Greater Shepparton City Council

Sustainable Water Use Plan

Adopted February 2007

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Executive Summary

In 2003 Melbourne Water and the Municipal Association of Victoria launched a program to assist local government councils in Melbourne to develop Sustainable Water Use Plans. As part of its *Our Water Our Future* action plan, the Victorian Government extended the Sustainable Water Use Plans Program to regional Victoria. This commitment included funding support from the Department of Sustainability and Environment (DSE) to help in developing the Sustainable Water Use Plan (SWUP). The Greater Shepparton City Council (the Council) SWUP has been developed in accordance with the Victorian Government's *Our Water Our Future* White Paper and the *Guidelines for Developing Sustainable Water Use Plans for Regional Local Government* provided by DSE.

The purpose of the SWUP is to facilitate the reduction in potable water usage within Greater Shepparton. The main focus of the SWUP is the Council's potable water consumption. However, an assessment of the Council's raw water entitlement and allocations is also included, as well as ways in which the Council can influence reduction in community potable water usage within the municipality.

The plan was developed by:

- Identifying how much potable water was used by Greater Shepparton during the period 2000-2005, classified into 13 consumption component categories.
- Identifying where the water is used and what it is used for.
- Establishing the context of the SWUP in relation to existing Greater Shepparton and State Government legislation, plans, policies, strategies, initiatives and objectives.
- Establishing projected potable water use within Greater Shepparton to 2010.
- Establishing objectives, and water reduction targets for the SWUP.
- Identifying potential water conservation measures.
- Preparing a Sustainable Water Use Action Plan (the Action Plan)

The Council's average annual potable water consumption is 415 ML/yr which equates to 7 KL/yr being used on behalf of each resident of the municipality. The Council's four highest potable water users, in order of diminishing consumption, are the Open Space/Parks, Recreation Reserves and Playing Fields, Swimming Pools and the Saleyards.

Council water use is effectively water that is used by the Council on behalf of the residents, for community benefit. An appropriate measure of water usage efficiency therefore, is the amount of water used on behalf of the residents of the municipality in litres per resident per year.

The overall water conservation objective for the Council, through the SWUP is:

To reduce Council per resident potable water use (measured against the population of the municipality) by 15 per cent over the five years of the SWUP based on 2004/2005 water consumption data.

The 2004/2005 Council per resident consumption was 6,273 L/resident/yr. The 2010 objective with 15 per cent reduction over five years is therefore 5,331 L/resident/year.

The SWUP identifies potential water conservation measures that can be implemented. The water conservation objectives and targets outlined in the SWUP are to be achieved through the actions described in the Action Plan. Actions within the SWUP pay particular attention to the highest potable

water consumers and the initiatives are prioritised to lead to reduction in water consumption within these areas. The Action Plan focuses on the themes of Sustainable Water Use; Education Promotion and Awareness; Incentives, Policies and Regulatory Controls, Monitoring and Reporting.

The overall focus of the SWUP is on the water used by the Council however, the Council has a role in promoting sustainable water use within the wider community. A secondary objective therefore of the SWUP is, where practicable (ie. where it falls within the general responsibility of the Council and does not duplicate work being undertaken by State Government agencies with more direct responsibility for water management):

To encourage the community to reduce their water usage.

The implementation of the water conservation measures outlined in the SWUP will result in a reduction in Council water use of 26,165 KL over the five years or 5,233 KL/yr.

1. Introduction

1.1 Drinking Water Is A Valuable Resource

Drinking water, referred to as potable water, is a high value resource and the importance of conserving water was highlighted to all of us during the recent droughts experienced in Victoria. There are numerous activities and applications that do not require a high grade of potable water and may well be subject to substitutions from water derived from other sources. These water sources do not have such high levels of treatment.

In Greater Shepparton potable water is supplied by Goulburn Valley Water (GV Water).

The benefits of potable water conservation in Greater Shepparton are:

- Reducing potable water use can lead to improved waterway health by providing increased environmental flows to rivers.
- Relieving drought pressure on Greater Shepparton through GV Water.
- Leading by example and demonstrating proactive water conservation and management to the community.

1.2 Background and Purpose of the Sustainable Water Use Plan

In 2003 Melbourne Water and the Municipal Association of Victoria launched a program to assist local government councils in Melbourne to develop SWUPs. As part of its *Our Water Our Future* action plan, the Victorian Government extended the SWUP Program to regional Victoria. This commitment included funding support from DSE to help in developing the SWUP.

The Victorian Government's *Our Water Our Future* White Paper states that local government councils in regional Victoria should prepare water conservation plans as has occurred in metropolitan Melbourne. This commitment is contained in Chapter 5 of the White Paper as follows:

- Action 5.21 - Funding will be provided to support the extension of local government water conservation plans across regional Victoria.
- Action 5.22 - The urban water authorities will be required to work with local government in the preparation of these plans.

The Council voluntarily committed to develop a SWUP.

A SWUP is an important water management and conservation tool. It identifies where council uses water, how much water is used and actions for the Council to reduce water consumption. The plan focuses on Council owned/managed water usage facilities such as parks and gardens, municipal buildings, sporting fields and swimming pools.

The Council has developed a SWUP in consultation with other stakeholders to assist changing the current water use behaviour for municipal water usage, by investigating and understanding the current water use practices and activities in the region.

2. Greater Shepparton

Greater Shepparton is situated in the heart of the Goulburn Valley, and covers an area of 2,421km^2. It is the fourth largest provincial centre in Victoria. The major urban centre of Shepparton is located at the confluence of the Goulburn and Broken Rivers and at the intersection of the Goulburn Valley and Midland Highways as shown in Figure 1.

Figure 1: Shepparton Locality Map

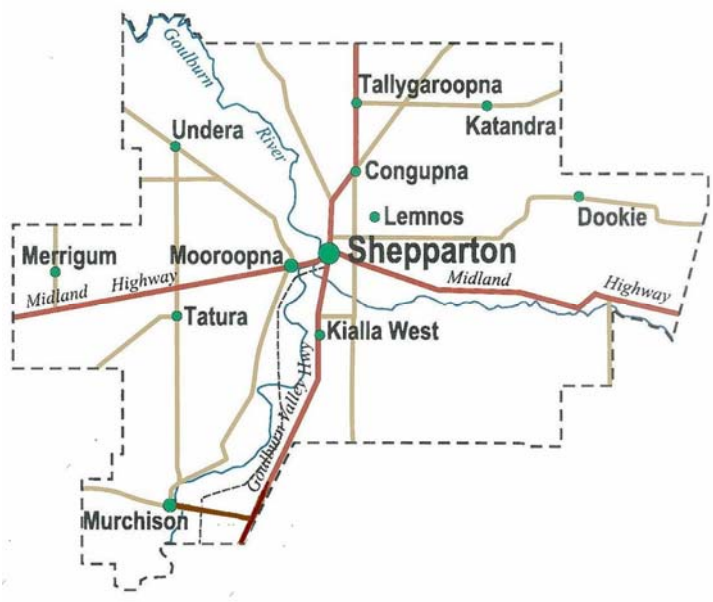


Figure 2: Greater Shepparton Municipal Boundary

Greater Shepparton has a well developed economy, largely due to its strong agricultural and irrigation base.

The Goulburn Valley is often referred to as the “Food Bowl of Australia” as around 25 per cent of the total value of Victoria’s agricultural production is generated in this area.

Dairying and fruit growing are the major primary industries, with the viticulture and tomato industries also showing huge growth. The area has a strong export focus and substantial growth projections. Major secondary industries in Greater Shepparton are mainly related to food processing, manufacturing and transport.

The municipality’s industrial, business and residential growth is robust with recent and planned major developments demonstrating strong confidence in the region.

The road transport industry is one of the largest industries in Greater Shepparton. Shepparton is provincial Victoria’s largest truck sales and service centre and is often referred to as the transport hub of regional Australia. An extremely high number of freight movements are associated with the food industry which relies on a high quality and effective distribution and transport network.

Greater Shepparton fulfils important regional business and service functions with associated employment opportunities, including:

- A strong retail sector drawing on an extensive catchment of approximately 160,000 people
- High quality medical services
- Well developed community facilities and open space
- An extensive range of retail outlets
- A progressive business sector
- A range of tertiary education opportunities.

The Goulburn and Broken River corridors are key natural features in Greater Shepparton. Together with roadside areas they provide the most significant stands of remnant vegetation with associated habitat values and also have obvious functions in flood management. Greater Shepparton’s agricultural and horticultural industries are reliant on irrigation water and effective water management practices play a key role in the region’s development and sustainability.

Greater Shepparton has a current population of 59,000 and is growing at 1.8 per cent per annum and is projected to reach 81,000 by 2030. Seventy seven per cent of the municipality’s people live in the main urban centres of Shepparton and Mooroopna. The balance of the population resides in the townships of Tatura, Murchison, Dookie, Merrigum, Congupna, Toolamba, Katandra and Tallygaroopna and in the surrounding rural areas.

3. State Government Policy and Legislation

3.1 Introduction

The Council's SWUP has been developed in accordance with the Victorian Government's *Our Water Our Future* White Paper which states that local government councils in regional Victoria should prepare water conservation plans similar to those carried out in metropolitan Melbourne. This commitment is contained in Chapter 5 of the White Paper outlining funding support and assistance from water authorities to develop the plans.

3.2 Securing Our Water Future Together –Victorian Government White Paper

The Victorian Government White Paper was released for implementation following submissions from relevant authorities, to manage Victoria's water under the Green Paper. The White Paper defines clear action in the future of water for Victoria.

The actions of the White Paper will help improve water management from the moment rain falls in our catchments, enters aquifers and rivers, and moves to homes, farms and business to the recycling plant.

"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." *Premier of Victoria Steve Bracks*

"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." *Minister for Water John Thwaites*

The White Paper action is defined in Chapter 5.

"Victoria's cities and towns will have safe, secure and reliable supplies and provide for growing populations into the future, while managing environmental impacts."

The Policy framework for sustainable urban water management:

1. Balancing water supply and demand
2. Reducing water consumption
3. Recycling and using alternative supplies
4. Securing our urban water supplies.

3.3 Regional Catchment Strategies

Catchment Management Authorities (CMAs) were formed to create a whole of catchment approach to natural resource management in Victoria. CMAs are regional bodies which have a responsibility to coordinate the ecologically sustainable development and use of catchments, and maintain and improve the quality of land and water resources.

CMAs carry out these responsibilities (outlined in the *Catchment and Land Protection Act 1994* and the *Water Act 1989*) by developing regional catchment strategies, which outline programs and actions aimed at the protection and rehabilitation of water quality, flow and aquatic habitats.

Greater Shepparton lies within the Goulburn Broken Regional Catchment.

3.3.1 Goulburn Broken Regional Catchment Strategy

The rivers within the Goulburn Broken Catchment are highly valued for tourism and recreation, environmental features, and as resources for social, agricultural and economic wealth. The *Goulburn Broken Regional Catchment Strategy 2003* includes the following vision statement of relevance to sustainable water use:

"The environmental footprint of irrigation and dryland farming will be significantly reduced, with farmers occupying less land and using less water whilst managing their resources more sustainably."

The strategy prioritises the actions and works to address current and emerging threats such as salinity and declining water quality. A key element of the strategy is the whole of catchment approach that promotes investment that offers benefits to the natural environment, the social fabric and the economy of the region.

3.4 Permanent Water Saving Rules

Potable water is supplied to the Council by GV Water. GV Water's Permanent Water Saving Rules in the form of Water Conservation By–Law 508 came into effect on 1 January 2004 and are effective all year round across all of the authority's regions. When necessary this by-law can be supplemented by formal water restrictions. The aim of Water Conservation By-Law 508 is to encourage customers and the wider community to conserve water and use water wisely by adopting the following water use practices:

- Sprinklers, micro-sprays, drip systems and any other methods of watering or irrigation connected to the town water supply system must not be used to water private gardens, public gardens or sports grounds between the hours of 10.00am to 5.00pm each day.
- Hand held hoses, watering cans or buckets may be used at any time.
- Vehicles must not be cleaned except by hand washing with a bucket or use of trigger device attached to the hose.
- Paved areas must not be cleaned by hosing unless cleaning is required as a result of construction, building or like activities, accident, fire, health hazard, storm or other emergency or by use of a water efficient pressure boosted jet hose fitted with a trigger device.

GV Water has established water conservation targets as:

"Establishing targets to reduce average water consumption by 11 per cent by 2010/2011 from 2001/2002 levels:"

3.5 Environment Protection Act 1970 and Subordinate Instruments

3.5.1 Environment Protection Act 1970

The *Environment Protection Act 1970* ("the Act") establishes the powers, duties and functions of Environment Protection Authority Victoria (EPA). These include the administration of the Act and any regulations and orders made pursuant to it, recommending State Environment Protection Policies (SEPPs) and Industrial Waste Management Policies (IWMP) to the Governor in Council, issuing Works Approvals, licences, permits, Pollution Abatement Notices and implementing National Environment Protection Measures (NEPMs).

The key aims of the Act include sustainable use and holistic management of the environment, ensuring consultative processes are adopted so that community input is a key driver of environment protection goals and programs and encouraging a cooperative approach to environment protection. To help achieve these aims, the following Principles of Environment Protection were added to the Act in 2001:

- Integration of economic, social and environmental considerations
- Precautionary principle
- Intergenerational equity
- Conservation of biological diversity and ecological integrity
- Improved valuation, pricing and incentive mechanisms
- Shared responsibility
- Product stewardship
- Wastes hierarchy
- Integrated environmental management
- Enforcement
- Accountability.

Changes made to the Act in 2002 by the *Environment Protection (Resource Efficiency) Act 2002* are designed to help all sectors of the Victorian community to continue to find innovative ways of using resources more efficiently and to reduce the ecological impact.

3.5.2 State Environment Protection Policy (Waters of Victoria)

SEPPs are subordinate legislation made under the provisions of the Act to provide more detailed requirements and guidance for the application of the Act to Victoria. SEPPs aim to safeguard the environmental values and human activities (beneficial uses) that need protection in Victoria from the effect of pollution and waste.

The principal SEPP for managing Victoria's waterways is *Waters of Victoria*, which applies to all surface waters of Victoria. This policy protects the environmental values, beneficial uses and associated social and economic values of the water environment to ensure that the needs of current and future generations are met. Specific schedules to *Waters of Victoria* deal with specific individual catchments and have more detailed requirements that apply within the catchments in question.

The SEPP includes a range of responsibilities for councils which impact on surface waters, including the planning and approval of sustainable land use, domestic wastewater management, urban stormwater, and where relevant, floodplain management. The policy also highlights the importance of councils cooperating and working with the EPA, catchment management authorities and other protection

agencies to ensure their municipal planning schemes, statutory approvals and municipal programs are consistent with the policy and regional catchment strategies, and help to protect beneficial uses. Clause 40 of the SEPP recognises the shared responsibility of communities, businesses and protection agencies to reduce consumption of potable water and to ensure a sustainable water supply for all beneficial uses. Councils are encouraged to work with communities and businesses to implement water saving practices, particularly for new developments.

3.5.3 EPA Guidelines

The EPA has prepared and published three environmental guidelines that have direct relevance to the SWUP.

Firstly, EPA Publication 464.2 *Use of Reclaimed Water – Guidelines for Environmental Management* (November 2003) provides information on the reclamation and use of treated sewage from large scale facilities. The key provisions of the guideline are:

1. Definitions of four classes of reclaimed water based on the treatment processes used and monitoring of water quality parameters.
2. Linkages between the acceptable uses for the different classes of the water.
3. The necessary restrictions to protect the environment and public health.
4. The regulatory framework and approval processes.

A significant aspect of this guideline is that it has been endorsed by EPA, Department of Human Services, DSE and the Department of Primary Industries.

Secondly, EPA Publication 812.1 *Domestic wastewater management series: Reuse options for household wastewater* (November 2001) provides advice about the regulatory, health and environmental issues associated with household wastewater reuse.

Thirdly, EPA Publication 168 *Guidelines for wastewater irrigation* (April 1991) which is designed to assist planners, engineers, consultants, plant operators and Government agencies in the design and operation of wastewater irrigation schemes, in accordance with environmental legislation in Victoria.

3.6 State Planning Policy Framework

The State Planning Policy Framework (SPPF) sits within all planning schemes in the State. The SPPF outlines State level planning policy and sets the strategic context for planning at the local government level. A key basis of the policy is sustainable development “for the benefit of present and future generations”.

As part of the ‘greener city’ policy under Clause 12.07, strategies for the sustainable use of water resources include encouraging alternative water supplies to potable water; ensuring that drainage, sewerage and water supplies are matters that are considered carefully in the early design stage for new developments; and also ensuring that any opportunities for recycling effluent are taken advantage of in new urban areas and green spaces.

4. Australian Government Water Efficiency Labelling

The Australian Government, in collaboration with State and Territory governments, has introduced a Water Efficiency Labeling and Standards (WELS) Scheme. The WELS Scheme, which commenced on 1 July 2006, introduces mandatory water efficiency labels on all showerheads, washing machines, toilets, dishwashers, urinals and some types of taps, as well as minimum water efficiency standards for toilets. The WELS Scheme replaces the voluntary National Water Conservation Rating and Labeling Scheme (the 'AAAAA' Scheme).

5. Greater Shepparton City Council Policy

5.1 Introduction

The Council has a range of existing initiatives, strategies and policies that relate to sustainable water management.

5.2 Water Conservation Discussion Paper

In October 2002, in response to the prolonged dry conditions, the Council wanted to be seen as setting an example for others to follow, by adopting and raising awareness of responsible water practices, and as such developed a *Water Conservation Discussion Paper*. The paper outlined a range of actions that the Council and the community could take to conserve water and demonstrate support for the rural community.

Submissions were received on the discussion paper from a range of community groups, individuals and government agencies. One of the key issues highlighted was the need to balance civic pride in parks and gardens against potential water savings. As a result of the feedback the Council received on the discussion paper, a range of actions were adopted which were designed to reduce water consumption and included:

- Undertake a water usage audit.
- Set a water reduction target of 15 per cent over five years.
- Increase education and awareness of water conservation .
- Plant drought resistant plants and grasses at public open space.

5.3 Council Plan

In July 2006 the Council adopted its *2006-2010 Council Plan*. The plan contains the following Vision:

Greater Shepparton
As the Food Bowl of Australia,
a sustainable, innovative
and diverse community
Greater Future

In support of its Vision, the Council has adopted six Strategic Objectives as follows:

Settlement and Housing
The Greater Shepparton City Council is committed to growth within a consolidated and sustainable development framework.

Community Life
The Greater Shepparton City Council will enhance social connectedness, physical and mental health and well being, education and participatory opportunities in order to improve liveability and a greater range of community services.

Environment
The Greater Shepparton City Council will conserve and enhance significant natural environments and cultural heritage.

Economic Development
The Greater Shepparton City Council will promote economic growth, business development and diversification, with a focus on strengthening the agricultural industry.

Infrastructure
Greater Shepparton will provide urban and rural infrastructure to enhance the performance of the municipality and facilitate growth.

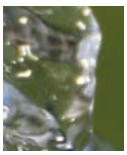
Council Organisation and Management
The Greater Shepparton City Council will deliver best practice management, governance, administrative and financial systems that support the delivery of Council programs to the community of Greater Shepparton

The Council's key strategic objectives are aligned to the key objectives set out in the *Greater Shepparton 2030 Strategy* (GS2030). The key strategic objectives to be pursued by the Council during the life of this Council Plan reflect current Council priorities. Objectives, strategies, measures and targets will be reviewed annually by the community and the Council.

5.4 Greater Shepparton 2030 Strategy

The Council and the DSE have prepared GS2030 a blueprint for building sustainable economic activity and maximising the quality of life in the municipality over the next 30 years. This plan updates the previous *Greater Shepparton City Council Strategy Plan 1996* which formed the basis for the current Municipal Strategic Statement (MSS). The MSS is the local strategy component of the Greater Shepparton Planning Scheme.

The Council's adopted strategic planning vision for GS2030 is conveyed in the following statement:



"Greater Shepparton 2030 – the regional centre
distinguished by the range of its sustainable achievements."

The environment component of this strategy plan is inclusive of a wide range of subtopics, or themes, that are interrelated and often interdependent:

- The natural environment
- Floodplain management
- Best practice land management
- Aboriginal heritage
- European heritage.

The overarching environmental issue is biodiversity - and the protection and enhancement of the earth's basic elements of air, water, soil and nutrients, and the protection of its intricate web of flora and fauna ecosystems.

In the case of Greater Shepparton, biodiversity issues are most evident in the myriad river systems, floodplains, wetlands and areas of remnant vegetation that influence the majority of land, both rural and urban, in the municipality. A major focus of this strategy is to recognise, protect and enhance the remaining natural environment and biodiversity assets within the municipality. Notably, Greater Shepparton has only 2.5 per cent of it original native remnant vegetation remaining. The environment also encompasses the cultural elements of the Aboriginal tribes in this region, and the built heritage of the original European settlers. These histories are important for the present and future communities to understand the development of the region and its communities, and of what gives the municipality its sense of place.

5.5 Municipal Strategic Statement

Following an extensive community consultation program and the adoption in principle of GS2030 by the Council in July 2005, a new MSS was prepared which forms the statutory means of implementing many of the outcomes of GS2030.

Amendment C69 provides the long term strategic framework for Greater Shepparton for the next 25 years. The amendment consists of a new MSS and new local planning policies which have been specifically tailored to suit the needs of Greater Shepparton.

The MSS identifies the Council's land use and development framework inclusive of town structure plans for Shepparton and for all of the smaller townships. Industrial and retail strategies are also presented. The document will be the key planning instrument upon which land use decisions will be reached by the council.

Amendment 69 of Section 21 of the MSS states:

"The Council is evaluating and planning for appropriate water saving measures relating to its' own water use of approximately 500 mega litres per year for sporting grounds, public open space areas, playgrounds, median strips, and other landscape features. Conservation measures include planting of indigenous, drought-resistant varieties; reduced number of waterings; all watering takes place during early morning and evening; no planting of flowering annuals; use of couch and kikuyu only for public open spaces and recreation reserves; conversion of watering systems from manual to automatic; and increase knowledge of water requirements of various grasses."

5.6 Recreation and Open Space Strategy

In 1996 the Council engaged consultants to prepare a *Recreation and Open Space Strategy* which provided a framework for the development of sporting, recreation and open space resources over the next five to ten years. The strategy identified a range of issues to be addressed by Council regarding the management and allocation of these resources, however, the issue of water resources required to maintain these facilities was not part of the brief for this project. The strategy is currently a reference document in the *Greater Shepparton Planning Scheme*, although GS2030 (Report No. 3 - Community Life) recommends the need for the document to be reviewed as a medium priority.

5.7 Stormwater Management Plan

The Council, in association with the Goulburn Broken Catchment Management Authority (GBCMA) and EPA, has prepared a *Stormwater Management Plan* to improve the quality of urban stormwater discharged into local waterways. The aim of the plan is:

"To identify actions to improve the environmental management of urban stormwater and protect the environmental values and beneficial uses of receiving environments."

It identifies urban activities that may adversely affect water quality and sets in place strategies to protect water quality and beneficial uses from stormwater runoff.

The strategies include:

- Reactive strategies: developed in response to current threats and activities that have been identified as posing a priority risk to stormwater quality.
- Management strategies: developed to enhance existing management practices and in doing so avoid future adverse impacts on stormwater.

With its focus on protecting water quality, the plan does not consider hydraulic issues such as the capacity of the drainage system and flooding issues. However, it does establish a common understanding and integrated approach between the Council, various Government agencies and the community to the protection of urban stormwater quality.

The plan addresses stormwater issues in the towns of Shepparton, Mooroopna and Tatura.

5.8 Infrastructure Design Manual

The Council, in association with the City of Greater Bendigo and the Shire of Campaspe, is in the process of finalising an *Infrastructure Design Manual*. The primary objectives of this joint initiative which is to be used within the boundaries of the three municipalities are:

- To clearly document the Council's requirements for the design and development of infrastructure.
- To standardise development submissions as much as possible and thus to expedite the Council's engineering approvals.
- To ensure that minimum design criteria are met in regard to the design and construction of infrastructure within the municipalities.

This comprehensive document will therefore include design criteria for aspects such as environmentally sustainable landscape design, design and management of open space (in accordance with the *City of Greater Shepparton Open Space Strategy*) and stormwater runoff (consistent with any relevant *Stormwater Management Plan*).

5.9 Eco-Buy Purchasing Policy

In June 2003 the Council adopted an Eco-Buy Purchasing Policy designed to advance the sustainable use of resources within the Council's operations. The policy provides purchasing guidelines aiming to purchase products, where practicable, that achieve:

- Zero Waste
- Zero Climate Damage
- Zero Habitat Damage
- Zero Pollution
- Zero Soil Degradation.

The policy details a 10 per cent price preference to products that are considered environmentally beneficial.

5.10 Aquamoves Environmental Policy

Aquamoves provides sport and recreational services to the Greater Shepparton district. Aquamoves is located alongside Tom Collins Drive between the Goulburn River and Victoria Lake in Shepparton.

Aquamoves Environmental policy includes the following statement of relevance to the SWUP:

Implement effective ways of minimising waste and ensure efficient and sustainable use of energy and water.

5.11 Greater Shepparton City Council Water Maintenance Operations 2006

The Council has prepared the *Greater Shepparton City Council Water Maintenance Operations 2006* in order to respond to the staged implementation of GV Water By-Law 10. The Council's document aligns implementation actions with the staged implementation of water restrictions as specified in GV Water By-Law 10.

6. Water Supply and Usage in the Greater Shepparton City Council

6.1 Rainfall and Evaporation

The majority of the water used in Greater Shepparton is for parks and reserves and the amount used is dependant on the seasonal climate variations, with demand being greatest during the drought of 2002/2003 and over the summer months.

Average rainfall data for Shepparton has been recorded at Tatura since 1942. Average rainfall data as well as data for 2002 and 2003 is summarised in Table 1.

(Source http://www.bom.gov.au/climate/averages/tables/cw_081049.shtml)

Month	Mean monthly rainfall (mm)	90th percentile rainfall (mm)	10th percentile rainfall (mm)	Monthly rainfall (mm) (2002	Monthly rainfall (mm) (2003)	Mean daily evaporation (mm)
January	34.0	88.2	2.8	8.2	31.4	7.3
February	30.8	81.2	0.9	53.6	31.6	6.7
March	34.9	78.4	1.4	15.2	0.2	4.9
April	35.7	71.9	3.6	6.0	83.0	3.0
May	48.9	91.2	11.2	17.8	55.4	1.6
June	45.0	74.2	14.5	36.2	48.8	1.0
July	49.3	80.6	16.0	13.0	75.6	1.1
August	48.4	80.8	12.3	10.4	69.4	1.7
September	44.7	84.1	15.9	28.0	26.8	2.7
October	48.5	92.2	10.4	8.6	NA	4.1
November	39.0	80.9	8.8	11.0	NA	5.5
December	33.8	76.4	3.7	4.2	NA	3.9

Table 1: Rainfall and Evaporation Data at Tatura

6.2 Current Municipal Water Usage

6.2.1 Potable Water Usage

The Council obtains potable (drinking) water from GV Water. Over the five years for which data has been analysed, the Council's annual consumption of potable water has varied from a low of 356,944 KL/yr in 2000/2001 to a maximum of 557,993 KL/yr in 2001/2002. The Council's average annual potable water consumption from GV Water is 414, 974 KL/yr. The trend in potable water use by the Council over the period 2000-2005 is shown in Figure 3.

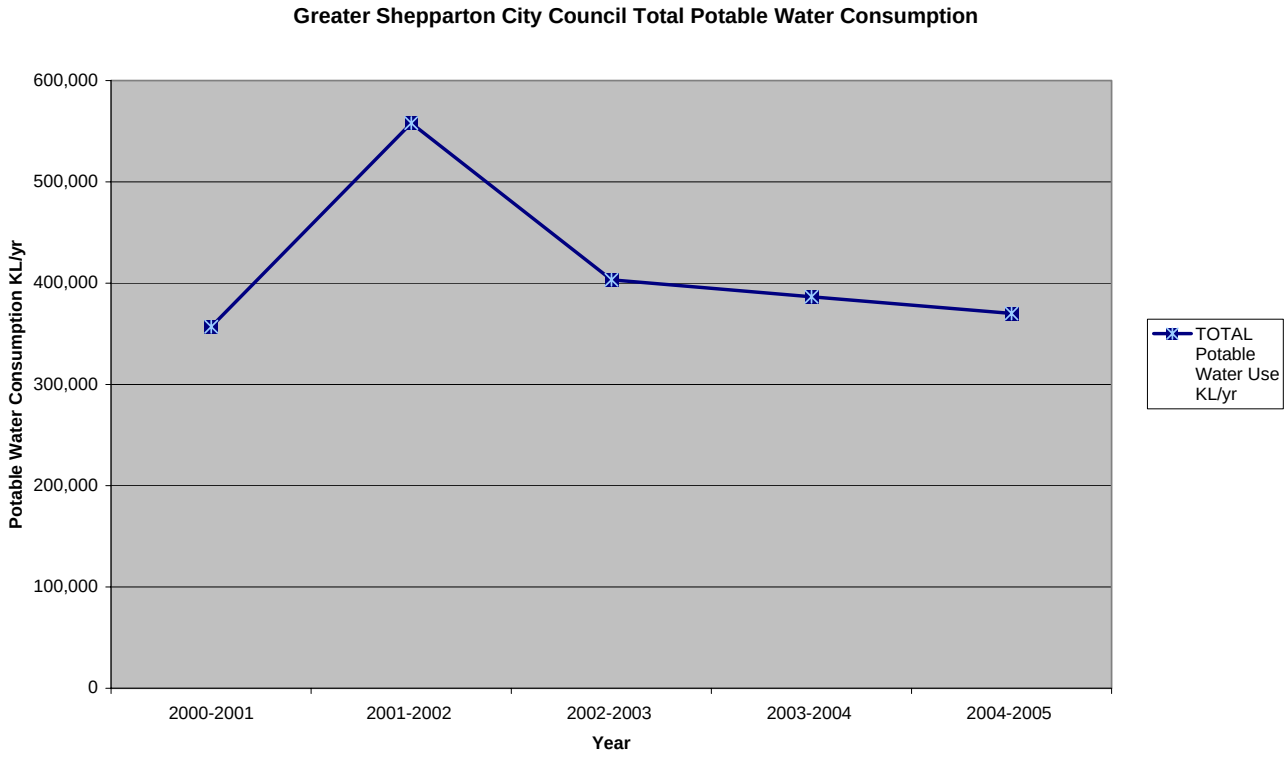


Figure 3: Potable Water Use Trend 2000-2005

To allow for a more detailed assessment of the water usage, the Council's potable water usage has been classified into 13 consumption component categories in accordance with the *Guidelines for Developing Sustainable Water Use Plans for Regional Local Government* as follows:

Council Administration Offices
- Council offices
- Business centre
- Tourist Information Centre
- Civic Centre

Child Care Centres
- Health centre
- Pre-school
- Kindergarten
- Child minding

Maintenance Depots
- Council Depots
- Dog pound

Cultural Buildings
- Libraries
- Theatres
- Museums

Community Centres
- Halls
- Scout halls
- Senior citizens rooms
- Club/clubrooms

Toilet facilities
- Public toilets and showers
- Transit centre/bus depot toilet block

Open Space/Parks
- Nature reserves
- Median strips
- Playgrounds
- Public garden/ park
- Reserve/other

Playing Fields/Ovals
- Ovals
- Golf courses
- Tennis courts recreation reserves
- Croquet club

Swimming Pools/Aquatic Centres
- Swimming pool

Planter Box/Car Park (included in open space/parks for assessment)
- Car parks
- Planter box
- Council car park

Recreation Centres
- Sport stadium
- Indoor netball/basketball courts

Saleyards
- Saleyards

Aerodrome
- Aerodrome

Potable water consumption data for each of the water use categories has been derived as shown in Figure 4.

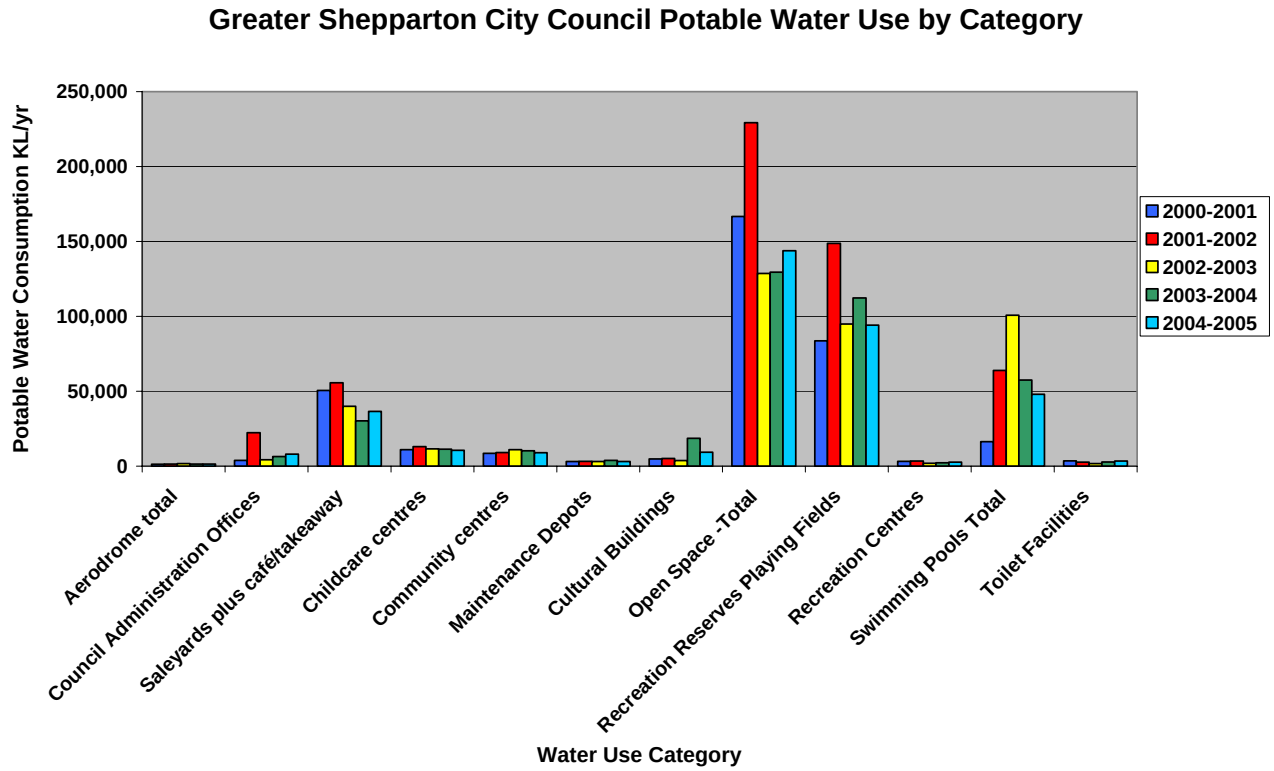


Figure 4: Potable Water Use by Category

The Council's potable water use by year is shown in Figure 5.

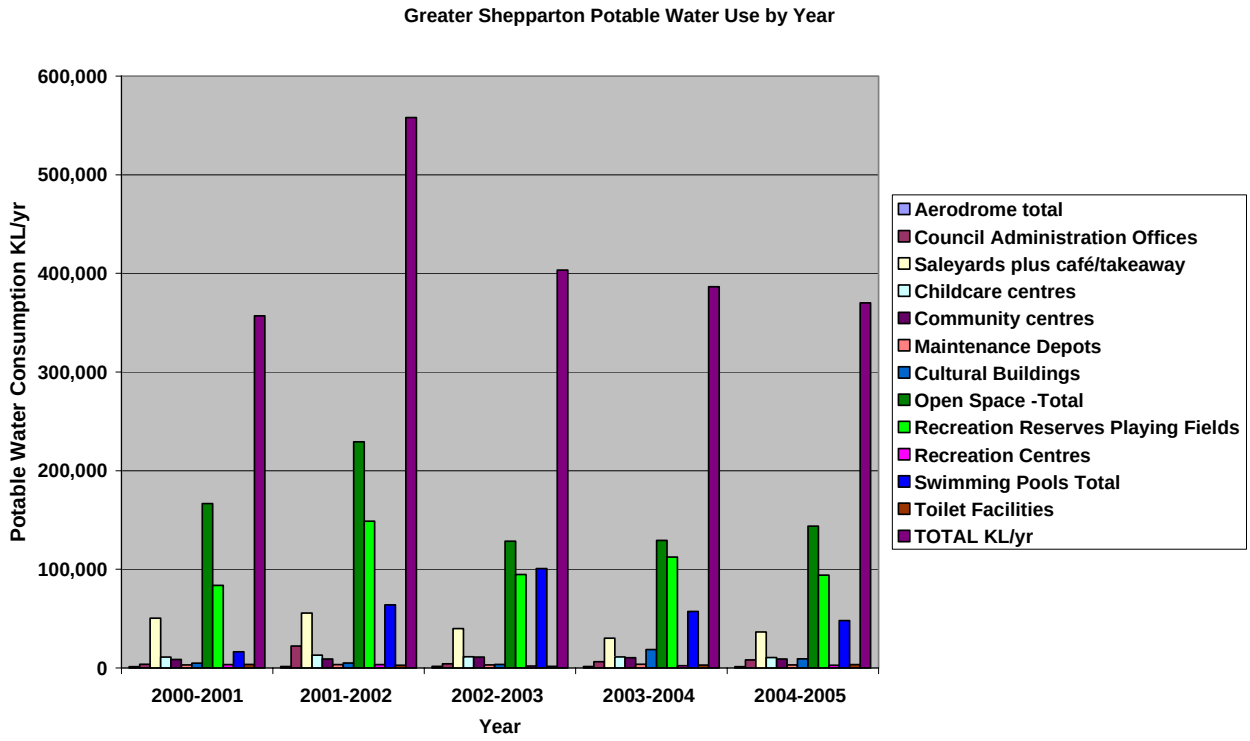


Figure 5: Potable Water Use by Year

The Council's four highest potable water users, in order of diminishing consumption, are Open Space/Parks, Recreation Reserves and Playing Fields, Swimming Pools, and the Saleyards as shown in Figure 6.

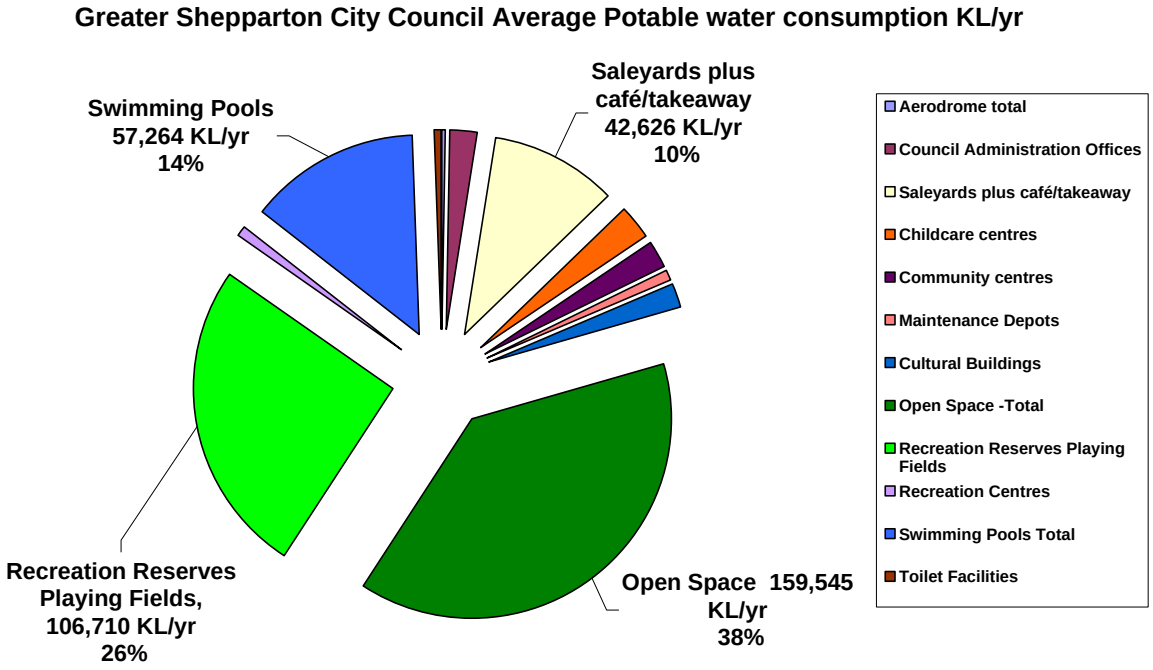


Figure 6: Council Average Potable Water Use

On average Open Space/ Parks account for 38 per cent of the Council's average potable water consumption. Potable water consumption on Open Space /Parks has varied over the five years from a low of 128,619 KL/yr in 2002/2003 to a maximum of 229,231 KL/yr in 2001/2002. Average potable water consumption on Open Space/ Parks is 159,545 KL/yr.

The Council's Recreation Reserves consume on average 106,710 KL/yr which is 26 per cent of the Council's average potable water consumption. Potable water consumption at the Recreation Reserves has varied from a low of 83,624KL/yr in 2000/01 to a maximum of 148,665KL/yr in 2001/02.

The Swimming Pools consume on average 57,264KL/yr accounting for 14 per cent of the Council's average potable water consumption. Potable water consumption at the swimming pools ranges from a low of 16,318 KL/yr in 2000/2001 to a maximum of 100,709 KL/yr in 2002/2003.

Potable water consumption at the Saleyards accounts for 10 per cent of the Council's average potable water use. Over the five years potable water consumption at the Saleyards has varied from a low of 30,205 KL/yr in 2003/2004 to a maximum of 55,746 KL/yr in 2001/2002. The average potable water consumption at the Saleyards is 42,626 KL/yr.

6.2.2 Raw Water Usage

The Council receives raw water from Goulburn Murray Water (GM Water) through a gravity water entitlement of 222 ML/yr which is used mainly for irrigating 26 recreation reserves at Tatura, Katandra, Tallygaroopna, Bunbartha and Congupna. The Council also has a bulk water entitlement of 654ML/yr to pump water from the Goulburn River.

The Council also has two licences from GM Water to pump from drains at the Katandra and Lemnos Reserves.

In addition to the raw water supplied by GM Water, the Council has an average annual raw water supply from GV Water of 160,721 KL/yr to irrigate median strips and parks in Mooroopna, and to top up Craigmuir Lake.

6.3 Comparative Water Usage

The population in Greater Shepparton is increasing. The Council water use is effectively water that is used by the Council for community benefit. An appropriate measure of water use efficiency is therefore the amount of water that is used on behalf of each resident of the municipality (KL per resident per year). By calculating this figure, comparisons can be made of current water usage efficiency with future water usage.

The current population is 59,000 people and the average annual potable water consumption over the period 2000-2005 was 414,974 KL/yr giving an average Council per resident usage of 7KL/resident/yr. The average Council per resident usage for each category is shown in Table 3:

Average Current Council water use for each water use category (2000-2005)		
Water Use Category	Average Potable water consumption KL/yr	KL/resident/yr
Aerodrome	1,455	0.025
Council Administration Offices	8,994	0.152
Saleyards plus café takeaway	42,626	0.722
Childcare centres	11,479	0.195
Community centres	9,632	0.163
Maintenance Depots	3,317	0.056
Cultural Buildings	8,331	0.141
Open Space	159,545	2.704
Recreation Reserves/ Playing Fields	106,710	1.809
Recreation Centres	2,756	0.047
Swimming Pools	57,264	0.971
Toilet Facilities	2,864	0.049
Total	414,974	7.033

Table 3: Average Council per Resident Water Use

6.4 What is the Water Used For and Where?

In order to be able to identify potential water conservation measures that can be implemented by the council, it is first necessary to understand how the water is currently used. In Sections 5.1 and 5.2 the Council's water use was presented in 13 categories. The water use in each of these categories is discussed as follows:

6.4.1 Aerodrome

The Shepparton Aerodrome is owned and operated by the Council and is located on the Goulburn Valley Highway 5km south of the Shepparton Post Office. The aerodrome site covers 52 Ha and is used by a flying school, charter aircraft, Air Ambulance, Security Express and privately owned aircraft. Water is used at the aerodrome for watering lawns around the terminal buildings, for toilet and bathroom and kitchen facilities within the terminal buildings and the flying schools. Some of the toilets in these facilities, depending on when they were installed, are dual flush, but many of the other fittings do not comply with the WELS Scheme. Water is also used for fire fighting purposes.

6.4.2 Council Administration Offices

The Council's Administration Offices category includes the Eastbank Centre and the Council offices in Welsford Street and the Business Centre offices in New Dookie Road. The majority of water used in the offices facilities is for toilet and bathroom use, as well as staff tea room and kitchen facilities which includes dishwashers, and sinks at both sites. The toilets at these facilities are dual flush, however, the dishwashers and other fittings do not comply with the WELS Scheme.

At the Eastbank Centre there are two commercial kitchens, a café/restaurant, and public toilet facilities. The toilets at these facilities are dual flush however, the water efficiency of the commercial kitchen equipment is uncertain.

6.4.3 Saleyards

The Shepparton Regional Saleyards are located in New Dookie Road. The Saleyards are owned by Council with the daily operations currently outsourced under contract management by Wilby Downs Pty Ltd. Scheduled sales occur every Monday, Tuesday and Friday with special sales also occurring regularly which amounted to over 700 sales conducted by agents last financial year. The Shepparton Regional Saleyards is the Council's largest municipal business operation as represented by this major provincial selling facility having stock throughput in excess of 121,000 cattle and 348,000 sheep last financial year. The Saleyards comprise roofed cattle yards which include two 50,000 litre collection tanks to harvest the rainwater catchment off the cattle roof, unroofed sheep yards, truck wash, agent's offices and café. The majority of water used at the saleyards is by the truck wash, and the remainder is used to wash down the sheep yards and for dust suppression.

6.4.4 Child Care Centres

The Council owns and operates one occasional care centre, three long day care facilities and 12 kindergartens. The Council owns 14 Maternal and Child Health Centres. The supply of services through these centres is contracted through Goulburn Valley Health. In addition the Council has lease agreements with two privately operated child care centres for which the Council pays one third of the water usage costs.

6.4.5 Community Centres

This category includes the Senior Citizens and Community Centres in Shepparton, Mooroopna, Tatura, Murchison and Merrigum. Water used in these facilities is generally for toilet, bathroom and kitchen use as well as some irrigation of surrounding gardens. Some of the toilets in these facilities are dual flush, depending on when they were installed, but many of the other fittings do not comply with the WELS Scheme.

6.4.6 Maintenance Depots

The Council has three depots at Shepparton, Mooroopna and Tatura. The Council depots use water for truck and car washes, hot water weed control, weed control chemical mixing, tree watering, irrigation of the site, toilet flushing and emergency potable water supply.

The Council also operates a transfer station at Ardmona, a transfer station and pound at Wanganui Road and an office and storage depot at Grahamvale Road.

The Council is currently constructing a new depot at Doyles Rd which is due to open in 2008. As part of the design of its new depot, the Council has included a major water saving feature through the innovative design of a rainwater harvesting system which has a storage capacity of 160,000L. The stored water will be sufficient to provide water for the truck wash, chemical spray mixing, toilet facilities, as well as irrigation of the vegetation at the depot.

6.4.7 Cultural Buildings

The cultural buildings include the library in Shepparton and the museums in Shepparton, Merrigum and Murchison and the cultural centre at Parkside Gardens The major water user in this category is the cultural centre at Parkside Gardens.

6.4.8 Open Space/Parks

The open space and parks category includes parks and gardens, roundabouts, road reserves, street trees and median strips.

The Council irrigates 168 parks and open space areas and 110 median strips, road reserves and roundabouts with potable water.

In 2003 the Council ceased watering all manually operated irrigation systems at its parks and reserves. Approximately 20 parks and reserves ceased to be watered as a result of this program.

6.4.9 Recreation Reserves/Playing Fields

The recreation reserves and playing fields category includes sporting ovals, hockey fields, netball fields and cricket fields.

There are 10 recreation reserves owned and managed by the Council that are irrigated with potable water.

6.4.10 Recreation Centres

This category includes the sports stadium at Numurkah Road. Water use at this site is mainly used for toilet, bathroom and kitchen facilities. Some of the toilets in these facilities, depending on when they were installed, are dual flush, but many of the other fittings do not comply with the WELS Scheme.

6.4.11 Swimming pools/Aquatic Centres

The Council operates four outdoor pools at Mooroopna, Merrigum and Tatura. The Mooroopna and Tatura pools are approximately 40 years old. Leaks from these pools were minimised through work on the expansion joints completed in 2002. Pool covers are being considered as an option to minimise evaporative losses from these pools.

The Merrigum pool is less than 40 years old. Pool covers are being considered as an option to minimise evaporative losses from the pool.

Potable water is used at these pools for topping up the pools as well as for toilet and shower facilities. Some of the toilets in these facilities, depending on when they were installed, are dual flush, but many of the other fittings do not comply with the WELS Scheme.

At Shepparton, the Council operates an indoor pool and recreation complex as well as an outdoor 50 metre pool. The Council took over the operation of this facility in 2002. High water consumption during 2002/2003 was due to leakage from the 50 metre pool. The Council undertook maintenance work on the pool expansion joints in 2003/2004 and installed pool covers on the 50 metre pool. Potable water is used at this facility for topping up the pool, kitchen, toilet and shower facilities. Some of the toilets in this facility, depending on when they were installed, are dual flush, but many of the other fittings do not comply with the WELS Scheme.

6.4.12 Toilet facilities

The Council operates 26 public toilet facilities located in Dookie, Katandra, Merrigum, Mooroopna, Murchison, Pine Lodge, Shepparton Tallygaroopna, Tatura and Undera,

None of the toilets in these facilities are dual flush, due to high vandalism rates.

6.5 Alternate Water Resources

The Victorian Government White Paper *Our Water Our Future* charged the EPA and the Department of Human Services with the task of reviewing the public health and environmental framework for alternative urban water supplies.

In March 2006 the EPA and Department of Human Services jointly released a discussion paper, *A Framework for Alternative Urban Water Supplies* which reviews the existing public health and environmental regulatory framework supporting alternative water supplies of rainwater, stormwater, greywater and sewage. The discussion paper identifies the gaps in the existing regulatory framework and makes recommendations for the development of future regulatory framework to support the safe and sustainable use of rainwater, stormwater, greywater and recycled sewage effluent.

The focus of the SWUP is to reduce Council potable water use within Greater Shepparton. Alternative water sources available to the city include:

- Rainwater
- Stormwater
- Sewage including grey water from Council facilities
- Industrial wastewater
- Groundwater.

6.5.1 Rainwater and Stormwater

Rainwater is used as a source of water within the municipality. Rainfall collection tanks are installed at the Saleyards and at the new depot. Rainwater and stormwater reuse are expected to be the primary sources of water at the new depot. Rainfall contributes to the irrigation of parks, gardens and recreation reserves.

Stormwater is currently reused for irrigation purposes from some lakes in the municipality.

6.5.2 Sewage and Grey Water

Sewage and grey water are potential water resources. Sewage is any wastewater containing human excreta or domestic wastewater and grey water is all household wastewater excluding that derived from toilets and urinals.

Reuse of sewage and grey water needs to comply with relevant EPA guidelines.

The EPA has developed an information bulletin and accompanying protocols to assist water authorities and their potential customers develop drought relief schemes involving the use of tankers to supply reclaimed water (water from sewage treatment plants) for dust suppression, and watering council parks and gardens. The information bulletin Publication 887 *Using Tankers To Supply Reclaimed Water For*

Drought Relief (February 2003) describes the management framework that will be required for a drought relief scheme, while the accompanying protocols provide examples of end use protocols. To ensure appropriate management controls are in place, drought relief initiatives should be discussed with the EPA regional office during development and have an EPA endorsement prior to commencement.

The Council will discuss with GV Water the potential to reuse wastewater from GV Water's Shepparton wastewater management facility for irrigation of sporting ovals at the north of Shepparton and for dust suppression, and watering Council parks and gardens.

6.5.3 Industrial Wastewater

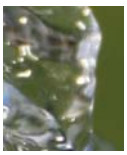
There are major food processing industries within Greater Shepparton, including Unilever (Rosella), Tatura Milk, SPC Ardmona, and Campbell Soups, which discharge trade waste to sewer. Some of these industrial wastewater streams already contribute to reuse on GV Water and third party properties and as such, there may be limited opportunities for the Council to use these alternative water sources.

6.5.4 Groundwater

Groundwater within the Council's area is managed by GM Water through the Shepparton Irrigation Region Groundwater Management Plan which was approved in 1999.

One of the key aspects of the Groundwater Management Plan is its role in the management of salt disposal from the region under the Murray Darling Basin Drainage Strategy.

The primary objective of the Groundwater Management Plan is to:



"Support the implementation of the Salinity Plan which aims to protect the Region's agricultural productivity and natural resources. It will do this by encouraging and supporting regular and responsible pumping of groundwater to provide salinity control while protecting both the groundwater resource and the rights of groundwater resource users."

The Groundwater Management Plan does not have a Permissible Annual Volume (PAV) against which licence entitlements are measured. Groundwater level monitoring is undertaken to allow watertable and salinity control works to be targeted in the high risk, high watertable areas, rather than tracking where excessive declines in groundwater levels are occurring.

The Council does not have a Groundwater license.

7. Water Sustainability Objectives and Conservation Targets

7.1 Council Water Use

The Council's water use is effectively water that is used by the Council on behalf of the residents, for community benefit. An appropriate measure of water usage efficiency therefore, is the amount of water used on behalf of the residents of the municipality in litres per resident per year.

The overall water conservation objective for the Council, through the SWUP is:

To reduce Council per resident potable water use (measured against the population of the municipality) by 15 per cent over the five years of the SWUP based on 2004/2005 water consumption data.

During the period 2000-2005 the average per resident Council potable water use, (ie. water used on behalf of the citizens of Greater Shepparton), for community benefit, was 7,033 L/resident/year. In the year 2004/2005 the Council per resident consumption was 6,273 L/resident/yr. The 2010 objective with 15 per cent reduction over five years is therefore 5,331 L/resident/year.

The main contributors to the Council water usage in the municipality are Open Space/ Parks; Recreation Reserves Reserves and Playing Fields; Swimming Pools; and the Saleyards. In order to achieve this overall objective, these water use categories will form the main focus of the action plan.

7.2 Projected Municipal Water Usage

In order to provide a basis for assessing performance of the Council with respect to implementing its SWUP, the future water use has been predicted for the next five years, based on current water use and a predicted future population growth of 1.8 per cent per annum.

The projected Council water usage is based on current usage rates apportioned per resident of Greater Shepparton population, and a forecast population growth of 1.8 per cent per annum. The forecast potable water usage for 2010 assumes that no water conservation measures are implemented and that the rate at which the Council uses water on behalf of its residents (Council water use) remains at the 2004/2005 level of 6,273 L/resident/year. This would result in an annual consumption in 2010 of 404 ML/yr compared to the 2004/2005 usage of 370 ML/yr. Therefore if no sustainable water use measures are implemented, the Council water use within Greater Shepparton will rise by 9.3 per cent resulting in an additional 19 KL/day of water consumed for municipal water requirements within Greater Shepparton.

7.3 Projected Water Savings

The projected water savings have been based on 15 per cent reduction in per resident Council water usage over the period 2005–2010. For the purpose of calculating the proposed water savings two scenarios are presented.

A population of 59,000 in 2004/2005 and an annual population increase of 1.8 per cent are assumed for the development of both Scenario 1 and 2.

Scenario 1 assumes that no water conservation measures are implemented and that the rate at which council uses water on behalf of its residents (Council water use) remains at the 2004/2005 level of 6,273 L/resident/year.

Scenario 2 assumes that there is a 15 per cent decrease in Council per resident water use over the five years of the SWUP which is equivalent to three per cent per year.

The two scenarios are presented Figure 7.

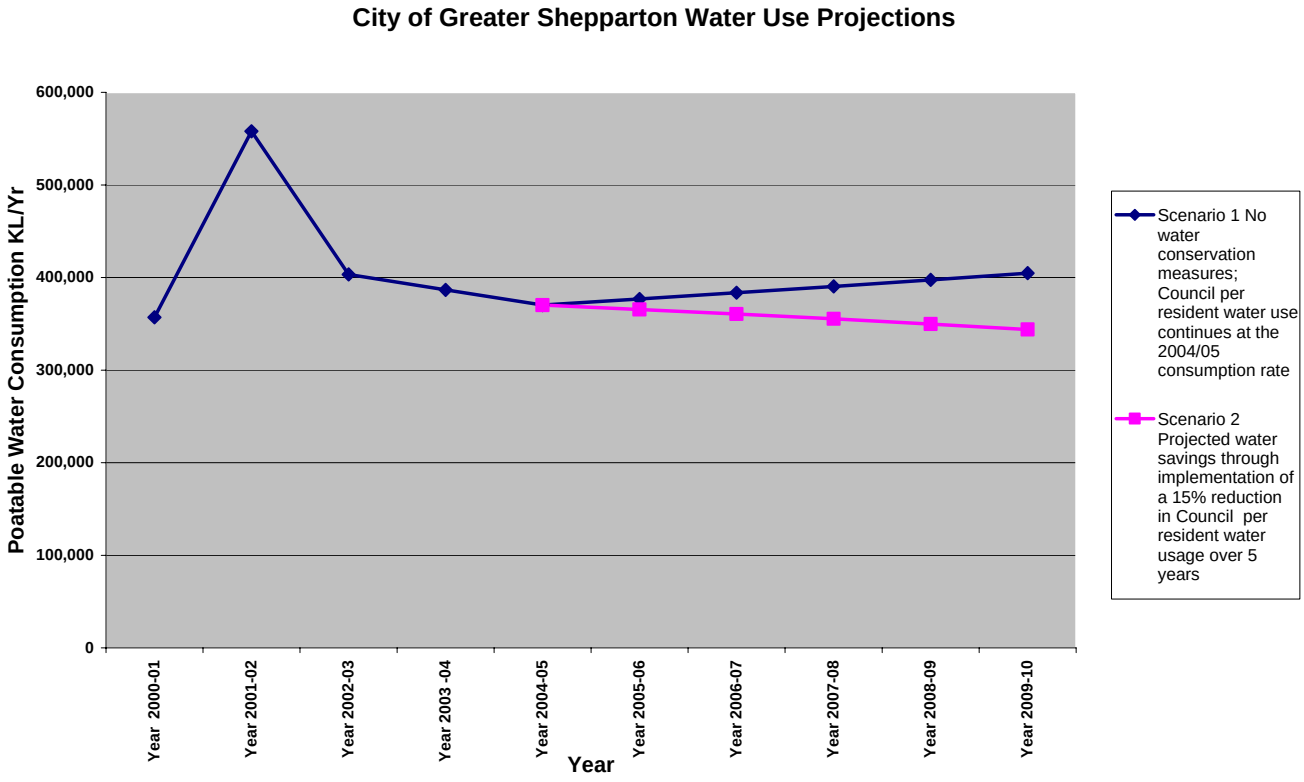


Figure 7: Water Use Projections

If no water conservation measures are implemented by the Council, then Scenario 1 indicated that this will result in an increased consumption of 34,530 KL over the five years or 6,906 KL/yr. The implementation of the proposed water conservation measures as shown in Scenario 2, will result in a reduction in council water use of 26,165 KL over the five years or 5,233 KL/yr.

7.4 Community Water Use

The focus of this plan is municipal Council water use, however, the Council has a role in promoting sustainable water use within the community. A secondary objective of the plan therefore, is, where practicable (ie. where it falls within the general responsibility of the Council and does not duplicate the work being undertaken by State Government agencies and water authorities with more direct responsibility for water management):

To encourage the community to reduce their water usage.

8. Action Plan

8.1 Introduction

The water conservation objectives and targets outlined in Section 7 are to be achieved through the actions described in the Action Plan. The actions focus on the themes of Sustainable Water Use; Education Promotion and Awareness; Incentives, Policies and Regulatory Controls and Monitoring and Reporting.

Actions within the SWUP pay particular attention to the highest potable water consumers and the initiatives are prioritised to lead to reduction in water consumption within these areas.

Each theme includes a key objective which relates to the overall objectives of the SWUP. The actions have been developed in consultation with relevant department officers within the Council. The responsibilities section of the Action Plan identifies the department within the Council responsible for implementation of the action. The Priority set for each Action Plan has been based on a ranking of high, medium and low and defined as:

High	To be undertaken, subject to available funding, as soon as possible, within the first two years of the implementation of the SWUP.
Medium	To be undertaken, subject to available funding, once the high priority actions have been completed, and within the third and fourth year of the implementation of the SWUP.
Low	Less urgent actions, to be undertaken, subject to available funding, once the high and medium priority actions have been completed, within the fifth year of the implementation of the SWUP.

The implementation of the actions is dependant on the Council attracting appropriate funding.

8.2 Action Plan Items

8.2.1 Open Space/ Parks

As a result of the drought in 2000, the Council undertook a proactive program to progressively implement a range of water saving measures at the municipality's parks, gardens and open space areas. In 2000, the Council commenced a program to plant all dry land areas within the municipality with native grasses and to mulch all Council garden beds. The Council has implemented a water conservation program for its parks that includes; surface aeration which is designed to improve drainage, the use of wetting agents and growth retardants which reduce water uptake by the grasses and reduce the frequency of watering, and the establishment of warm season grasses. In 2002, the Council began using a wetting agent with all new tree plantings which is designed to assist in conserving water and decreasing the frequency of irrigation applications. In 2003, the Council ceased watering all manually operated irrigation systems at its parks and reserves, which resulted in approximately 20 parks and reserves no longer being watered.

In 2005, the Council commenced a pilot program to trial a centrally controlled irrigation system which is designed to avoid water wastage. The system includes radio controlled water valves and in one location, a soil moisture monitor. The trial is currently operating at two locations; a recreation reserve (Deakin Reserve) and a median strip (Wyndham Street). Once the system is operating successfully the Council plans to progressively implement centrally controlled irrigation systems for the whole municipality. However, the high estimated cost of implementing this is prohibitive at this stage.

All new landscaping projects within the municipality are developed using water conservation principles including drought tolerant species, hard surfaces and warm season grasses.

The Council's irrigation systems have been progressively upgraded to provide better uniformity of water delivery and minimise wind drift. Ongoing irrigation management practices include regular staff participation in training and information seminars on horticultural practices and weekly inspections of the irrigation systems to identify and address any problems.

The Council has updated its GIS mapping of parks, gardens and reserves so that it will be able to link this with water use data and area irrigated in order to monitor water use per unit area (KL/Ha/annum) as an indicator of water use efficiency.

8.2.2 Recreation Reserves and Playing Fields

As a result of the drought in 2000, the Council undertook a proactive program to progressively implement a range of water saving measures at the municipality's playing fields and recreation reserves. In 2001 the Council implemented vertidraining of all of its sports ovals which is designed to improve drainage and minimise ponding. In 2002 the Council began using a wetting agent on all sports fields to assists in conserving water and decreasing the frequency of irrigation applications.

In 2003, the Council introduced a preferred grass policy using Kikuyu and Couch grasses in recreation reserves. The Council also commenced a program to convert the grasses on all of the sports ovals from cool season to warm season grasses. Two ovals each year are converted under this program, with all of the ovals due to be converted by 2013. As a result of the program, water application at the converted ovals has been reduced from two to three applications per week to one application per week. The playing surface of the converted ovals is dormant during the winter, and looks brown which results in negative comments from residents, however, the comments from the players indicate that the playing surface is of good quality.

The Council implemented the use of growth retardants on grasses on ovals in 2004 to reduce water uptake by the grasses and reduce the frequency of watering. These measures are expected to reduce water use by up to 25 per cent per oval.

8.2.3 Swimming Pools

In 2005 the Council undertook a water efficiency investigation of Aquamoves. The investigation was confined to the indoor facilities and assumed that potable water consumption at the site was 10 ML/annum. The investigation did not include the 50 metre outdoor pool and the garden and grassed areas surrounding the complex. Potable water consumption figures obtained for the preparation of the SWUP indicate that average water consumption at the whole site is 57 ML/annum. The investigation concluded that there were opportunities to improve water use efficiency at Aquamoves and recommended the inspection of the building by a plumbing contractor to further investigate the cost and

feasibility of reducing potable water usage and trade waste flows. These recommendations are included in the Action Plan.

By not emptying outdoor pools during the winter no use period the Council can save water by reducing the need to dispose of the water and refill at the start of the next season. This procedure could also assist in maintaining the structural integrity of the pool and prevent leaks, since many pools suffer structural problems as a result of frequent emptying and filling. Pool filters may have to be run during the winter, for a period each week, as well as some disinfection and a 'winteriser' (a commercially available anti-algal product) used to minimise the risk of algal growth.

Winterisation of the Council's outdoor pools at Merrigum and Shepparton will be trialed. The Mooroopna and Tatura pools have chlorinated rubber painted walls which have to be repainted biannually. Winterisation of these outdoor pools may be possible every second year.

At the time of preparing the SWUP, the Council does not have any plans to increase the number of pools within the municipality.

8.2.4 Saleyards

In 2002/2003 the Council roofed the cattle yards at the Saleyards which resulted in over 15,000 KL reduction in annual water use at the site. The cattle yards include soft standing, which is sawdust used for the collection of cattle manure, rather than washing down the yard. The sawdust and collected manure is replaced regularly, ie. approximately every six months with the removed sawdust being mulched with soil and on-sold by the contractor. The Council has identified the truck wash as the overwhelming major water use facility at the site and will investigate potential water recycling systems which could be installed at the site to minimise the water used by this facility. The Council has engaged consultants to investigate mechanical sweeping options for the removal of sheep droppings from the sheep yards, rather than washing down the sheep yards with water. There is also potential to roof the sheep yards and install a roof water collection facility. The need for dust suppression at the site could be reduced through progressive hard surfacing of the whole site.

8.2.5 Community Centres

Although the community centres are minor water users, water conservation actions have been included in Appendix A for these facilities.

8.2.6 Council Depots

In 2004 as part of the design of its new depot, the Council has included a major water saving feature through the innovative design of a rainwater harvesting system which has a storage capacity of 160,000 L. The stored water will be sufficient to provide water for the truck wash, chemical spray mixing, toilet facilities, as well as irrigation of the vegetation at the depot.

8.2.7 Council Administration Offices

The majority of the water used at the Council administration offices is for watering the surrounding gardens. Water conservation actions for the Council Administration offices have been included in Appendix A.

8.2.8 Child care centres

A variety of water saving measures will be implemented in the day to day operation of the kindergartens and water conservation will become an incidental component of the centres' program.

Following discussion at meetings involving the kindergarten teachers, fungroup and occasional care program leaders, it was agreed that the early childhood centres are the ideal places to introduce or continue water conservation education and practice. Staff discussed and agreed on the following measures:

1. Large buckets will replace running taps in sand pits and digging patches.
2. Drought tolerant plants will be introduced to gardens, in particular locally indigenous plants.
3. The education program will include the reasons for turning off taps.
4. The education program will include the reasons for the use and monitoring of dual flush toilets.

8.2.9 Toilet facilities

The Council will conduct an audit of its public toilet facilities with the objective of rationalising the numbers of public toilets facilities within the municipality due to the high maintenance costs resulting from frequent vandalism. The Council will develop a fitting replacement schedule which includes automated flushing, and taps with aerators, flow restrictors or self-closing taps.

8.3 Actions to Assist in Reduction of Community Water Use

8.3.2 Garden Establishment in New Subdivisions

The Council in association with Goulburn Valley Environment group has produced a leaflet titled *Gardening with Local Native Plants*. The leaflet encourages residents within Greater Shepparton to plant indigenous native plants as they require less water and fertiliser, compared to non native species and assist in reducing salinity and limiting the amount of nutrients entering waterways.

8.3.3 Industrial Water Sources

The Council in conjunction with GV Water will identify the major industrial wastewater generators within Greater Shepparton. The Council will assess the potential to reuse industrial wastewater at its facilities. The assessment will consider the risks, cost benefits and alternative reuse options.

8.3.4 Planning Controls

On 9 October 2006, a new set of provisions were introduced to Clause 56 of all planning schemes which replaced the existing residential subdivision provisions. The new provisions include Clause 56.07 relating to integrated water management. The VPP Practice Note *Using the Integrated Water Management Provisions of Clause 56 – Residential Subdivision* prepared by DSE (October 2006) outlines the aims as follows:

- Integrate use of all water resources including rainwater, reused water, recycled water and stormwater.
- Conserve the supply and reduce the use of potable water.
- Use alternative water supplies where potable water quality is not required.

- Use best practice water sensitive urban design techniques to conserve, reuse and recycle water and manage the quality of stormwater run-off.

Developers are required to provide a number of services to the boundaries of all lots including drinking and waste water systems, stormwater management systems; and reused and recycled water systems in areas where dual reticulated systems are required. All of these factors should be considered in the original design.

Figure shows the overview of the new provisions as included within the VPP Practice Note.

Figure 1 – Clause 56.07 Integrated water management planning provisions, Overview

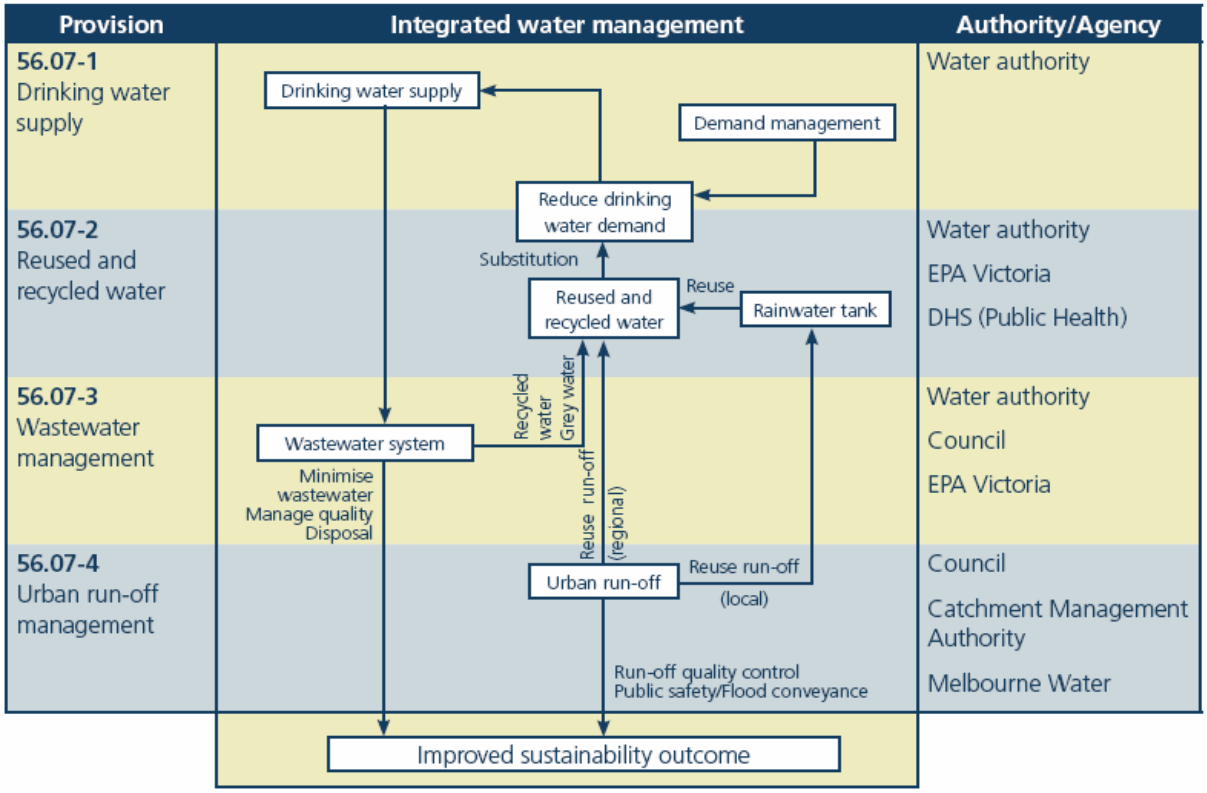


Figure 8: Integrated Water Management Planning Provisions
Source: *Using the Integrated Water Management Provisions of Clause 56 – Residential Subdivision,* VPP Practice Note, Department of Sustainability and Environment, October 2006

8.4 Implementation Plan

The Council has prepared an Action Plan for the actions identified in this Plan and this is included as Appendix A. This Action Plan identifies targets, actions priorities and responsibilities.

8.5 Monitoring

A water usage data base will be established from data supplied by GV Water and GM Water. Annual water consumption data will be compared with the SWUP objectives and targets. Monitoring of progress will be against 2004/2005 potable water consumption level of 370,099 KL/yr.

8.6 Evaluation

Broad key evaluation questions have been developed at this stage but will be further refined.

The current evaluation questions are:

1. Are the Priorities still relevant?
2. What are the Priorities now?
3. Have the Targets been met?
4. What are the Targets now?

8.7 Reporting

The Council will report on progress in implementing the SWUP Actions and current water conservation performance on an annual basis. This will be reported in the Council's Annual Report and on the Council website.

8.8 Review

Annual performance reviews of the SWUP will be undertaken to check on progress in implementing the Action Plan set out in Section 7. Progress regarding achieving the SWUP objectives will be assessed annually to determine the Council's water usage on a per capita basis.

The Council will update the priority actions on an annual basis in accordance with budget planning activities.

The SWUP will be reviewed every five years with the first review to commence December 2010.

9. APPENDIX A ACTION PLAN

Greater Shepparton City Council Sustainable Water Use Plan – Action Plan

Implementation Priority	
High	*For Implementation, subject to available funding, during year 1-2*
Medium	*For Implementation, subject to available funding, during year 3-4*
Low	*For Implementation, subject to available funding, during year 5*

Sustainable Water Use - Open Space, Parks and Gardens

Broad objective

Reduce Potable and Raw water use on Parks and Open Space

Target	Action	Priority	Estimated Cost ($)	Responsibility
Reduce potable water consumption by 15% over the five years of the SWUP based on 2004-05 water consumption.	OSP1. Link water consumption data with Council GIS mapping of area irrigated in order to monitor water use per unit area (KL/Ha/annum) as an indicator of water use efficiency.	High	$1,000	Manager Waste and Open Space and GIS Officer
	OSP2. Continue Best Practice horticultural practices.	Ongoing/High	No additional cost	Manager Operations
	OSP3. Progressively install Centrally Controlled Irrigation Systems for watering of Open Space, Parks and Gardens.	Medium	$110,000	Manager Waste and Open Space
	OSP4. Continue to implement replacement planting of cool-season grasses with warm-season grasses (kikuyu/couch).	Ongoing/Medium	$100,000	Manager Waste and Open Space
	OSP5. Implement Street Tree planting in accordance with the Street Tree Master Plan.	Ongoing/Medium	No additional cost	Manager Waste and Open Space

Sustainable Water Use - Open Space / Median Strips

Broad objective

Reduce Potable and Raw water use on Median Strips

Target	Action	Priority	Estimated Cost ($)	Responsibility
Reduce potable water consumption by 15% over the five years of the SWUP based on 2004-05 water consumption	OSM1. Link water consumption data with Council GIS mapping of area irrigated in order to monitor water use per unit area (KL/Ha/annum) as an indicator of water use efficiency.	High	$1,000	Manager Waste and Open Space and GIS Officer
	OSM2. Adhere to current best practice guidelines in new median strip designs.	Ongoing/High	$2,000	Manager Major Projects
	OSM3. Progressively install Centrally Controlled Irrigation Systems for watering of Median Strips.	Medium	Included in cost of OSP3	Manager Waste and Open Space

Sustainable Water Use - Recreation Reserves/ Ovals

Broad objective

To challenge community perceptions regarding the aesthetic appearance of recreation reserves and to continue to implement best practice water management.

Target	Action	Priority	Estimated Cost ($)	Responsibility
Reduce potable water consumption by 15% over the five years of the SWUP based on 2004-05 water consumption	RR1. Link water consumption data with Council GIS mapping of area irrigated in order to monitor water use per unit area (KL/Ha/annum) as an indicator of water use efficiency.	High	$1,000	Manager Waste and Open Space and GIS Officer
	RR2. Continue to work with reserve users regarding implementing sustainable water use.	Ongoing	No additional cost.	Manager Waste and Open Space

Sustainable Water Use - Saleyards

Broad objective

To reduce potable water use at the Saleyards

Target	Action	Priority	Estimated Cost ($)	Responsibility
Reduce potable water consumption by 15% over the five years of the SWUP based on 2004-05 water consumption	SY1. Investigate best practice water saving measures that could be installed to reduce potable water use at the Saleyards Truck wash facility.	High	$10, 000	Director Business and Finance
	SY2. Investigate manual sheep manure removal systems that could be installed at the sheep yards to reduce the amount of potable water used to wash down the yards.	High	$10, 000	Director Business and Finance
	SY3. Investigate measures that could be implemented at the Saleyards to minimize the use of potable water required for dust suppression at the site.	Medium	$5,000	Director Business and Finance
	SY4. Investigate the potential water savings that could result from roofing the sheep yards.	Medium	$5,000	Director Business and Finance
	SY5. Investigate the installation of a groundwater pump to supplement water supplies to the site.	Low	$10, 000	Director Business and Finance

Sustainable Water Use - Swimming Pools and Recreation Facilities

Broad objective

Conserve water in council operations through the implementation of sustainable water use practices.

Target	Action	Priority	Estimated Cost ($)	Responsibility
Reduce potable water consumption by 15% over the five years of the SWUP based on 2004-05 water consumption	SP1. Undertake further investigation of cost and feasibility of reducing potable water usage and trade waste flows at Aquamoves.	High	$10, 000	Aquatic Services Operations Coordinator
	SP2. Install flow regulators in showers and hand basin taps.	High	$5,000	Aquatic Services Operations Coordinator
	SP3. Maintain pool infrastructure to stop leakage.	High	$25,000	Aquatic Services Operations Coordinator
	SP4. Undertake an audit of the potable and raw water use at all swimming pools.	Medium	$15,000	Aquatic Services Operations Coordinator
	SP5. Undertake a winterization trial at the Shepparton outdoor pool.	Medium	$2,500	Aquatic Services Operations Coordinator
	SP6. Where possible convert irrigation systems at swimming pools from using potable water to raw water.	Low	$60,000	Aquatic Services Operations Coordinator

Sustainable Water Use - Community Facilities

Broad objective

Decrease potable water use at Community Facilities

Target	Action	Priority	Estimated Cost ($)	Responsibility
Reduce potable water consumption by 15% over the five years of the SWUP based on 2004-05 water consumption	CF1. Install a dishwasher which complies with the Water Efficiency Labeling Standards at the Welsford Street Senior Citizens centre.	High	$5,000	Manager Aged and Disability Services
	CF2. Install dual flush toilets and waterless urinals in all council community facilities.	High	$50,000- $150,000	Manager Aged and Disability Services Building Maintenance Coordinator Manager Leisure Services Manager - Family & Children's Services Aquatic Services Manager
	CF3. Install rainwater collection tanks at council community facilities where appropriate.	Medium	$50,000 - $150,000	Manager Aged and Disability Services Building Maintenance Coordinator Manager Leisure Services Manager - Family & Children's Services Aquatic Services Manager

Sustainable Water Use - Council Administration Facilities

Broad objective

Decrease potable water use at Council administration facilities

Target	Action	Priority	Estimated Cost ($)	Responsibility
Reduce potable water consumption by 15% over the five years of the SWUP based on 2004-05 water consumption	CA1. Where necessary replace obsolete white goods with products that comply with the Water Efficiency Labeling Standards.	Medium	$5,000	Building Maintenance Coordinator
	CA2. Investigate the feasibility of installing waterless urinals in all Council administration facilities.	Medium	$2,000	Building Maintenance Coordinator
	CA3. Investigate options for reducing water use on gardens surrounding the council administration facilities.	Medium	$2,000	Manager Waste and Open Space

Education Promotion and Awareness

Broad objective

Increase the understanding and ownership by Councilors and Council staff of sustainable water use principles and practices.

Target	Action	Priority	Estimated Cost ($)	Responsibility
Reduce potable water consumption by 15% over the five years of the SWUP based on 2004-05 water consumption	EP1. Develop an internal, cross-functional Water Action Group in consultation with the Eco-Buy working Group to take responsibility for oversight of the implementation of the SWUP.	High	$2,000	Manager Sustainability and Environment
	EP2. Erect awareness signage within Council buildings, parks, gardens and recreation reserves, highlighting water conservation measures that have been implemented at the location.	High	$2,000	Manager Waste and Open Space
	EP3. Regularly inform staff members and Councilors of Councils progress towards achieving the water consumption target via internal newsletter (COGSPEAK), staff notice boards, manager meetings and Councillor briefings.	High	$500	Manager Sustainability and Environment Manager Communications
	EP4. Include information regarding water conservation on the Council's web site.	Medium	$1,000	Manager Sustainability and Environment Manager Communications
	EP5. Include information regarding water conservation on the Council's regular radio and television community information programs.	Medium	$1,000	Manager Sustainability and Environment Manager Communications
	EP6. Include information in council's community newsletter regarding council's water conservation initiatives.	Medium	$1,000	Manager Sustainability and Environment Manager Communications
	EP7. Work to challenge community expectations of regarding Council planting and watering in the light of limited water supplies.	Low	$1,000	Manager Waste and Open Space

Target	Action	Priority	Estimated Cost ($)	Responsibility
	EP8. Work closely with Goulburn Valley Water to promote community water conservation initiatives.	Low	$1,000	Manager Sustainability and Environment
	EP9. Promote the “Gardening with local native plants” brochure and ensure that copies are available at the front counter.	Low	$1,000	Manager Sustainability and Environment

Incentives, Policies and Regulatory Controls

Broad objective

Encourage water efficiency within Council operations through providing appropriate guidelines and policies.

Target	Action	Priority	Estimated Cost ($)	Responsibility
Reduce potable water consumption by 15% over the five years of the SWUP based on 2004-05 water consumption	IP1. In conjunction with Goulburn Valley Water develop a comprehensive database for the storage of Council's water consumption information.	High	$5,000	Manager Waste and Open Space Manager Sustainability and Environment
	IP2. In conjunction with the responsible council officers, actively seek any eligible funding which will assist with the implementation of the SWUP.	High	$2,000	Manager Sustainability and Environment
	IP3. Integrate water conservation ideology into Council policies: tendering policy, design policy development policy.	Medium	$1,000	Manager Sustainability and Environment
	IP4. Review Council's purchasing and tendering policies to include water conservation principles.	Medium	$1,000	Manager Design Services
	IP5. Review lease agreements on Council owned properties to include payment for water and/or requirements for lessees to meet water conservation requirements.	Medium	$1,000	Manager Property Services
	IP6. Investigate options for alternative water supplies e.g. industrial sources.	Medium	$2,000	Manager Waste and Open Space Manager Sustainability and Environment
	IP7. Investigate the possibility of employing a grants officer to coordinate Council's funding applications.	Low	$1,000	Manager Sustainability and Environment

Sustainable Water Use Plan Monitoring and Reporting

Broad objective

Encourage water efficiency within the Shire's operations

Target	Action	Priority	Estimated Cost ($)	Responsibility
Reduce potable water consumption by 15% over the five years of the SWUP based on 2004-05 water consumption	MR1. Undertake an annual review of Council's water consumption data against the SWUP objectives and targets.	High	$10,000	Environment Officer
	MR2. Prepare an annual report on progress in implementing the SWUP.	High	$10,000	Environment Officer