

Monash City Council Environmental Sustainability Road Map 2011-2015

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Community Reference Groups

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- Disability Consultative Committee
- Young Persons Reference Group
- Older Persons Reference Group
- Multicultural Advisory Committee
- Economic Development Forum

Consultants

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Council staff and community members who provided invaluable information and insight.

Language Assist

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廣東話	9321 5481	русском	9321 5486
Ελληνικά	9321 5482	Việt Ngữ	9321 5487
Italiano	9321 5483	Other	
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EXECUTIVE SUMMARY

The Environmental Sustainability Road Map aims to enhance Monash's sustainable journey. A challenge that will connect the three key principles of sustainability (environmental, social and economic) and drive to improve the environment, the health and wellbeing of the community and promote a sustainable local economy.

The Road Map focuses on environmental aspects and outlines the actions that Monash City Council will undertake to make Monash a more sustainable place to live, work and play. It is a key document for informing and supporting Council's strategic objectives and commitment to the principles of environmental sustainability. Council acknowledges that while its primary focus is on the environment, the outcomes of the Road Map will also have many social and economic benefits for the community.

The Road Map is timely, as issues such as climate change, oil scarcity, food security, potable water supply and the future growth of Melbourne will have a significant impact on the Monash community.

Council engaged the specialist services of Environ Australia to assist with the development and assessment of key themes and priorities. The development of the Road Map involved a consultative methodology, which provided key stakeholders, including the community and Council's Advisory Groups and Committees, with an opportunity to contribute to the plan through workshops, meetings, online and written submissions. The Road Map also reviewed existing State and Federal Government policies such as 'Climate Change Adaptation Actions for Local Government' and 'Victorian Climate Change White paper – Action Plan' that may guide and influence priorities and outcomes.

The consultation process generated a large number of ideas and potential actions. Council, with the technical expertise of Environ Australia, utilised an Analytic Hierarchy Process (AHP) to assist with prioritising actions and projects. As a result, actions were able to be compared with what would achieve the best environmental outcome in relation to investment.

The challenge is large and cannot be achieved by Council or the community alone. Therefore it is essential that Council and the community work together with actions that support the continued building of community links and resilience. The actions focus on the operations that Council has direct control over, and where Council can educate and influence the community. The principal focus of the Road Map is to reduce consumption (energy and water) and improve efficiency of

facilities and activities. Alternative sources of renewable energy have been considered in instances where reduced consumption is not practical or achievable.

The Road Map has a focus on achieving targets that are challenging, realistic and measurable. They will be delivered through sustainable practices and by engaging the community in actions within six themes:

The infographic consists of six horizontal bars, each representing a sustainability theme. Each bar contains an icon on the left, the theme name in bold, and a specific target. The themes and their targets are: Energy (lightbulb icon, 20% reduction in Council's energy levels by 2020 compared to 2010 levels), Water (water tap icon, 20% reduction in potable water use by 2015), Waste & Food (trash can icon, To remain a leading municipality on diverting waste from landfill), Natural Environment (leaf icon, Plant 100,000 trees, shrubs and groundcovers per year), Transport (truck icon, 10% reduction in the production of CO2-e, compared to 2010 levels, by Council fleet by 2015), and Planning & Design (house icon, All new Council buildings meet a 5 star NABERS rating).

Theme	Target
ENERGY	20% reduction in Council's energy levels by 2020 compared to 2010 levels.
WATER	20% reduction in potable water use by 2015
WASTE & FOOD	To remain a leading municipality on diverting waste from landfill.
NATURAL ENVIRONMENT	Plant 100,000 trees, shrubs and groundcovers per year.
TRANSPORT	10% reduction in the production of CO2-e, compared to 2010 levels, by Council fleet by 2015
PLANNING & DESIGN	All new Council buildings meet a 5 star NABERS rating.

To achieve these targets, Council will need to implement a number of new initiatives. A summary of the key actions are displayed in the following table.

THEME	MAJOR CHALLENGES	WHAT ARE WE GOING TO DO?	WHAT WILL THIS ACHIEVE?
	<p>Availability</p> <p>Consumption</p> <p>Cost to the consumer</p>	<ul style="list-style-type: none"> Retrofit street lighting with low energy globes Investigate tri/co-generation for major Council facilities Establish the sustainability streets / hubs program Retrofit Council facilities with low energy appliances 	<ul style="list-style-type: none"> 18% emissions saving Reduction in energy use Increased community knowledge Reduction in emissions
	<p>Availability</p> <p>Quality</p>	<ul style="list-style-type: none"> Expand warm seasons grass conversion program at sportsfields Retrofit Council's facilities with water efficient appliances Stormwater harvesting at Mt Waverley Reserve Continue to install gross pollutant traps 	<ul style="list-style-type: none"> 50% reduction in sportsfield water use Water savings of 6200KL per year 80% reduction in sportsfield water use at Reserve Improved water quality
	<p>Quantities of waste</p> <p>Green waste</p> <p>Energy use in food production</p>	<ul style="list-style-type: none"> Continue to utilise gas extraction from landfills for energy production Expand provision of co-mingled recycling at strip shopping centres Promote a 'veggie day' 	<ul style="list-style-type: none"> Utilise waste to provide energy sources Reduction in the amounts of landfill waste A long term reduction in emissions
	<p>Community parklands & gardens</p> <p>Impacts of population growth</p>	<ul style="list-style-type: none"> Continue to enhance the street tree planting program Further develop the creek vegetation program Continue to revegetate parks and reserves 	<ul style="list-style-type: none"> Increased vegetation canopy within streetscapes Improved creek environs Increased tree canopy and flora within parks and reserves
	<p>Active transport opportunities</p> <p>Transport flows</p> <p>Public transport opportunities</p>	<ul style="list-style-type: none"> Further development of the cycling and walking path network Purchase of fuel efficient fleet and plant vehicles Review and update existing walking and cycling strategies 	<ul style="list-style-type: none"> Increased number of residents using paths Reduced emissions Increased number of residents using paths
	<p>Community parklands & gardens</p> <p>Impacts of population growth</p>	<ul style="list-style-type: none"> Ensure new facilities and major refurbishments are designed to achieve equivalent of a 5 star NABERS rating. Develop a Sustainable Development Policy 	<ul style="list-style-type: none"> Reduction in energy use Improved planning decision making

Council will establish an Internal Steering Committee that will meet twice a year to assist with the evaluation of actions and timeframes. This will also involve regular discussions with Council's Environmental Advisory Committee. In addition, Council will conduct a strategic review every two years to ensure the Road Map considers any changes in technology, introduction of new government legislation, changes in climatic conditions and the potential for new funding streams.

It is recognised that it is difficult to determine the end goal in relation to sustainability. With changing impacts, influences and activities, sustainability targets are endlessly shifting. However the principles of sustainability for the City of Monash will provide future guidance to Council operations.

1. INTRODUCTION

The Environmental Sustainability Road Map outlines the actions that Monash City Council will undertake to make Monash a more sustainable place to live, work and play. It is a key document for informing and supporting Council's strategic objectives and commitment to the principles of environmental sustainability. The Road Map is timely, as issues such as climate change, potable water supply, food security, oil scarcity and the future growth of Melbourne will have a significant impact on the Monash community.

The City of Monash is one of Melbourne's most populous municipalities, with approximately 176,000 residents. Monash has some of Melbourne's best known landmarks within its 82 square kilometres, including the Monash Medical Centre, the Victoria Police Academy and Jells Park. Monash is second only to the Melbourne CBD for job opportunities.

The City is also home to Melbourne's most substantial innovation cluster, with notable features including Monash University's Science Technology Research and Innovation Precinct and Technology Park and the Australian Synchrotron. Monash has also developed a reputation as a 'high tech' centre for industry with the headquarters of a number of major companies based in the area, including Robert Bosch, NEC, BMW, Telstra, Biota, Mercedes Benz, Nestle and Toyota.

The City of Monash has reached a time of consolidation, and Council faces challenges posed by changes in demographics, housing types, community aspirations and diversity, business investment and social issues. The changing demographics show that there is a steady increase in population growth with the City's population shifting to an older profile. The fastest increase is evident in the fifty and over age group.

Although there is a significant concentration of detached houses in the City, there is also a trend towards higher density dwelling development. A maturing population, combined with broader local employment opportunities, has heightened the need for an improved public domain and road transport infrastructure.

Sustainability involves the minimisation of resource use through renewable energy, recycling and re-using, biodiversity richness, high productivity, low pollution and waste, and social and economic well being in the community. The challenge is large and cannot be achieved by Council or the community alone.

Therefore, it is essential that Council and the community work together with actions that support the continued building of community links and resilience. This Road Map has a focus on creating sustainable practices and engaging the community in actions within six themes:



It is essential to remember that the themes are all interlinked with many actions also having outcomes within other themes. These key themes include targets and strategic actions that will be delivered through different Council departments in consultation and with the community.

The Road Map aims to:

- Build on the existing strategies taking account of the current circumstances and knowledge relating to environmental risks, mitigation and adaptation
- Identify and analyse new opportunities
- Establish realistic and measurable targets for key elements of the Road Map
- Enable Council to undertake innovative and creative solutions to improve and reduce its impact on the environment.
- Identify and prioritise actions that Council can undertake to achieve the targets of the Road Map.

Council recently adopted Monash 2021, outlining Council's 10 year vision including the priorities that will help deliver long term community benefits. Planning for the future liveability of a more populous city will be one of the City of Monash's greatest challenges in the next 10 to 20 years.

In regard to environmental sustainability highlighted in Monash 2021, Council's priorities for the next 10 years will be to:

- Lead the Monash community in responsible recycling, waste and litter management.
- Cultivate and promote sustainable living practices within the Monash community including recycling, water and energy use.
- Encourage the reduction of our community's use of resources and our greenhouse gas emissions.
- Lead by example in adopting sustainable practices and technology in council buildings and operations.
- Educate and support residents to adapt to a low carbon economy.
- Use community events as opportunities to engage the community in discussion about environmental issues.
- Maintain the provision of open space for passive and active uses.
- Maintain the leafy character of the city and streetscapes.

In the longer term, it is anticipated that we will live in a hotter, drier climate with more frequent extreme weather conditions. Council's mission is to ensure that the Monash community thrives by looking after its social, economic and environmental wellbeing as times change. To achieve this, Council planning needs to take a long term view so it can manage change and respond to the needs and circumstances of the community now and in the future.

The Road Map will also be guided by Monash's Council Plan 2009-2013. The five main objectives of the Council Plan are:

Objective 1 - Our community

Objective 2 - Our local economy

Objective 3 - Our built environment

Objective 4 - Our natural environment

Objective 5 - Our people and organisation

These strategic objectives have strong relationships with many other key Council policies and strategies (please refer to Figure 1). Some of these documents overlap with and potentially influence environment practices within Monash. Conversely the Road Map may influence a range of other Council policies and strategies. Therefore, it is important that these relationships and potential influences be both acknowledged and shown in this document in a practical way.

The Road Map will also be delivered through specific Council policies, strategies and plans. A number of these include environmental actions and activities. These strategies include:

- Municipal Strategic Statement 2009.
- Monash City Council - Council Plan 2009-2013 (2010 update).
- Monash 2021.
- Greenhouse Action Plan 2003.
- Water Use Management Strategy 2008.
- Litter Prevention Strategy 2009.
- Stormwater Management Plan 2002.

This Environmental Sustainability Road Map will provide a framework to guide Council’s investment in environmental sustainable practices that will build community resilience and cohesion.



Figure 1 – How the Road Map relates to other Council plans

2. WHAT DOES ENVIRONMENTAL SUSTAINABILITY MEAN TO MONASH?

For some time, the global scientific community has been presenting evidence that human activity has and will continue to contribute to climate change. Responding to climate change is a pressing challenge as it impacts our energy and water usage, transportation methods, the costs of extreme weather events and our enjoyment of open space and the natural environment.

Monash is one of the few Council's that has adopted a Garden City vision to guide the strategic planning, use and development of land within its municipality. By incorporating this vision into its planning framework, Monash is ensuring the City will remain characterised by treed residential streetscapes and industrial areas with clearly defined precincts and buffers, wide streets and large well landscaped setbacks. The vision covers all land use and aims to maintain and enhance the established canopy treed environment.

Council will need to continue to be innovative in reducing carbon emissions and energy use in its operations, maintenance practices and in waste management to further reduce the amount of waste going to landfill. Protecting and rejuvenating natural areas and encouraging sustainability in urban design as well as in private, commercial and housing design will also remain important. It is now evident that immediate changes to protect our environment and community are necessary to reduce pressure on our natural resources and build resilience within the community.

Environmental sustainability should be considered in terms of where we want to be and how we might achieve this. For the purpose of this plan, the definition of environmental sustainability is:

**“Meeting the needs of the present without compromising the ability of
future generations to meet their needs” *UN Food and Agriculture Organisation***

An environmentally sustainable Monash (Figure 2) is one that

- Promotes and utilizes renewable energy generation
- Minimizes its carbon footprint
- Practices Zero waste principles
- Maximizes biodiversity
- Has a resilient community



Figure 2 – Sustainability Goal

In moving Monash towards a more sustainable future, a number of principles will be followed in developing and undertaking key strategic actions (Figure 3):

- **Community Commitment** – Show commitment to the community through programs that demonstrate value and benefit to the Monash community.
- **Leadership** – Show ethical leadership in the actions and environmental sustainability programs being implemented for Council operations.
- **Responsible Resource Use** – Be mindful of limiting non-renewable resource use and being efficient in resource use when completing programs.
- **Innovation** – Be willing to try innovative projects and actions.
- **Being Courageous** – Be willing to undertake actions and programs that may have high rewards but be difficult to implement.
- **Education and Communication** – Inform and educate the community of Monash on what is being undertaken and provide opportunities for community participation.



Figure 3 – The Principles for Monash to achieve Sustainability in the future

It is recognised that it is difficult to determine the end goal in relation to sustainability. With changing impacts, influences and activities, sustainability targets are endlessly shifting. However the principles of sustainability for the City of Monash will provide future guidance to Council operations. Council will need to periodically review progress of achievement of its sustainability aspirations and adjust its goals in light of changed circumstance.

3. WHAT IS MONASH GOING TO LOOK LIKE IN THE FUTURE?

As an established municipality in the middle band of Greater Melbourne, the City of Monash has been experiencing population growth rates slower than those of Greater Melbourne. Over the three years to 2009 the estimated average annual growth rate was 1.4% with an estimated 176,000 persons. It is likely that the population of the City of Monash will increase to approximately 182,000 persons by 2015. The structure of the population at that time is expected to be slightly older than the current age structure, which is a relatively older age structure compared with Metropolitan Melbourne.

Monash has a high level of home ownership with 22.8% renting compared to a Melbourne average of 25.4%.

The labour force growth is significantly stronger than that of Greater Melbourne, with a labour force in Monash of approximately 90,000 persons. It is expected in 2015 that there would be a total of 106,850 persons employed in Monash, based on a growth rate of 2.4 per cent per annum to 2009. Monash residents provided for only 30% of persons employed within the City, a further 42% came from adjoining municipalities.

The following highlights future key considerations for the Road Map that will be relevant for the period 2011 to 2015.

Residents

- A continuing aging population.
- Planning for a reduction in the carbon footprint of existing homes. This may include developing environmental standards for establishing retrofit or improvements to existing dwellings.
- Development of clear actions and support by Council to assist households to reduce environmental impacts.

Work Location and Transport

- The labour force in Monash in March 2010 totalled 90,080 persons. However, only 30% of Monash residents work within the municipality with a further 30% working in neighbouring local government areas. There is a high proportion of persons with graduate and postgraduate qualifications (26.6 %) compared to Greater Melbourne (21 %).

- The employed persons who live in the City of Monash are mainly employed in manufacturing (12.5 %) followed by retail trade (12 %).
- The percentage of people in Monash travelling to work by car will continue to be high. Although bus services along major roads in Monash have improved significantly in recent years, workplace destinations outside of major activity centres are not generally well serviced by public transport.

Environment

- Monash is an established urban area with limited space to increase the number of natural areas, parks and gardens.
- Increased density of housing will place further demand on open public space as private open space diminishes.
- There will be increasing pressure to protect and enhance existing natural areas, parks and gardens, activity centres and public places and canopy trees.
- Continued assessment and enhancement of areas linking natural communities, such as Damper Creek and Scotchman's Creek, in the Monash area.

Infrastructure

- The opening of EastLink has reduced congestion on the main north south roads such as Springvale, Blackburn and Stephenson's Roads and improved access to the South Eastern suburbs and Mornington Peninsula, however transport congestion is likely to continue to be a growing issue in the future as economic activity and housing densities increase.
- Community facilities need to be appropriately located to minimise car travel and encourage public transport, cycling and walking.
- There will be a growing demand on the public transport network.
- There will be increased demand for an expanded shared path network to link neighbourhoods to community facilities and allow for recreational and transit use by pedestrians and cyclists.
- Increased pressure on Council's stormwater drainage system to allow for higher density of development and more frequent extreme weather events.

4. WHAT GOVERNMENT POLICIES WILL HELP GUIDE THE ROAD MAP?

It is recognised worldwide that there is need for action to tackle climate change at a global, national, regional and local level. Monash City Council plays an important role in driving environmental management at the local level to assist in achieving broader environmental objectives.

There are a number of international, national, state and local strategies and policies that are relevant to the development of an Environmental Sustainability Road Map.

Relevant International Policy

In 2008, Australia ratified the international agreement on climate change known as the Kyoto Protocol. In doing this, Australia has committed to ensuring greenhouse gas emissions increase by no more than 8% by 2012 (in comparison to 1990 levels).

At the 2010 United Nations Framework Convention on Climate Change, developed countries were urged to protect the climate system for the benefit of present and future generations and take the lead in combating climate change and the adverse effects thereof.

Relevant National Strategies

The Federal Government has committed to protecting the environment through a global response, working with other countries to reduce emissions and build resilience. There are a number of strategies relevant to environmental sustainability at a national level that will help achieve these objectives and lead to reduced impacts of climate change.

The most relevant national strategy, the “Climate Change Adaptation Actions for Local Government” (Commonwealth Department of Climate Change and Energy Efficiency, 2007) aims to reduce the risks of climate change impacts and realise any opportunities. In the medium term, target strategies in this Framework will build Australia’s capacity to deal with climate change impacts and reduce vulnerability in key sectors and regions.

Relevant State Strategies

There are a number of strategies relating to climate change for Victoria. The “Victorian Climate Change White Paper - Action Plan” (Victoria, 2010) outlines ten categories of actions for tackling climate change. The first action of this plan is to introduce legislation binding Victoria to an emission reduction target of 20% below 2000 levels by 2020 and implementing initiatives to reach this outcome. This will play an important part in reducing the impact of Victoria’s emissions on the environment. There is also a significant number of State Government policies that will have an impact on how climate change is managed including:

- Melbourne 2030 (Department of Sustainability and Environment).
- Melbourne@5million (Department of Sustainability and Environment).
- Our Environment, Our Future 2006 (Department of Sustainability and Environment).
- Victorian Greenhouse Strategy 2005 (Department of Sustainability and Environment).
- Energy Efficiency for Victoria Action Plan 2006 (Department of Sustainability and Environment).
- Towards Zero Waste 2005-2014 (Sustainability Victoria).
- Waterways Water Quality Strategy (Melbourne Water).
- Victoria’s River Health Strategy (Department of Sustainability and Environment).
- Victorian Litter Strategy – Creating Cleaner Safer Places 2009 (Sustainability Victoria).
- The Victorian Transport Plan (Department of Transport).

5. HOW DID WE DEVELOP THE ROAD MAP?

5.1 Consultation

The key emphasis of the development process for the Road Map was to ensure a highly consultative methodology was undertaken. A detailed project plan was developed which provided all key stakeholders with an opportunity to contribute to the actions.

The aim of the consultation process was to ensure a broad cross section of the community and relevant Council staff were involved in identifying key themes and potential actions. A series of consultations with community and stakeholders were undertaken from July 2010 to November 2010. Key information collection methods and consultation are outlined in Tables 1 and 2.

Table 1 - Data Collection Methods

Method of Data Collection	Description
Internal Consultation	Focus groups, workshops and forums with key internal stakeholders at Monash City Council.
Consultation with Council Reference Groups and Advisory Committees	Meetings and focus groups with key community committees and advisory groups. These meetings were designed to: <ul style="list-style-type: none">▪ Ascertain existing environmental practices, programs and services stakeholders are aware of and currently use within the City of Monash▪ Identify key issues in relation to the current provision of environmental practices, programs and services.▪ Identify potential future developments to meet community needs.
Input from General Community Members	Residents were notified of the opportunity to provide input through the Monash Bulletin, local newspapers, Council's website and community groups. Comments could be submitted online, in person or in writing.

Table 2 - Stakeholders Consulted

Advisory Group/Committee	Date	Collection Method
Environmental Advisory Committee	Mar 10 – Feb 11	Workshops and meetings
Disability Consultative Committee		
Young Persons Reference Group		
Older Persons Reference Group	Sept 10	Combined Workshop
Multicultural Advisory Committee		
Economic Development Forum		
General Community	Sept 10	Online & written submissions

5.2 Developing and Assessing Ideas

The consultation process generated a large number of ideas and potential actions. The challenge was to assess and prioritize these in a comprehensive and equitable way. As a consequence Council utilised an Analytic Hierarchy Process (AHP) to assist with this. AHP is a structured technique that provides a comprehensive and rational framework for relating competing elements to overall goals, and for evaluating alternative solutions.

As part of the AHP, each environmental sustainability issue (such as water savings, reduction in greenhouse gases) was assessed against each other to create a weighting. This weighting was then combined with implementation criteria (simple to do, quick to implement, low cost and effectiveness) to ascertain a priority order. As a result, actions were then able to be compared as to what would achieve the best environmental outcome in relation to investment and placed in a priority category (High, Medium or Low). Please refer to Appendix A for an example.

To allow a more comprehensive comparison, the action plans (please refer to Section 9) include a separate Environmental Benefit Rating to illustrate and assess what impact a proposed action may have on the environment. The prioritisation process also considered the short or long term impact of the outcome and whether they are cost effective.

7. WHAT ARE THE KEY THEMES?

The Road Map has a focus on achieving targets that are challenging, realistic and measurable. They will be delivered through sustainable practices and by engaging the community in actions within six key themes; energy, water, waste & food, natural environment, transport and planning & design.



Greenhouse gas emissions from energy consumption is the most significant contributor to climate change. The majority of scientific opinion indicates that the burning of fossil fuels to generate energy has led to human induced warming of the atmosphere. The principal issues for energy are the availability of alternative energy sources and the cost to the consumer. Consequently reducing the reliance on energy is the most significant way Council can lessen its impact on the environment (refer to Figure 4). Figure 5 also highlights the major challenges in relation to greenhouse gas emissions.

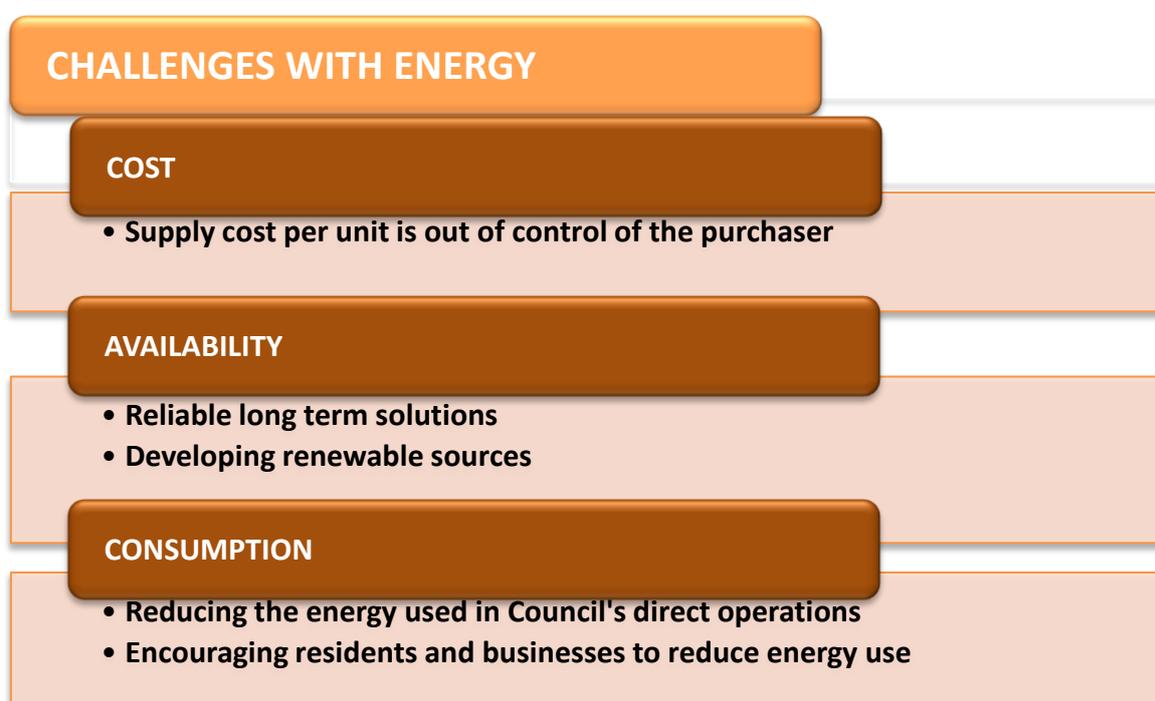


Figure 4 – Challenges associated with energy for Monash

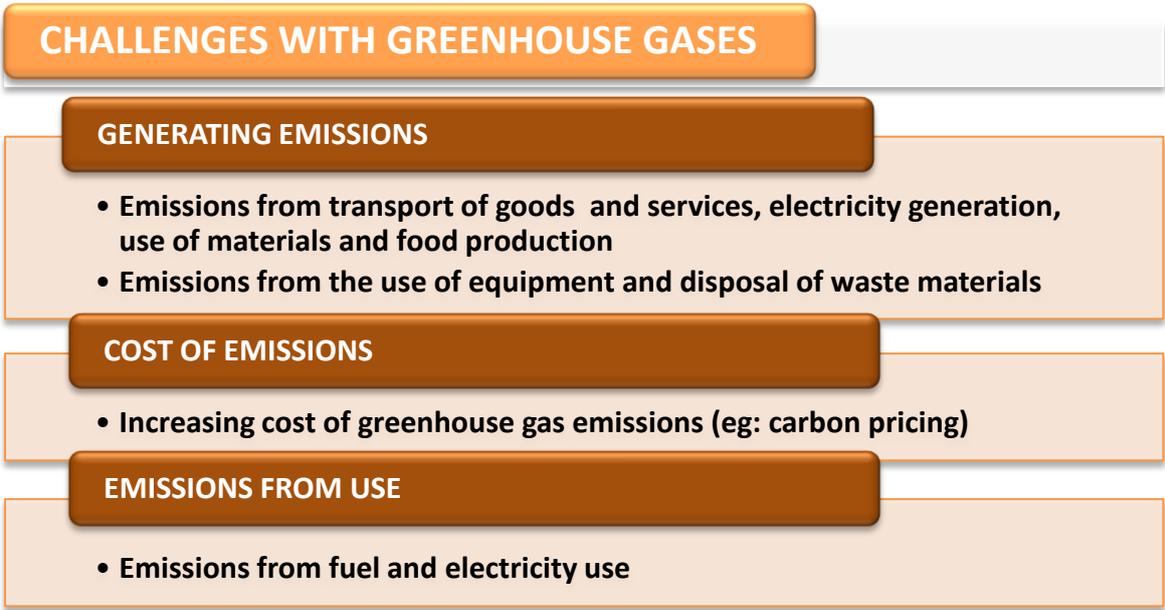
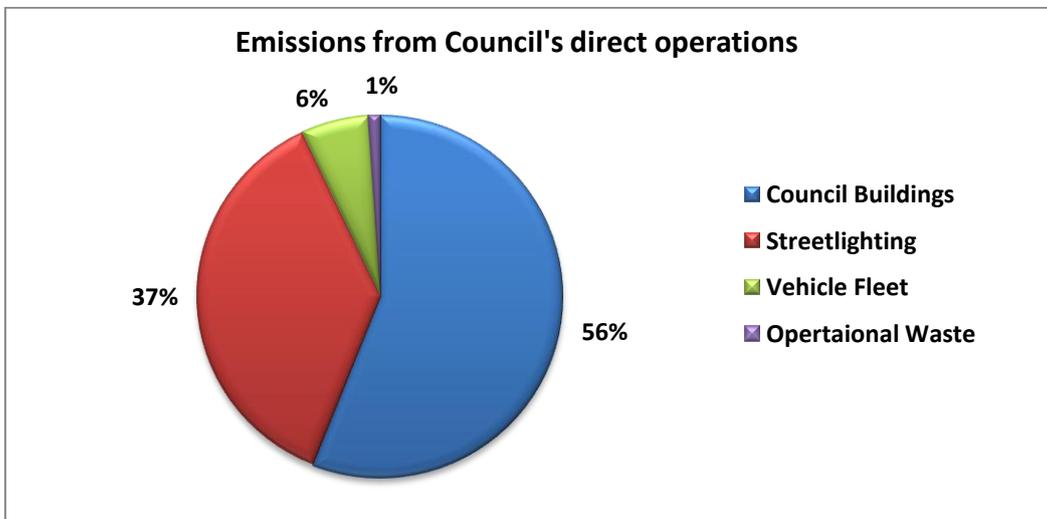


Figure 5 – Challenges associated with Greenhouse Gases for Monash

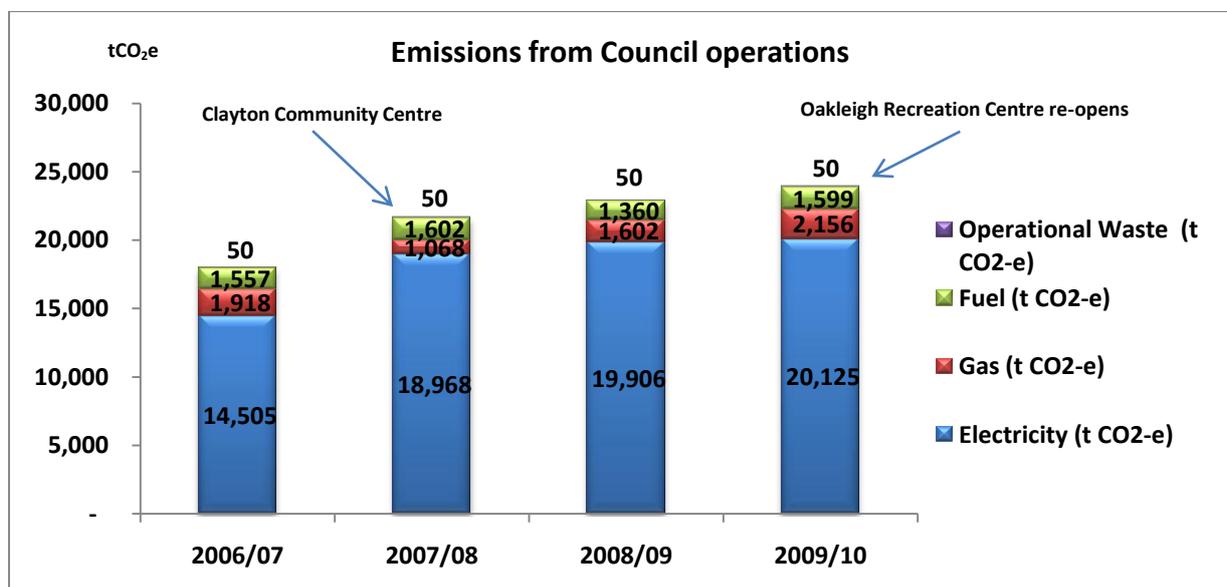
Emissions from Council’s direct operations include facilities, services and activities that are controlled by Council and able to be measured. Therefore, facilities that are tenanted by external groups and emissions from contractors who undertake work on Council’s behalf are excluded. As shown below, emissions resulting from Council’s direct operations include electricity consumption for street lighting (8,777 tonnes of emissions or 37%), Council buildings (13,500 tonnes of emissions or 56%), vehicle fleet (1,600 tonnes of emissions of fuel or 6%) and operational waste (less than 1%). While operational waste is a small proportion, residential putrescible kerbside collection produces three times more emissions than Council’s direct operations (approximately 93,000 tonnes of emissions annually).



Monash is currently working towards reducing Council emissions through an energy conservation program which includes the installation of solar panels, passive ventilation of buildings, low energy lighting and appliances. The graph below demonstrates the greenhouse gas emissions for Council operations. The increased emissions over recent years are the consequence of new facilities being built, such as the Clayton Community Centre and the refurbishment of the Oakleigh Recreation Centre. New buildings such as Batesford Community Hub and Euneva Avenue Car Park Complex will need to be taken into account when considering future emission reduction targets. The Batesford Community Hub has solar panels which will provide 50% of the facility's electricity.

To meet Council's new emission reduction targets (please refer to Section 8) Council will need to retrofit public and street lighting with low energy globes. With a total energy saving of 18%, this is by far the most effective way of reducing Council's impact on the environment.

In addition, Council will need to implement a number of other initiatives including investigating and possibly implementing energy tri/co-generation for major Council facilities, ensuring new facilities and major refurbishments are designed to achieve the equivalent of a 5 star NABERS rating, purchasing fuel efficient fleet and purchasing green energy or offsets.



Note: Includes emissions from Council's direct operations and excludes tenanted sites, contractor emissions and kerbside waste collection.

Monitoring and reporting on Council's operational emissions will be a vital part of reducing emissions. The 2007 National Greenhouse and Energy Reporting (NGER) Act has established a national framework for the collecting and reporting on carbon emissions for large energy users. This

What we are doing now?

Council already has a number of energy conservation projects underway including:

- *Installation of solar panels and solar hot water (e.g. Clayton Community Centre, Batesford Community Hub & Euneva Car Park - to commence construction in 2011)*
- *Passive ventilation of buildings (e.g. Batesford Community Hub)*
- *Purchase of low energy appliances*
- *Community education programs (e.g. World Environment Day Award)*
- *Bulk purchasing of solar hot water and light globe replacement program for residents*
- *Installation of energy efficient lighting (e.g. Bogong car park)*

reporting relates to direct emissions from transport or energy production (e.g. power and fuel producing companies) or emissions from waste. Companies that produce over 25,000 tonnes of greenhouse gas emissions are required to report under the NGER scheme.

Council's kerbside putrescible waste disposal site (Clayton South Landfill) generates emissions that take Council over this threshold. While Council is currently not required to report through NGERs, this will be a valuable scheme to ensure consistency in reporting.

Council currently supports the community to help reduce energy consumption and greenhouse gas emissions through a number of programs such as bulk purchasing of environmental products (e.g. worm farms, solar hot water, etc) and the World Environment Day Awards. However, Council will need to introduce new initiatives such as establishing sustainability streets or hubs, developing a green reference guide, partnering with Monash

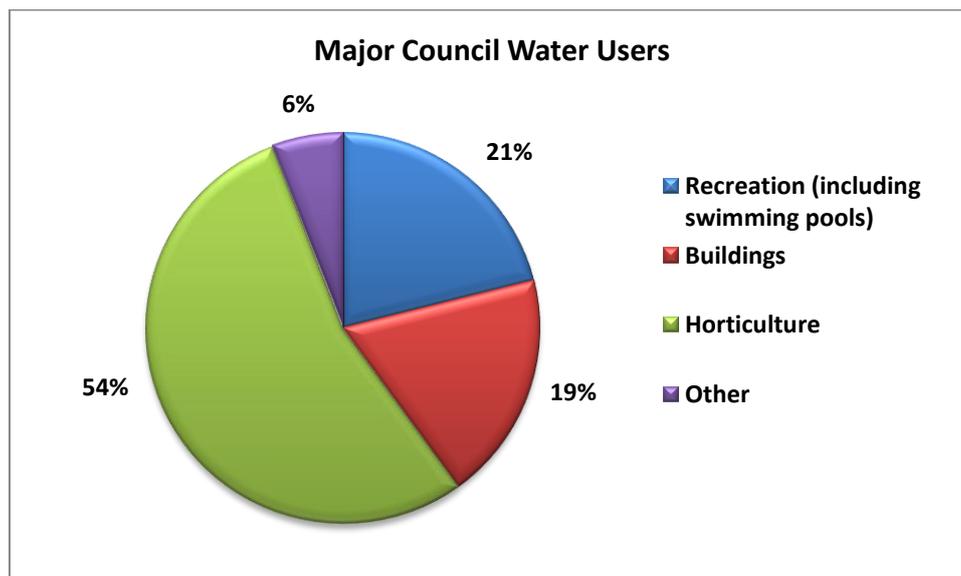
University to develop a mobile eco-display, promoting sustainable house day and continuing to provide information via the website and local publications to help sustain community awareness of energy consumption.



WATER

Water is a valuable and highly utilised resource across Australia. The value and cost of water has increased and is forecast to increase over the next few years as the growing population, economy and severe water shortages in some areas place increasing pressure on existing resources. Water conservation will continue to be an essential part of living in Australia, and will assist to minimise the impact of drought conditions on our environment and community.

Water is used for a range of purposes by Council including the irrigation of sportsgrounds, operation of swimming pools and use in Council buildings. The largest water consumers are in Horticulture through the irrigation of sportsgrounds with recreation facilities such as Monash Aquatic and Recreation Centre, Clayton Aquatics and Health Club and the Oakleigh Recreation Centre also using high volumes of water.

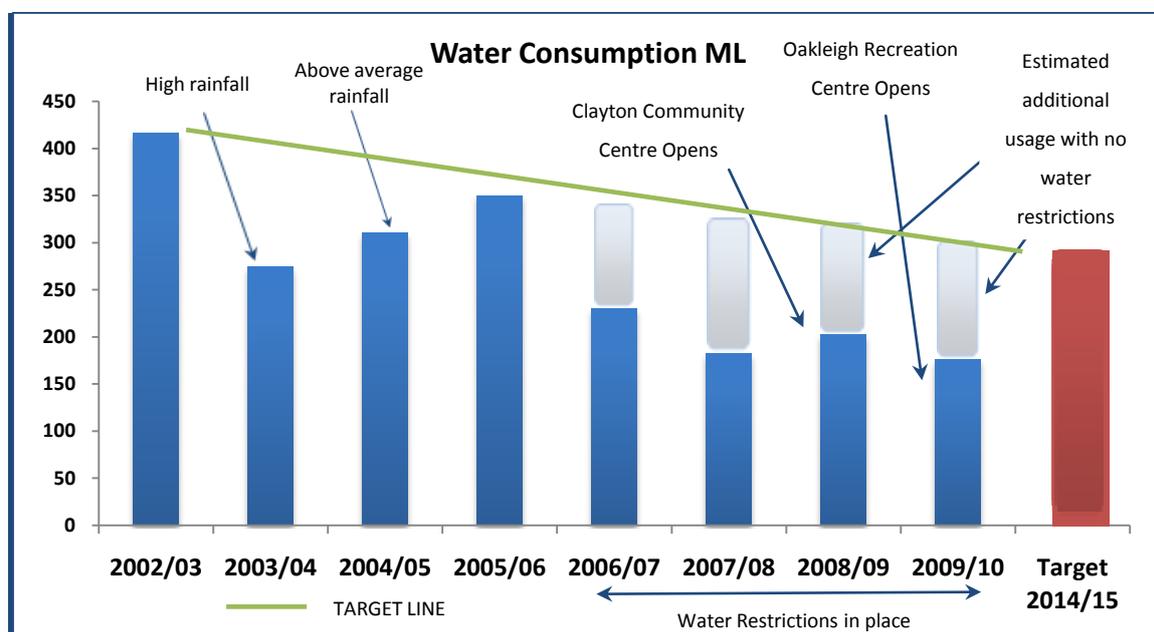


The City of Monash is responsible for the maintenance of 72 sportsgrounds and two golf courses. Council is also responsible for the maintenance of a number of public gardens, most of which are associated with Council buildings.

A number of creeks, stormwater drains and water bodies exist within the municipality. The creeks, which Melbourne Water is primarily responsible for, include Scotchman's, Damper, Gardiner's and Dandenong Creeks, the latter of which form the eastern boundary of the municipality.

As illustrated in the graph below, Council has achieved significant water savings through a number of water conservation projects. Monash has installed over 50 rainwater tanks at Council facilities for garden and tree watering, toilet flushing and vehicle and machinery washing. The rainwater tanks have resulted in water savings of over 10 million litres. In addition, Council has implemented a number of water savings initiatives at aquatic centres such as upgrading facilities and educating staff and customers resulting in a saving of over 20 million litres of water. Council has also introduced drought-tolerant grasses at over 15 sportsfields, saving an average of 2 million litres of water per hectare in comparison to traditional grass species. The capture of stormwater at Glen Waverley Golf Course has resulted in further water savings of over 30 million litres.

Changes in water restrictions and rainfall will need to be taken into account when considering any water reduction target. New and upgraded facilities such as Clayton Community Centre and Oakleigh Recreation Centre have significantly increased Council’s water consumption in recent years. Council will need to implement a number of new initiatives including Monash Aquatic and Recreation Centre backwash recycling improvements, Mount Waverley Reserve stormwater harvesting project and expansion of the warm season grasses programs at sporting fields to meet its water reduction target (please refer to Section 8).



While consumption is being reduced, the major challenges that need to be considered are water availability and the quality of water resources (Please refer to Figure 6).

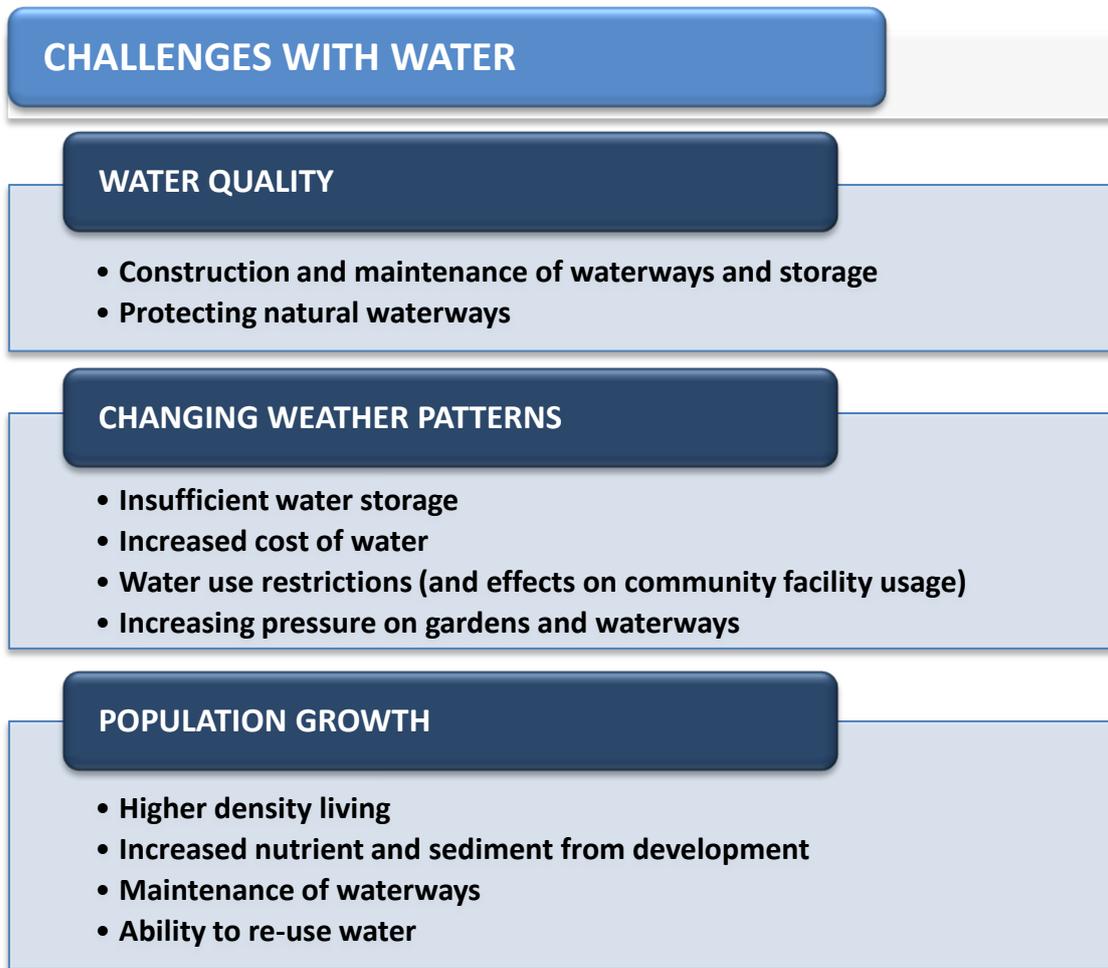


Figure 6 – Challenges associated with water for Monash

Council has a number of water conservation projects such as stormwater harvesting, installation of rainwater tanks and conversion of sporting grounds to warm seasons grasses to help reduce consumption and improve water quality. Council is also working with local water authorities to ensure the adherence to current water restrictions and continuation of water conservation. High water use sites such as the aquatic centres have individual Water Management Action Plans which are reviewed annually to ensure Council continues to improve efficiency.

What are we doing now?

Council already has a number of water projects including:

- *Stormwater harvesting at Mount Waverley Reserve and Glen Waverley Golf Course*
- *Rainwater tank installations at Council Facilities (e.g. Vehicle wash bays, Gardiner's Reserve, Monash Gardens aged care facility)*
- *Installation of gross pollutant traps.*
- *Installation of dual flush toilets and waterless urinals.*
- *Use of water sensitive design techniques in parks, reserves and new facilities.*
- *Warm season grass conversions at Jack Edwards Reserve, Brentwood Reserve, Capital Reserve & Central Reserve.*
- *Investigation of backwash water recycling at Monash Aquatic and Recreation Centre*
- *Support of the community waterwatch program*
- *Providing information to residents on water conservation programs*

To meet Council's new water conservation target a number new of initiatives including accelerating the installation of warm seasons grasses at sportsgrounds, upgrading the backwash facility at Monash Aquatic and Recreation Centre; Stormwater harvesting at Mount Waverley Reserve and investigating the use of treated water from Reg Harris Reserve will need to be implemented. In addition, Council will also need to implement a number of projects focussed on improving water quality, including the acceleration of the gross pollutant trap program; installation of stormwater treatments and rain gardens as part of landscaping in a project; implementing the litter strategy and rehabilitating wetlands.

Council currently has a number of community projects that support residents in reducing water consumption. Council will need to expand this program through new initiatives such as establishing a knowledge bank for environmental projects, stormwater education programs in larger activity centres, and supporting local community groups and sporting clubs to install rainwater tanks.



WASTE & FOOD

Waste management is a critical component of the provision of environmental services to the community. Waste collection, recycling, treatment and disposal require significant amounts of resources and produce greenhouse gases that have the potential to have negative impacts on the environment. The Victorian Government, Metropolitan Waste Management Group and Local Government share a common sustainable vision for increasing the amount of domestic waste diverted from landfill.

Sustainability Victoria's Victorian Local Government Annual Survey 2008–2009 listed Monash as the top recycler in the state, with 57 per cent of all waste collected at kerbside being recycled. Innovative programs, such as informing residents to improve their recycling opportunities and offering incentives to residents who recycle correctly through the Silver Star Recycling Rewards Program have played a vital role in achieving this result.

The major challenges facing Monash are the increasing quantities of domestic waste being generated and the long term treatment of green waste (please refer to Figure 7).



Figure 7 – Challenges associated with waste for Monash

What are we doing now?

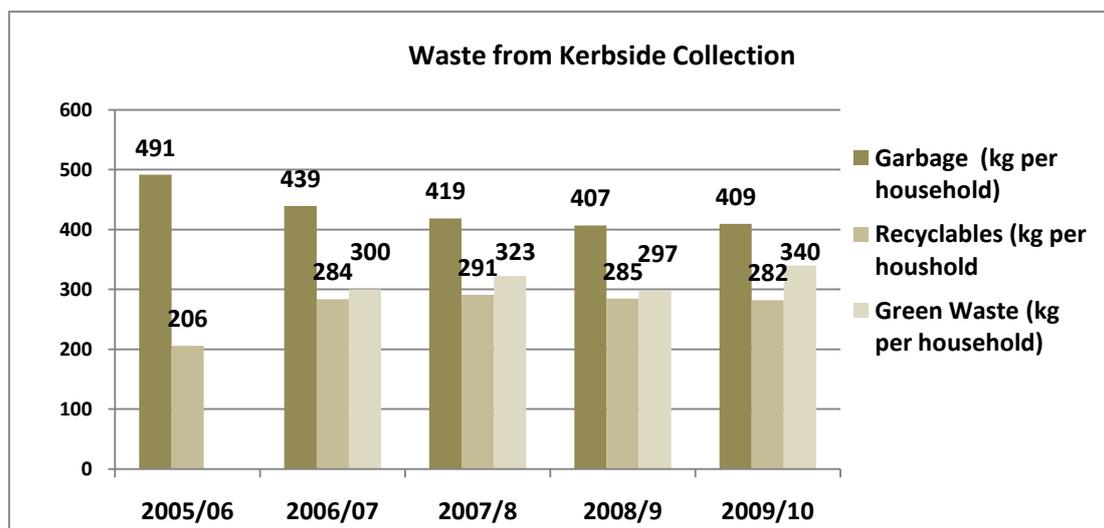
Council already offers a number of waste related services:

- *Universal waste collection*
- *Offering a Silver Star Recycling Awards program for residents*
- *Educating and informing residents on how to improve their recycling opportunities*

Council has two streams of waste to consider – waste from Council operations and the waste from community kerbside collection service. Council operations produce less than 0.09% of Council's total greenhouse gas emissions. While operational waste is a small proportion of Council's emissions, residential kerbside collection produces approximately 93,000 tonnes of CO₂-e, which is over 3 times more than Council's total operational emissions.

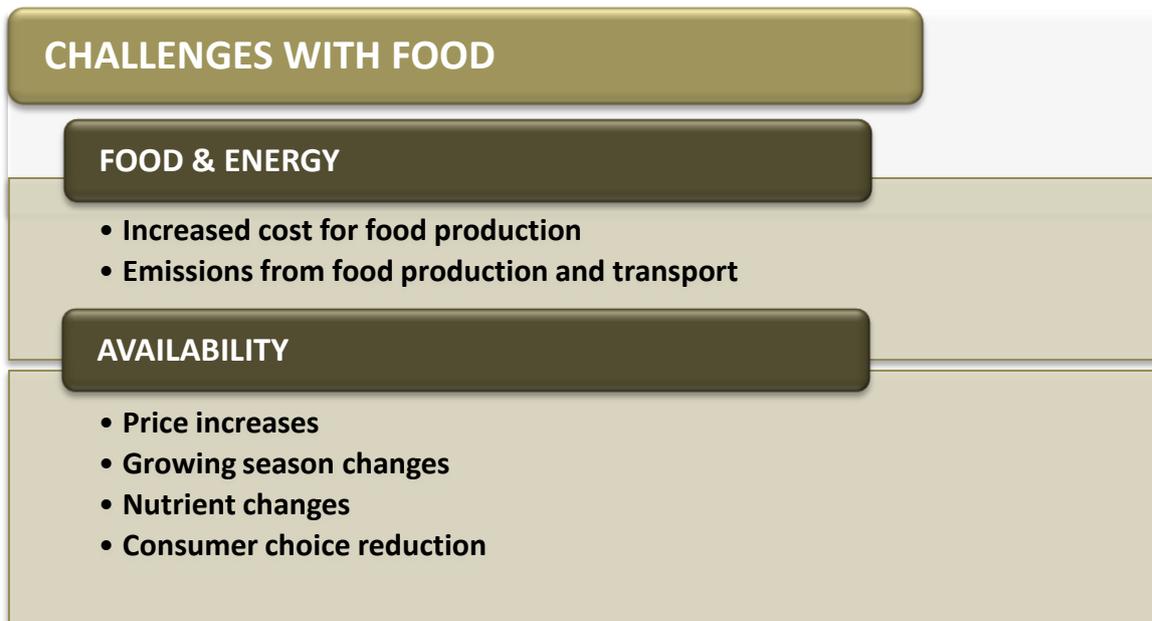
The kerbside waste service includes collection of garbage, co-mingled recycling and green waste for

Monash residents. The graph below demonstrates that the amount of landfill waste has significantly decreased from 2005/06 levels, while the amount of recycling has increased for the same period. Council currently utilises landfill gas extraction to generate energy as a method of reducing the amount of emissions. Council in partnership with the Metropolitan Waste Management Group is researching options for long term sustainable practices to recycle green waste using the latest technology. The implementation of any new technology and associated infrastructure would require significant funds from the State Government. Progress relating to this research is due to be reported to Council in 2012/13.



To remain the leading recycler in Victoria, Council will need to maintain existing education programs and implement a number of new initiatives including investigating the potential of introducing recycling services to include commercial retailers, expanding provision of co-mingled recycling at strip shopping centres and encouraging major shopping centres to provide recycling services.

While Council continues to face challenges in relation to waste, food production and security are increasingly an issue at both a global and local level with changes in climate, the lack of local production and the impact of food miles (the distance food has to travel to reach our homes). The major challenges affecting global food production are depicted below, and include energy and resources used and availability including price and seasonality.



What are we doing now?

Council already has a number of food and food production related initiatives:

- *Installation of a worm farm at Council's depot*
- *Workshops for residents on sustainable gardening*
- *Encouraging the use of worm farms and compost bins*
- *Providing information via Council's website*

There are five community gardens in Monash (Dixon House, Amaroo Neighbourhood House, Waverley Community Garden, Ashwood College Permaculture Food Garden and Shepherd's Bush). Council conducts a number of educational programs such as sustainable garden workshops, bulk purchasing of worm farms and compost bins for reducing food waste and educating on local food production.

To help build a resilient community, Council will need to initiate a number of new programs such as identifying appropriate agencies to establish new community gardens, promoting a 'veggie day' and providing more extensive information on minimising food wastes.



NATURAL ENVIRONMENT

Monash is one of the few councils that has adopted a Garden City vision to guide the strategic planning, use and development of land within its municipality. The vision represents a core value held by Monash and is an important consideration in all land use and development decisions. The Garden City Character forms a central component of land development and ensures the City will remain characterised by treed residential streetscapes and industrial areas with clearly defined precincts and buffers, wide streets and large well landscaped setbacks.

The City of Monash is host to 125 parks and reserves, which contain significant stands of indigenous vegetation and provide important re-vegetation corridors and habitat for native wildlife. In a largely urban setting, the City of Monash's indigenous reserve corridors support valuable remnant native vegetation and revegetated areas, which provide habitat for 151 animal species of national, state and regional significance.

The City's most significant natural environments are Jells Park, Gardiner's Creek Corridor, Scotchman's Creek Corridor, Dandenong Creek Corridor, Damper Creek Reserve and Valley Reserve.

Monash also has extensive passive reserves throughout the city that provide valuable ecological benefits to the local environment as well as recreational benefits. There are numerous walking tracks in these bushland reserve areas and surrounding Council's sportsfields. These reserves, in conjunction with Jells Park, support important remnant indigenous vegetation and provide highly utilised community facilities.

The major challenges facing Monash's natural environment relate to community parklands and gardens, and the impacts of population growth and increasing housing density on biodiversity.

CHALLENGES WITH THE NATURAL ENVIRONMENT

POPULATION GROWTH

- Increased pressure on planning and development decisions
- Decreasing vegetation and permeability
- Reduction in biodiversity values within the community
- Increased pressure on existing parks and green spaces

TREES & VEGETATION

- Species selection
- Ensuring the survival of trees and vegetation

MAINTENANCE OF GARDENS & VEGETATION

- Low maintenance gardens
- Disposal of green waste

What are we doing now?

Council already helps protect the natural environment through:

- *Upholding Council's Garden City vision*
- *Sustainable gardening workshops*
- *Planting of drought tolerant and indigenous species*
- *Providing residents with information on weeds and indigenous plants.*
- *Supporting local community groups undertake local projects (e.g. 'friends of' groups)*
- *Supporting the community waterwatch program and the 'Friends of' groups and Living Links program.*
- *Scotchman's Creek habitat corridor restoration program*
- *Significant tree planting within streetscapes and parklands*

Council currently has a number of programs such as the planting of indigenous species, street tree enhancement, gateway plantation, National Tree Planting Day, vegetating traffic treatments, creek corridor revegetation and supporting community waterwatch to help preserve our natural environment.

Council will need to continue with these programs to ensure the protection and enhancement of our natural environment. In addition, Council should initiate a number of new programs and projects including the development of an open space strategy, providing interpretive signage at bushland and heritage areas and expanding information available to residents.



TRANSPORT

Transport is a significant contributor to Victoria's emissions, accounting for over 16% of the States emissions in 2006. While major road infrastructure projects such as the completion of EastLink and the further widening of Monash Freeway have created opportunities for business and enhanced the

What are we doing now?

Council already helps reduce the impacts of transport by:

- *Developing Council's local shared path network to encourage walking and bicycle use*
- *Providing bicycle racks at activity centres*
- *Advocating for improved public transport and facilities*
- *Purchasing fuel efficient vehicles*
- *Supporting local walking and cycling groups*

attractiveness of Monash as a business location, there is still a large reliance on private vehicle use. Council has been developing its bicycle network, through the establishment of shared paths throughout the city, with most recent paths being constructed along both rail corridors and Scotchman's Creek. A current project is to further link Scotchman's Run path between Waverley Rd and Foster Rd in Mt Waverley.

Council is enhancing its footpath network with an ongoing program to close the missing links in the existing network. Recent footpath projects have been undertaken along Wellington Rd in Notting Hill, Ferntree Gully Rd in Oakleigh and Napier Park in Glen Waverley.

There is a need for an expansion to the shared path network and increased cooperation with State Government in developing public transport opportunities. Active transport, incorporating the promotion of walking, cycling and or a combination of public transport as an alternative to car travel, is becoming an even more integral part of any liveable neighbourhood. By providing the appropriate infrastructure, Council will be promoting a smarter, environmentally friendly and healthier choice when it comes to transport options. Active transport opportunities and linkages, transport flows, emissions and public transport opportunities are the major challenges facing Monash in relation to transport.

CHALLENGES WITH TRANSPORT

PUBLIC TRANSPORT

- Increasing housing density and population
- Future planning and communication
- Traffic congestion
- Linkages and accessibility

EMISSIONS

- Impact on air quality
- Increasing exhaust emissions

FUEL USE

- Council fleet and plant vehicle use
- Petroleum production and exploration impacts
- Increasing cost of fuel

ACTIVE TRANSPORT

- Linkages to community facilities and public transport
- Increasing use of walking and cycling paths as a mode of transport

Council currently uses 659,000 litres of fuel in vehicles and plant for its operations, which produces approximately 1,600 tonnes of greenhouse gas emissions per year. Council will continue to focus on the reduction of Council's fuel use and also encourage the community to reduce their reliance on private vehicle use. In addition, Council will need to improve active transport opportunities through further development of the municipal shared path network, purchase fuel efficient vehicles, support the Department of Transport's car pooling program and advocate for improved public transport.



PLANNING & DESIGN

The construction and operation of buildings and facilities can consume large quantities of water, non-renewable materials and energy, and contributes to the release of greenhouse gases and other pollutants. Due to the significant greenhouse gas emissions generated by Council's buildings, reducing the impact of these buildings and other facilities will play a vital role in helping to combat climate change.

The Building Commission is an authority that oversees the building control system in Victoria under the Building Act 1993. Their role involves helping developers ensure the safety, liveability and sustainability of the built environment. The Building Commission achieves this by encouraging sustainable building design, construction and use. Council's role is to implement and enforce the

Building Act and to encourage Ecological Sustainable Design (ESD).

What are we doing now?

Council already helps reduce the impacts of the built environment by:

- *Incorporating ESD features into new buildings (e.g. Electra Community Centre, Batesford Community Hub)*
- *Encouraging environmental friendly purchases through the Procurement Policy*
- *Participating in the Eco-Buy Program*
- *Assessing environmental criteria in tender evaluation*

ESD incorporates green design principles that result in facilities that use less energy and resources as well as producing less waste, less greenhouse gas and less toxic emissions. The issues associated with planning and design encompass all the other key areas (energy, greenhouse gases, water, waste, natural environment).

Council currently leads by example by ensuring ESD principles are incorporated into any new building designs. The Building Act currently requires developers to consider environmental impacts of any new developments. While the Building Act provides control, Council should also develop a sustainable development policy to

be incorporated into the planning scheme to ensure private developments have an even less impact on the environment. New Council buildings and major refurbishments should build upon this and be designed to achieve the equivalent of a minimum 5 Star NABER's rating or 6 star GreenStar rating.

8. WHAT ARE WE AIMING TO ACHIEVE?

8.1 Targets

The targets for the Road Map have been based on what is challenging, achievable, realistic and will make a significant contribution to reducing Council's impact on the environment. Targets will focus on what Council has direct operational control over and where Council can educate and influence the community to reduce their impact on the environment. The targets will be achieved through the implementation of the Action Plan (please refer to Section 9). This Action Plan aims to primarily reduce consumption (energy and water) and improve efficiency of facilities and activities. Alternative sources of renewable energy such as green powers and carbon offsets have been considered in instances where reduced consumption is not practical or achievable.



Council's target for energy use is a 20% reduction in Council's greenhouse gas production by 2020 compared to 2010 levels. Moving progressively towards this target will also minimise the financial impact on ratepayers and allow Council to incorporate new technologies as they become available.

The target relies on the retrofitting of Council's street lighting, which equates to an 18% reduction in energy consumption. The timing is dependent upon State and Federal Government funding and the capacity of electrical distributors to implement and so is expected to be undertaken progressively until 2020. A number of actions will also need to be implemented such as the investigation into co-generation of energy at key Council facilities, improving building efficiencies and installing solar power, with the remaining savings requiring the purchasing of green energy and/or offsets.



WATER

Reduce potable water use by 20% of 2002 levels by 2015

A 20% reduction in potable water use by Council has been set as a target. In 2002/03 Council water consumption was 416 million litres. 2002/03 has been used as a baseline, as this was prior to the introduction of water restrictions. To achieve this water reduction target Council will need to consider a number of projects including retrofitting of irrigation systems (1.25% saving over five years), installation of summer grasses (potentially 3.75% over five years or 0.38% per ground), backwash recycling at Monash Aquatic and Recreation Centre (1.5% saving) and stormwater harvesting (2.25% saving over three years).

Council has already made significant savings through a number of water conservation projects such as the installation of rainwater tanks at Council facilities, upgrading facilities and educating customers at Council's aquatic centres, introducing warm seasons grasses at over 15 sportsfields and capturing stormwater at Glen Waverley Golf Course.



WASTE & FOOD

To remain a leading municipality on diverting waste from landfill

To achieve this, Council needs to consider a number new of initiatives including expanding the recycling services to commercial retailers and encouraging major shopping centres to provide recycling services.



NATURAL ENVIRONMENT

Plant 100,000 trees, shrubs and groundcovers per year.

Council will plant 100,000 trees, shrubs and groundcovers per year throughout the city to maintain biodiversity, enhance character and help offset greenhouse gas emissions as well as countering the 'urban heat island effect'.



TRANSPORT

10% reduction in the production of CO2-e, compared to 2010 levels,
by Council fleet by 2015

Fuel use in Council's plant and vehicles contributes to around 10% of Council's greenhouse gas emissions. In 2010 Council used 659,000 litres of fuel for its operations, which equates to approximately 1600 tonnes of greenhouse gas emissions. To achieve the emission reduction target for fuel, Council will continue to purchase fuel efficient vehicles and will consider purchasing offsets.



PLANNING & DESIGN

All new Council buildings to have a 5 star NABER's rating
A Sustainable Development Policy to be incorporated into
the Planning Process

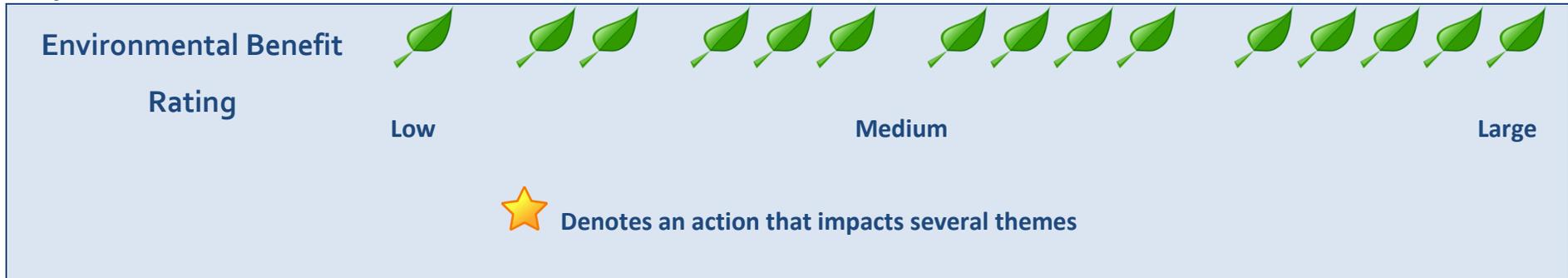
Council will ensure new Council buildings and major refurbishments are designed to achieve the equivalent of a 5 star NABERs rating or 6 star GreenStar rating. In addition, Council will also produce a Sustainable Development Policy to reduce the impact of new residential and industrial developments on the environment.

8.2 Reporting

Council will establish an Internal Steering Committee that will meet twice a year to assist with the evaluation of actions and timeframes. This will also involve regular discussions with Council's Environmental Advisory Committee. In addition, Council will conduct a strategic review every two years to ensure the Road Map considers any changes in technology, introduction of new government legislation, changes in climatic conditions and the potential for new funding streams.

9. WHAT ARE WE GOING TO DO?

Key



An environmental benefit rating is an assessment of the impact that a proposed project may have on the environment. As well as direct effects such as water savings or energy conserved, each project may cause a multitude of indirect effects such as community awareness and education. The indirect effects of projects are challenging to directly measure but where possible have been taken into consideration during the development of a project's environmental benefit rating.



ENERGY

Priority	Action	Resources	Timeframe	Outcome	Benefit Rating
High	Install or retrofit street and other public lighting with low energy use lamps	\$4,000,000 (New -one off) Savings of approx. \$250,000 per annum	5+ years	All streetlights changed to low energy lights saving 18% of Council's energy use	
High 	Establish sustainability streets or hubs	\$40,000 (New – ongoing)	1-2 years	Reduction in community energy use	
High 	Ensure new facilities and major refurbishments (over \$1m) are designed to achieve the equivalent of a 5 star NABERS rating or 6 star GreenStar rating.	Additional 5% premium on project costs	On-going	Reduction in energy use	
High	Investigate the installation of renewable energy generation capabilities at Monash Aquatic & Recreation Centre, Civic Centre and Clayton Community Centre	\$25,000 (New - one off)	1-2 years	Reduction in energy use	
High	Investigate the use of fuel cells for installation in Council's facilities where appropriate	\$50,000 (New - one off)	5+ years	To reduce the energy demand at facilities	
High 	Continue to support the bulk purchasing schemes for energy saving installations for the community, such as solar panels	Within current resources	On-going	Reduction in community energy use	

High	Expand the audit program of high energy consuming buildings and their operations to identify opportunities to reduce energy demands (e.g. insulation)	\$20,000 (New - ongoing)	5+ years	Facilities minimising impacts on the environment	
High ★	Develop a Green Reference Guide for the community	\$10,000 (New - one off)	1-2 years	Improved community knowledge	
High	Continue to purchase energy efficient equipment including fridges, hot water systems, computer peripherals, air conditioning etc.	Within current resources	On-going	Reduction in energy use	
Medium	Purchase green energy to offset greenhouse gas emissions from Council's operations	\$140,000 equates to 10% of Council current operations	5+ years	Reduce Council's emissions	
Medium	Initiate a program, and evaluate effectiveness, to insulate existing facilities, especially north and west facing walls including double glazing, ceramic paint, batts, etc	\$25,000 (New - ongoing)	1-2 years	Reduction in energy use	
Medium	Provide information links to the community, including the small to medium enterprises on energy use	Within current resources	1-2 years	Improved community knowledge	
Medium ★	Provide demonstrations of low energy, low water use facilities at major community facilities via on-site information signage and internet	\$5,000 (New - ongoing)	5+ years	Improved community knowledge	
Medium	Expand the retrofitting of low energy fixtures and fittings in Council's facilities	Additional \$16,000 (\$34,000 current capital budget)	1-2 years	Reduction in energy use	
Medium	Continue to install solar panels, solar hot water appliances to Council's facilities where appropriate	Include with project cost	On-going	Reduction in energy use	

Medium ★	Develop (in consultation with Neighbourhood House and Monash University) a mobile eco display and community exhibition tool	\$25,000 (New - one off)	5+ years	Increased community knowledge	
Medium ★	Continue to provide Monash's World Environment Day awards	Within current resources	On-going	Increased community knowledge	
Medium ★	Determine suitability for the establishment of a dedicated Environment Department	Within current resources	1-2 years	Structure reviewed	
Medium ★	Promote the National Sustainable House Day	Within current resources	1-2 years	Increased community knowledge	
Medium	Assist users of Council's leased facilities to minimise green house gases	Within current resources	1-2 years	Reduction in emissions	
Low	Continue to review street light and street tree planting locations to improve the operation of the street lighting to minimising quantity of lights	Within current resources	On-going	Improved effectiveness of street lighting and increased tree canopy.	
Low ★	Continue to facilitate a teachers environment network	Within current resources	On-going	Increased community knowledge	



WATER

Priority	Action	Resources	Timeframe	Outcome	Benefit Rating
High 	Upgrade the back wash facilities at Monash Aquatic & Recreation Centre to increase water savings	\$377,000 (New - one off)	5+ years	Water savings of 6200KL per annum	
High	Expand the program of installing low water use grasses to sportsfields and other ornamental grassed areas	Additional \$24,000 (\$26,000 current capital budget)	1-2 years	50% reduction in use of potable water per sportsgrounds	
High	Implement stormwater harvesting at Mt Waverley Reserve	\$175,000 (within current capital budget)	1-2 years	80% reduction in use of potable water at Mt Waverley Reserve	
High	Implement stormwater harvesting projects at appropriate sporting reserves.	\$500,000 per site (New - ongoing)	5+ years	80% reduction in use of potable water per reserve	
High	Accelerate the installation of Gross Pollutant Traps from one to two per year	Additional \$80,000 (\$73,000 current capital budget)	5+ years	Reduced pollutants in water systems	
High	Expand the investigation and installation of rainwater harvesting at Council's facilities.	Additional \$47,500 (\$52,500 current capital budget)	3-5 years	Reduction in use of potable water	

High ★	Establish a knowledge bank for Council's environmental projects that demonstrates savings in consumption.	Within current resources	1-2 years	Improved community knowledge and awareness	
High	Investigate the treatment of water from Reg Harris Reserve to expand its use to nearby reserves and facilities	\$50,000 (New - one off)	5+ years	Reduction in use of potable water for irrigating sportsgrounds	
High ★	Undertake litter education programs as outlined in Council's Litter Strategy	Within current resources	Ongoing	Improved community knowledge and awareness	
High	Continue to utilise rainwater for washing of Council's vehicles	Within current resources	On-going	Reduction in use of potable water	
High	Continue to use drought tolerant plants in parks and reserves	Within current resources	On-going	Reduction in use of potable water	
High	Expand the retrofitting of irrigation systems to ensure efficient water application, including subsurface irrigation	Additional \$20,000 (\$41,000 current capital budget)	3-5 years	Improved efficiency of irrigation systems and reduce use of water	
High	Continue to conduct water audits of Council facilities and implement conservation plans	Within current resources	On-going	Reduction in use of potable water	
High	Continue the use of water sensitive urban design techniques including the installation of permeable surfaces in Council's car parks and facility surrounds	Within current resources	On-going	Increased aquifer recharge	
High	Continue to support the waterwatch program to monitor water quality in creeks	Within current resources	On-going	Improved water quality	

High	Continue to install stormwater treatments as part of new property developments, e.g. water quality treatments	Within current resources	On-going	Improved stormwater quality	
Medium	Replace grass surfaces with synthetic or artificial grassed surfaces at appropriate locations	\$1,000,000 (New - ongoing)	5+ years	Reduction in use of potable water	
Medium	Install water efficient devices, e.g. AAA rating urinals, toilets, showers, wash basins, in Council's facilities	\$25,000 (New - ongoing)	1-2 years	Reduction in use of potable water	
Medium	Where possible, continue to install water cleansing treatments, such as wetlands, vegetated swales and infiltrations beds in roads, car parks, reserves and surrounds of facilities	Within project budget	On-going	Improved stormwater quality	
Medium 	Expand the rehabilitation of existing wetlands to ensure ongoing water quality improvements	\$67,000 (\$14,000 current capital budget)	1-2 years	Improved water quality by removing gross pollutants from stormwater	
Medium	Continue to use fertilizers and chemicals that minimise the impact on the water system	Within current resources	On-going	Improved water quality by reducing contamination	
Medium	Continue Council's works activities to contain site sediments from entering the stormwater systems.	Within current resources	On-going	Improved water quality by reducing contamination	
Medium	Provide information to the water users at facilities to identify opportunities to reduce the consumption	Within current resources	1-2 years	Reduction in use of potable water	

Medium	Continue to support water retailers to provide information to the community and staff on minimising water consumption and water quality	Within current resources	On-going	Improved community knowledge and awareness	
Medium	Construct and promote drought tolerant gardens at Neighbourhood Houses	\$20,000 (New - ongoing)	5+ years	Reduction in use of potable water	
Medium	Implement water conservation initiatives (such as timers, flow restrictors) at Monash Aquatic & Recreation Centre	\$65,000 (New - one off)	3-5 years	Reduction in use of potable water	
Low	Continue to utilise low or no water use construction practices in Council's operations such as dry grinding	Within current resources	On-going	Reduction in use of potable water	
Low	Continue to support with water conservation initiatives at tennis and bowls clubs (e.g. rainwater tanks and warm seasons grass conversions)	\$32,000 (Within current capital budget)	1-2 years	Reduction in use of potable water	
Low	Introduce stormwater education programs in larger activity centres such as Glen Waverley, Oakleigh & Clayton	Within current resources	3-5 years	Improved community knowledge	
Low	Continue Council's drain clearing program to remove debris from the stormwater system, e.g. pit clearing program	Within current resources	On-going	Improved water quality by removing gross pollutants from stormwater drains	



WASTE & FOOD

Priority	Action	Resources	Timeframe	Outcome	Benefit Rating
High	Continue to utilise gas extraction from landfills for energy generation	Within current resources	On-going	Reduced emissions	
High 	Continue to promote the Eco-buy program within Council's operations	Within current resources	On-going	Increased community knowledge	
High	Implement the Litter Strategy and continue with Clean-up Australia Day programs.	Within current resources	1-2 years	Decreased quantities of litter	
High	Investigate the recycling program to include a paper and cardboard recycling service to commercial traders	\$20,000 (New - one off)	5+ years	Reduction in the amounts of waste going to landfill	
High	Seek the support of the major shopping centre operators to introduce recycling opportunities for their customers	Within current resources	3-5 years	Reduction in the amounts of waste going to landfill	
High	Identify appropriate agencies to establish further community gardens	\$65,000 per garden (New - ongoing)	5+ years	Increased opportunities for locally grown foods	
High 	Promote a "veggie day"	\$5,000 (New - ongoing)	1-2 years	A long term goal of reducing emissions in farm production	
High	Provide linkages to information on minimising food wastes	Within current resources	1-2 years	Reduction in the amount of food waste to landfill	

High	Continue to develop sustainable demolition practices with the salvage and recycling of demolition materials in Council construction projects.	Within current resources	Ongoing	Reduction in the amount of waste to landfill	
Medium	Expand the provision of co-mingled recycling to larger strip shopping centres	\$25,000 capital cost (New - ongoing) \$5,000 operating cost	1-2 years	Reduction in the amounts of waste going to landfill	
Medium	Promote green organic recycling opportunities	Within current resources	1-2 years	Reduction in the amounts of waste going to landfill	
Medium	Continue the information and education on the materials that can be recycled, e.g. plastic containers	Within current resources	On-going	Reduced amount of waste to landfill	
Medium	Advocate for minimisation of food packaging	Within current resources	On-going	Reduced amount of waste to landfill	
Medium	Continue with existing surveillance and education measures to ensure that recycling opportunities are maximised.	Within current resources	On-going	Increased recycling	
Medium	Continue to support and partner e-waste programs with Sustainability Victoria	Within current resources	On-going	Improved community knowledge	
Medium 	Continue to promote environmental sustainability within the current festival program	Within current resources	On-going	Increased community knowledge and awareness of actions/activities	
Medium	Review Council's cleaning products to minimise impacts on the environment	Within current resources	1-2 years	Utilise materials that have minimal impact on the environment	

Medium 	Promote minimisation of Council's use of natural resources within administrative operations	Within current resources	On-going	Reduction in the use of natural resources	
Medium 	Promote waste and environmental programs to renting agents for distribution to tenants	Within current resources	Ongoing	Reduction in the amounts of waste going to landfill	
Medium	Continue to provide training and support to schools on appropriate waste management and recycling	Within current resources	On-going	Reduction in the amounts of waste going to landfill	



NATURAL ENVIRONMENT

Priority	Action	Resources	Timeframe	Outcome	Benefit Rating
High	Develop an open space strategy action plan	\$50,000 (New - one off)	5+ years	Strategic direction for the utilisation of open space	
High	Continue to enhance the street tree planting program	\$240,000 (within current capital budget)	On-going	Increased vegetation canopy within streetscapes	
High	Continue revegetating parks and reserves	\$125,000 (within current capital budget)	On-going	Increased vegetation canopy within parks	
High	Provide information on weeds	Within current resources	On-going	Increased community knowledge of weeds	
High	Continue to provide opportunities for volunteers to undertake environmental activities	Within current resources	On-going	Increased number of volunteers	
Medium 	Continue to seek funding to further develop the creek revegetation program	Additional \$30,000 (\$108,000 current capital budget)	1-2 years	Improvement of creek environs	
Medium	Continue to support friends groups	Within current resources	On-going	Increased local community involvement and ownership	
Medium	Expand information provided to residents on the local indigenous vegetation	\$5,000 (New - ongoing)	5+ years	Increased community knowledge on suitable plant species for the area	
Medium 	Provide interpretive signs/boards at bushland and heritage areas promoting the vegetation species and their benefits and purpose	\$80,000 (New - ongoing)	5+ years	Increased community knowledge	
Medium	Provide natural shade around or near new or upgraded playgrounds	Within current resources	On-going	Improved shade at playgrounds	

Low	Continue with the development of the Gateway enhancement along arterial roads.	\$150,000 (Within current capital budget)	5+ years	To enhance the appearance of the major thoroughfares and increase vegetation	
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TRANSPORT

Priority	Action	Resources	Timeframe	Outcome	Benefit Rating
High	Improve active transport linkages and opportunities through the continued development of Council's shared path program and a review of Council's priorities	Additional \$155,000 (\$147,000 current capital budget)	5+ years	Increased number of residents using walking and/or cycling as a mode of transport.	
High	Continue the construction of linking the footpath network to improve active transport opportunities.	\$90,000 per annum (within current capital budget)	Ongoing	Increased number of residents using walking and/or cycling as a mode of transport.	
High	Advocate for the provision of information to enable better linking of transport modes	Within current resources	Ongoing	Increased use of public transport	
High	Build upon existing walking and cycling strategies to enhance active transport opportunities	Within current resources	Ongoing	Increased number of residents using walking and/or cycling as a mode of transport.	
High	Monitor the trial being undertaken by the Department of Transport for the provision electric vehicles and recharge points for short local trips	Within current resources	Ongoing	Reduction in emissions from vehicle operation	
High 	Continue to purchase fuel efficient vehicles including those that can utilise gas, bio-fuels or electrical power for Council's fleet	Within current resources	On-going	Reduced reliance on petroleum products, reduced emissions	
High 	Purchase plant (e.g. trucks) that meet or exceed the EURO4 emission standards for Council's fleet.	Within current resources	On-going	Reduction in emissions from vehicle operation	

High	Support the Department of Transport in facilitating car pooling within the community and for staff	Within current resources	1-2 years	Reduction in car trips, reduced emissions	
High	Continue to advocate for public transport to be considered with significant land use changes	Within current resources	On-going	Improved public transport linkages	
High	Advocate for flexible public transport routes to service to residents and commercial/ industrial locations	Within current resources	1-2 years	Improved public transport linkages	
High	Advocate for park and ride facilities at public transport nodes	Within current resources	1-2 years	Increased use of public transport	
Medium	Provide parking spaces for small vehicles (&/or motorcycles) in key locations within Councils car parks where practicable.	Within current resources	1-2 years	Additional spaces provided	
Medium	Expand the provision of bike racks to support bicycle riders at activity centres and Council facilities	\$15,000 (New - ongoing)	5+ years	Provision of bike rack facilities	



PLANNING & DESIGN

Priority	Action	Resources	Timeframe	Outcome	Benefit Rating
High 	Develop a Sustainable Development Policy to incorporate into the planning scheme	Within current resources	1-2 years	Improved planning decision making	
High 	Ensure tender evaluations include environmental criteria for Council operations	Within current resources	Ongoing	Works or activities are undertaken minimising the impact on the environment	
High 	Implement training of staff to increase awareness of environmental sustainable practices	\$5,000 (New - ongoing)	5+ years	Enhanced awareness and knowledge	
High	Develop best practice sustainable design standards for Council's engineering, urban design and building projects	Within current resources	Ongoing	Reduction in greenhouse gas emissions	
Medium	Continue to provide opportunities to promote and encourage good environmental design and sustainability practices by local residents and businesses through World Environment Day Awards, Clean-up Australia Day, National Tree Planting day and National Sustainable House Day	Within current resources	On-going	Enhanced community awareness and knowledge	
Medium	Council continues to specify the use of products, recycled or able to be recycled in construction works wherever practicable as per current procurement policy	Within current resources	Ongoing	Works or activities are undertaken minimising the impact on the environment	

APPENDIX A

Rank (Relative Priority)	Actions	Implementation Factors				Environmental Factors											Weighted Score
		Simple to do	Quick to Implement	Low Cost to Implement	Effectiveness	Food and Food Production	Education/communication	Energy	Biodiversity	Green Design	Transport	Waste	Water Resources	Climate Change Adaptation	Greenhouse Gases	Noise	
	Factor Weighting	0.07	0.08	0.43	0.43	0.02	0.07	0.21	0.07	0.08	0.13	0.09	0.1	0.04	0.1	0.01	
1	EXAMPLE Drip Irrigation installed at all sporting fields	2	2	2	4	0	2	0	0	0	0	0	5	3	0	0	20