductions and its achievements from recent implemented actions.	Public Relations/ SWUP Facilitator	Established	Internal cost	NA	First report by July 2008 (July 2007 if sufficient action taken).	Med, Ongoing.
1.11	Investigate all high and medium priority actions in Objective 2 and develop a detailed schedule of timing (in conjunction with Council's asset maintenance plan) and costs.	SWUP Facilitator		SWUP Facilitator			

## 7.2 Objective Two – To Reduce Water Consumption and Encourage Greater Water Efficiency in All Council Operations and Outsourced Activities

Facility Type	Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
General Broad	2.1	Investigate the feasibility of upgrading the Council's irrigation systems. At minimum ensure all systems are automated, and for all high use irrigation areas to include linkage with soil moisture sensors, rain sensors, Micromet irrigation system (linked to weather station data and central control system) or similar technology where possible.	SWUP Facilitator/ Parks & Gardens	Commenced	TBD – \$100 to \$1000 per auto system - depends on no. of valves in use. \$1800 moisture and temp sensor \$50 rain sensor \$12,000 Micromet.	Costs and savings for irrigated areas dependant on system.	Automation will allow watering at later restriction stages.	Med.
	2.2	Investigate the purchase of turf renovating machinery / equipment (corers, aerators etc) to facilitate regular improvement to Councils irrigated lawns and their soil structure/ infiltration levels etc.	SWUP Facilitator/ Parks & Gardens	Within regular maintenance of sports grounds	TBD	TBD	Improves efficiency of irrigation systems.	Low.
	2.3	Review the mowing heights used by Council's Parks and Gardens Crew to ensure that grass length is kept at an optimum height during warmer months to reduce evaporation levels and heat stress on grassed areas.	SWUP Facilitator/ Parks & Gardens		No cost	TBD	Savings difficult to quantify.	Med, Ongoing.
	2.4	Support training courses for relevant staff and contractors on water sensitive gardening, water re-use systems, rainwater tanks, and water efficient products.	SWUP Facilitator	Commenced	\$5000	NA	SWUP Facilitator to inform staff of upcoming courses.	High, Ongoing.
	2.5	Provide trigger nozzles for all hose fittings for use during all cleaning and hosing down practices (toilet cleaning, vehicle wash, pool practices etc) and inform staff or contractors of the reasoning behind using trigger nozzles.	SWUP Facilitator Facilities	Commenced	\$10-\$30 per nozzle.	1,550kL savings possible pa (1.2% saving across Council).	60% less flow than normal hose. % saving assumes 20% hoses already have trigger nozzles.	High.
	2.6	Remove the tap heads from all non-essential taps (replace heads with key style tap fittings), with particular emphasis on those that are likely to be left dripping / running (public toilets, parks etc). Ensure Council staff have access to key-style tap heads so taps can be used when required, but will not be left running or used by public for undesirable purposes.	SWUP Facilitator/ Infrastructure		\$20-35 per key-style tap head.	TBD	Permanently remove unused taps. Saves water lost from vandalism, taps left running, non-desirable uses.	Med.
	2.7	Encourage the use of sweeping techniques for cleaning as opposed to hosing down of concrete where possible. Where hosing is required, encourage the use of trigger nozzles at minimum or high-pressure unit where possible (consider making high pressure cleaning mandatory in cleaning contracts for public toilets) and reduced frequency of hosing. Council to abide by Smart Water By-Law at all times.	SWUP Facilitator/ Contractors/ Infrastructure	Commenced	No cost (or \$300 - \$800 for pressure unit if Council to purchase).	630kL saving possible if high pressure used to hose toilets (1% saving).	\$700 mobile Gerni high pressure cleaning unit uses up to 80% less water than a normal hose.	Med.
	2.8	Review the metered sites that have consistently had very low water consumption and assess the possibility of decommissioning the water meters that are not required for future use.	SWUP Facilitator/ Infrastructure	Underway	Cost to cap meter at main	Minor annual saving	Saves over \$300 per meter pa in meter reading/ maintenance fees.	Low
	2.9	Investigate the feasibility of installing check meters on the highest water using facilities at sites where there are numerous water users. Priority sites include: <ul style="list-style-type: none"> <li>Saleyard</li> <li>Depot</li> <li>South Wangaratta Sports Complex / Speedway.</li> </ul>	SWUP Facilitator		Check meters from \$80 each, higher cost for larger diameter pipes.	NA	Allows accurate measuring of water usage and savings from actions.	High
	2.10	Produce educational material and signage for all Council	SWUP Facilitator/		\$5000 to \$10,000	NA	Public toilet signage is	High

Facility Type	Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
		facilities to include water savings tips and best practices, and to explain Council's reduction actions to staff / public. Signs to be installed at high water use locations including bathrooms, toilets, kitchens and vehicle washdown stations.	Public Relations/ Parks & Gardens				priority.	
Buildings	2.11	Audit / monitor the highest using buildings within Council for which there is a history of increasing water use but little change in past management. To include inspection of amenities for quality and leakages, and including but not limited to the following facilities: <ul style="list-style-type: none"> <li>• Art Gallery</li> <li>• Shire Offices</li> <li>• Public Hall</li> <li>• Kindergartens.</li> </ul>	SWUP Facilitator/ Facilities		Cost for consultant assessment	TBD	Monitor water meter when water not being used, test for leaks, install check meters if required etc.	High.
	2.12	Install flow restriction valves (appropriate size for each purpose) in all high use buildings and toilets to restrict the flow through taps and other fittings than don't require high water flows / pressure. Not to be fitted to fittings which require high pressure or fast fill i.e. toilet cisterns.	SWUP Facilitator		\$5 to \$20 per fitting valve – depending on the pressure required. One valve for entire building from \$65.	20-50% saving per tap, 20-60% saving per shower, 10 - 25% saving if one valve used for entire building.	Difficult to quantify possible savings – too many variables. Price depends on meter size and pressure required.	Med.
	2.13	Develop a retrofit program for high consumption buildings - Install dual flush toilets, waterless urinals (or Sani-sleeve), low-flow showerheads and tap aerators and restrictors (tap timers) in all high use Council facilities.	SWUP Facilitator/ Facilities		Dual flush cistern only \$120+ In-wall dual cistern only \$350+ Dual flush complete \$500-600 Single urinal \$500+ Waterless urinal \$1000+ Push-button tap \$120+ Low-flow shower head \$60+	Duals save av. 5 litres per use. Single urinals save 5 to 20 liters/ use from bank urinal. Waterless 100% saving. Low-flow heads save 40-70% from old style showers.	Too many variables to estimate savings across Council. Actual savings to be determined on a site by site basis depending on fittings and usage levels.	High.
	2.14	Install flow restriction valves, AAA+ appliances, dual flush toilets, waterless urinals, low-flow showerheads and tap aerators and regulators (timers) in all Council refurbishments and future developments (incorporate requirement into purchasing and planning policy).	SWUP Facilitator/ Infrastructure	Underway	TBD	TBD	Incorporate water efficiency into planning policy.	High, Ongoing.
	2.15	Investigate the feasibility of installing raintanks (or other suitable alternative water source) at all appropriate buildings (with large roof and space for tanks) for use as toilet flush, irrigation or other suitable purpose.	SWUP Facilitator	Commenced	\$2,500 to \$10,000 for tanks and \$1100 for Davey Rainbank system for av. building.	Dependant on site type, roof size and uses for rainwater.	Priority sites are high users with suitable plumbing.	Med.
	2.16	Investigate the feasibility of developing a showcase building (toilet, community centre, house or other similar asset) to demonstrate to the community how best practice water efficiency can be incorporated into such a facility to reduce water consumption. Include educational material, public relations and appropriate signage (see Action 1.8).	SWUP Facilitator		TBD	TBD	Choose a high use public asset / site for showcase.	Low.
	2.17	Ensure that irrigation systems associated with buildings are all automated systems (convert manual systems to automated systems) and review the irrigation practices and gardens surrounding Council buildings to: <ul style="list-style-type: none"> <li>• Investigate gardens that are suitable for replanting with native/ xeric species to reduce water consumption</li> <li>• Investigate grassed areas that could be converted into xeric gardens or other low/ no water use area</li> </ul>	SWUP Facilitator/ Parks & Gardens	Underway	Dependant on site and system.  Greywater systems from \$1000.	TBD	Greywater reuse suitable for sites with high flows through showers and taps, with irrigation use for water.	Med.

Facility Type	Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
		<ul style="list-style-type: none"> <li>Ensure gardens are appropriately mulched and not over watered (grouped plantings with like water requirements)</li> <li>Investigate alternative sources of water where gardens are using large amounts of water (rainwater tanks, greywater etc)</li> <li>Reduce amount of annual species by replacing with perennial plants where possible (not in significant gardens / memorials).</li> </ul>						
<b>Swimming Pools</b>	2.18	Retrofit all swimming pool facilities (where required) with flow regulation valves, dual flush toilets, waterless urinals (or sani-sleeve), low-flow showerheads with timers, tap aerators and regulators (timed shut-off).	SWUP Facilitator		TBD - See action 2.13	TBD	Showers first priority as they are usually biggest user and have energy savings too.	Low
	2.19	Investigate the feasibility of installing raintanks at suitable pool locations (higher users with an adequate sized roof for capture – i.e. Aquatic Centre and Swan St Pool). Rainwater collected to be used for pool top-up (pending health dept. approval), toilet and urinal flushing, irrigation and other appropriate fit-for-purpose uses.	SWUP Facilitator		\$25,000 Raintanks, plumbing and pumps.	TBD – depends on roof size and uses for water.	Verbal approval for rainwater as pool top-up gained from DHS, but need approval in writing also.	High (ag centre)
	2.20	Investigate the feasibility of treating and reusing backwash water for pool top-up and other fit purposes including irrigation (after holding tank) or toilet flushing. Best suited to pools with large amount of backwash water generated.	SWUP Facilitator/ Environmental Health/ Facilities	Commenced	\$70,000 to \$80,000 for reverse osmosis treatment unit, tanks and plumbing if for pool top-up (less cost for just irrigation).	TBD - 70% of pool backwash reused, 30% waste sent to sewer after treatment.	May be useful for irrigation only – i.e. won't require treatment unit and be much cheaper.	High (ag centre)
	2.21	Investigate the feasibility of maintaining full swimming pools over winter where possible (when not in need of repairs) to reduce the need to fill for the following season (provided savings in water will outweigh the costs of chemical or other implications involved) or pump water to storage for reuse. If keeping full, investigate installing automated recirculation pumps to save staff labor and allow operation during off peak times to save energy costs.	SWUP Facilitator/ Environmental Health/ Facilities		TBD	TBD	Require accurate costing and ongoing monitoring. Ensure pools are not leaking first (Being trialed by Indigo Shire – wait for results).	Low.
	2.22	Investigate the need to install separate meters on the main water consuming appliances or users within each swimming pool facility (indoor pool and outdoor pool make-up, amenities etc) to provide a more accurate representation of usage and to provide reduction options for reducing the consumption of the highest users at the pools.	SWUP Facilitator/ Facilities		Meters from \$80 but more expensive for larger pipes.	NA	Provides accurate picture of potential savings and current water uses / losses.	Med.
	2.23	Design and undertake a regular leak identification program at each facility to monitor water consumption and track other evidence of pool and amenities leakages.	SWUP Facilitator/ Facilities	Established	Internal cost	TBD	Check meters may assist here.	Med.
	2.24	Install automated irrigation systems if the current systems are deemed to be inefficient, and where available, source alternative supplies to be used for irrigation (rain tanks, backwash water).	SWUP Facilitator/ Parks & Gardens		TBD	TBD	If backwash / raintanks installed, link to irrigation system.	Med.
	2.25	Review the management processes / practices being undertaken at the swimming pools to determine if current practices conform to best management practices for public pools and to determine if further improvements to water efficiency could be made. Consider developing procedural regulations to ensure future pool operators follow best practice management for the pool's operations.	SWUP Facilitator/ Facilities	Underway	Internal cost	TBD	Undergo regular audits on pool water usage and involve contractors – quickly address any increases in water consumption.	High, Ongoing.
<b>Open Spaces (medians,</b>	2.26	Reduce the amount of open space watering where possible. Investigate the feasibility of options to lower irrigation	Parks & Gardens/ SWUP Facilitator	Established	TBD	TBD	Costs and savings are site and system	Med.

Facility Type	Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
roundabouts, reserves)		including letting some low-use areas brown-off over summer (with educational material to explain reasoning to the community), replace grassed areas with xeric landscaping (natives, mulch and drought tolerant species) and grouped plantings (hydro-zones) with like water requirements.					dependant.	
	2.27	Consider replacing grass in roundabouts / medians with native gardens, paving or other low water use or waterless medium where suited.	Parks & Gardens/ SWUP Facilitator	Reviewed	TBD	TBD	May have OH&S benefits for staff by removing need to mow in traffic areas.	Med.
	2.28	Investigate the feasibility of replacing or updating the irrigation equipment in all open space areas (at minimum all of the highest using reserves and open spaces). Options may include: <ul style="list-style-type: none"> <li>Converting all irrigation systems to automated and timed systems</li> <li>Installation of rain or soil moisture sensors for highest using systems (or Micromet)</li> <li>Convert spray irrigation to drip or subterranean (soaker tube) systems where appropriate.</li> </ul>	Parks & Gardens/ SWUP Facilitator	Commenced	TBD \$100-1000 for automated system. \$1800 for soil moisture system. \$50 rain sensor. \$12,000 per system for Micromet.	TBD	Costs and savings dependant on current system and technology adopted.	Med.
	2.29	Investigate the feasibility of, or trial the use of water crystals or similar chemical treatment of the high water use open spaces and playing fields to reduce water consumption, while taking into consideration costs, benefits, and possible environmental impacts.	Parks & Gardens/ SWUP Facilitator	Trail commenced	Rain-saving crystals \$38/kg (10g to 20g per m2 for turf – applied in root zone).	TBD – dependant on site	Crystals suitable for turf, trees and gardens when being established.	High.
	2.30	Consider developing a showcase water efficient garden, reserve or other open space to demonstrate to the community how water savings can be achieved.	Parks & Gardens/ SWUP Facilitator		TBD	TBD	Cost dependant on site. High public visitation site priority for showcasing.	Low.
	2.31	Replant suitable reserves and grassed open spaces with drought tolerant grass species and winter growing grasses such as kikuyu or couch species to reduce the need for water to keep the areas green. Ensure invasiveness of species is considered before planting near waterways or native bush areas.	Parks & Gardens/ SWUP Facilitator	Established	\$5,000 to \$20,000 per park/ reserve.	20 to 30% water savings possible per irrigated site.	Drought tolerant species often more hardy and less maintenance than winter grasses.	Low.
	2.32	Prepare an Open Space Plan for Council, containing initiatives that reduce water consumption, including but not limited to: <ul style="list-style-type: none"> <li>Investigation of alternative water sources such as recycled water, lake/river water or rainwater</li> <li>Replanting program with drought tolerant species</li> <li>Increased use of organic mulch for new and suitable plantings</li> <li>Incorporation of warm season (drought tolerant) grasses onto all irrigated open spaces</li> <li>Grouped plantings of like-species or species with similar water requirements</li> <li>Maintenance program for irrigation equipment to regularly monitor leakage and performance of systems</li> <li>Investigation of areas that may be suitable for reductions to irrigation frequencies to reduce over watering</li> <li>Restrictions on timing and frequency of watering behaviours for all open spaces (including grounds operated by management committees).</li> </ul>	SWUP Facilitator		Internal cost	TBD	Open Space Plan may provide benefit to Council by gaining exemptions from certain stages of drought water restrictions.	Med.
Playing Fields	2.33	Investigate water pressure problems at playing fields and its impact on irrigation systems at various open spaces and	NE Water/ SWUP Facilitator		TBD	TBD	Low-pressure irrigation systems are	High.

Facility Type	Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
		playing fields and, in cooperation with North East Water, develop solutions to the problem to achieve more efficient and effective irrigation (south Wangaratta Reserve).					available if no solution is found (or reduce the no valves per bank).	
	2.34	Investigate alternative water sources or other reduction options for the South Wangaratta Sports Oval and Speedway. Options at the site include but are not limited to: 1. Bore water for Oval irrigation, speedway use and toilet flushing where possible; 2. Stormwater for above uses; 3. Treated industrial waste water for speedway use (toilet flush and water trucks) or irrigation of Ovals after dilution or additional treatment of water; 5. Upgrade the irrigation systems to an efficient standard.	NE Water/ Goulburn-Murray Water/ SWUP Facilitator		TBD	TBD		High.
	2.35	Investigate alternative water sources or options for Wonga Park Oval. Options at the site include: 1. Capture of stormwater from the school roof for use in toilets at school and irrigation of Oval 2. Investigate feasibility of selling the Oval to the school.	SWUP Facilitator/ School Committee		TBD	TBD	Cooperative project with the school may be able to secure grant funding.	Med.
	2.36	Investigate alternative water sources and option for Appin St Athletics Oval. Options for the site include: 1. Bore water for irrigation 2. Rainwater for toilet and urinal flushing 3. Upgrade of irrigation system.	SWUP Facilitator		TBD	TBD		Low.
	2.37	Review the irrigation systems and practices at all playing fields and ensure that all systems are automated and timed systems and that efficient use of water is being achieved.	SWUP Facilitator/ Parks & Gardens	Commenced	TBD	TBD		Med.
	2.38	Retrofit all public toilet facilities, kitchens, showers and club rooms at all playing fields where required with water efficient fittings. Develop program – see 2.13.	SWUP Facilitator/ Facilities	Included in programmed refurbishment	TBD (see action 2.13)	TBD	Costs are dependant on site / systems.	High.
	2.39	Encourage all sports ground management committees to consider their water consumption and push for the development of water management plans for each facility. Plans to include actions to reduce water consumption and seek alternative water sources.	Property Manager/ SWUP Facilitator/ Management Committees		No cost	NA	Plans will help Ovals when water restrictions are in force by achieving best practice.	Med.
	2.40	Council to ensure that Management Committees are abiding by the water restrictions imposed at any time and that they are following the rules in place with the Smart Water By-Law.	Property Mgr (WS Rovers)/ Management Committees		No cost	TBD	Lease agreements to include watering schedule.	High, Ongoing.
<b>Airport</b>	2.41	Investigate the need to install check meters at the major water consuming facilities at the airport site and monitor to determine water requirements of each user to ascertain the scope of using other water sources, and to recover costs of water at non-Council owned properties.	SWUP Facilitator/ Lessees		Check meters from \$80.	NA	May not be required if alternative water source secured.	Med.
	2.42	Investigate the potential to source alternative water supplies for the Aerodrome site (treated borewater and/or rainwater storage to replace potable water).	Facilities/Lessees	Underway	TBD	TBD	Investigation in progress by Council.	High.
	2.43	Pending check meter results and sourcing of adequate alternative supplies, investigate the feasibility of cutting off the meter to the Aerodrome site (large potential savings are possible given leakage issues, provided other users linked to this line are adequately catered for).	SWUP Facilitator/ Lessees	Underway	TBD	TBD	Save meter charges and pipeline repairs.	Med.
	2.44	Encourage the decommissioning of the sprinkler system on the Aerodrome hanger (by lessee).	SWUP Facilitator/ Lessees		TBD	TBD	May be difficult as asset is not owned by	High.

Facility Type	Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
							Council. Get NEW support.	
	2.45	Install flow restriction valves for all suitable facilities at the site, including the public toilet, residence and airport building.	SWUP Facilitator/ Lessees		\$5 to \$20 per valve.	TBD	May not require if alternate water source secured.	Low.
	2.46	Retrofit toilet facilities at the site with more efficient fittings including dual flush toilets, waterless urinals (or Sani-sleeve), low-flow shower heads and timed tap fittings (if savings in water use justify the cost of retrofitting).	SWUP Facilitator/ Facilities/ Infrastructure		See action 2.13	TBD		Low.
<b>Cemeteries</b>	2.47	Review the irrigation system and practices at the Wangaratta Cemetery. Ensure that the system, frequencies and timing of water application are appropriate.	SWUP Facilitator/ Cemetery Manager		No cost	TBD	Currently high water user for irrigation of lawns.	High.
	2.48	Investigate the potential for increasing the storage capacity of the current stormwater dam, to further supplement the potable water for use as irrigation on cemetery grounds.	SWUP Facilitator/ NE Water/ Cemetery Manager		TBD	TBD	Stormwater dam on site has potential for supplying more water for irrigation system.	High.
<b>Saleyards</b>	2.49	Consider installing metering equipment to measure the volumes of water being consumed by the different facilities/consumers within the complex and monitor the results (Or use money made at the standpipes to determine the volume of water being used).	SWUP Facilitator/ Saleyard Manager		TBD	TBD	May provide better representation of where water is used and provide accurate estimates of potential water savings at site.	Med.
	2.50	Investigate the feasibility of recycling the water from the truckwash facility and hosing down of the stock yards, with water to be re-circulated for use after treatment process. This has been trialed at Ballarat Saleyards.	SWUP Facilitator/ Saleyard Manager		\$150,000 to \$180,000 (based on Ballarat Council Saleyard recycling system).	TBD - Review Ballarat Saleyards recycling project – currently not running. Contact Phil Campbell in 2-3 months re project costs/ outcomes 0419302850.	80 to 90% water savings possible at yards / 100% saving at truckwash. Could also have a recycled water standpipe if suitable.	Low.
	2.51	Investigate the feasibility of sourcing alternative supplies of water for the truckwash from bore water, wastewater dam on-site OR textile wastewater or other source if deemed to be of appropriate quality for cleaning of trucks.	SWUP Facilitator/ Saleyard Manager		TBD	TBD		Low.
	2.52	Retrofit saleyard toilets, showers and kitchens with water efficient fittings, to include investigation into capacity for raintank installations on building for use as toilet flush, irrigation or other suitable use.	SWUP Facilitator/ Saleyard Manager		See action 2.13	TBD		Med.
	2.53	Install awareness and educational signage at high using facilities (saleyard hose, truckwash, standpipes) to explain to users the need to conserve water and to report any leakages.	SWUP Facilitator/ Saleyard Manager		\$500 - \$1000	TBD		High.
<b>Gardens / planter boxes</b>	2.54	Review and update the irrigation systems where required. Install automated timer systems on all irrigation systems.	Parks & Gardens/ SWUP Facilitator	Commenced	TBD	TBD	Dependant on system.	Med.
	2.55	All future plantings to consider low water and drought species appropriate to needs of the site.	Parks & Gardens/ SWUP Facilitator/ Strategic Planning		TBD	TBD	Native gardens use little or no potable water after they are established.	High, Ongoing.
	2.56	A mulch program should be undertaken to reduce water loss from garden beds and suitable trees to help reduce the water required to maintain these plantings.	Parks & Gardens/ SWUP Facilitator	Established	\$40 per cubic metre for mulch (less if Council uses own mulch).	TBD	Council to stockpile own mulch from tree pruning/ removals.	High, Ongoing.
	2.57	Drip irrigation should be considered where feasible to ensure water is directed to plant roots and to reduce wastage from overspray and evaporation.	Parks & Gardens/ SWUP Facilitator		TBD	TBD	Price dependant on system required.	Med.

Facility Type	Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
Toilet Facilities	2.59	Trial the installation of waterless urinals in the highest using public toilet facility(s) where the toilet is separately metered to show accurate water savings. Or trial in the administration or other suited building. If trial successful, install in other facilities where appropriate.	SWUP Facilitator/ Facilities		\$1000 to \$1400 per urinal (plus removal of old bank urinal or single urinals).	4000kL saving pa possible if all urinals waterless type (2-3% saving possible across Council).	100% saving per urinal. Vandal proof urinals (plastic or s/s) are available for public toilets.	Med.
	2.60	Consider cheaper option of installing the Enviro – sani-sleeve units (or similar brand product) for existing urinals if waterless urinals are found to be too expensive / unsuccessful. Suited to all existing bank and single urinals – sleeve fits into existing urinal drain. Benefit is there are low installation costs compared to waterless urinal option.	SWUP Facilitator/ Facilities		\$465 per kit. Kit includes solenoid valve, timer, adaptor and sani-sleeve unit.	Approx. 3800kL saving possible (6% saving across Council if all urinals get a Sani-sleeve).	Up to 95% savings per urinal. Sani-sleeve has auto flush 4 times per day. Seek advice from Stonnington Council, they have taken this option.	Med.
	2.61	Retrofit all high use public toilet facilities with dual flush toilets, single or waterless urinals (if suited), low-flow showerheads, tap aerators and tap timers. High users currently include the Ryley St comfort station, King George Garden toilet, Vincent Rd toilet and the Bindall Av Oval pavilion.	Facilities/ SWUP Facilitator		Dual cistern \$120+ In-wall dual cistern only \$350+ Dual set \$500-600 Single urinal \$500+ Waterless \$1000+ Push button tap \$120+ Low-flow shower head \$60+	Duals save av. 5 litres per use. Single urinals save 5 to 20 liters/ use from bank urinal. Waterless 100% saving. Low-flow heads save 40-70% from old style showers.	Too many variables to estimate savings across Council. Actual savings to be determined on a site by site basis depending on fittings and usage.	Med.
	2.62	Investigate the feasibility developing a state of the art water-saving building to showcase water efficiency. Suitable toilets for showcasing efficiency include the Ryley St comfort station, Apex Park toilet and the King George Gardens toilet.	SWUP Facilitator/ Facilities		\$25,000	TBD	Choose a high use pubic asset / site for showcasing.	Low.
	2.63	Install flow control valves, AAA+ appliances and dual flush toilets, waterless urinals, low-flow showerheads, tap aerators and regulators (shut-off mechanism) in all future toilet facilities developed or refurbished by Council.	SWUP Facilitator/ Infrastructure	Considered for new facilities	TBD	TBD	Incorporate water efficiency into planning policy.	High, Ongoing.
	2.64	Develop a maintenance program to regularly monitor water usage levels at toilets and include regular checks at public facilities to help ensure leakages are quickly identified and addressed.	SWUP Facilitator/ Facilities		No cost	TBD	Cleaners to be aware of leaks and report them to the facilities.	High.
	2.65	Install flow restriction valves and timed self-closing taps to all public toilet facilities and drinking fountains to prevent leakages.	SWUP Facilitator/ Infrastructure		\$2 to \$20 per valve. Push-button tap \$120.	TBD	Stops leaks and taps from being left running.	Med.
	2.66	Design and install signage in all toilets to raise public awareness of water wise message and to explain Council's actions to improve water consumption. Include number for public to report leakages or vandalism.	Facilities/ SWUP Facilitator		\$2,000 to \$5,000	TBD	High public visitation toilets first priority.	High.
	Depot	2.67	Investigate the need to install check meters on the truckwash and stand pipes (and other large users) at the Depot to determine volumes of usage for each and to help ascertain the possibility of using other fit-for-purpose water sources at these outlets.	SWUP Facilitator		Check meters from \$80, more for larger pipes.	NA	Provides data to determine number of raintanks required to supply truckwash, truckfill etc.
2.68		Investigate the feasibility of: 1. Installing rainwater tanks on one or more of the depot buildings (three sheds with 2850m <sup>2</sup> of roof) with water to be used for the truckwash facility and other fit purposes such as toilet and urinal flushing. 2. Using the stormwater dam at the rear of the depot site to fill water trucks and use for other fit purposes.	SWUP Facilitator/ Facilities	Underway	\$25,000 for 5 x 22,500lt tanks, pumps, UV filter and truckfill hydrant.	1000 – 1500kL pa water saving possible (0.7 – 1.2% saving for Council).	60 to 90% savings possible. Larger pumps now available for Davey Rainbank system.	High.

Facility Type	Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
	2.69	Ensure the use of high pressure cleaning units for the Depot's vehicle/ machinery cleaning purposes, and encourage / enforce the use of trigger nozzles where high pressure is not appropriate.	SWUP Facilitator/ Parks & Gardens	Partially introduced	No cost	TBD	No hose to be used without trigger nozzle.	Med.
	2.70	Investigate the feasibility of recycling the truckwash water. This may include the installation of: 1. A recycling unit for the waste water and storage tank for reuse, or; 2. A bio-retention filter system to treat waste before entering the sites storage dam and being re-used on-site or for truck-fill or other suitable purpose.	SWUP Facilitator/ Facilities		<b>Option 1.</b> \$50,000 – \$80,000 for recycling unit, pumps and raintanks <b>Option 2.</b> TBD	TBD (note trial of recycling failed at Blacktown depot – hosing garbage trucks impacted on water quality. May be suitable if not cleaning garbage trucks).	If water reused in truckwash, require UV filtration at minimum to prevent risk from inhaling / contact with truckwash mist.	Low.
	2.71	Where possible, water trucks should source alternative sources of water when constructing roads (lake or river water standpipes or stormwater sources) and avoid using potable water for purposes that do not require such high water quality.	SWUP Facilitator	Established	No cost	TBD	Depot staff / contractors to be briefed on importance of sourcing water elsewhere (of lower quality than potable water).	High.
	2.72	Investigate the feasibility of reusing washdown water or stormwater for other fit-for-purpose uses on site including toilet and urinal flushing and nursery irrigation.	SWUP Facilitator/ Facilities		TBD	TBD		Med.
	2.73	Install flow restriction valves in the handwash stations and aerators for the taps, and retrofit the kitchen, toilets and showers with water saving devices.	SWUP Facilitator/ Facilities		See Action 2.13	TBD		Med.
	2.74	Investigate the use of high air pressure hoses for cleaning of Council machinery (graders, mowers etc). This potentially reduces water use and is effective for seed, weed and dirt removal.	SWUP Facilitator	Partially introduced	Air compressor unit and hose fittings \$300 - \$800.	TBD	Energy costs may be higher than water savings.	Low.

### 7.3 Objective Three – Continue to Build a Working Relationship with Water Authorities to Develop Water Conservation Programs

Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
3.1	Ensure that Council's corporate water consumption data be sent by North East Water in digital/ electronic format (quarterly) to facilitate easy entry into the water consumption database. This will provide improved tracking of consumption, leakage identification and monitoring of any improvements made.	SWUP Facilitator/ NE Water/Mgr - Env		No cost	NA	NE Water to start sending data by 2008.	High.
3.2	To facilitate future cooperative actions, provide NE Water with regular reports on Council's progress towards the water reduction target in the SWUP to show advancement towards best practice by Council. This may also be a component of the communication strategy requirements within certain grant funding criteria by providing promotion of funded actions.	SWUP Facilitator/ Mgr – Env		No cost	NA	First report to be sent by July 2008.	Low, Ongoing.
3.3	Invite NE Water representative to Sustainable Water Use Group meetings (if formed) to seek their input and advice about further reduction options.	SWUP Facilitator/ Mgr – Env		No cost	NA	NE Water input by 2008.	Med, Ongoing.
3.4	Continue to work with North East Water to develop policies for Council that relate to alternate water supplies and reductions in potable water consumption, ensuring that developments in water efficiency be communicated to Council from NE Water representatives.	SWUP Facilitator/ Mgr – Env		No cost	NA	Maintain awareness of best practice	Med, Ongoing.

							water management	
--	--	--	--	--	--	--	------------------	--

#### **7.4 Objective Four – Increase the Awareness and Understanding of Sustainable Water Use Principles Among Staff and in All Sectors of Council**

Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
4.1	Signage in buildings to be erected displaying water efficient advice and contact numbers to report leakages (see Action 1.9).	Facilities		See Action 1.9	TBD	On-going with works.	Med
4.2	Induction sessions for new staff to have a water wise component that explains the need to conserve water and to demonstrate the best practices for staff to adopt to help contribute to the Council's water reduction target.	Human Resources/ SWUP Facilitator		Internal cost	NA	Update induction process by 2008.	Med, Ongoing.
4.3	Facilitate involvement of relevant staff (and contractors where necessary) in courses on water re-use systems, rainwater capture, irrigation and gardening techniques, sustainable urban development and water efficient products.	Human Resources/ SWUP Facilitator		\$5000	TBD	On-going.	High, Ongoing.
4.4	Council website to include updates on Council's water management progress and latest actions, and to also include links to relevant water saving contacts and authorities.	SWUP Facilitator/ Information Technology		No cost	NA	Website updated by 2008.	Low, Ongoing.
4.5	Information sessions to be held during Council meetings where required, to inform staff and Councilors of SWUP objectives, Council's progress made towards conservation targets and to seek further input and ideas from representatives at meetings.	SWUP Facilitator		No cost	NA	On-going.	High, Ongoing.
4.6	Ensure that management of water resources be a key consideration in the development of all major Council strategies and projects.	Strategic Planning/ SWUP Facilitator		No cost	NA	First staff briefing by 2008.	Med, Ongoing.
4.7	Develop an internal multi-disciplinary Sustainable Water Use Group to oversee the implementation and periodic review of the SWUP.	All Departments		No cost	NA	Form group by 2008.	Med.
4.8	Regularly inform staff of progress towards the Council's water use reduction target and other relevant outcomes through existing Council working groups and via Council's website, newsletters and notice boards.	SWUP Facilitator/ Public Relations		No cost	NA	Media to be developed by 2008.	Med, Ongoing.
4.9	Contractors and cleaners to be briefed on the importance of monitoring the condition of water meters (for leakages/damage) and/or water consuming appliances (taps, toilets, showers, urinals etc) to ensure that leaks are identified, recorded and reported immediately to the SWUP Facilitator or the Council's facility management team.	SWUP Facilitator/ Facilities		No cost	NA	Contractors to be briefed by mid 2007.	High, Ongoing.

#### **7.5 Objective Five – Actively Seek Funding to Facilitate Implementation of Water Saving Actions and to Help Purchase Water Efficient Devices**

Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
5.1	Establish a revolving fund to return savings made from previous water saving initiatives (savings on water bills) into implementation of new initiatives. This can be linked with the database used for tracking consumption and works.	Finance/SWUP Facilitator/ Information Technology		No cost	NA	Investigate feasibility by 2009.	Low, Ongoing.
5.2	Maintain awareness of current and future funding programs and opportunities for Council e.g. the Stormwater and Urban Water Conservation Fund or the Community Water Grants program.	SWUP Facilitator		No cost	NA	Links to authorities to be established by 2008.	Med, Ongoing.
5.3	Complete funding grant applications where appropriate to develop the finances necessary to implement the priority actions outlined in this Plan.	SWUP Facilitator		No cost	TBD	Focus on highest	High, Ongoing.

							priority projects first	
--	--	--	--	--	--	--	-------------------------	--

**7.6 Objective Six – Monitor and Report Annually on Council’s Water Consumption Levels and Their Progress Towards Reaching the Water Reduction Targets**

Action	Description of Action	Responsibility	Existing Action	Estimated Costs	Estimated Saving	Details	Priority
6.1	Maintain a database for storage and analysis of consumption data (see Action 1.2).	SWUP Facilitator/ Information Technology		No cost	NA	Develop database by 2008.	High, Ongoing
6.2	Periodically monitor data for significant changes in water usage (when water bills are entered into the monitoring database) and report large increases (or decreases) to facility manager to determine possible causes.	SWUP Facilitator/ Facilities		No cost	TBD	Monitor quarterly, On-going.	Med, Ongoing
6.3	Report Council’s water consumption and SWUP achievements to staff and Councilor’s via the Council website, notice boards, depot site notice board and Council newsletter.	SWUP Facilitator/ Information Technology		No cost	NA	First report by 2008.	Med, Ongoing

## 8. MONITORING AND REVIEW

It is essential that this Sustainable Water Use Plan be monitored regularly and undergoes a thorough review every three years for the life of the Plan. This will ensure that the target and objectives involved are still reflective of Council's intention to save water and that the actions are being implemented in a manner appropriate for Council's changing circumstances. Council's progress in implementing the actions involved with the Plan will be reported at the end of each financial year as a component of Council's annual reporting process.

The review of the Plan will involve:

- A water consumption audit for Council's operations using the most recent water consumption data, with comparisons to be made to the base year data;
- An annual report detailing the water consumption reduction actions that have been undertaken in the previous implementation period to be included in Council's annual reporting process and publicised through the relevant channels;
- A triennial review of the action plan component of the Plan to make changes to the recommended actions where required; and
- A comprehensive review of the Plan in six years in consultation with regional water authorities and DSE.

## 9. GLOSSARY

<b>Council</b>	Refers to the Wangaratta Rural City Council
<b>DSE</b>	Victorian Department of Sustainability and Environment
<b>Greywater</b>	Water from sinks, showers and washing machines that can be re-used for irrigation or toilet flushing (water not containing human wastes or food particles).
<b>ICLEI</b>	The International Council for Local Environmental Initiatives
<b>kL</b>	Kilolitre. 1kL is equivalent to 1,000 litres
<b>ML</b>	Megalitre. 1ML is equivalent to 1,000,000 litres or 1000kL
<b>NEW</b>	North East Regional Water Authority
<b>Potable Water</b>	Water that is suitable for human consumption based on Australian Water Quality Standards

<b>Recycled Water</b>	Treated waste water from sewage treatment plant suitable for irrigation in some cases (depends on level of treatment)
<b>SDS</b>	Supply Demand Strategy – North East Regional Water Authority
<b>Stormwater</b>	Runoff from rooftops and ground, if captured (raintanks or stormwater harvesting from drainage network) can be used for a variety of other purposes
<b>SWUP</b>	Sustainable Water Use Plan
<b>Water Campaign</b>	ICLEI program to help Local Governments develop water use plans to reduce municipal water consumption
<b>White Paper</b>	Victorian Government's White Paper (Securing Our Water Future Together); Action Plan to secure the State's water supplies for future populations
<b>WSUD</b>	Water Sensitive Urban Design

## 10. REFERENCES

North East Regional Water Authority 2006, [www.nerwa.vic.gov.au](http://www.nerwa.vic.gov.au)

Wangaratta Rural City Council 2005, Council Plan 2005-2009.

Wangaratta Rural City Council 2005, Recreation Strategy.

Wangaratta Rural City Council 2003, Stormwater Management Plan.

State of Victoria 2005, Progress Towards Securing Our Water Future 04-05; Our Water Future Progress Report, Department of Sustainability and Environment.

State of Victoria 2004, Victorian Government White Paper: Securing Our Water Future Together; Securing Our Water Future Together, Department of Sustainability and Environment.

Victorian Water Industry Association 2005, Victorian Drought Water Restrictions Guidelines; Final Draft.

Water Partners International 2006, Water Facts; Did You Know, accessed online 12 April 2006  
[www.water.org/crisis/waterfacts.htm](http://www.water.org/crisis/waterfacts.htm)

## 11. APPENDICES

### *Appendix A – Water Use per ICLEI Landuse Category*

<b>LANDUSE TYPE</b>	<b>2000-01 (kL)</b>	<b>2001-02 (kL)</b>	<b>2002-03 (kL)</b>	<b>2003-04 (kL)</b>	<b>2004-05 (kL)</b>
<b>Swimming Pools</b>	48,127	44,331	59,940	82,380	42,304
<b>Open Spaces (Total)</b>	34,706	51,494	43,663	42,603	28,998
<i>Roundabouts</i>	<i>1394</i>	<i>1,537</i>	<i>2,114</i>	<i>2,209</i>	<i>821</i>
<i>Median Strips</i>	<i>5,179</i>	<i>5,985</i>	<i>7,481</i>	<i>7,389</i>	<i>3,787</i>
<i>Reserves</i>	<i>28133</i>	<i>43,972</i>	<i>34,068</i>	<i>33,005</i>	<i>24,390</i>
<b>Playing Fields</b>	36,859	44,832	42,863	14,741	27,279
<b>Airport</b>	12,853	3,687	5,345	7,313	8,670
<b>Cemeteries</b>	2,487	9,351	9,374	7,587	4,827
<b>Saleyards</b>	2,818	2,659	4,249	3,008	2,643
<b>Gardens / Planter Boxes</b>	8,434	5,103	2,858	3,308	2,053
<b>Toilet Facilities</b>	2,213	3,171	3,804	4,622	4,242
<b>Administration Offices</b>	3,784	1,933	2,196	1,898	1,839
<b>Depots</b>	6,062	7,057	5,553	2,763	1,760
<b>Town Halls</b>	1,235	1,858	3,737	1,395	1,308
<b>Childcare Centres</b>	1,433	1,230	1,364	1,529	1,161
<b>Cultural Buildings</b>	796	573	851	790	1,095
<b>Misc. Buildings</b>	161	455	482	807	429
<b>Recreation Centres</b>	594	503	371	346	229
<b>Residences</b>	192	223	469	593	153
<b>Tip Facilities</b>	529	315	277	162	138
<b>Misc.</b>	2,664	2,722	1,174	70	13
<b>Council Total (kL)</b>	<b><u>165,947</u></b>	<b><u>181,497</u></b>	<b><u>188,570</u></b>	<b><u>175,915</u></b>	<b><u>129,141</u></b>

## ***Appendix B – Policy and Legislative Framework that Guides the Development of the SWUP***

### **1. International Agreements**

#### **(a) World Water Development Report**

The World Water Development Report (2003) is an ongoing assessment project being guided by the United Nations and undertaken by the World Water Assessment Program Committee. The Report intends to measure progress towards achieving the goal of sustainable development, which was formulated during the Rio Summit of 1992, and the setting of targets by the UN Millennium Declaration of 2000. The international community pledged to halve the proportion of people who are unable to access or afford safe drinking water by 2015, and to stop the unsustainable exploitation of water resources through development of water management strategies at the local, regional, and national levels which promote equitable access and adequate supplies of water.

### **2. National Water Policy**

#### **(a) National Water Initiative (NWI)**

The National Water Initiative (NWI) is a comprehensive water management strategy that is driven by the Australian Government to facilitate improved water management across the country. The initiative was agreed to and signed at the June 2004 meeting of the Council of Australian Governments (COAG) and it encourages the adoption of best-practice approaches to the management of water resources in Australia. In particular, the NWI will result in:

- Expansion of water trade provisions to encourage more profitable water consumption and flexible recovery of water to achieve environmental outcomes;
- More secure water entitlements to encourage better investment, monitoring, reporting and accounting of water use levels;
- More sophisticated and transparent water planning that deals with issues relating to interception of water, interaction between surface and groundwater systems, and the provision of water to achieve environmental objectives, and;
- Better and more efficient management of water in urban environments, for example through increased use of recycled water and stormwater.

### **3. Victorian Policies and Strategies**

#### **(a) Environmental Protection Act 1970**

The Environmental Protection Act (1970) is the principal environmental Act in Victoria. Its purpose is to create a legislative framework for the protection of the environment in Victoria having regard to the principles of environmental protection. The Act aims to prevent pollution and environmental damage through setting of objectives and the establishment of programs to meet them. The Act encourages sustainable use of resources, holistic management of natural resources and a cooperative approach to protect and rehabilitate environmental values and natural assets. The EPA have powers under the Act to enforce environmental protection measures, licensing and permit approvals, and can prosecute offenders that fail to comply with specific requirements of the Act.

**(b) State Environment Protection Policy (SEPP) (Waters of Victoria)**

The SEPP was reviewed and updated to reflect improved scientific understanding and new catchment management arrangements, and was released in June 2003. The SEPP aims to establish a basis for maintaining the State's water quality at a level conducive to environmental health, public benefit, welfare, health and safety, and it provides a more adequate basis for planning functions. The SEPP states that to secure a sustainable future for Victorians, we need to protect and rehabilitate the aquatic habitats of our lakes, rivers, wetlands, estuaries and marine areas, and the social and economic values they support. To do this, we need to reduce the impact we have on surface water environments by using land and water resources within their capabilities and through re-use of the wastes generated.

SEPP provides a framework for government agencies, businesses and community members of Victoria to work cooperatively to help protect and rehabilitate Victoria's surface water environments. Councils have a range of responsibilities within their municipalities that can impact on surface waters, at the forefront of which are the planning and approval processes for sustainable landuse, domestic wastewater management, urban stormwater management and floodplain management. To carry out these responsibilities, councils are encouraged to work with EPA, Catchment Management Authorities and other relevant agencies to ensure that their corporate goals are in-line with reaching environmental quality objectives outlined in SEPP. Councils should also ensure that their municipal planning schemes and programs are consistent with the SEPP and catchment strategies to help protect beneficial uses of natural assets.

**(c) Water Act 1989**

This is the primary piece of legislation that sets out laws relating to water in Victoria. It seeks to promote the orderly, equitable and efficient use of the State's water resources. The Act attempts to promote consistency in the way water supplies, including both surface and groundwater supplies, are managed across the State. It also provides a means to protect catchment conditions and enhance the environmental qualities associated with water resources and their in-stream uses.

**(d) Water Industry Act 1994**

This piece of legislation allowed for the reform of the water industry into the current water industry structure. Under this Act, regional water authorities have a statement of obligations that includes a requirement for them to work with councils to develop Sustainable Water Use Plans. This statement facilitates better interaction and consultation between authorities and councils during the development of the Plans and encourages a cooperative and coordinated effort towards more sustainable and accountable water consumption.

**(e) Securing Our Water Future Together: Securing Our Water Future Together - White Paper (2004) - See Section 2.1**

**(f) Supply Demand Strategy - North East Water – See Section 2.2**

**(g) Victoria's River Health Strategy (2002)**

The Victorian River Health Strategy was released in August 2002 after thorough consultation with stakeholders, and provides a vision and long-term direction for the management of the State's rivers. It contains comprehensive policy direction on issues that affect river health and forms a blueprint that integrates management efforts aimed at protecting rivers, ensuring that we get the most effective environmental benefits for the level of resource investment. The Strategy aims to encourage regional communities to make decisions on river protection and restoration, and to determine the balance between using river resources and maintaining their ecological conditions.

**(h) North East Regional Catchment Strategy**

The North East Regional Catchment Strategy (RCS) (2004) has a major influence on the investment decisions made by the Federal and State Governments and the community regarding natural resource management and sustainable regional development. The RCS features an assessment of the catchment's natural assets and their emerging threats, and creates a strategy to guide investment to address the highest threats and most valuable assets to ensure money is spent where it is needed the most. Current threats in the North East Catchment include salinity and declining water quality. A key element of the RCS is the whole-of-catchment approach to managing natural resources, which provides benefits to the natural environment, the social fabric and the economy of the region.

**(i) North East Regional River Health Strategy**

The North East Regional River Health Strategy (2005) has been developed to provide waterway managers with strategic direction for the future management of waterways in the North East Catchment. The strategy is in place to guide future Government investment and local level development of an annual works program to address waterway management issues. The strategy provides a vital link between the State Government's objectives for waterway management and the requirements of the community, and is an integral part of the Victorian legislative framework in place to protect Victoria's waterways.

**(j) Best Practice Guidelines for Management of Urban Stormwater**

Urban stormwater run-off needs to be identified and addressed by local government in accordance to the principles set out in the "Best Management Guidelines for Urban Stormwater" manual, and the municipality's Storm Water Management Plan. The guidelines were developed to protect stormwater quality and to ensure that the environmental values and various beneficial uses of the waters that receive stormwater run-off are managed, sustained and enhanced. The guidelines advocate that to achieve effective stormwater management, councils must:

- Preserve the existing elements of the stormwater system including wetlands, natural channels and riparian vegetation;
- Control the source of stormwater to limit the changes to quality and quantity of stormwater at its source, and;
- Implement structural controls where needed, including treatment techniques and detention basins, to improve water quality and control stormwater discharge rates.

**Appendix C - Council's Corporate Water Consumption Percentage and Volume Change Since the Base Year 2000-01**

Landuse Type	2000-01		2004-05		% Change Since 2000-01	Volume Change (kL)
	Consumption (kL)	%	Consumption (kL)	%		
Swimming Pools	48,127	29	42,304	32.8	-12.1	-5,823
Open Spaces (Total)	34,706	20.9	28,998	22.5	-16.4	-5,708
<i>Roundabouts</i>	<i>1,394</i>	<i>0.8</i>	<i>821</i>	<i>0.6</i>	<i>-41.1</i>	<i>-573</i>
<i>Median Strips</i>	<i>5,179</i>	<i>3.1</i>	<i>3,787</i>	<i>2.9</i>	<i>-26.9</i>	<i>-1,392</i>
Reserves	28,133	17	24,390	18.9	-13.3	-3,743
Playing Fields	36,859	22.2	27,279	21.1	-26	-9,580
Airport	12,853	7.7	8,670	6.7	-32.5	-4,183
Cemeteries	2,487	1.5	4,827	3.7	<b>+94.1</b>	<b>+2,340</b>
Saleyards	2,818	1.7	2,643	2	-6.2	-175
Gardens / Planter Boxes	8,434	5	2,053	1.6	-75.7	-6,381
Toilet Facilities	2,213	1.3	4,242	3.3	<b>+91.6</b>	<b>+2,029</b>
Administration Offices	3,784	2.3	1,839	1.4	-51.4	-1,945
Depots	6,062	3.7	1,760	1.4	-71	-4,302
Town Halls	1,235	0.7	1,308	1	<b>+5.9</b>	<b>+73</b>
Childcare Centres	1,433	0.9	1,161	0.9	-19	-272
Cultural Buildings	796	0.5	1,095	0.8	<b>+37.6</b>	<b>+299</b>
Misc. Buildings	161	0.1	429	0.3	<b>+166.5</b>	<b>+268</b>
Recreation Centres	594	0.4	229	0.2	-61.4	-365
Residences	192	0.1	153	0.1	-20.3	-39
Tip Facilities	529	0.3	138	0.1	-74	-391
Misc.	2,664	1.6	13	0.01	-99.5	-2,651
<b>Council Total</b>	<b><u>165,947kL</u></b>		<b><u>129,141kL</u></b>		<b>- 22.20%</b>	<b>- 36,806 kL</b>

## ***Appendix D – Overview of Funding Opportunities for Sustainable Water Use Projects***

### **1. Smart Water Fund**

#### **Overview**

The Smart Water Fund was established by Melbourne's water businesses and the Victorian Government, to encourage and support innovative development of water, bio-solids recycling and water saving projects within the community.

#### **Funding Available**

Approximately \$4 million was available for each of the previous two rounds of funding, totalling \$8 million in investment to support innovative sustainable water use projects. Round three offered a further \$5 million through various funding streams, to support additional projects within the geographic areas of metropolitan Melbourne and regional urban Victoria.

The next round of funding was announced in July 2006.

#### **Eligibility**

There is funding available to any individual, community group, enterprise or professional research body that is equipped with the ability to implement their proposed project. Refer to the various funding streams to establish which stream is most appropriate for our sustainable water project and our organisation.

#### **Requirements**

You must demonstrate that all resource requirements to facilitate the successful completion of the project and communication of its outcomes are achievable. It is possible to explore additional opportunities for funding from other sources, and supplementary funding from within our organisation will be well regarded.

The Fund will look more favourably on innovative projects that provide sustainability leadership within the community/industry, and will look less favourably on the projects which represent a capital works program which would occur as part of the normal and expected business practices of the applicant.

Where commercial gain is expected for the applicant or where the applicant could undertake the project as part of their normal business operations and appropriate environmental practice, dollar for dollar matching at minimum, from the applicant will be well regarded by the Fund.

There is a time limit of three years from when the funding is received for completion of the project. Funding is being made available for one or more of the project's stages: research, planning, design, construction and operation.

#### **How to apply**

A Smart Water Fund Application Pack may be obtained via:

- download or email by completing the online request form
- phoning the Smart Water Fund on 1800 882 432
- **Please Note:** Applications must be submitted in electronic and hardcopy format, therefore you are encouraged to obtain the Application Pack via download or email.

The next round of funding was announced during July 2006. There is a further \$5 million available to support innovative sustainable water use projects in metropolitan Melbourne and regional urban Victoria. There is also an additional \$1 million available from the Victorian Water Trust for research into sustainable water management areas.

## 2. Community Water Grants

### Overview

As a component of the \$2 billion Australian Government Water Fund, the Community Water Grants are in place to make a real difference in the way communities use our water resources. \$200 million over five years has been made available for grants of up to \$50,000 to applicants deemed eligible for development and implementation of practical on-ground projects that will result in water-wise use and involve local communities.

### Funding Available

\$200 million available over five years. Individual grants of up to \$50,000 each for practical on-ground projects.

### Eligibility

There are three themes for action that are addressed by the Community Water Grants which are:

- Water use, efficiency and conservation;
- Water reuse and recycling, and;
- Improving surface and groundwater health.

A diverse range of groups are permitted to apply for funding, including:

- Local governments;
- Schools;
- Indigenous organisations, and;
- Community groups such as environmental groups, sporting associations, community care sectors and regional natural resource management bodies.

### Requirements

Successful applicants have to enter into a financial agreement with the Australian Government, thus they must be eligible to enter into such a contract. Applicants must obtain and provide relevant permits and approvals prior to receipt of any funding. Obtaining these approvals at the time of application will save time later if successful. Check whether the proposed activities require approval under Federal environment legislation (Environmental Agencies, Health Agencies, and Local Government Associations).

### How to apply

Visit the website to find more details on the Community Water Grants

<http://www.nrm.gov.au/state/index.html>

The main requirements for Round 1 included:

- Has the applicant acquitted all previous project funding from programs such as the Natural Heritage Trust, as required?
- Will the project promote water savings and water conservation through community engagement and awareness-raising?
- Will the project incorporate best practice management, innovative solutions and on-ground activities appropriate to local issues?
- Does the project represent good value for taxpayers' money?
- Is the project feasible, technically sound and safe for human health?
- Is the project something for which the applicant would normally be responsible, or is it something that someone else should be paying for?
- Does the project have community support and contribution?
- Does the project align with the natural resource management plan for the region or is it part of an existing plan for sustainable management of the environment in the local area?

### **3. Sustainability Fund**

#### **Overview**

Funding is available, through Victoria's Sustainability Fund, for projects that are practical and innovative and will help make Victoria more environmentally sustainable.

#### **Funding Available**

Dependant on availability of subsequent rounds of funding – to be announced.

#### **Eligibility**

Open to businesses, community groups, and council or non-government organisations.

#### **Requirements**

Projects that aim to help Victorians do more with less (use fewer resources and/or produce less waste) will be eligible for funding.

#### **How to Apply**

Contact the secretariat at Sustainability Victoria

Information about successful projects from the first round of the Sustainability Fund is published in EPA Victoria's Annual Report 2004-2005.

### **4. Stormwater and Urban Water Conservation Fund**

#### **Overview**

As part of the Securing Our Water Future Together action plan, the Victorian Government has made available \$10 million in funding to conserve our water supplies and develop new water sources, particularly those that take advantage of stormwater supplies.

The Fund is available for three years and will be used to develop infrastructure, demonstration projects and education projects in cities and towns across the State. The Fund supports local level water sensitive urban development initiatives, stormwater conservation and water recycling initiatives across Victoria.

#### **Funding Available**

To be announced – Unsure if further rounds of funding will be made available.

#### **Eligibility**

The Fund is open to applications from:

- Local government;
- Water authorities;
- Open space and recreational facilities management, and;
- Business and industry.

#### **Requirements**

Applications for Round 3 have closed as of March 2006. At this stage it is unclear if further rounds of funding are to be offered under the Fund.

#### **How to Apply**

Contact the Project Manager:

#### **Andrew Major**

Phone: 9637 8202

Email: [andrew.major@dse.vic.gov.au](mailto:andrew.major@dse.vic.gov.au)