



Sustainable Water Management Plan

Completed as part of ICLEI Milestone III and
Melbourne Water SWUP

Foreword

Fresh, clean drinkable water is essential for a healthy environment, economic prosperity and the wellbeing of our society. Without it, our way of life and everything we take for granted – flushing toilets, watering our garden and drinking a cup of coffee – would not exist. The management of our drinking water resources is one of the most critical issues facing Bayside, Victoria and Australia. However, we can all do something to reduce our use of drinking water.

By developing a Sustainable Water Management Plan, Bayside City Council will continue to provide leadership in water conservation and management. The Sustainable Water Management Plan provides direction and actions to improve water conservation and management for the municipality. It brings together work that the Council has been undertaking with Melbourne Water, South East Water and the International Council for Local Environmental Initiatives (ICLEI). The ICLEI Water Campaign[™] has provided a methodology to develop the Plan. The Water Campaign[™] is a nation-wide program that involves more than 60 Local Governments.

Bayside Council has set a goal to reduce water consumption by 30 per cent for Council operations and 15 per cent for the community. Water quality goals have also been set for Council and community.

As a community we need to work together to achieve a more sustainable city. We can do this through collaboration, communication and support.

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Sustainable Water Management Plan

Executive Summary

The Sustainable Water Management Plan provides strategies and actions for the Bayside City Council and the Bayside community to reduce water consumption and improve water quality. It has been prepared in partnership with Melbourne Water, South East Water and the International Council for Local Environmental Initiatives (ICLEI).

Melbourne benefits from an excellent water supply system, while water consumption has reduced by about 11 per cent since 1992. Despite these achievements water management remains a major challenge for communities and governments. Continuing rainfall variability, population growth, and the impacts of climate change are possible threats to our water supply.

Our way of life is underpinned by high consumption of quality water so there is a major challenge to reduce our water consumption. This is a particular challenge for the Bayside community because it is a high water user in comparison with other municipalities in metropolitan Melbourne.

By developing and implementing this Plan, the City of Bayside will provide leadership and build on its roles and responsibilities in water management through:

- *Community leadership and partnerships;*
- *Natural resource and asset management;*
- *Strategy and regulation;*
- *Education, awareness and behavioural change; and*
- *Advocacy.*

Many federal, state and regional strategies and initiatives provide important context for this Plan. They provide policy directions, programs, actions and possible funding sources that will influence its development and implementation. The Council will work closely with other agencies and the community to implement this Plan.

Bayside City Council has set targets to reduce its water consumption by 30 per cent by 2010/11 and achieve a 20 per cent reduction in the Bayside community's water consumption during the same period. Targets have also been set to improve water quality by improving erosion and sediment control, gross litter pollution management and herbicide and fertiliser use. For this Plan, 2000/01 is used as a base year for these targets.

Most of the Council's water consumption (91 per cent) is for irrigating the City of Bayside's playing fields, open space and gardens. Rainfall variability directly influences this water use. Reducing this water use is a challenge because water is important for ensuring trees, gardens and turf are not damaged or placed under significant stress and areas are safe and

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aesthetically pleasing. Similarly water is important for the gardens and landscaping that bring important environmental and amenity benefits to the municipality.

A Sustainable Water Use Plan, which has been developed in conjunction with Melbourne Water and South East Water, identifies a suite of actions to reduce water use in its open space and facilities. Capacity building of staff and contactors will help achieve this while monitoring and reviewing will be an important component of these actions.

The Bayside community is a high water user in comparison with other municipalities in metropolitan Melbourne. Water consumption varies across the municipality with residents in Brighton and Beaumaris using the highest volumes of water per household. Gardens, water thirsty and salt sensitive plants and sandy soils all contribute to Bayside's high water use.

The Bayside Council is working in partnership with South East Water and the community to reduce water consumption. The Bayside community has achieved reductions that are above the average for Melbourne metropolitan area, this suggests encouraging progress with these efforts. While the community's response is encouraging, further behavioural changes are necessary to ensure on-going reduction in water use. The Council's actions focus on continuing to work with communities on programs such as the "Be a Bayside Water Saver" to achieve lasting and long-term behavioural change.

Stormwater is the key water quality issue for the City of Bayside. Stormwater is rainfall that runs off hard, generally man-made surfaces such as roads and roofs. It is the main source of pollution in Melbourne's waterways and most of it enters Port Phillip thereby affecting the bay's ecology. Port Phillip and its foreshore is a precious asset for the Bayside community and Victoria so its protection is a high priority.

Through its involvement in the development of the Clean Stormwater Planning Framework, Bayside Council is a leader in stormwater management. This Plan builds on that work by identifying further strategies and actions to improve stormwater, particularly through the application of Water Sensitive Urban Design (WSUD). This will also provide greater scope for use of stormwater as an alternative source of water within the municipality.

This plan also provides actions to explore other sources of water. The use of groundwater and grey water requires further work and research. There are significant environmental, health and regulatory issues associated with these water sources. Recycled water is another potential water source that warrants further investigation. Bayside Council is participating in the development of the Sandbelt Recycling Scheme. The Scheme would see treated 'waste water' being pumped back into Bayside from the eastern sewerage treatment plant at Carrum and used for the irrigation of golf courses, playing fields, open space and gardens.

PART ONE: INTRODUCTION AND POLICY CONTEXT

This section explains why and how Bayside Council is developing the Sustainable Water Management Plan. The Council's water management role is explained. It also sets out relevant federal, state and regional and local strategies and initiatives that have influenced the development of the Plan.

1.1 Purpose of this plan

Bayside Council's Sustainable Water Management Plan provides a comprehensive approach to water management for the Council and the Bayside community until 2010/11. This date has been selected to satisfy the requirements of the International Council for Local Environmental Initiatives (ICLEI) Water Campaign™. Through its Water Campaign™, ICLEI has provided an approach and support to develop the Plan. The completion of this Plan also fulfils the Bayside Council's commitment to complete an integrated water management plan in partnership with Melbourne Water and South East Water.

The Plan sets goals that are based on targets and provides strategies and practical actions to reduce water consumption, improve stormwater quality, use alternative water resources and manage groundwater. The strategies and actions will be implemented via business and work programs according to budget priorities and funding opportunities. A monitoring, reporting and reviewing process will support this plan.

1.2 Why save water and improve water quality?

“At the beginning of the 21st Century, the earth, with its diverse and abundant life forms, including over six billions humans, is facing a serious water crisis. All the signs suggest that it is getting worse and will continue to do so, unless corrective action is taken. This crisis is one of governance, essentially caused by the ways in which we mismanage water”¹

Sustainable water management is a major issue for our country. Australia is the driest inhabited continent in the world and yet, per capita, we are among the highest users of water internationally. Continuing depletion of water resources and decline in water quality threatens the health, happiness and wellbeing of this generation and future generations. This threat is less obvious in Melbourne because it has benefited from the legacy of a well-planned water supply system that delivers high quality water from protected catchments. In contrast, other Australian cities such as Adelaide, Perth and Sydney are experiencing more significant problems and challenges. Despite this comparative advantage more sustainable water management is imperative for Melbourne and the City of Bayside.

¹ United Nations, World Water Development Report – Water for People, Water for Life

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Water Consumption

“If we continue to use water in the future at the same rate and in the same way as we have in the 1990s, the city may approach its supply limit within 15 years”²

In Melbourne the impacts of drought have been felt since 1998 and in 2002 water restrictions were introduced for the first time in 20 years. These restrictions were lifted in February 2005 and were replaced with permanent water saving measures. Despite recent reductions in water consumption as a result of water conservation measures, Melbournian’s cannot become complacent. Currently Melbourne’s dams are a little more than half full and current trends point to an increasing demand for water and the likelihood of less rainfall.

Climate change predictions show less rainfall for Melbourne with hotter and drier days, and increased evaporation rates³. Forecast population growth may compound this problem. “By 2030, Melbourne will accommodate more than one million additional people and regional Victoria another 350,000”⁴

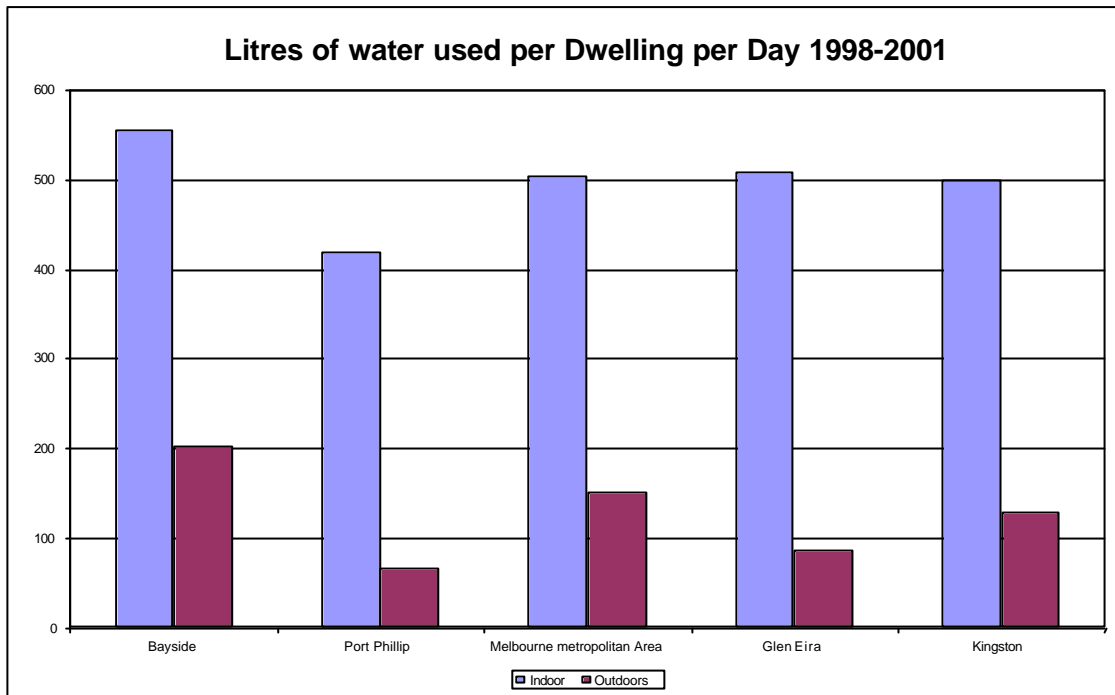
The State Government’s White Paper (Securing Our Water Future Together, 2004) provides a clear policy direction to conserve and use water more wisely rather than pursuing supply solutions such as building more dams. This policy direction is particularly relevant to the City of Bayside because it has one of the highest rates of water use per household in metropolitan Melbourne. Graph One represents City of Bayside’s average water use per household between 1998 and 2001 as compared to other municipalities in metropolitan Melbourne.

² Securing our water future together – Victorian Governments White Paper, 2004

³ Securing our Water Future Together – Victorian Governments White Paper, 2004

⁴ Securing our water future together – Victorian Governments White Paper, 2004

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Graph One: Bayside's average water use, per household between 1998 and 2001, compared to other cities in metropolitan Melbourne

Water Quality

"Port Phillip will not cope with the growing inputs of water-borne nutrients, particularly nitrogen"⁵.

The quality of water that enters Port Phillip is a significant issue for the City of Bayside. Bayside is located at the bottom of the region's catchment and borders Port Phillip. The bay is a key feature and a significant asset for the Bayside community and visitors. The beaches and waterways of Bayside are visited and enjoyed by more than 500,000 people every year and are highly valued by the community as shown in a 'Community Wellbeing Survey' undertaken in 2004. In this survey, 69 per cent of respondents found the foreshore the most appealing attribute of living in Bayside⁶.

Generally the bay is quite healthy,⁷ however it is under threat from population growth and urban and agricultural development in the catchments that drain into it. The City of Bayside does not have significant open waterways apart from Elster Creek, which passes through the municipality, so Bayside has a limited influence on the quality of water in the waterways that enter Port Phillip. Despite its limited role in waterway management, Bayside has a strong interest in the catchment management measures to improve the quality of water in the waterways that enter the bay.

⁵ Port Phillip and Western Port Regional Catchment Management Strategy 2004-2009, p6

⁶ Bayside City Council – Annual Community Survey 2004

⁷ Port Phillip Bay Environmental Study, 1996

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Stormwater is now the most significant source of pollution in Melbourne's waterways⁸ that drain into Port Phillip. The City of Bayside and Melbourne Water manage more than 340 kilometres of drains and 44 drainage outlets that enter directly into Port Phillip so it has a direct interest and role in improving the quality of stormwater.

⁸ The Source, Melbourne Water, April 2005

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1.3 Bayside City Council's role in water conservation and quality

Bayside City Council has an important role in achieving more sustainable water management.

Its role includes:

- ***Community leadership and partnerships;***
- ***Natural resource and asset management;***
- ***Strategy and regulation;***
- ***Education, awareness and behavioural change; and***
- ***Advocacy.***

The following provides a summary of the Council's activities in these areas. These activities are important inputs to the development of this Plan.

Community Leadership and Partnerships

Bayside is working in partnership with a range of stakeholders on several programs and funding initiatives to provide leadership and act as a role model in water management. The stakeholders include water retailers, international environment groups, state agencies, community groups, other Councils, and individuals.

ICLEI Water CampaignTM

The City of Bayside joined the International Council for Local Environmental Initiatives (ICLEI) Water CampaignTM in 2002. ICLEI is an international association of Local Governments whose mission is to build a "worldwide movement of Local Governments to achieve tangible improvements in global sustainability⁹".

The Water CampaignTM involves the Council working with water retailers and the community to reduce water consumption and improve water quality. It involves the completion of five performance-based milestones. These milestones are:

1. Inventory of water consumption and water quality issues;
2. Establish goals for water conservation and improvement of water quality;
3. Develop a local action plan;
4. Implement water conservation and quality actions; and
5. Monitor and report progress.

Council has achieved the first milestone and the development and implementation of this Plan will result in the achievement of Milestones Two and Three. This plan will also provide the basis for achieving Milestones Four and Five.

⁹ ICLEI Website, 2005

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Be A Bayside Water Saver Campaign

Bayside City Council is working closely with South East Water on the development of the Be A Bayside Water Saver program. Established in April 2004, the Be A Bayside Water Saver program is a community awareness and behavioural change program that is designed to provide Bayside residents with information, simple tips and advice that will help them to save water, especially in the garden. This program has contributed to an average reduction in water use of 17 per cent across the City in 2003/04 and will be continued in 2005/06 with a range of initiatives to reinforce and increase awareness on water saving.

Sustainable Water Use Plan

This project was established in partnership with Melbourne Water to develop a customised Sustainable Water Use Plan (SWUP) for the City of Bayside. South East Water now manages this project. The Plan is intended to reflect a holistic approach to the management of water resources and a broad interpretation of water resources (for example, recycled effluent, stormwater and groundwater as possible substitutes for potable water). The SWUP aims to assist in the reduction of freshwater consumption within the operations of Bayside Council and assists in the quantifying and understanding of water use patterns and behaviours.

ABM Clean Stormwater Planning Project

Bayside has been leading a ground-breaking project, on behalf of the Association of Bayside Municipalities (ABM), that has developed a robust system for ensuring that new urban development incorporates Water Sensitive Urban Design to meet specified environmental performance standards. The ABM initiated this project to ensure that the environmental quality and health of Port Phillip was sustained despite continued urban development in the bay's catchment. The project has resulted in the completion of a report (Final Report of Clean Stormwater – a planning framework) that will serve as an important reference in the development of planning controls that incorporate water sensitive design.

Natural Resource and Asset Management

The Council has a significant role in natural resource and asset management. It invests considerable resources in these activities and can lead by example in achieving water conservation outcomes in these areas.

Although Bayside City Council only uses 3 per cent of freshwater across the city, the Council manages the largest individual water use sites within the municipality. Most of the water is used for Bayside's parks and open space. Bayside is renowned for its lush parks, gardens, golf courses and coastal areas. These assets bring important environmental and aesthetic

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benefits. One of the biggest challenges facing Bayside Council is to continue providing aesthetically pleasing and safe open space and at the same time, reducing freshwater use. The Council has a suite of Master Plans that provide the basis for management of its open space and parklands.

The Council has a key role in managing the City's stormwater, drainage and road network and therefore has a vital function in managing stormwater. The Council also owns or manages a significant number of other assets that include buildings, car parks, gardens, playing fields and open spaces. These assets provide opportunities to invest and lead by example in water conservation.

Strategy and Regulation

The Council has a number of important strategies and plans that provide context for this Plan. The key documents that relate to this Plan are:

Bayside City Council Plan 2005-2009

The Bayside City Council Plan sets direction for the City until 2009. It is a key strategic framework to ensure that the identified needs, values and expectations of the Bayside community inform the delivery of Council's services and initiatives. The Plan's Sustainability and Environment goals address community amenity, land use planning and the development of environmental sustainability for the future of the Bayside community.

Municipal Strategic Statement (MSS)

The MSS provides key strategic planning, land use and development objectives for the municipality and strategies and actions for achieving the objectives. It has an overarching objective for the Bayside community to be "an ecologically focussed city in which its natural resources are valued by all the community, present needs are met and development is responsibly managed for the benefit of this and future generations".

Environmental Sustainability Framework

Bayside's Environmental Sustainability Framework outlines how Bayside intends to integrate its philosophy on sustainability into decision-making and actions. The Environmental Sustainability Framework is a key element of Council's policy. This policy guides decision-making and the development of organisational practices and procedures with respect to environmental outcomes. It complements Council policy for other matters, such as economic and social development, to form an integrated approach to support a sustainable Bayside community.

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Stormwater Quality Management Plan

Council's Stormwater Quality Management Plan is a "strategic plan for the application of best practice environmental management of urban stormwater within the City of Bayside."¹⁰ It establishes the actions to be undertaken by Bayside Council and other responsible authorities to improve stormwater quality, the quality of Bayside's coastal waters and the water bodies within the municipality. The purpose of the Plan is to assist the Council to increase awareness, appreciation, protection and responsible use of water bodies located within the municipality and Bayside's coastal waters"¹¹.

Litter Management Plan (draft)

The draft Litter Management Plan identifies litter types and sources and identifies and builds on existing strategies. It also develops new strategies to further reduce the amount of litter within Bayside. There are 11 objectives in the Litter Management Plan including: reducing litter in Bayside's public environment and maintaining a "clean" environment; reducing the dumping of hard waste and rubbish and increasing public awareness of cigarette butt litter as an issue.

Drought Response Plan

Bayside City Council's Drought Response Plan was developed following implementation of Stage Two Water Restrictions on the Council's playing fields and other open spaces. Developed in accordance with Melbourne Water and South East Water's Drought Response Plans, Bayside Council's Drought Response Plan allows for the watering of Council and school sport fields under Stage Two Restriction on the provision that there is a 10 per cent reduction in water use annually.

¹⁰ Stormwater Quality Management Plan, Bayside City Council, March 2001

¹¹ Stormwater Quality Management Plan, Bayside City Council, March 2001

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Regulation

Bayside's regulatory role in planning and building provides a means of influencing water management practices for built form. Via its involvement in the Association of Bayside Municipalities' Clean Stormwater Planning Framework project the Council has contributed to the development of a robust framework for ensuring that Water Sensitive Urban Design (WSUD) becomes an integral part of new urban development. WSUD involves the practical application of techniques to achieve more sustainable stormwater management.

Council recently exhibited Amendment C44 to the Bayside Planning Scheme. The Amendment was developed from a model-planning scheme set out in the Clean Stormwater – Planning Framework. The Amendment strengthens the strategic basis for the introduction of stormwater quality requirements for new developments. This will involve the introduction of new local policy establishing statutory requirements incorporating WSUD into new developments.

Education, Awareness and Behavioural Change

Bayside City Council has an important role in providing information, educating others and facilitating behavioural change in water management. Council has actively worked with community, staff, contractors, other Councils and schools to encourage community involvement and promote sustainable water use.

Council's involvement in and support of the Green Plumbers and Green Gardeners programs is an example of the Council's work in this area. The Green Plumbers program provides training and accreditation on environmental issues to licensed plumbers. Plumbers that complete the training and gain accreditation are able to use the Green Plumbers logo in advertising and marketing their business. The Green Gardeners course targets professional gardeners. It has been developed to raise awareness of environmental issues among professional gardeners and provide them with knowledge and advice on how to reduce the environmental impacts of their work and pass this advice to their customers.

Council also has an important role in the provision of information about water conservation, including initiatives such as the introduction of permanent water saving measures.

Advocacy

Bayside City Council has a limited role in specific elements of water management such as waterway management, groundwater and water recycling. Council recognises that these are important components of a holistic approach and it is vital to influence those that have a more direct role.

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Water recycling project proposals that are being developed for the Eastern Treatment Plant are relevant for Council. The Sandbelt Water Recycling Scheme is a proposal to pump treated recycled water from the Eastern Treatment Plant to be used for the irrigation of golf courses, playing fields and other uses in the Bayside and surrounding municipalities. This proposal has the potential to reduce water use across the City by two million megalitres and therefore Council has proactively advocated for this project.

1.4 Legislative, Strategic and Institutional Context

There are many of Acts, policies and strategic documents that provide a context for Bayside's Water Management Plan.

Key relevant legislation includes:

- Water Act 1989;
- Catchment and Land Protection Act 1994;
- Coastal Management Act 1995;
- Local Government Act 1989;
- Building Act 1993;
- Environment Protection Act 1970; and
- Planning and Environment Act 1970.

Many federal, state and regional strategies and initiatives provide important context for this Plan. They provide policy directions, programs, actions and possible funding sources that will influence its development and implementation. Figure One outlines the key relevant initiatives at other levels of government.

Federal Initiatives

Council of Australian Governments Water Reform Framework

This strategic framework aims to achieve an efficient and sustainable water industry and is based on the recognition that action is needed to halt the widespread degradation of Australia's natural resources through the unsustainable use of our precious freshwater resources. The framework identifies seven critical environmental water issues including allocation for the environment, ecological sustainability of developments, protection of groundwater and the implementation of the National Water Quality Management Strategy.

National Water Quality Management Strategy (NWQMS)

The NWQMS was developed in response to growing community concern about Australia's water quality levels. It was signed in 1992 by the Federal, State and Territory Governments and includes three areas of interest – policies, guidelines and processes.

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The strategy's objectives are to "achieve a sustainable use of the nation's water resources by protecting and enhancing their quality while maintaining economic and social development"¹². It covers a broad range of topics such as freshwater, groundwater and stormwater and delivers a nationally consistent approach to water quality management.

¹² www.deh.gov.au/water/quality/nwqms

Figure One – Key Federal, state, regional and local initiatives, policies and strategies

Setting the Context

Federal Strategies and Initiatives

- Council of Australia Governments Water Reform Framework
- National Water Quality Management Strategy (NWQMS)
- National Water Initiative
- Australian Government Water Fund
- Australian Government EnviroFund

State Strategies and Initiatives

- Securing Our Water Future Together -Victorian Government White Paper
- 21st Century Melbourne: A WaterSmart City
- Melbourne 2030: Planning for Sustainable Growth
- New Water for Victoria - Victoria's Water Recycling Action Plan
- State Environment Protection Policy (Waters of Victoria)
- Smart Water Fund
- Central Region Sustainable Water Strategy (under preparation)
- Water Supply Demand Strategy to 2055 (under preparation)
- Stormwater and Urban Water Fund

Local and Regional Strategies and Initiatives

- Environmental Sustainability Framework
- Corporate Plan / Municipal Strategic Statement
- Drought Response Plan
- Stormwater Management Plan
- Clean Stormwater Planning Framework
- Amendment C44 to the Bayside Planning Scheme
- Port Phillip and Westernport Regional Catchment Strategy
- Litter Management Plan

Council Programs

- ICLEI - Water Campaign
- Melbourne Water - Sustainable Water Use Plan
- South East Water - Be A Bayside Water Saver

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National Water Initiative

The National Water Initiative sets out objectives, outcomes and actions for the ongoing process of national water reform in areas including water access, water markets, water pricing, integrated water management, water resource accounting, urban water reform and community partnerships and adjustment. The initiative was developed from recognition of the imperative to increase the productivity and efficiency of Australia's water use, the need to service rural and urban communities and to ensure the health of river and groundwater systems.

Australian Government Water Fund

The Australian Government Water Fund is part of the National Water Initiatives. It incorporates three funding programs, which are:

- Water Smart Australia - accelerates the development and uptake of smart technologies and practices in water use across Australia;
- Raising National Water Standards - invest in Australia's national capacity to measure, monitor and manage its water resources; and
- Community Water Grants - provide grants to communities to promote wise use of water.

Australian Government EnviroFund

The Australian Government EnviroFund assists communities in undertaking local conservation, biodiversity and sustainable resources promotional projects. Grants of up to \$30,000 are given to successful groups.

State and Regional Initiatives

Securing Our Water Future Together. Victorian Government White Paper. 2004

The White Paper sets out strategies and a wide range of actions to secure Victoria's water future during the next 50 years. It provides an integrated approach that covers several key themes including:

- Secure water future for Victoria;
- Water resources and their allocation;
- Restoration of rivers and aquifers;
- Smarter use of irrigation water;
- Smarter water use in towns and cities;
- Pricing for sustainability; and
- Innovative and accountable water sector.

The White Paper has strategies and actions to improve water management. The section on Smarter Towns and Cities has several actions that involve working with Local

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Governments. The actions include developing water conservation plans and demonstration projects

21st Century Melbourne: A WaterSmart City

A WaterSmart City sets out “resource blueprints for the next 50 years to ensure a safe and reliable supply of water is delivered to Melbourne in an environmentally sustainable manner and at a cost acceptable to the community”.

Water Supply Demand Strategy to 2055

The State Government requires Melbourne Water and the water retailers to prepare a joint water supply-demand strategy for Melbourne. It will identify demand management and water supply actions to secure a sustainable water supply. It will have a 50-year outlook and will be reviewed every five years. Bayside City Council is participating in the development of this strategy.

Smart Water Fund

The State Government’s Smart Water Fund encourages and supports innovative development of water conservation, water saving and bio-solid recycling projects within the community, delivering broader environmental, community and economic benefits.

Stormwater and Urban Water Fund

As part of its Our Water Our Future action plan, the State Government has made \$10 million available for funding to conserve our water supplies and develop new water sources, particularly stormwater. The three-year Stormwater and Urban Water Conservation Fund will be used to develop infrastructure, demonstration models and education projects in cities and towns across Victoria. The Fund will support local-scale innovative water sensitive urban development and stormwater conservation and water recycling initiatives. Bayside City Council successfully obtained funding for the Hampton Primary School stormwater project.

Melbourne 2030: Planning for sustainable growth

Melbourne 2030 provides policies to manage population growth, change and development across metropolitan Melbourne. There are seven principles, which Melbourne 2030 is based on including ‘sustainability’, ‘leadership’ and ‘adaptability’. There are also nine key directions, which provide a framework for governments at all levels to use as a reference to meet the diverse needs of those that live and work around Melbourne. One of these key directions is ‘A Greener City’ which will deliver on ‘sustainable water use’ through implementing policies such as ensuring water resources are managed in a sustainable way, reducing the impact of stormwater on bays and catchments and protecting groundwater and land resources.

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Port Phillip and Westernport Regional Catchment Strategy

The Regional Catchment Strategy analyses the natural assets of the region and assesses the risk to those assets. The Strategy focuses on increasing protection for Port Phillip, Western Port and the catchment's waterways. It sets targets and identifies actions for improving and enhancing the health of the region's land, water and biodiversity. Both the Victorian and Australian Governments have endorsed the Regional Catchment Strategy and it will be an important document for organisations seeking government support for programs.

New Water for Victoria – Victoria's Water Recycling Action Plan

Victoria's Water Recycling Action Plan was developed to "provide a framework for the adoption of water recycling across the State as a part of sustainable water resource management". The Action Plan aims to deliver the goal of increasing water recycling in Melbourne to 20 per cent by 2010.

State Environment Protection Policy (Waters of Victoria) Schedule F6: Waters of Port Philip

The State Environment Protection Policy (Waters of Victoria) sets the framework for government agencies, businesses and the community to work together, to protect and rehabilitate Victoria's surface water environments for ecological and social health.

Central Region Sustainable Water Strategy

The Sustainable Water Strategies being developed by the Department of Sustainability and Environment are part of Victoria's Water Allocation System. This is the Victorian Government's process for decision-making on bulk entitlements, water allocations between water authorities, environmental flows and new water allocations. The Central Region Sustainable Water Strategy covers the wider metropolitan area and includes Geelong, Ballarat, Mount Macedon and West Gippsland. It is due for completion in September 2006.

1.5 Key Agencies

The development and implementation of this Plan will require Council to work in partnership with other agencies, including:

Melbourne Water

Melbourne Water manages Melbourne's water supply catchments, as well as the removal and treatment of Melbourne's sewage. Melbourne Water also manages Melbourne's creeks, rivers

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and major drainage systems. Its vision is 'Working together to ensure a sustainable water future'¹³.

South East Water

The City of Bayside's water retailer is South East Water, which buys freshwater resources from Melbourne Water and pipes it to homes and business from Port Melbourne to Portsea and from Port Phillip to Berwick¹⁴. In 2003/04 it achieved an 11 per cent reduction in average domestic water consumption. Along with the other water retailers and Melbourne Water, South East Water has set a target of reducing per capita drinking water consumption by 15 per cent by 2010.

Southern Rural Water

Southern Rural Water manages the groundwater resources that Bayside City Council uses at Sandringham Golf Course and Basterfield Park. Bayside is located within the Moorabbin Groundwater Management Area. Southern Rural Water is a Victorian Government authority that is responsible for the management of rural water resources across the southern half of country Victoria.

Port Phillip and Western Port Catchment Management Authority (PPWCMA)

This PPWCMA is responsible for the development and implementation of the Regional Catchment Management Strategy. It is a State agency that is responsible for strategic planning and priority setting in relation to catchment management for Port Phillip and Western Port Regions.

Department of Sustainability and Environment

The Department of Sustainability and Environment assists in delivering the State Government's vision to position Victoria as a work leader in sustainability.¹⁵ Roles include policy development such as sustainable water management. It also works with Parks Victoria in the operation and management of Victorian National Parks, reserves and waterways.

Environmental Protection Authority (EPA)

The EPA is a statutory body responsible for controlling pollution on land, in water and air and industrial noise. Set up in response to community concern about pollution, the EPA operates under the EPA Act that provides legal framework for the development and establishment of objectives, goals and regulations. The EPA has developed guideline for domestic use of grey water, which Bayside City Council uses.

¹³ http://www.melbournewater.com.au/system/mainFrameset.asp?path=/about_us/about_us.asp

¹⁴ http://www.southeastwater.com.au/sewl/index.asp?link_id=1.566

¹⁵ www.dse.vic.gov.au, May 2005

PART TWO: WATER MANAGEMENT ISSUES

This section analyses the water consumption and quality issues for the council and the community. The main issues and achievements so far provide context of identifying goals, strategies and actions.

2.1 Goals and Targets

The International Council for Local Environmental Initiatives (ICLEI) Water Campaign™ requires Councils to set goals for reducing water consumption and improving water quality. This requirement has directly shaped the development of this Plan. Goals and targets developed by the State Government and water agencies such as Melbourne Water and South East Water provide context for the development of this Plan and those of the water agencies. The State Government's interim targets are:

- To reduce Melbourne's water use by 15 per cent on a per capital basis by 2010;
- Increase waste water re-use in Melbourne to 20 per cent by 2010; and
- To increase the use of recycled water by 20 per cent by 2010.

The State Government has a target to reduce by 1000 tonnes the amount of nitrogen entering Port Phillip by 2006.

Water Consumption Goals

To meet ICLEI requirements a target percentage water consumption reduction for the Council and the community, must be achieved by a date set and acknowledged by Council. A base year is established as a reference point, the City of Bayside has chosen 2001 because of the availability of data. The water consumption goals that have been set for the City of Bayside are:

- To reduce Bayside City Council's water consumption by 30 per cent from 2000/01 levels by 2010/11; and
- To reduce the City of Bayside's community water consumption by 20 per cent below 2000/01 levels by 2010/11.

These targets were developed through consultation with internal and external stakeholders including Bayside Council staff and management, Melbourne Water, South East Water and ICLEI. State Government targets and the goals of other Councils were also considered (see following tables). The targets are generally at the higher end of targets that have been set by other councils while the community target of 20% is higher than the State Government's interim target of 15%. The Bayside community has high per capita water consumption in comparison with other metropolitan municipalities so it is reasonable to set a higher target.

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The reduction in water consumption over the last four years indicates that a higher target is achievable, particularly with the continuation of programs such as Be A Bayside Water Saver.

Council	Reduction Goal	Base Year	Goal Year
Stonnington	50%	2000/01	2010/11
Boroondara	25%	1998/99	2008/09
	5%		2013/14
Whitehorse	25%	Average 2001/02 - 2012 2002/03	
Hume	10% (Council)	Average for 2002/2004	2030
Darebin	25%	1999/00	TBD
Port Phillip	30%	1999/00	2011

Table One: Examples of reduction goals for Council operations

Council	Reduction Goal	Base Year	Goal Year
Stonnington	20%	2000/01	2010/11
Whitehorse	15%	2001/02	2012
Hume	15%	2002/03	2010
Port Phillip	15% (residential) 20% (non-residential)	1999/00	2011

Table Two: Examples of council reduction goals for community

Water Quality Goals

ICLEI Action Cards (an ICLEI developed water quality scorecards system) are based on criteria for improving water quality. The Bayside City Council has selected the following criteria:

1. Sediment and erosion control:
2. Gross litter trapping; and
3. Herbicide, pesticide and fertiliser use.

Each of these water quality areas has a number of actions proven to be effective in reducing contaminants from entering stormwater. These actions are each assigned five to ten points by ICLEI. To achieve the community and corporate quality component of ICLEI, Bayside Council must set a minimum target of 50 points through selecting actions that Council has completed since joining the ICLEI program or are committed to achieving by a date set and acknowledged by Council.

The water quality goals that have been set by Bayside City Council are:

- Bayside City Council will achieve 50 points of the Water Quality Action Card by 2010/11 for council operations; and

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- Bayside City Council will achieve 50 points of the Water Quality Action Cards by 2010/11 for community.

2.2 Water Consumption

The City of Bayside

As part of the ICLEI Water Campaign™ and Melbourne Water's Sustainable Water Use Plan, water consumption data for Council operations and the community were obtained from South East Water for financial years 2000/01, 2001/02, 2002/03 and 2003/04. This data assists in understanding issues surrounding water use within municipal boundaries and why the City of Bayside has one of the highest community water use levels in Melbourne. On-going collection and analysis of this data will provide the basis for monitoring and responding to trends.

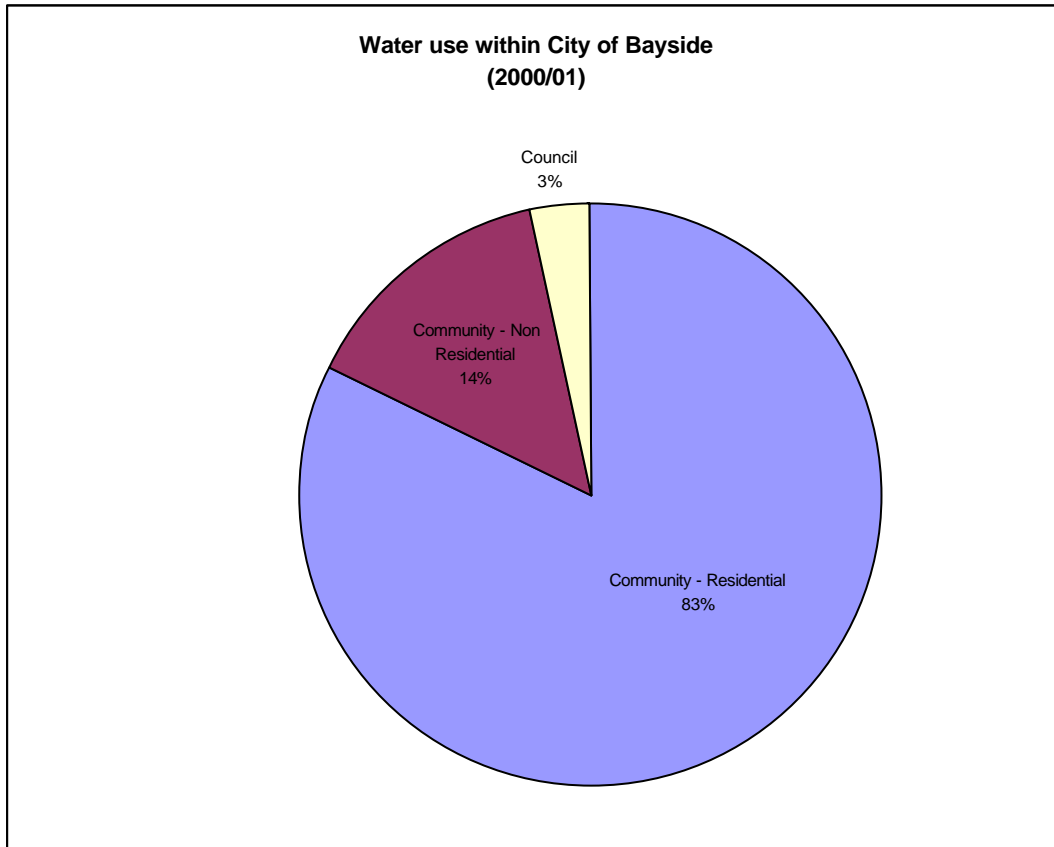
It is noted that rainfall for the base year was the wettest of the four financial years. The table below demonstrates significant variation with yearly rainfall and this needs to be considered in setting long-term targets. Reduction in consumption during that past few years has occurred because of water saving initiatives, water restrictions and behavioural changes within the Bayside community, rather than levels in rainfall. Rainfall data for 2000/01 to 2003/04 is set out in Table Three.:

Fiscal Year	Rainfall mm
2000/01	694.2
2001/02	596.8
2002/03	361.6
2003/04	653.7

Table Three: Rainfall in Bayside from 2000/01 – 2003/04

The water demand across the City of Bayside during the base year of 2000/01 was 11,958,910kL. Graph Two shows water use for the residential and non-residential sectors of the community as well as Council operations. As the graph shows, community (residential and non-residential) represent 97 per cent (11,556,235kL) of all water used in the City of Bayside.

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Graph Two Water use within the City of Bayside

Bayside City Council

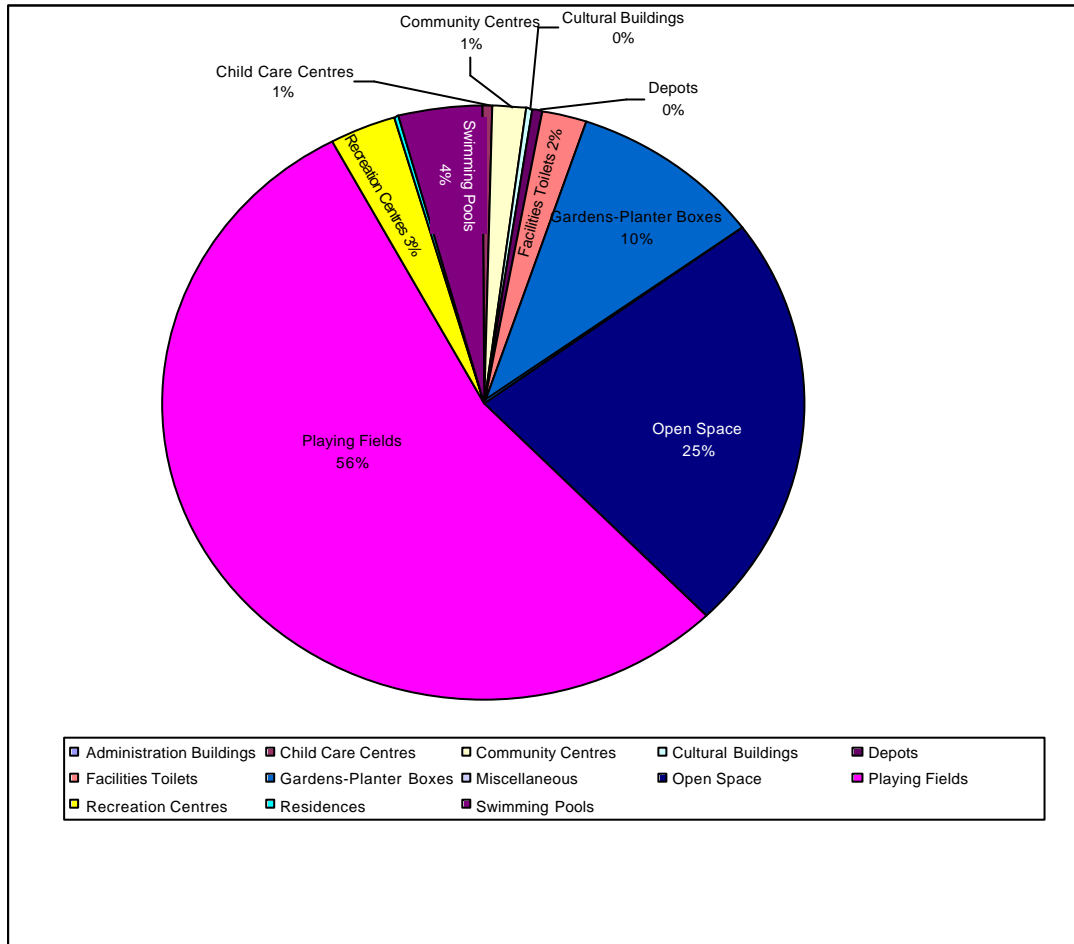
Bayside City Council has completed a water consumption inventory for Council operations, buildings and open space water use from 2000/01 to 2003/04. Sites are divided into facility types and a full list of facility types is set out as Appendix One. The completion of this inventory achieved Milestone One of ICLEI's Water Campaign™.

For the base year 2000/01, Bayside Council's operations used 402,675kL of water, with 91 per cent of this being used to irrigate Bayside's playing fields, open spaces and gardens. Although Council facilities and operations only use three per cent of all water throughout the City, Council has seven of the highest individual water use sites in South East Water's service area and all of these are playing fields, open spaces and gardens:

- Dendy Park (Playing Field)
- Brighton Public Golf Course (Playing Areas)
- Landcox Park (Open Space)
- Kamesburgh Gardens (Gardens)
- Trevor Barker Beach Oval (Playing Field)
- Hurlingham Park (Playing Field)
- Banksia Reserve (Playing Field)

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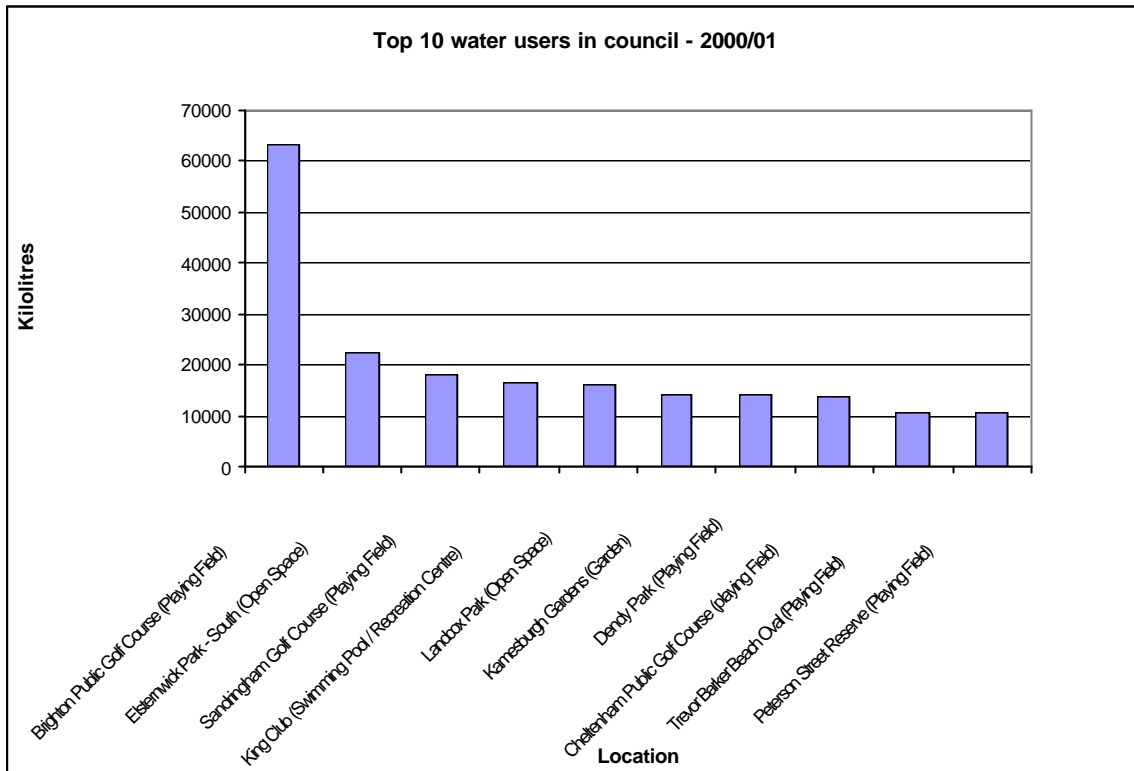
This presents a management challenge because water is important for ensuring trees, gardens and turf are not damaged or placed under significant stress and areas are safe and aesthetically pleasing. Graph Three shows water use within Council operations, with playing fields consuming more than half of the water that the Council uses.



Graph Three –Water use in Bayside City Council's operations

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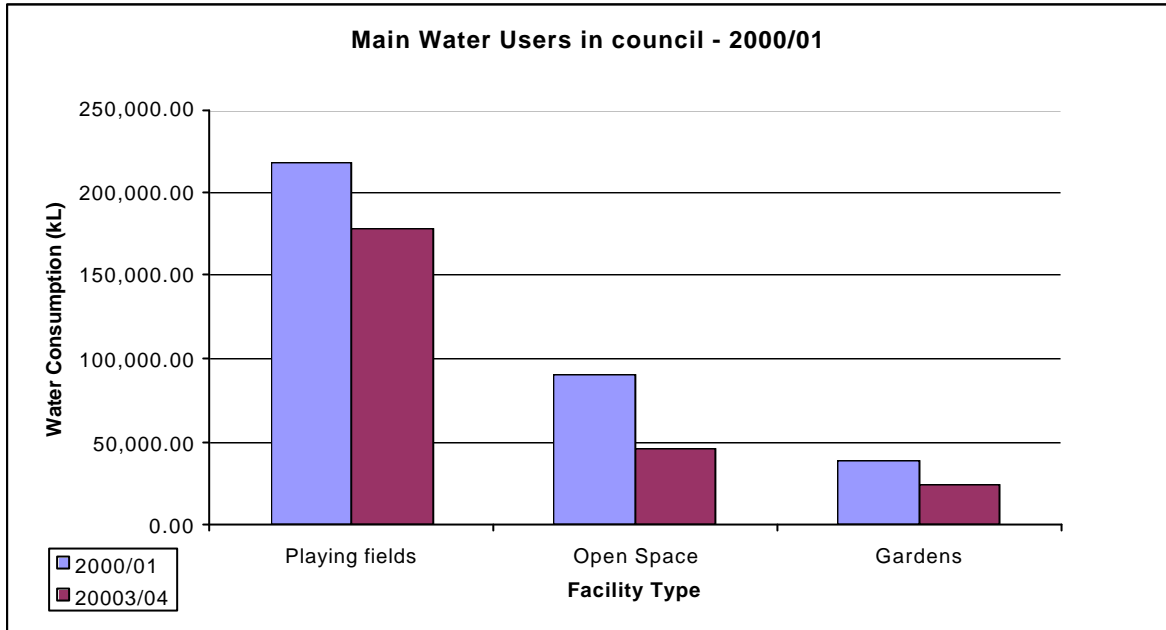
Graph Four shows the top 10 water users for the Council. This data differs from the list on page 22, because this includes properties that are owned by Bayside City Council but are under lease arrangements. All except the King Club (sports and leisure centre) are playing fields, open spaces and gardens. It used the fourth highest amount of water in 2000/01 due to the requirements of the pool and showering facilities.



Graph Four – Top ten water users in Bayside City Council in 2000/01

Playing fields, open space and gardens provide the greatest opportunity for the Council to reduce its water consumption and Graph Five illustrates the significant reductions were achieved between 2000/01 and 2003/04.

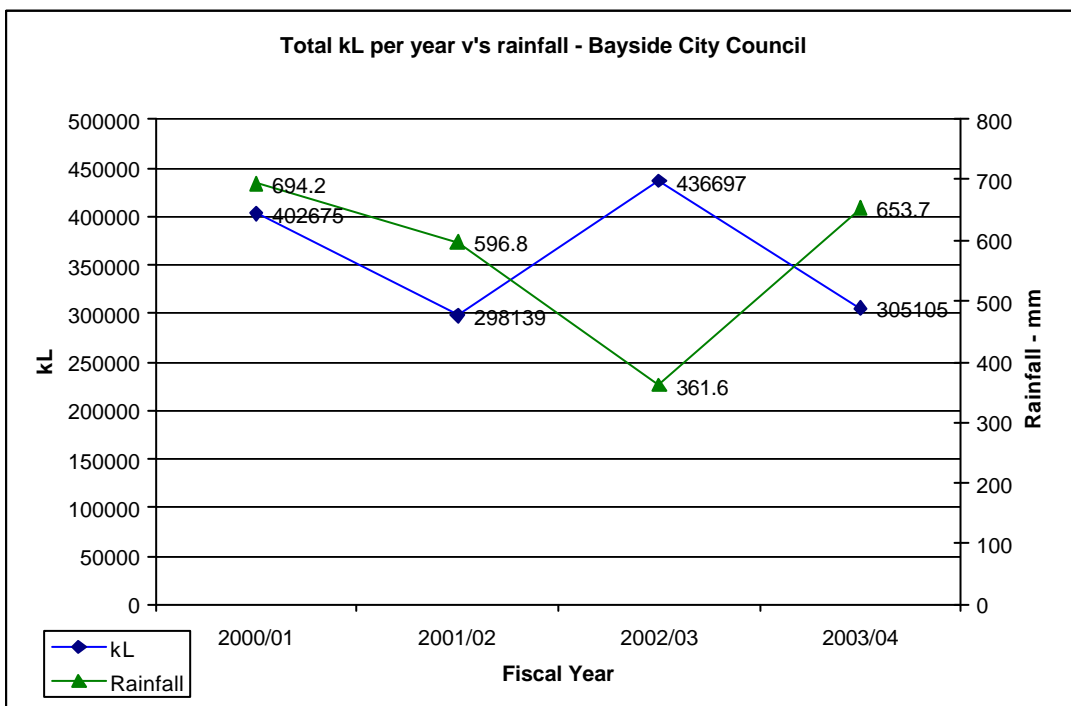
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Graph Five – Major water users in 2000/01 – by facility type

Since 2000/01 Bayside Council's corporate water use has fluctuated, mirroring, in general, the trends in rainfall – as rainfall has decreased, water use, has increased due to the significant use of water for irrigation. Bayside City Council has reduced water use from 402,675kL to 305,105kL between 2000/01 and 2003/04 – a reduction of 24 per cent or 97,570kL.

Graph Six shows fluctuation of water use and rainfall levels



Graph Six: Fluctuation of water use and rainfall levels

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Response

To reduce Bayside City Council's water consumption by 30 per cent from 2000/01 levels by 2010/11

A 30 per cent reduction in the 2000/01 consumption levels would result in potential savings of 120,802kL by the year 2010/11. This goal is realistic and achievable, particularly in view of recent reductions and analysis of potential opportunities. A more detailed analysis is located in Appendix Two, which provides a numerical justification for this target. Since 2000/01, Bayside City Council has achieved a 24 per cent reduction in its water use. This significant reduction can be attributed to water saving initiatives, browning off of open space and mandatory water restrictions. However with the introduction of new automatic watering systems at three playing fields during the next financial year, water consumption will increase.

Council's long-term, aspirational goal is to only use potable/scheme water for essential purposes such as consumption and hygiene. This will require a reliable water source, innovation and continual improvement with management practices. Water supply will continue to be influenced by climatic variation and this will impact on Council operations such as irrigation because if there is no rain, irrigation must occur. However programs such as the Sandbelt Recycling Scheme will assist in the reduction of water use while at the same time providing safe and aesthetically pleasing public facilities.

The reduction in the use of fresh water for playing fields, parks and gardens is the greatest opportunity, however there are important safety and aesthetic issues that need to be considered. The King Club is another opportunity because it consumes a significant amount of water for its pool and showers. Other Councils such as Frankston and Mornington Peninsula are using the pool backwash water for irrigation or are treating and reusing it to refill the pool. This not only reduces water use but also reduces energy requirements to heat the water.

Green purchasing and staying aware of new innovations will assist Council in delivering the initiatives necessary to reduce water use by 30 per cent. The Municipality Association of Victoria's EcoBuy program assists Council in selecting environmentally sensitive products. This program has already been a success in Bayside with Council operations being recognised with an EcoBuy Award for achieving excellence in communicating the buy green message to staff throughout the organisation. EcoBuy will assist in choosing water sensitive technologies for Council operations.

To stay at the forefront of water saving, Council needs to stay aware of and trial new water saving initiatives.

Sustainable Water Management Plan

What has Bayside City Council done to save water across Council operations?

Compliance with Water Restrictions	The reduction of irrigation in Council's open spaces.
Micromet	A weather sensitive irrigational control system has been introduced in more than 20 public sites across the municipality.
Tank-to-toilet flushing systems.	Installed at all Council-run Maternal and Child Health Centres and the new Beaumaris Library. These have been installed within a 12-month to –18-month period and reductions can already be seen.
Waterless urinals	Tried at Marion Street public toilets
Fytofoam	This wetting agent was trialed at Dendy Park
Warm season grasses	Now used on many of Council's playing fields

Sustainable Water Management Plan

Strategies and Actions

1. Reduce water use in Council's open spaces

- 1.1 Research, trial and plant water efficient turf types and other water saving initiatives in Council's open space and playing fields.
- 1.2 Review the re-use of rainwater to fill all ponds and lakes and fountains.
- 1.3 Audit open space irrigation systems to identify opportunities to reduce water use and improve efficiency.
- 1.4 Implement actions identified from audit – subject to budget considerations.
- 1.5 Investigate the use of recycled water from CityPower and Telstra Pits.
- 1.6 Develop guidelines to incorporate water efficient landscape design into landscape practices.

2. Reduce water use in Council facilities

- 2.1 Investigate installing rainwater tanks at Council depot.
- 2.2 Investigate installing a water efficient irrigation system at Council's nursery.
- 2.3 Install rainwater tanks and use water for flushing in all public toilets, Council facilities, new developments and retrofit as opportunities arise.
- 2.4 Integrate WSUD techniques into all new asset designs and upgrades where appropriate.
- 2.5 Install flow control valves in all internal and external taps at Council properties.
- 2.6 Investigate the use of water plants in fountains to reduce evaporation.
- 2.7 Monitor water use readings of all Council meters and investigate possible leaks and repairs.
- 2.8 Assess current waterless urinals in Council facilities and investigate opportunities for other installations.
- 2.9 Undertake a feasibility study on reusing backwash water from The King Club pool in conjunction with planned refurbishment.
- 2.10 As old white goods are retired, replace them with AAA+ (or equivalent) rated appliances in all Council facilities.
- 2.11 Install best available dual flush toilets in all Council building refurbishments, developments and retrofits as opportunities arise.
- 2.12 Investigate installing shower timers and flow control valves in sports pavilions, foreshore showers, external drinking fountains and other council facilities as opportunities arise.
- 2.13 Remove hoses or install trigger nozzles on all hoses.

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3 Capacity Build with corporate staff, open spaces and other contractors

- 3.1 Strengthen water conservation requirements in Council lease agreements and contracts.
- 3.2 Adopt EPA guidelines for the use of grey water systems in Council properties.
- 3.3 Monitor best practice and trial new water saving initiatives for adoption in asset management practices.
- 3.4 Provide forums for relevant staff, contractors and management to learn more about new water saving initiatives.
- 3.5 Communicate Council projects that feature water saving initiatives.
- 3.6 Increase awareness of Green Plumbers and Green Gardeners and where appropriate train contractors.
- 3.7 Seek funding opportunities and grants for water conservation projects and initiatives.

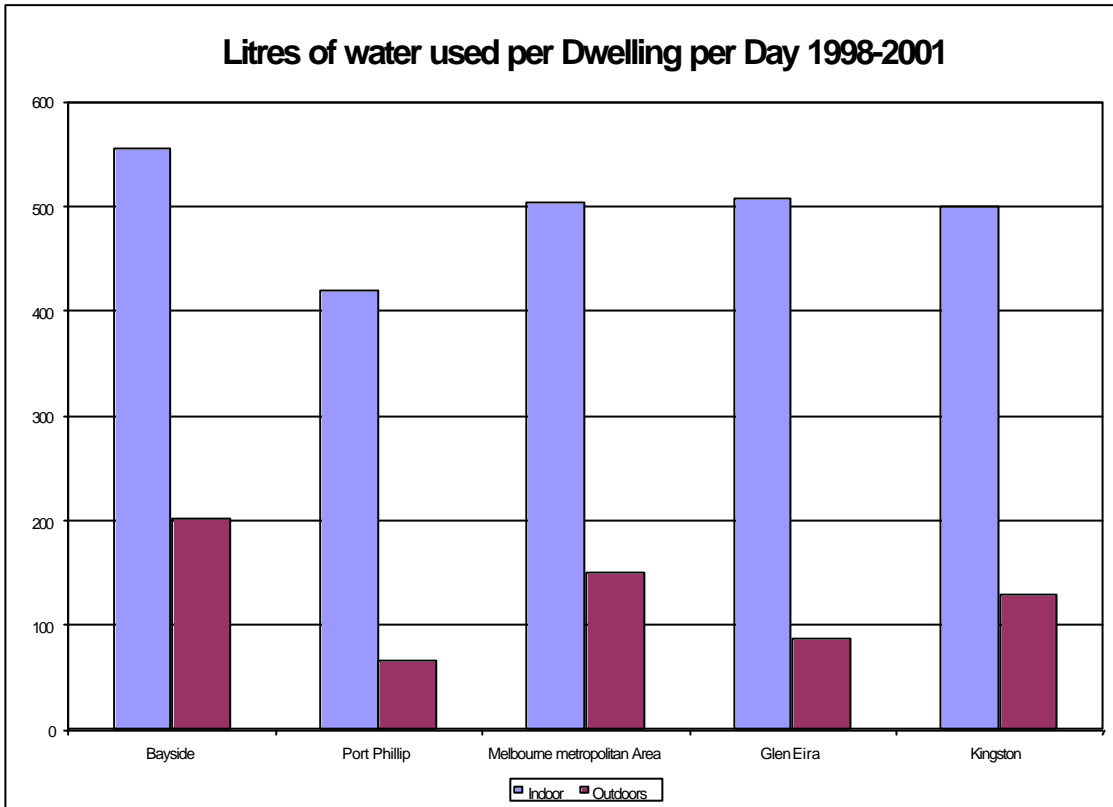
4 Monitor and Review

- 4.1 Deploy portable sub-meter at sites to get an exact reading of water use at various facilities with buildings.
- 4.2 Investigate the benefits of GIS applications in water management.
- 4.3 Research possible tools for monitoring and reporting water consumption.
- 4.4 Provide regular reporting on water usage in Council.
- 4.5 Develop modelling to more effectively regulate and monitor water consumption / use, especially related to open space requirements.

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The City of Bayside - Community Water Use

The community of Bayside has one of the highest per capita water uses in metropolitan Melbourne, 23 per cent more than the Melbourne average. Graph Seven compares water use in Bayside and the surrounding municipalities of Port Phillip, Glen Eira and Kingston as well as metropolitan Melbourne.

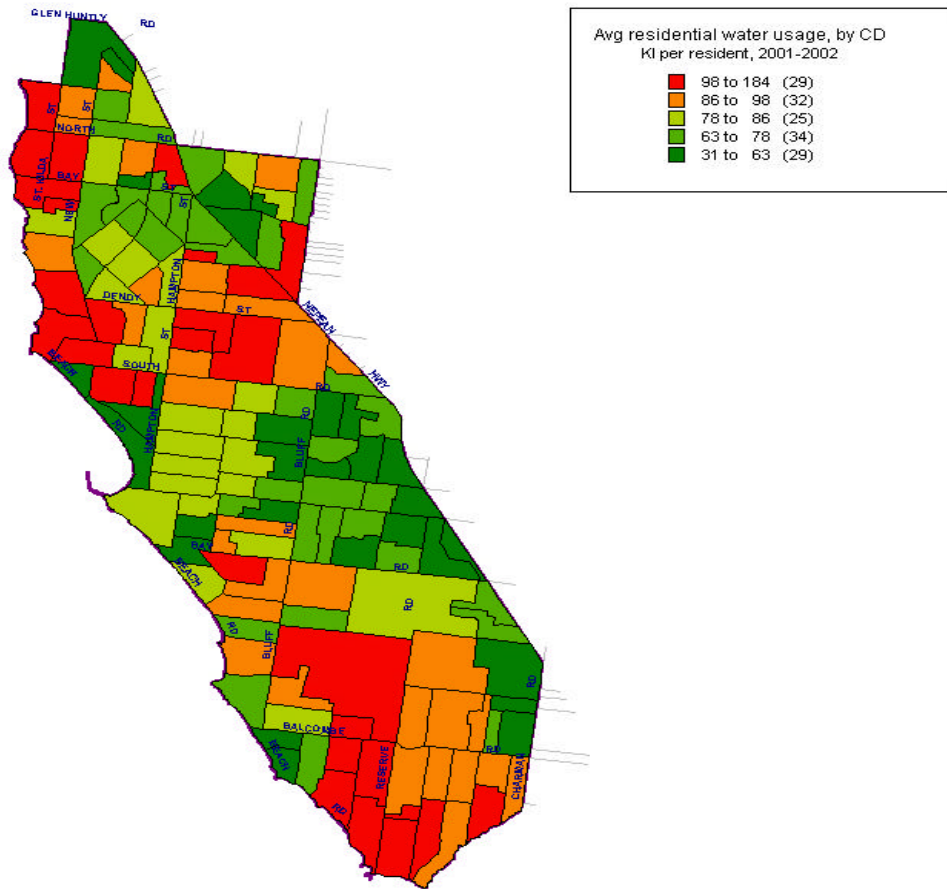


Graph Seven: Bayside's average water use, per household between 1998 and 2001, compared to other councils in metropolitan Melbourne

A behavioural and attitude study completed by South East Water highlighted a number of reasons why water use in Bayside's residential area was so high. Large gardens, water thirsty and salt sensitive plants and sandy soils all contributed to Bayside's high water use. As a result of this study, South East Water and Bayside City Council developed an innovative community awareness program designed to influence residential water use, particularly in the garden.

Within the City of Bayside in 2000/01, 97 per cent (11,556,235kL) of water used was by the community – 9,841,046kL was through residential use and 1,715,189kL through non-residential use such as private golf courses, shopping strips, schools and industry. Map One shows the high water use areas within Bayside – Brighton and Beaumaris are the highest users with an average of between 86kL and 184kL per person.

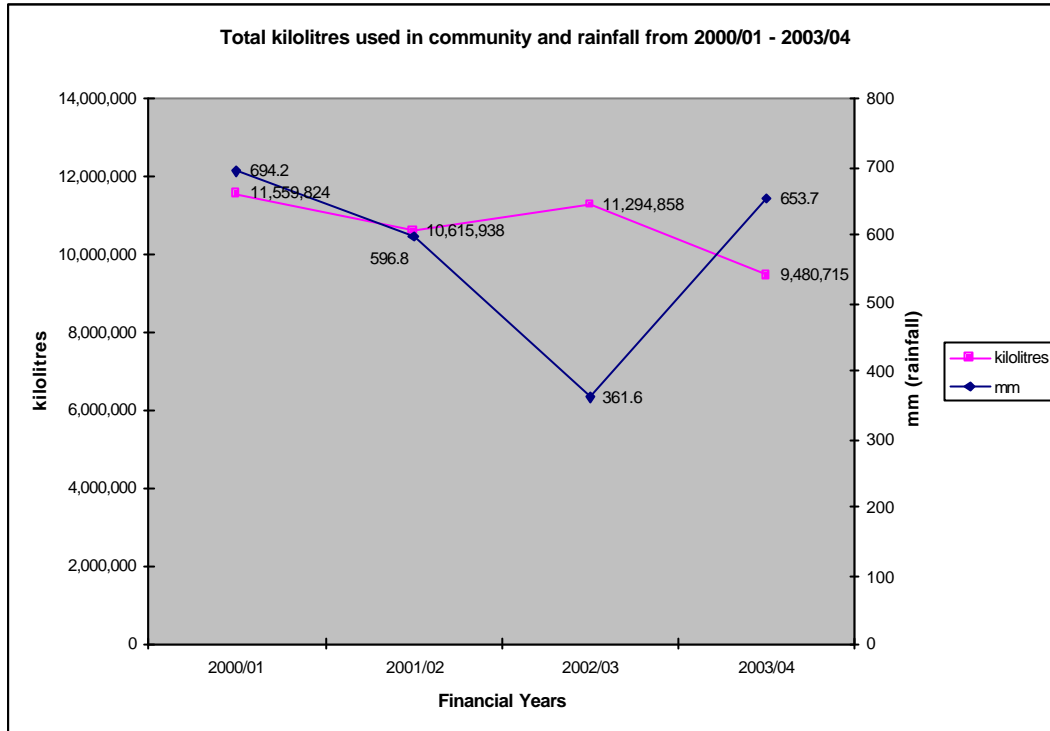
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Map One: water use within Bayside City Council (by Census Collection District)

Graph Eight shows correlation between water use and rainfall. The pattern here is similar to corporate water use with fluctuation of water use in the community directly related to rainfall levels. Statistics show that most of this water use can be attributed to residential gardens and open spaces so it varies according to rainfall.

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Graph 8 – Fluctuation of water use in the community and rainfall levels

Community future water use

Bayside City Council's population is forecasted to increase by 4.5 per cent by 2010/11, resulting in further demands on our water supply.

The tables below indicate the variance in water use if the Bayside community continues to use water at 2000/01 levels (Table Four) as compared to reduction target of 20 per cent (Table Five). This table takes into account the estimated population increase between 2000/01 and 2010/11.

Table Four - No water saving measures undertaken

Year	Population	kL / person	Water use (kL)
2000/01 (base year)	88,808	130	11,556,235
No reduction			
2010/11	92,849	130	12,069,590

Table Five - Reaching a 20% reduction target

Year	Population	kL / person	Water use (kL)
2000/01 (base year)	88,808	130	11,556,235
4.5 per cent increase in population and a 20 per cent reduction in water use			
2010/11	92,849	104	9,656,296

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A number of significant water users provide opportunities to reduce water use. Private golf courses are already developing methods for reducing water use on their greens and are working with Melbourne Water on the development of a dual pipe system that will pipe recycled water from the Eastern Treatment Plant to irrigate golf courses and other open spaces. This system could significantly reduce the amount of freshwater being used within the City of Bayside.

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Response

To reduce water consumption by 20 per cent from 2000/01 levels by 2010/11

A 20 per cent reduction to the 2000/01 consumption levels plus the expected population growth would result in a potential saving 2,413,294kL by the year 2010/11. Since 2000/01, the community of Bayside has reduced water consumption on average by 17 per cent while the average reduction across Victoria has been about 11 per cent. Increased awareness through State Government funded programs, water restrictions, new water saving measures and pricing reforms have contributed to these reductions.

The South East Water / Bayside City Council “Be A Bayside Water Saver” program may have contributed to the significant reductions achieved by the Bayside community. The Be A Bayside Water Saver program focuses on providing information and it complements other Council initiatives such as publication of the ‘Green Your Home – One day to Sustainability’ booklet. Information provision will continue however achieving behavioural change is a high priority and Council will examine further behavioural change programs to be implemented in the Bayside community.

Bayside City Council is well placed through its roles, responsibilities and community networks to provide further leadership in water conservation. The Council, through the Be A Bayside Water Saver program, has already developed strong relationships with local schools and community groups. There is a significant opportunity to work with other non-residential sectors of the community, such as industry, retail and private golf courses to assist them in reducing water use.

What has the Bayside community done to save water across the municipality

“Be A Bayside Water Saver”	A community awareness program developed by Bayside City Council and South East Water.
Hampton Rotary Club and Hampton Primary School	Installed a 75,000L rainwater tank at the school. Completed with an open day and rainwater tank installation in April 2005.
Water Expo	Run in December 2002 to exhibit water saving products to the residents of Bayside.
Green Plumber & workshops	Three workshops have been hosted by Bayside City Council for plumbers in the Bayside area.

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Bayside Community Nursery	Successful in the promotion of indigenous plant use in Bayside gardens meaning plants that are suited to sand and salty conditions are now being used in Bayside gardens.
Guidelines for rainwater tanks and grey water use	Bayside City Council is developing guidelines for the use of rainwater tanks and grey water systems on residential properties.

STRATEGIES AND ACTIONS

5 Continue to develop partnerships with community groups and schools through water retailers and council bodies.

- 5.1 Extend the Be A Bayside Water Saver program.
 - a) Give householder the opportunity to sign up to be one of 20 'Home Water Savers Challenge' participants to further explore current household behaviour and ways to make changes.
 - b) Link into the South East Water's "Water – Learn It! Live it!" education program to further communicate water conservation in Bayside Primary and Secondary Schools.
 - c) Offer residents the opportunity to participate in water conservation competitions as a way to better understand water behaviour.
 - d) Hold a public rainwater tank installation display at a local Bayside building or community centre.
 - e) Promote Water Heroes program.
 - f) Promote the program to local nurseries/hardware stores.
- 5.2 Develop seminars promoting ways to save water for builders, gardeners and the general community.
- 5.3 Increase awareness of recycled water and its benefits within Council open spaces and industry.
- 5.4 Communicate permanent water restrictions and Council's response to these in relation to sporting fields, open spaces and gardens.

6 Continue to provide leadership, through leading by example

- 6.1 Develop an exhibition waterwise garden.
- 6.2 Ensure best practice guidelines for grey water re-use, rainwater tanks and waterwise gardens are available at the Council's Corporate Centre and other Customer Service locations such as libraries.
- 6.3 Monitor and report on community water use.

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7 Continue to facilitate learning and behavioural change in the community about water use

- 7.1 Continue working with schools and other community groups, providing them with assistance to reduce water use.
- 7.2 Continue working with South East Water and Melbourne Water on developing programs to work with non-residential sectors to reduce water use.
- 7.3 Undertake further research into community attitudes about water conservation.
- 7.4 Explore further behavioural change programs for implementation within the Bayside community.

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2.3 Water Quality

Stormwater is the key water quality issue for the City of Bayside. Stormwater is rainfall that runs off hard, generally man-made surfaces such as roads and roofs. In urban developments such as Melbourne and surrounding suburbs as much as 90 per cent of rainfall can enter the stormwater system including drains, lakes, rivers, creeks and Port Phillip due to the increase in impervious surfaces, intensity of activities and changes to stormwater flow paths.

As stormwater flows over these hard surfaces it accumulates pollutants such as dog faeces, detergents, oils, fertilisers, litter, grass clippings and chemicals. This is eventually washed into Port Phillip resulting in the closure of beaches, significant denigration of Melbourne's urban aquatic environment and increased nitrogen and phosphorus levels that unbalance the bay's ecosystems.

It is estimated that 50 per cent of high quality drinking water, which is piped to urban areas is used for lower quality purposes such as gardening and toilet flushing and that stormwater runoff from cities is almost equal to the amount of potable imported water used.

Forecast population growth and urban consolidation planning policies such as Melbourne 2030 mean that there will be increased sealed surfaces. The consequences projected for allowing patterns and trends to continue unabated are significant changes to the ecology of Port Phillip. These changes have the potential to strip away the quality and values of the bay and deny Melbourne residents and visitors access to safe clean waters and beaches. The Councils bordering Port Phillip (for example, the member Councils of the Association of Bayside Municipalities) have a particular focus on the bay environment and consequently on the relationship between urban development in the bay's catchment and the quality of the bay's waters.

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Response

Council	To achieve 50 points from the Water Campaign™ Water Quality Action Cards by 2010
Community	To achieve 50 points from the Water Campaign™ Water Quality Action Cards by 2010

Stormwater Management Plan

Bayside City Council was one of the first Victorian Councils to develop and implement a Stormwater Quality Management Plan. Significant challenges still remain particularly in relation to monitoring and understanding water quality. The Stormwater Management Plan is the primary document for the implementation of stormwater initiatives. A review and update of the Council's Stormwater Management Plan will focus, in part, on these challenges and will continue to work towards improving the quality of stormwater. It is expected that this will commence in 2006. Beyond the Stormwater Plan the Council is developing planning scheme measures to improve water quality.

Clean Stormwater Planning Framework

Bayside City Council will continue its leadership role by implementing the Clean Stormwater Planning Framework. Amendment C44 to the Bayside Planning Scheme was exhibited in March 2005. The Amendment strengthens the strategic basis for the introduction of stormwater quality requirements for new development through introducing new local policy that establishes statutory requirements for the incorporation of water sensitive urban design in new developments.

The exhibition of this Amendment provides an opportunity to pilot this breakthrough approach to incorporate Water Sensitive Urban Design (WSUD) into the planning system. The next steps involve testing the administrative and technical issues that need to be addressed with implementing this in the planning scheme. A number of issues still need further examination. These include assessment and understanding of the full life cycle costs and health implications associated with various Water Sensitive Urban Design (WSUD) techniques. The practical use of the framework by planners in the assessment of development proposals is also an important consideration. Analysis of feedback from the Bayside Planning Scheme Amendment will inform the ongoing development and implementation of the Stormwater Planning Framework.

Council will continue to work with key stakeholders such as Melbourne Water on administrative technical issues. It will also be important to educate others and monitor progress with initiatives that are being developed by State Government and other relevant agencies. Bayside will keep engaged with bodies such as CLEARWATER, which educate and continually improve technology and initiatives. CLEARWATER is an innovative Victorian

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capacity building program, recognised as a leader in the design and delivery of best practice professional development in sustainable urban water management. CLEARWATER is a joint initiative of the Municipal Association Victorian of Victoria and the Stormwater Industry Association of Victoria, funded by EPA Victoria as part of the Victorian Stormwater Action Program.

What is Bayside City Council doing to improve water quality?

Installation of Gross Pollution Traps (GPT)	About 68m ³ of rubbish and litter are removed from 11 of the 14 GPT's located across the City of Bayside which would otherwise flow into Elster Creek and Port Philip.
Expansion in the monitoring of GPTs	From the information gathered conclusions can be drawn as to the performance and effectiveness of differing GPTs.
Education and empowerment programs	Three programs have been developed <ol style="list-style-type: none">1. Community: Butt Out Campaign Run in conjunction with the ABM in 2003/04, this beach litter education program focused on educating smokers that cigarette butts are litter. It also promoted the message "Bin it or Swim in it" and developed partnership with Life Saving Clubs, Yacht Clubs and foreshore kiosks.2. Schools – "What a load of rubbish – Catchment Care Program," with objectives to raise awareness, involve students in the development of creative solutions and involve local retailers and businesses.3. Bayside City Council Staff Bayside City Council is a 'Waste Wise' Council and a part of the EcoBuy program.
Monitoring of litter sources and the development of a Beach Litter Report	This report and study identifies three main litter sources along Bayside's beaches and audits the litter collected at these sites.
Monitoring of toxicants at drainage outlets	This program allows for better understanding of toxicants in stormwater

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	and helps to determine whether management strategies have been effective and if further work is required.
New bin regime	Council has replaced the old crate recycling system with a wheelie bin system, decreasing the amount of litter generated in the rubbish collection process.
Development of a Building Site Code of Practice that regulates sediment run-off from building sites.	Developed for Council, contractors and service authorities and to be incorporated into Council operations, permits and agreements. It will be distributed to builders and developers with Bayside.
Infrastructure	<p>Bins located in public areas such as parks, foreshore areas and shopping strips.</p> <p>Domestic Kerbside Waste Services include the two hard and bundled branches waste collections per year and fortnightly green waste collections. This is believed to be a key contributor to the low levels of dumped waste in public areas.</p> <p>Monthly street sweeping.</p> <p>Sharps containers installed in public buildings.</p>
Local laws and enforcement	Enforces the Environmental Protection Act 1970 Section 45. Undertakes education and enforcement.
Installation of bio-retention systems at Ricketts Point car park and the new Beaumaris Library	Installed in the new developments during 2005
The publication of “Clean Stormwater – A planning framework”	Represents a key contribution to sustainable urban water management and serves as an important reference in the development of planning controls incorporating WSUD.
C44 Amendment to planning scheme	Developed from a model-planning scheme set out in “Clean Stormwater – A planning framework”. The Amendment strengthens the strategic basis for the introduction of new local policy establishing strategic requirements in corporate WSUD.

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Stormwater being diverted to Elsternwick Park lake This project reduced the amount of polluted water entering Port Phillip and improved the aesthetics of Elsternwick Park.

International Council for Local Environmental Initiatives (ICLEI) Water Campaign™

The ICLEI Water Campaign™ requires Council to analyse, research and determine water quality problems and initiatives. Council has identified three areas for improvement of water quality by both corporate and community sectors. These areas were identified because they are the three major issues that affect water quality within Bayside.

1 – Erosion and Sediment Control

Building and landscape works and the erosion of river and creek beds all contribute to the high quantities of sediment in waterways. High flows and insufficient riparian vegetation stabilising the riverbank often cause erosion. Aquatic species can be affected by sediment in the waterways.

2 – Gross Litter and Pollution Management

Gross litter management is manufactured materials. It varies in size and enters a waterway via the drainage system or the dumping of rubbish. Litter can reduce the aesthetic value of a natural area and injure aquatic fauna. In urban areas, litter can be responsible for contributing between 20 kilograms and 40 kilograms per hectare per year of gross pollutants into stormwater.

Chemical and toxicant pollutants entering water bodies are derived from industrial processes and vehicle emissions. Pollutants are generally seen in the context of undesirable elements, which can impact on the beneficial uses of the receiving waters.

3 – Herbicide, Pesticide and Fertiliser Use

Herbicides and pesticides are used to control a variety of weeds and pest animals largely in the management of open spaces and tree care on Council land. Some herbicides and pesticides can enter freshwater resources either through seepage into groundwater or overland run-off into watercourses. Excessive use or mismanagement of herbicides and pesticides can have a toxic effect on receiving waters.

The Water Quality improvement goals were developed through the ICLEI scorecard. Actions are identified under the three major water quality categories of 'Sediment and Erosion Control'; 'Gross Litter and Pollution Management' and 'Herbicide, Pesticide and Fertiliser Use'. These actions are proven to be effective in reducing contaminants from entering the waterways and each action is allocated five points or 10 points. The full list of actions for

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these three categories are identified in Appendix Three A and B with the actions Bayside are choosing to incorporate into the 50 points of action highlighted.

Through its role in developing the Clean Stormwater Framework and implementation of its Quality Stormwater Management Plan, Council has provided leadership in improving water quality. The following strategies and actions will build on these achievements.

STRATEGIES AND ACTIONS

- 8.1: Review the City of Bayside's Stormwater Management Plan.
- 8.2: Continue advocating the collection of Stormwater.
- 8.3: Develop educational brochures and pamphlets for all architects, surveyors and homeowners on how to incorporate WSUD into developments.
- 8.4: Undertake WSUD projects on Council properties where appropriate.
- 8.5: Communicate Council's leadership role and activities in stormwater management.
- 8.6: Develop partnerships with water authorities such as Melbourne Water to work collaboratively to improve implementation and application processes relating to stormwater.
- 8.7: Keep abreast of current trends and technologies towards improving water quality and WSUD.
- 8.8: Work with Melbourne Water and South East Water on demonstration and other high profile / large scale WSUD projects within Bayside.
- 8.9: Monitor WSUD development within Bayside through a property database which records the number of stormwater assessments undertaken, how much water has been re-used and not discharged into Port Phillip.

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2.4 Alternative Water Sources

Water is not an infinite resource, however through progressive management and treatment processes, alternative water sources can become an integral element in supplying water to meet the demands placed on the freshwater supplies of the City of Bayside. To this end, Council will follow the waste hierarchy (avoid, reduce, re-use and recycle) in its water management practices.

Many of the every day processes that use water within council and residential operations do not require the use of fresh, potable water. For example, irrigation of playing fields and gardens can use lower grade water without affecting plant or animal species or human health.

In addition to stormwater, there are other possible alternative water sources available to the City of Bayside:

- Water Recycling;
- Grey water; and
- Groundwater.

Water Recycling

The recycling and treatment of sewage to provide 'Class A' water for irrigation purposes provides Melbourne with a valuable and safe resource. The State Government through Melbourne Water has committed to achieving 20 per cent recycling by 2010 from its western and eastern treatment plants. Currently the two treatment plants discharge a combined total of 300,000 million litres into Port Phillip and Bass Strait. This is the equivalent of 66 per cent of Melbourne's annual fresh water requirements¹⁶.

The Sandbelt Recycling Scheme is one of the projects being developed in south-east Melbourne, which could support Bayside in reducing the use of freshwater. The Sandbelt Recycling Scheme would see treated 'waste water' being pumped back into Bayside and used for the irrigation of golf courses, playing fields, open spaces and gardens in the Cities of Bayside, Monash, Kingston, Dandenong and Glen Eira.

If this scheme is implemented, not only golf course users but also the wider community of Bayside will benefit through improved public facilities. About 402mL of water is used yearly by Bayside City Council, 91 per cent is used for irrigation of passive and active open spaces. The introduction of the Sandbelt Recycling Scheme could reduce Bayside's water use by approximately 152mL (37 per cent). If Bayside were to extend the pipe to reach more of its open space, water use could be reduced by 167mL (41 per cent).

¹⁶ www.melbournewater.com.au/content/publications/fact_sheet/water_recycling/ (April 2004)

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Melbourne Water and South East Water in conjunction with the 18 golf clubs, Bayside City Council and the City of Greater Dandenong are currently developing a proposal for the State Government. It would be in the best interest of Bayside City Council to research and understand the risks and benefits associated with this scheme.

Recycled water is a valuable resource, however it should only be considered after all other efforts have been tried in reduce the demand on water. A combination of water demand management, water harvesting, stormwater utilisation, recycled water and potable water supplies can result in effective and efficient ways to meet water demand.

Grey Water

Grey water (sometimes called sullage) is all non-toilet wastewater. It includes water normally discharged to sewer after its use in showers, baths, spas, hand-basins, washing machines, laundry troughs, dishwashers and kitchen sinks. Grey water is distinct from recycled water in that it has not been contaminated with sewage.¹⁷ Average households will produce 400 litres of grey water everyday. This accounts for 40 per cent of household water use. The treatment and re-use of grey water for the purpose of irrigation not only reduces the wasteful use of freshwater, but also cuts down on the need for fertilisers. Bayside City Council also has the ability to use grey water for the irrigation of playing fields. Grounds, which have showering and change facilities could use grey water from these for the purpose of irrigation or toilet flushing.

Groundwater

Groundwater is “water that occurs beneath the land surface, for example water held within a saturated zone, rock medium, fracture or other cavity within the ground”.¹⁸ In southern Victoria, groundwater is managed by Southern Rural Water and plays a significant role in the irrigation of rural Victoria and open spaces in metropolitan Melbourne.

Groundwater is a major component of the water cycle; it effects and is affected by surrounding environments, impacts and management processes. Replenished like other surface waters through the infiltration of precipitation such as rainfall and snowmelt, it can also be contaminated through an over use of fertilisers, leaking septic tanks and landfill. The over use and depletion of groundwater supplies also effects surface water, influencing environmental flows in rivers and streams and creating further environmental damage.

Groundwater is a major water source for irrigation and consumption in capital cities including London, Los Angeles and Perth. Although Melbourne does not rely on groundwater as a major water source, it does impact on the ability of groundwater to recharge and function effectively. Non-porous surfaces such as footpaths, roads and paving prevent rainwater from filtering into

¹⁷ en.wikipedia.org/wiki/Grey_water

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the aquifers and underground works such as underground parking and tunnels effect the natural flow of the water through rock.

Groundwater in Victoria is managed by a number of policies and strategies including the State Environment Protection Policy (SEPP) -Groundwater of Victoria. The SEPP (Groundwater of Victoria) is an integrated framework of environmental protection goals for groundwater; it helps in the maintenance and improvement of groundwater quality and sets a consistent approach to groundwater protection. The Victorian Government also regulates catchment activities stating that it should:

- not affect the quality of groundwater to an extent that it is no longer able to be used;
- not be extracted to an extent that will decrease the amount or quality of water way flows; and
- not discharge saline wastewater from groundwater that would effect other water systems.

Groundwater supplies are separated into Groundwater Management Areas. These areas have a Permissible Annual Volume (PAV). Supply Protection Areas are Groundwater Management Areas that have reached their PAV and are at risk.

Bayside lies within the Moorabbin Groundwater Management Area. Its PAV is 4,305mL, of which 65 per cent is currently being used within local Councils including Bayside and Glen Eira, golf courses and private use. Groundwater in the Moorabbin Groundwater Management Area is becoming more saline and in time will require desalination. The salinity is due to its close proximity to Port Phillip and the use of the resource.

Bayside presently uses groundwater on two Council properties – Sandringham Golf Course and Basterfield Park and although Council's effect on groundwater is minimal, the non-porous surfaces around Bayside are contributing to a reduction in groundwater levels as flows of stormwater have increased.

STRATEGIES AND ACTIONS

9 Explore further opportunities for the use of alternative water sources

- 9.1: Explore further opportunities for the use of stormwater.
- 9.2: Continue as a member of the steering committee for the Sandbelt Recycling Scheme.
- 9.3: Research opportunities for grey water re-use.
- 9.4: Develop alternatives to using groundwater for irrigation.

¹⁸ www.groundwater.com.au/glossary/content.asp May 2005

PART THREE: IMPLEMENTATION AND MONITORING

3.1 Local Action Plan

A Local Action Plan (LAP) provides the basis for implementing this Plan. The LAP will be used to inform business planning and project development. It summaries the strategies and actions and provides more specific details about costs, responsibilities, priorities and partnerships. The LAP is attached to this document.

3.2 Monitoring

On-going monitoring and review will support the implementation of this Plan. The achievement of Milestone Five of the ICLEI water campaign™ will require a further re-inventory and assessment of water consumption. Council will also work in partnership with South East Water to update and improve databases and undertake analysis of water consumption trends. This will inform broader corporate reporting processes and provide the basis for review and improvement. The updating of Council's Stormwater Plan will be a means of reviewing and monitoring progress with water quality. Along with South East Water, Council is supporting research by Monash University into community attitudes about water use. This will provide input on the implementation and review of the plan.

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Glossary

Base Year	The first year of data collected for the ICLEI Water Campaign™. The data is used as a measure of performance in water conservation. Bayside City Council's base year is 2000/01.
Be A Bayside Water Saver	Established in April 2004, the Be A Bayside Water Saver program is a community awareness and behavioural change program that is designed to provide Bayside residents with information, advice and simple tips in reducing the amount of water being used in and around the home.
Bioremediation/bio-retention	"A water quality practice that uses landscaping and soils to treat stormwater run-off by collecting it in shallow depressions and filtering it through a planting soil media" ¹⁹
Community	Residential and non-residential water use.
Council	Corporate water use. Water used for Council business development, for example playing fields, nursery, buildings and street cleaning.
Fit-for-purpose	Ensuring that the output water produced is of appropriate quality for use. For example, recycled water is fit for the purpose of irrigating open spaces, but not for drinking.
Grey Water	'Waste' water from baths, showers, basins and washing machines. Any water that has not come into contact with toilet water.
Gross Pollutant Traps (GPTs)	Devices used to prevent large items polluting waterways. Used in stormwater drains, they collect items including take away containers, leaves, bottles and plastic bags.
Groundwater	"Water that occurs beneath the land surface, for example water held within a saturated zone, rock medium, fracture or other cavity within the ground" ²⁰
ICLEI – Water Campaign™	International Council for Local Environmental Initiatives. Founded in 1990 by Local Governments at the United Nations Head Quarters. ICLEI's mission is to "build and serve a worldwide movement of Local Governments to achieve tangible improvements in global sustainability." ²¹ The Water Campaign™ was designed to assist Local Governments in managing their water resources sustainably.
Kilolitres (kL)	One thousand litres. An Olympic size swimming pool holds approximately 2,500kL.
Megalitres (mL)	One million litres. An Olympic size swimming pool holds approximately 2.5mL.
Gigalitre	One gigalitre is one billion litres.

¹⁹ www.greenworks.tv/stormwater/glossary.html (May 2005)

²⁰ www.groundwater.com.au/glossary/content.asp (May 2005)

²¹ <http://www.iclei.org/about.htm> (May 2005)

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Permanent Water Saving Measures	<p>Put in place in March 2005, the Permanent Water Saving Measures cover five key rules, which affect both the community and Council water use. These rules are:</p> <ol style="list-style-type: none">1. Using manual watering systems only between 8pm and 10am;2. Using automatic watering systems only between 10pm and 10am;3. Fitting your hose with a trigger nozzle;4. Not hosing paved areas; and5. Applying to fill a new swimming pool. <p>Penalties apply if non-compliance (First time offenders - \$1000, subsequent offenders - \$2000 and if it continues \$200/day).</p>
Potable Water	Freshwater, safe, drinkable water.
Sustainable	It does not have a widely accepted definition and each industry, business or individual has their own definition that will suit their needs and requirements. "A sustainable way of life is one in which human needs are met without diminishing the ability of other people, wild species, or future generations to survive" ²² .
SWUP	The Sustainable Water Use Plan is Melbourne Water's / South East Water's Local Government program to assist Council's in reducing water use in their operations.
Wastewater	Wastewater is water that has been used once for washing, toilet flushing or car washing and is traditionally channelled into stormwater, which eventually flows into Port Phillip or sewage, which is transported to a treatment plant, treated then discharged into coastal waters. Wastewater however can now be treated to a standard that allows it to be re-used for irrigation of playing fields and open spaces.
WSUD	Water Sensitive Urban Design is the integration of the water cycle into urban planning. It is designed to protect our natural resources, integrate stormwater treatment into the landscape, protect water quality, reduce run off and peak flows and add value while minimising development costs. ²³

²² oceanlink.island.net/biodiv-web/glossary.htm (May 2005)

²³ <http://wsud.melbournewater.com.au>

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Appendix One

ICLEI Facility Classifications

Facility Type	Definition
Administration Building	Standard office buildings used by Council.
Community Centre	Mixed use halls, for example scout halls and open indoor areas with minimal facilities.
Cultural Buildings	Art galleries, libraries, fountains.
Depots	Wash-down facilities.
Toilets and Facilities	Public access sites in parks, along foreshore, including showers and boat wash-down areas.
Gardens and Planter Boxes	A sub-section of open space, all areas which are not primarily grass. Includes areas such garden beds and round a bouts.
Market Buildings	N/A
Miscellaneous	Where something is unmetered and not attached to a metered building or open space.
Nurseries	Production of seedlings and street trees.
Open Space	Roundabouts, nature strips, median strips and cemeteries
Recreation Centres	Sites dedicated to indoor recreation, for example gymnasiums and netball courts. These will generally have showers, etc.
Residences	Owned by Council and let.
Shopping Centres	N/A
Swimming Pools	Indoor and outdoor.
Town Hall	Includes hall space; reception and ancillary.
Water Trucks	Spraying dust on the side of roads and tip sites, watering trees and footpaths.

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APPENDIX 2

JUSTIFICATION OF CORPORATE CONSUMPTION GOALS

Buildings (52 sites)				
kL used 2000/01 at facility types	Action	Justification	Expected reduction across facility type	Expected reduction of council's water
13747.3	Waterless urinal	potential to save 90% at each urinal	3299.355 (24%)	0.80%
	Flow regulators	15-20%	412.42 (15%)	0.11%
	Rainwater tanks for toilet flushing	potential of 30%	2199.57 (16%)	0.60%
Assumption One - Council buildings predominantly use water for toilet and urinal flushing (80%) 10997.84 (amount used on toilets in Council buildings).				
Assumption Two - 1/3 of water used for toilets are used for urinals & 2/3 used for flushing toilets. 3665.95 (urinals) 7331.90 (flush toilets)				
Recreation Centres (sports pavilions) (13)				
kL used 2000/01 at facility types	Action	Justification	Expected reduction across facility type	Expected reduction of council's water
12738	Waterless urinal	potential to save 90% at each urinal	946.5 (7%)	0.30%
	Flow regulators	15-20%	1910.70 (15%)	0.50%
	Rainwater tanks for toilet flushing	potential of 30% + (difficult to determine - dependent on rainfall & use)	946.5 (7%)	0.30%
Assumption One - Sports pavilions predominantly use water for showering (66%) and toilet/urinal flushing (33%) (based on average water use in households YVW)				
Assumption Two - Urinals use 1051.635kL and flushing toilets 3154.905				
Toilets / Facilities (26)				
kL used 2000/01 at facility types	Action	Justification	Expected reduction across facility type	Expected reduction of council's water
9020.81	Waterless Urinals	12l/flush	2029.68 (23%)	0.50%
	Rainwater tanks for toilet flushing & wash down	50%	3382.80 (50%)	0.90%
Waterless urinals use 1/4 of water used in toilets therefore 2255.20				
flushing toilets 6765.60				

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Gardens (20 sites)				
kL used 2000/01 at facility types	Action	Justification	Expected reduction across facility type	Expected reduction of council's water
38138	Reduction in amount of open space irrigation	10%	3813.8kL (10%)	1%
	Water efficient landscape design	40%	15255kL (40%)	4%
Playing Fields (27 sites)				
kL used 2000/01 at facility types	Action	Justification	Expected reduction across facility type	Expected reduction of council's water
186127	Introduction of warm season grasses into all sports fields	20%	37225 (20%)	10%
Open Space (59 sites)				
kL used 2000/01 at facility types	Action	Justification	Expected reduction across facility type	Expected reduction of council's water
90192	Installation of rainwater tanks to refill lakes, ponds and fountains	20%	18038.4 (20%)	5%
	Elimination of irrigation at roundabouts and median strips	5%	4509.6 (5%)	1.20%
	Water efficient landscape design	40%	36,070kl (40%)	9.70%
	Reduction in amount of open space irrigation	10%	9019kL (10%)	2.40%
Swimming Pools (1)				
kL used 2000/01 at facility types	Action	Justification	Expected reduction across facility type	Expected reduction of council's water
16,388	Flow Regulators	15-20%	2458.2 (15%)	0.61%
	Backwash for irrigation, toilets, refill	Potential to save 40% *	6555.2 (40%)	1.70%
	Investigate potential to use rainwater for pool make up water	Potential 25%	4097kL (25%)	1.10%
* Energy saving are also expected as reused backwash water does not need to be reheated				
			Total reduction	35.00%

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APPENDIX 3a			
COUNCIL WATER QUALITY			
Water Quality Areas	#	Key Initiatives	
Sediment and Erosion Control	1a	Develop and implement erosion and sediment control guidelines based on best management practices for Council staff and contractors on all Council's construction sites.	5
	1b	Contract managers/supervisors to undertake training in the interpretation of the erosion and sediment guidelines.	
	2	Identify/appoint an officer who is responsible for fully implementing and enforcing Council's policies for erosion and sediment control	10
	3a	Include a clause to all Council tenders for construction activities, which incorporates erosion and sediment control guidelines or management plans.	10
	3b	Undertake footpath maintenance works which prevents the creation of concrete slurry	
	3c	Contract managers/supervisors to ensure that Council tenders are strictly adhered too with respect to erosion and sediment control.	
	4	For urban Councils, restore a minimum of 100 lineal meters using plant selection, which responds to urban drainage issues. This can involve the removal of exotics (many deciduous), bank stabilisation and re-vegetation with indigenous plants; OR	5
		For urban fringe and rural Councils, restore 500 lineal metres of degraded riparian environments per annum, largely focusing on over story species. This can involve the removal of exotics (many deciduous), bank stabilisation and re-vegetation with indigenous plants.	
	Gross Litter Trapping	1a	Undertake a litter hot spot audit, which identifies locations of high gross litter generation.
1b		Collect and collate data on the quantity and type of litter trapped for use in education and awareness building.	
1c		Review the type of gross litter device that provide best capture of your Council's litter profile	
2a		Respond to litter audit results by the appropriate selection and placement of side entry litter traps.	5
2b		Implement a maintenance regime that works on optimum efficiency of the side entry litter trap device installed.	
3a		Respond to litter audit results by the appropriate selection and placement of large permanent litter trapping devices.	10
3b		Implement a maintenance regime that works on optimum efficiency of large permanent litter trapping devices.	
4a		Provide a level of maintenance to street litter bins that prevents overflow into nearby drains.	5
4b		Use alternative system to recycle crates, that contains recycled material, for example bins.	
5a		Evaluate and remove unnecessary rubbish bins in parks and install education signage 'Please take your litter home'.	5
5b		Develop litter training package for appropriate in-house staff to improve understanding of rubbish generation, bin selection and placement.	
5c		Review current street sweeping programs, and implement best management practices in street sweeping	
Herbicide, Pesticide and Fertiliser Use	1a	Undertake a review of herbicide, pesticide and fertiliser use and demonstrate any reductions in applied chemical use.	5

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	1b	Educate staff on the impacts of herbicide, fertiliser and pesticide use through induction, environmental management system training and adherence to chemical spill action plans.	
	2	Identify and implement alternatives to spraying herbicides along concrete kerb and channel and plantation areas.	5

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APPENDIX 3b			
COMMUNITY WATER QUALITY			
Water Quality Areas	#	Key Initiatives	
Sediment and Erosion Control	1a	Develop and implement erosion and sediment control guidelines based on best management practices for developers / contractors working on construction sites.	10
	1b	Include the preparation of erosion and sediment control plans with all subdivision planning permits.	
	2	Develop, inform and enforce a local law that prevents sediment-laden run off from leaving a construction site.	5
	3a	Develop and circulate a series of educational brochures for erosion and sediment control in the building and construction sectors working in your Council area for site management.	5
	3b	Develop and conduct an induction training session for erosion and sediment control for the building and construction businesses working in your Council area.	
	4a	Develop and circulate a series of educational brochures for erosion and sediment control and containment of landscape materials for the nursery and landscape industry working in your Council area	5
	4b	Develop and conduct induction training sessions for nursery and landscape industries in your Council area to adhere to best practices of site management.	
	5a	Develop and implement an educational campaign focused on sediment and erosion control.	5
	5b	Develop and implement a planning control that maintains and promotes a vegetated buffer strip along drainage lines during and post construction activities.	
	Gross Litter Trapping	1a	Undertake a periodic review of recycling services provided to ratepayers to promote appropriate separation of materials.
1b		Undertake a periodic review of the effectiveness of the recycling method undertaken in the Council area and respond to improvements necessary to prevent litter generation.	
1c		Develop educational material on the appropriate sorting of recyclable material for ratepayers.	
2a		Develop a local law that prevents the dumping of rubbish on public land.	5
2b		Remove dumped rubbish immediately from public land and attempt to identify persons involved.	
2c		Install local laws signage on public land to deter the dumping of rubbish.	
3a		Develop a cigarette butt educational program to work with select businesses at designated smoking areas.	5
3b		Implement cigarette butt education campaign including both incentives and enforcement, for example fines.	
Herbicide, Pesticide and Fertiliser Use		1a	Develop and circulate educational brochures on methods for minimising herbicide, pesticide and fertiliser use in private gardens.

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	1b	Develop and circulate educational material to farmers on methods for minimising herbicide, pesticide and fertiliser use in paddocks.	
	1c	Develop and circulate educational brochures on methods for minimising herbicide, pesticide and fertiliser use in nursery and landscape industry.	
	2a	Develop and implement workshop programs to minimise herbicide, pesticide and fertiliser use in private gardens, paddocks and industry.	5
	2b	Develop educational material to reflect environmental benefits through gardening practices	
	2c	Development of rooftop garden and leadership projects.	
	3a	Engage alternate gardening groups to run sessions for the community on ways to minimise herbicide, pesticide and fertiliser use in private gardens. For example, Green Gardener and Sustainable Gardening Australia.	5
	3b	Engage with local landcare groups to run sessions for farmers on methods for minimising herbicide, pesticide and fertiliser use in paddocks.	
	3c	Engage with alternate nursery producers to run session for mainstream nurseries on methods for minimising herbicide, pesticide and fertiliser use in nursery production.	
	4a	Council to promote the use of mulch in garden beds with guidance on transport, storage and the effective depth, which supports less fertiliser and water consumption.	5
	4b	Council to promote indigenous plants with guidance on appropriate species selection for the LGA, which supports less fertiliser use and water consumption. For example, provision of free plants to all ratepayers on the redemption of a rates voucher.	