



City of Ballarat's

environment sustainability strategy





City of Ballarat Environment Sustainability Strategy

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**Centre for Environmental
Management**



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EXECUTIVE SUMMARY

The Environment Sustainability Strategy is the City of Ballarat's framework for a more sustainable future. Building on the foundation of Council's previous conservation strategies, this Strategy provides a set of practical initiatives that will help deliver Blueprint Ballarat's environmental and sustainability vision for 2030:

"Ballarat will be a leader in its management of the natural environment. It will have worked hard to balance the needs of settlement and industry with the protection of the environment. Through innovation and community education it will have reversed negative trends in some key indicators of environmental degradation, such as soil quality and biodiversity, so that Ballarat's environmental record is continually improving towards sustainability. There will be a community wide commitment to reduced energy consumption and effective management of water resources. Surrounded by a green zone of natural bush, Ballarat's lively precincts will be linked by bicycle and walking paths."

Upon implementation, the strategies and actions contained in this Strategy collectively provide direct benefits to the Ballarat community by creating healthier and cleaner living environments, protecting vital finite resources and natural assets, generating economic gains and developing stronger and more united communities. Through the implementation of this Strategy the City of Ballarat will show leadership by its commitment to improving sustainability in the region.

The Environment Sustainability Strategy has been developed within the framework of international, national, state and regional sustainability strategies, plans and policies including the State Government's recently released Victorian Environmental Sustainability Framework.

The City of Ballarat's Environment Sustainability Strategy framework consists of a vision for sustainability, a set of guiding principles and set of key directions. The vision sets the overall goal as:

City of Ballarat is a leader in environmental sustainability with its commitment to organisational change to achieve sustainability. Ballarat's natural environment is well protected and Council staff, businesses and residents show strong support for sustainability through initiatives to reduce resource consumption and waste production.

The following principles will guide progress towards sustainability:

- **Leading by example**
Achieve leading practice and continuous improvement in Council's own operations and in the way it supports others.
- **Proactive action**
Council acts proactively to establish a vision for sustainability for the city and to encourage leading practice by all residents and businesses.
- **Ecological integrity**
Protection and restoration of natural assets which are fundamental to sustaining natural life.
- **Integration**
Application of an integrated economic, social and environmental decision making and action process.
- **Long term planning**
Application of long term thinking to planning and decision making beyond traditional political terms.
- **Precautionary approach**
Prevention of environmental degradation is not delayed due to lack of full scientific certainty.
- **Equity**
Ensuring fairness and equal access to opportunities for our current community and future generations.
- **Whole of community approach**
Change requires awareness and participation by all sectors of the community.

Three key directions provide a focus for Council's sustainability program. The key directions have been used as the basis for developing sustainability objectives, strategies and actions that address biodiversity, land health, water quality and quantity, energy, waste, recycling and reuse and air quality issues. The objectives, strategies and actions have been developed under a series of sustainability themes. The key directions and themes are:

1. Developing a Culture of Sustainability

2. Restoring and Maintaining Natural Assets

- Healthy and productive land
- Healthy and productive waterways and wetlands
- Protecting and enhancing biodiversity
- Air quality

3. Reducing our Resource Consumption and Everyday Impact

- Water conservation
- Energy conservation
- Waste reduction

A selection of actions have been identified as feature projects or priority initiatives that address key sustainability issues and highlight the positive outcomes of sustainable living to the broader community. The selected actions include:

FOSTERING A CULTURE OF SUSTAINABILITY

- Develop and implement a Triple Bottom Line (TBL) management and reporting framework for Council which incorporates sustainability into all levels of decision making and action;
- establish an environment/sustainability Councillor portfolio;
- identify and implement Council staff training needs on sustainability (at least 4 workshops per year);
- continue to develop and resource Council's Sustainability unit;
- continue to participate in the local Sustainability Accord and promote Council's participation in this program;
- investigate and implement opportunities for using recycled water to irrigate Council managed parks, ovals, reserves and gardens;
- adopt the proposed LiveSmartBallarat Sustainability Policy and implement through a range of regulatory and non-regulatory mechanisms;
- develop practice notes for different types of development and different sustainability themes;
- adopt the STEPS (residential) and SDS (commercial and industrial) assessment tool programs as a voluntary system for all new development requiring either building or planning approval;
- develop a Sustainability Incentive Program to encourage and assist landholders and developers to undertake environmentally sustainable practices;
- investigate the feasibility of establishing a 'Sustainable Living Resource Centre' in conjunction with the city's Indigenous Plants Community Nursery, the Ballarat Horticulture Centre and the Ballarat Botanical Gardens;
- work in partnership with one or more local developers to design and establish a model for sustainable development / 'Sustainable House' in Ballarat;
- develop a new sustainability section on the City's website; and
- in association with Council's Blueprint Ballarat Committee, develop a regular biennial report card on the state of Ballarat's environment;

RESTORING AND MAINTAINING NATURAL ASSETS

- Identify and map riparian zones wetlands and update Schedule 2 of the Environment Significance Overlay (ESO) to protect all relevant waterways and wetlands within the municipality;
- Continue improvement and management of public reserves, frontages and wetlands of the Yarrowee River and its tributaries by continuing to implement the Linear Network of Communal Spaces (LINCS) Program;
- Review and implement the Ballarat Stormwater Management Plan;
- Continue to implement the stormwater and water quality components of Council's Water Action Plan;
- Establish best practice stormwater management for all new developments;
- Continue to work on a water flow impact assessment process for new developments;
- Continue to undertake a biodiversity assessment of land managed by Council;
- Develop and implement biodiversity management regimes for all sites on land managed by Council containing native biodiversity;
- Review and implement Council's Roadside Management Plan;
- Develop biodiversity section on Council website;
- Amend the Ballarat Planning Scheme to incorporate the revised Vegetation Protection Overlay to protect areas of high biodiversity value on private land through the Ballarat Planning Scheme by developing and applying a suitable schedule of the ESO (Biodiversity Protection);
- Require mandatory biodiversity assessments and impact statements for all developments occurring in Environmental Significance Overlay (Schedule 2), Vegetation Protection Overlay (Schedule 1) areas and the proposed biodiversity protection ESO (see above);
- Continue to support and promote the LINCS program; and
- Organise Sustainable Gardening Australia to run programs in Ballarat for gardening businesses, nurseries and home gardeners.





REDUCING OUR RESOURCE CONSUMPTION AND EVERYDAY IMPACTS

- Continue partnership arrangements with Department of Sustainability and Environment (DSE), Central Highlands Water (CHW) and the Catchment Management Authorities (CMA) to advocate for a secure water supply for Ballarat and assist with the implementation of Our Water Our Future Ballarat Regional Action Plan and the Central Region Sustainable Water Strategy;
- Research suitable alternative water supplies for Council assets and community facilities;
- Facilitate the requirement for third pipe recycled water system infrastructure;
- Facilitate the requirement for on-site stormwater collection and grey water treatment plants for multi-dwelling developments;
- Continue implementation of the City of Ballarat Greenhouse Action Plan;
- Participate in and assist with the implementation of the Central Victorian Solar Cities project;
- Develop and implement a TravelSmart Green Transport Plan to reduce the financial and environmental costs of Council staff travelling to and from work;
- Implement the Sustainable Public Lighting Action Plan;
- Develop a plan for Council to become carbon neutral through the use of renewable energy and carbon offsetting;
- Council to purchase Green Power;
- Develop and apply a set of energy efficiency requirements for new residential developments that augment existing state planning and building energy efficiency standards;
- Develop and apply a set of energy efficiency requirements for new industrial and commercial developments that augment existing state planning and building energy efficiency standards;
- Establish energy efficient development workshops or information sessions for industry, businesses and home owners;
- Develop a program of waste reduction with targets for each department within Council, including regular audits of waste volumes and types;
- Finalise and implement a Waste Management Policy for the city; and
- Establish a green/organic waste collection and composting facility, including establishment of a third bin system for residential properties.

1. INTRODUCTION

1.1 Ballarat's Sustainability Challenge

Communities throughout the world are facing the enormous challenge of maintaining or improving living standards without degrading or destroying the physical and natural systems that support life. Agriculture, industrialisation, economics, population growth and poverty have greatly increased the impact of the human race on the natural and physical environment. Consequently, the human race is consuming more of the planet's finite natural resources than ever before and is having an increasing impact on the earth's natural systems including the global climate. This rapid expansion of consumption has not been accompanied by replacement or creation of resources and the protection of natural systems (soil biodiversity, water and atmosphere). The global community is not living sustainably.

Generally there is scientific consensus that climate change (global warming) is occurring at a rate faster than it would naturally as a result of human activity, in particular the production of greenhouse gases. The State Government Greenhouse website states:

“Climate change is more than a warming trend. Increasing temperatures will lead to changes in many aspects of weather, such as wind patterns, the amount and type of precipitation, and the types and frequency of severe weather events that may be expected to occur in an area. Not all regions of Victoria will be affected in the same way by climate change. Impacts predicted for Victoria as a result of climate change include:

- *Changes to agriculture, forestry and fisheries production due to changes in weather patterns;*
- *Increased risk of flooding;*
- *Increased stress to buildings, transport networks and general infrastructure;*
- *Increased risk to water supplies due to drought; and*
- *Harm to, and loss of wildlife habitat.*

'Developed' countries like Australia are responsible for the vast majority of global resource exploitation. Australians, and more particularly Victorians, have amongst the largest ecological footprints in the world (see Box 1). It is imperative for global sustainability that countries like Australia take the initiative, show leadership and address this imbalance through action.

Like other municipalities throughout Victoria and Australia, the City of Ballarat has a role to play in the sustainability challenge. Guided by international, national and state sustainability frameworks and strategies, local governments are increasingly investigating local sustainability issues and developing their own policies, strategies and frameworks. In 1991 Council took a significant step towards addressing sustainability issues when it produced the Ballarat Region Conservation Strategy (Steering Committee of the Ballarat Region Conservation Strategy 1991). This Strategy initiated some very successful long term projects such as the LINCS (Linear Network of Community Spaces) program, Ballarat Environment Network (BEN) and the Ballarat Region Seed Bank.

The City of Ballarat continued the impetus from the first Conservation Strategy releasing a revised Strategy in 1999 (City of Ballarat 1999). More recently, the need for sustainable living and development in the municipality has been recognised in the City's strategic documents — Blueprint Ballarat (City of Ballarat 2004) and the Municipal Strategic Statement (MSS) (City of Ballarat 2005a).

The development of Council's Environment Sustainability Strategy builds on the work achieved through the previous conservation strategies, takes direction from recent planning and development strategies (MSS and Blueprint Ballarat), and is another step towards addressing the sustainability challenge.

Box 1: ECOLOGICAL FOOTPRINT:

Ecological footprint is a measure of the biologically productive area required to produce the resources (food, energy and materials) and to absorb the wastes of an individual, city, region, or country.

Australia has the world's eighth highest average ecological footprint of 7.09 hectares of land per person. Victoria averages around 8.0 ha per person. Countries like India and Pakistan average less than 1.0 ha per person.

The global average footprint is around 2.2 ha per person with the actual capacity being around 1.9 ha per person. It would require four planets to support the world's population if they all lived like Victorians.

Venetoulis et al (2004)

1.2 Purpose and Scope of the Strategy

Objectives

The primary objective of this project is to produce a five year environment sustainability strategy for the City of Ballarat, which will result in the delivery of key outcomes of Blueprint Ballarat 2030, the Ballarat Municipal Strategic Statement and other relevant sustainability related frameworks, plans and policies.

Key objectives of the project are:

- To provide a clear direction to the City of Ballarat and its community regarding sustainability as well as the protection and enhancement of the natural environment;
- To develop a focus on sustainability across the organisation and achieve best practice environmental management in respect to Council's operations; and
- Continue to raise awareness and increase the community's participation and partnerships in environmental issues.

Tasks

Key tasks were to:

- Undertake an appropriate level of community and stakeholder consultation to satisfactorily engage with the community of Ballarat, but acknowledging the consultation which has previously occurred with other Council strategies;
- Review the existing Ballarat Region Conservation Strategy 1999-2004;
- Determine the priority environmental projects within the City of Ballarat which will result in the delivery of the objectives of Blueprint Ballarat 2030 and the Municipal Strategic Statement; and
- Develop an action plan for the delivery of priority projects.

Outputs

Project outputs are;

An action-oriented document that addresses the following themes:

- Biodiversity (flora and fauna);
- Water quality and quantity;
- Energy;
- Waste, recycling and reuse; and
- Air quality.

Scope

This strategy has been developed with a focus on the issues and responsibilities under the jurisdiction of the City of Ballarat. Sustainability strategies and actions have been developed with an emphasis on Council's operations, management and planning responsibilities. Emphasis has also been placed on Council's role in working with other organisations, agencies and the community to deliver sustainability outcomes for areas outside the direct influence of Council.



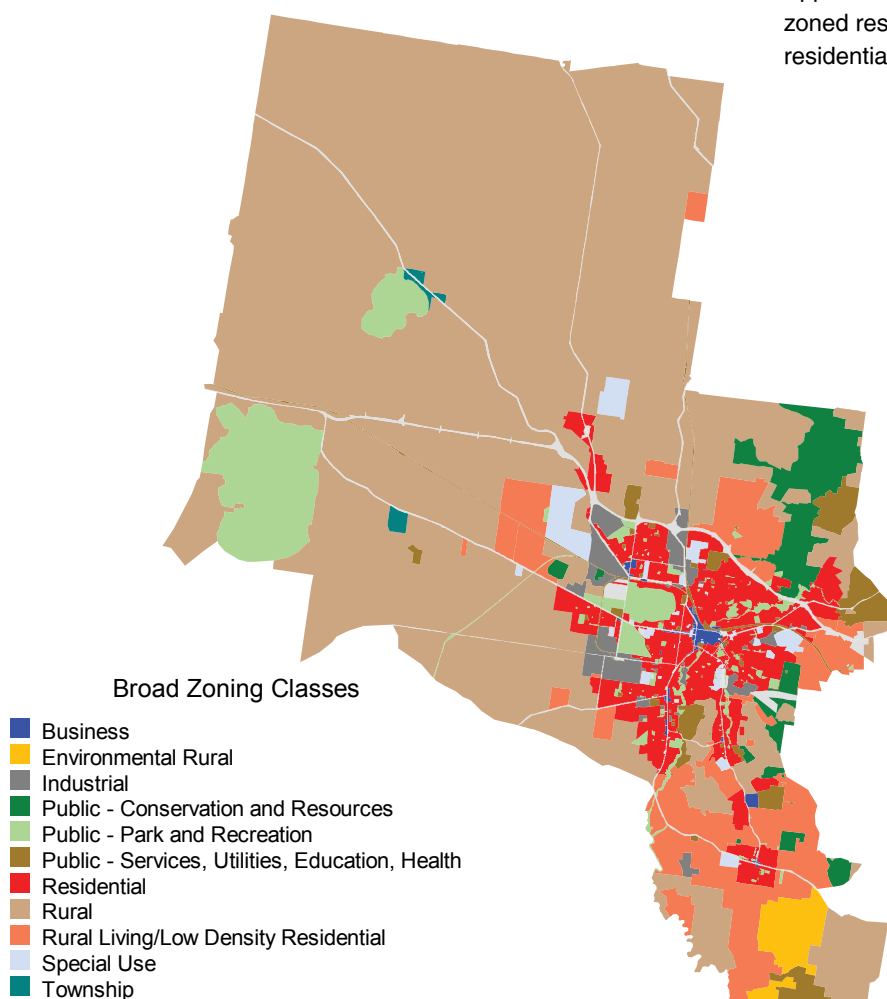
2. MUNICIPALITY PROFILE

2.1 Landscape and Climate

- The municipality covers approximately 74,000 ha.
- The two main land systems of the municipality are:
 - » West Victorian Uplands - Sedimentary based steep hills with yellow earths and yellow duplex soils (16,654 ha).
 - » West Victorian Volcanic Plains – Undulating plains with red friable earths (24,896 ha) or yellow duplex soils and grey clays (18,342ha).
- The headwaters of three catchments, the Barwon, Hopkins and Loddon River basins, occur in the south, western and northern regions of the municipality respectively.
- Approximately 11% (8,000 ha) of the municipality supports native vegetation (source: DSE EVC mapping).
- The annual rainfall in 2003 was 536mm. Rainfall in Ballarat has fallen by 4% per annum over the 1993 to 2003 period. The annual rainfall in 1993 was 833mm.

2.2 Land and Resource Use

- Significant areas of the municipality have been subject to high levels of disturbance from past mining activity;
- The majority of land in the municipality, approximately 83%, is used for agriculture (68% zoned rural) and housing (15% zoned residential/low density residential/rural living). The distribution of land use in the municipality is shown in figure 2-1;
- Approximately 12,000 ha (16%) of the municipality is public land and is managed for a range of purposes including recreation, conservation, water storage and forestry;
- Much of the activity in the region is based on consumption of non-renewable resources such as oil and minerals;
- Virtually all activity is dependent on electricity, with the majority of energy consumed being fossil fuel generated;
- Access to potable water is critical for all types of activity in the municipality. The largest water users are households and the manufacturing sector (City of Ballarat 2005b); and
- Use of land for residential developments is increasing. Approximately 6.6% of the municipality is currently zoned residential and 8.1% is zoned low density residential or rural living.



2.3 Lifestyles

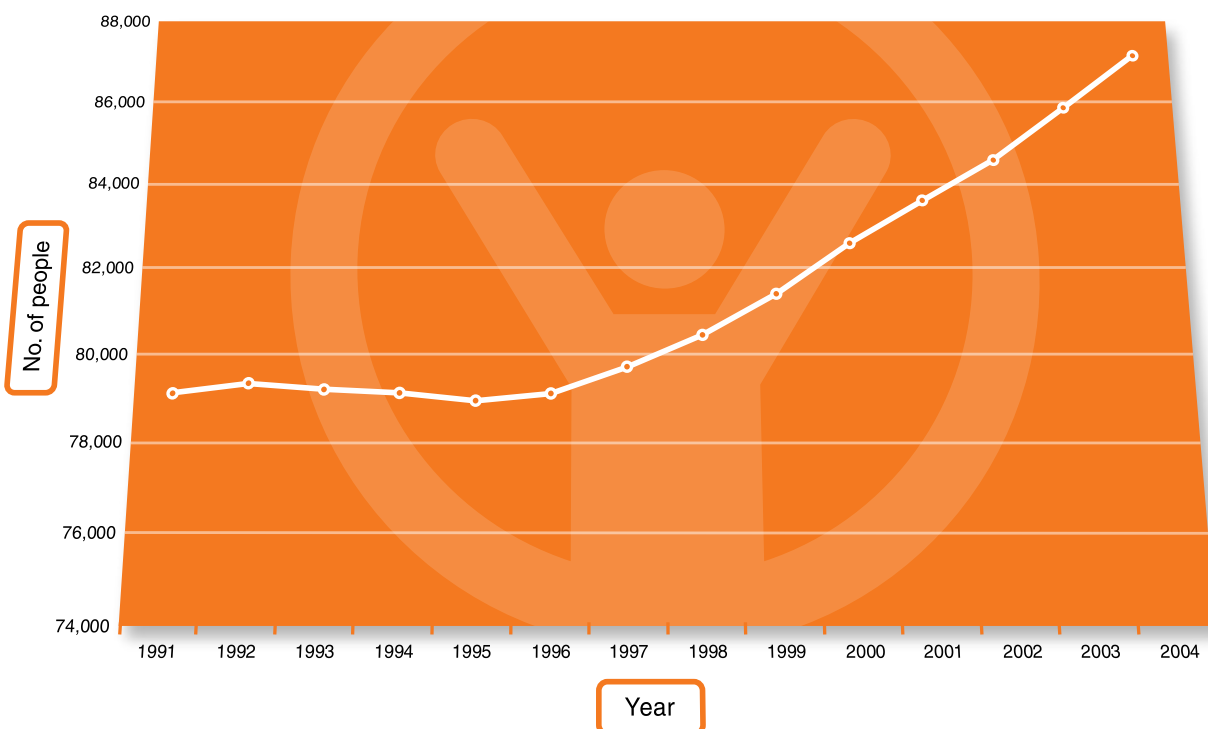
- There are approximately 33,000 households in the municipality (Census 2006);
- The average number of people per household is 2.67 (Census 2001);
- Approximately 90% of households have one or more vehicles (Census 2006);
- Travel to and from work is heavily car based. Over 70% of people travelling to work use a car (Census 2001);
- The four largest employment areas are retail (17% of the workforce), manufacturing (16% of the workforce), health and community services (14% of the workforce) and education (9% of the workforce), (Census 2001);
- 75,000 tonnes of waste was collected from Ballarat households during 2003/2004. Victorian households are estimated to produce 540 kilograms of rubbish per annum (Environment and Natural Resources Committee 2005);
- A typical Victorian household uses 5,330 kilowatt hours of electricity per year, spends an average of \$1,300 per year on energy and uses 58% of the total energy consumption on household heating. 21% of the total household energy consumption is used to heat water (Environment and Natural Resources Committee 2005);
- Households account for 63% of the water use in the Ballarat and district system. 14% of water in the system is used by manufacturing and transport (Centre for Regional Innovation and Competitiveness 2004);

- The average water consumption per household per year over the 2000-2004 period in the Ballarat and district system was 222 kL per household per annum (Centre for Regional Innovation and Competitiveness 2004); and
- The median house price in 2005 was around \$199,000 (Valuer General Victoria, A Guide to Property Values, 2004).

2.4 Demography

- Ballarat's population was around 88,000 at June 2005 (Victoria in Future 2004);
- There has been steady population growth for the past 10 years (see Figure 2-1);
- It is estimated Ballarat's population will exceed 110,000 by 2031 (DSE 2004c);
- The State Government's Melbourne 2030 strategy identifies regional centres such as Ballarat as major growth areas and places where urban development will be encouraged; and
- Transport developments such as the Ballarat to Melbourne fast train service will encourage population growth and urban development in the Ballarat area.

Figure 2-1 City of Ballarat Population Size



2.5 Landcare and Community Groups

The Ballarat region has an active environmental community represented by individuals and families, environment groups and networks, landcare groups, volunteer organisations and government agencies.

The following community based groups and not-for-profit organisations undertake environmental activities in Ballarat:

- Ballarat Environment Network (BEN);
- Conservation Volunteers Australia;
- Australian Koala Foundation;
- Ballarat Renewable Energy and Zero Emissions Inc (BREAZE);
- Creswick Landcare Centre;
- Ballarat Region Seed Bank;
- Leigh Catchment Group;
- Ballarat Gorse Task Force;
- South Ballarat Urban Landcare Group;
- Garibaldi Environment Group;
- Upper Williamsons Creek Landcare Group;
- Napoleons Landcare Group;
- Ross Creek Landcare Group;
- Haddon Landcare Group;
- Wattle Flat/Pootilla Landcare Group;
- Burrumbeet Landcare Group;
- Bolton – Beckworth Landcare Group;
- Bald Hills – Creswick Landcare Group;
- Miners Rest Landcare Group;
- Nerrina Environmental Action Group;
- Bird Observers Club of Ballarat;
- Ballarat Field Naturalists' Club;
- Keep Ballarat Beautiful Committee;
- Ballarat Clean Up Australia Committee; and
- Ballarat Bicycle Users Group.



3. THE SUSTAINABILITY SETTING

3.1 Supporting Sustainability Frameworks

International and National Frameworks

Since the international Earth Summit in Rio de Janeiro in 1992, which produced Agenda 21 as a key document establishing a blueprint for sustainability, there has been a significant increase in awareness of the need to consider the environmental and social, as well as economic implications of our decisions and actions. Chapter 28 of Agenda 21, known as Local Agenda 21 (LA21), focuses on implementing sustainability at the local level. The role of local government authorities, as the closest level of government to the people, is recognised and they are encouraged to play a key role in promoting and supporting sustainability at a community level. A second World Summit on Sustainable Development was held in Johannesburg in 2002 which reinforced the commitment of local authorities to the LA21 framework.

Australia developed its National Strategy for Ecologically Sustainable Development (NSES D) in 1992, and this document continues to form a foundation for sustainability planning and action in Australia. The NSES D defines ecologically sustainable development as:

'Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'.

The NSES D commits all Australian governments to the following objectives:

- to enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;
- to provide for equity within and between generations; and
- to protect biological diversity and maintain essential ecological processes and life-support systems.

A set of 24 headline indicators for ecological sustainable development have been developed to measure progress against the objectives of the NSES D. The most recent report against these indicators, *Are We Sustaining Australia? Report Against Headline Sustainability Indicators* (DEH website, March 2005) concludes that whilst we are moving towards meeting a number of objectives relating to individual and community well-being and welfare, progress towards the following aspects of the objectives is not clear:

- Whether our economic development is safeguarding the welfare of future generations;
- Whether we are providing for inter-generational equity; and
- Whether we are protecting biological diversity and maintaining essential ecological processes and natural life-support systems.

The report states that these objectives cannot be achieved without the protection and sustainable management of the ecological processes upon which life depends. It also identifies that we do not have sufficient trend information available in relation to ecological and natural resource management indicators to determine whether this is occurring.

State and Regional Frameworks

In 2005 the Victorian State Government released its sustainability framework *Our Environment, Our Future* (DSE 2005b) which:

- Outlines the key environmental challenges facing Victoria ;
- Provides background information about environmental sustainability and why it is important;
- Identifies strategic directions for becoming environmentally sustainable;
- Sets out objectives and interim targets for measuring progress; and
- Identifies steps for putting the framework into action.

The Framework identifies three key strategic directions:

- Maintaining and restoring our natural assets;
- Using our resources more efficiently; and
- Reducing our everyday environmental impact.

The Our Environment, Our Future - Sustainability Action Statement was released in 2006 (DSE 2005a). The goal of the Action Statement is to make Victoria a sustainable state by:

- Responding to the challenge of climate change;
- Maintaining and restoring our natural assets;
- Using our resources more efficiently;
- Reducing our everyday environmental impacts; and
- Government leadership.

The Action Statement presents a combination of regulatory and legislative tools, targets and incentives to encourage sustainable development and activity across the State.

Additionally, the Victorian State Government has developed the *Victorian Local Sustainability Accord* which aims to achieve cooperation and partnerships in the delivery of local sustainability initiatives. A sustainability fund has been established and will be administered through Sustainability Victoria, to assist Councils to achieve their sustainability objectives.

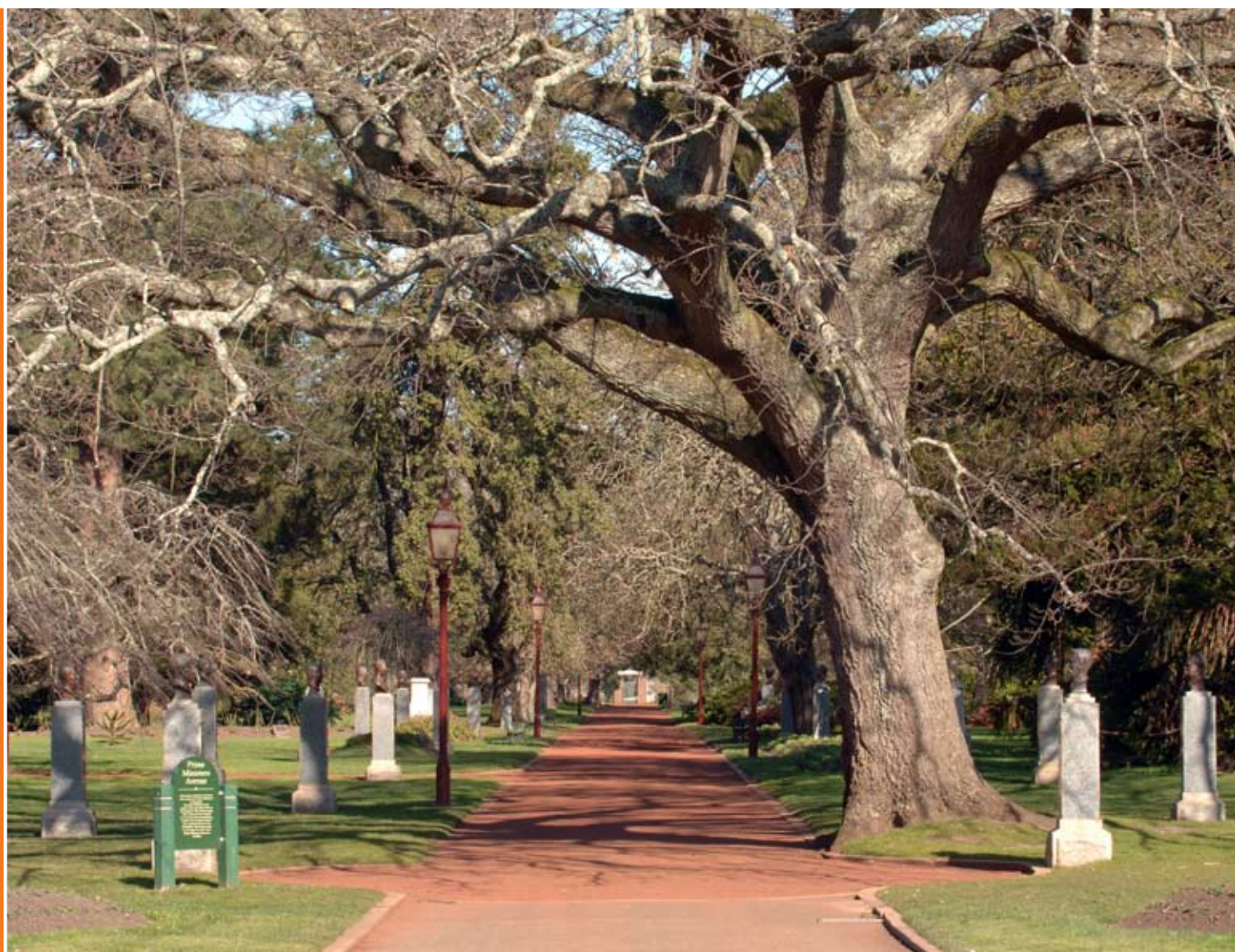


Table 3.1 Government Departments and Roles

Level of Government and Key Departments	Key Roles in Relation to Sustainability
<p>International Bodies</p> <p>United Nations Environment Program (UNEP)</p> <p>Commission on Sustainable Development (CSD)</p> <p>Organisation for Economic Cooperation and Development (OECD), Environment Policy Committee</p>	<p>To provide international leadership and encourage partnerships in protecting the environment.</p> <p>To identify and address transboundary environmental issues.</p> <p>To monitor and support implementation of Agenda 21.</p>
<p>Federal Government</p> <p>Department of Environment and Water Resources</p> <p>Department of Agriculture, Fisheries and Forestry</p>	<p>Representation at international forums and compliance with international agreements that Australia is signatory to.</p> <p>Providing national leadership, direction and support for implementation of the NSESD 1992.</p> <p>Sustainable management of its own properties and activities.</p> <p>Coordinator/development of national environmental standards, e.g. Environmental Impact Assessment (EIA).</p> <p>Developing and ensuring compliance with national legislation, e.g. Environment Protection and Biodiversity Conservation Act (EPBC Act 1999).</p>
<p>State Government</p> <p>Department of Sustainability and Environment (DSE)</p> <p>Department of Primary Industries (DPI)</p> <p>Department of Planning and Community Development</p> <p>Environment Protection Authority (EPA)</p> <p>Sustainability Victoria (EcoRecycle Victoria and Sustainable Energy Authority)</p>	<p>Develop and implement policy and programs for the State Government's environment, water and planning portfolios.</p> <p>Take a lead role in whole-of-government implementation of the Victorian Government's Sustainability Action Statement.</p> <p>Development of regional sustainability strategies.</p> <p>Developing and ensuring compliance with state legislation, e.g. Planning and Environment Act 1987, Flora and Fauna Guarantee Act 1988.</p> <p>Regulation of planning and development.</p> <p>State environment protection policies (SEPPs), established under the Environment Protection Act by the Environment Protection Authority express in law the community's expectations, needs and priorities for using and protecting the environment. SEPPs provide a clear statutory framework of environmental performance objectives.</p>
<p>Regional Authorities</p> <p>North Central Catchment Management Authority (CMA)</p> <p>Corangamite Catchment Management Authority (CMA)</p> <p>Glenelg Hopkins Catchment Management Authority (CMA)</p> <p>Central Highlands Water</p> <p>Southern Rural Water</p> <p>Highlands Regional Waste Management Group</p>	<p>Establishing key directions and objectives for natural resource and water quality management.</p> <p>Supporting local communities to protect and enhance the natural environment.</p>
<p>Local Government</p>	<p>Developing and implementing planning policies and strategies.</p> <p>Implementing the State Planning Policy Framework.</p> <p>Sustainable management of its own properties and activities.</p> <p>Regulating development.</p> <p>Supporting community and industry to become more sustainable.</p> <p>Provision of services to the community and local businesses, e.g. waste management.</p>

Table 3.1 identifies the key international bodies and Australian government departments and defines their key roles in relation to sustainability. Additionally in Victoria we have regional Catchment Management Authorities (CMA's) which have developed strategy and action plans for natural resource management. At each level of government there are a number of policies, strategies, and action plans that have been developed to address specific issues, such as native vegetation, pest plants and animals, soil conservation, water quality and quantity, wetlands, energy and waste.

Table 3.2 lists the key strategic frameworks guiding progress towards environmental sustainability in Australia and for the City of Ballarat.

Numerous other international, national, state, and regional strategies, plans and frameworks address the key environmental sustainability themes such as biodiversity, energy, water, and waste. A full list of documents is provided in Appendix 1. A list of sustainability related programs and initiatives offered by a range of agencies and organisations is provided in Appendix 2.



Table 3.2 International Sustainability Framework

Level of Government	Key documents
International	Agenda 21 (Earth Summit – 1992) Local Agenda 21
National	National Strategy for Ecological Sustainable Development (1992) Intergovernmental Agreement on the Environment (1992)
State	Our Environment Our Future: Victoria's Environmental Sustainability Framework (2005).
Regional	Catchment Management Authority Regional Catchment Strategies and Sustainability Frameworks (where developed).
Local	Local Government sustainability and environmental strategies and frameworks (where developed).

City of Ballarat Initiatives

Ballarat's original conservation strategy was prepared in 1991 and was one of the first conservation strategies of its kind in Australia, making Ballarat a leader in the field of environmental planning at the time. This strategy was reviewed in 1999 (City of Ballarat 1999) and incorporated the principles and objectives of Local Agenda 21 (see Box 2).

Both strategies covered the municipalities of the City of Ballarat and parts of Golden Plains, Pyrenees, Moorabool and Hepburn Shires. They were prepared by committees with representation from the community and local and state governments, while similar community-based implementation committees were responsible for guiding their implementation. The 1999 strategy lists a number of achievements that can be attributed to the earlier strategy, including the creation of the Ballarat Region Seed Bank, formation of the Ballarat Biodiversity Network and support for the LINC project.

The 1999 strategy deals broadly with values, issues and directions and provides general guidance for conservation in the region and a basis for community education, rather than defining particular initiatives. Due to the general nature of the objectives, actions and results it is difficult to determine to what extent the Strategy has contributed to change in comparison to other influences. Stakeholders and implementation committees have generally reported that good progress has been made in implementing the strategy. Much of the direction in the 1999 Conservation Strategy has been superseded or encompassed by a range of local, regional, State and Commonwealth documents and programs, often based on more specific and current data (see Appendix 1 and 2 for details).

Box 2: LOCAL AGENDA 21 GUIDING STATEMENTS

These principles lie at the core of the Ballarat Region Conservation Strategy:

- Development today must not undermine the development and environmental needs of present and future generations.
- In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process, and cannot be considered in isolation from it.
- Environmental issues are best handled with the participation of all concerned citizens. Nations shall facilitate and encourage public awareness and participation by making environmental information widely available.
- The polluter should, in principle, bear the cost of pollution.
- Sustainable development requires better scientific understanding of the problems. Nations should share knowledge and innovative technologies to achieve the goal of sustainability.
- The full participation of women is essential to achieve sustainable development. The creativity, ideals and courage of youth and the knowledge of indigenous people are needed too. Nations should recognise and support the identity, culture and interests of indigenous people.

Excerpt from the Ballarat Region Conservation Strategy 1999-2004



Council's two key current strategic planning documents, the Ballarat Municipal Strategic Statement (MSS) and Blueprint Ballarat (City of Ballarat 2004), demonstrate strong support for sustainability. The MSS contains a clear commitment to sustainability (see Box 3) and presents key issues, objectives and strategies under seven areas of environmental management:

- Catchment management;
- Energy;
- Floodplain management;
- Flora and fauna;
- Land capability;
- Landscape; and
- Water.

Box 3: SUSTAINABLE CITY (CLAUSE 21.01)

Natural resource management is a key issue for the municipality as the economic and social well being of the region is dependent upon the sustainable management of natural resources. This is particularly important given the location of the municipality within a region that is highly dependent on natural resources for economic and social well being.

For Ballarat to be a sustainable city there must be the simultaneous achievement of economic, social and environmental goals. Ecologically sustainable land management practices are essential to ensure the viability of biodiversity assets and the future of primary production. The sensible use of natural resources and recycling or re-use of waste products, utilisation of renewable energy sources, greater treatment of emissions to protect air and water quality are key factors. A climate that encourages innovation in business and the community will ensure sustainability and prosperity are achieved. These goals are inexorably linked. Sustainability is really prosperity in the long term. Short-term profit based on exploitation of finite natural resources must be forsaken for long-term sustainable prosperity.



Blueprint Ballarat is Council's key visionary document which aims to identify priorities for growth and the development of Ballarat for the next 25 years. 'Our Environment and Heritage' is identified as a key theme for achieving the future vision for Ballarat. In relation to environmental issues, the vision for the City in 2030 is:

"Ballarat values and celebrates its natural environment, its history and its cultural life" and "it will have reversed negative trends in some key indicators of environmental degradation, such as soil quality and biodiversity, so that Ballarat's environmental record is continually improving towards sustainability. There will be a community-wide commitment to reduced energy consumption and effective management of water resources. Surrounded by a green zone of natural bush, Ballarat's lively precincts will be linked by bicycle and walking paths".

In 2007 Council launched the LiveSmartBallarat program. The LiveSmartBallarat initiative is the City's vision to create a sustainable future for Ballarat and consists of three publications — WaterSmartBallarat, EnergySmartBallarat and WasteSmartBallarat. The publications identified proposed objectives, targets and policy positions in relation to water, energy and waste, with a particular emphasis on new development. Council sought feedback on each of the three LiveSmartBallarat documents to determine public opinion on the proposals. In general, the responses received indicated a strong support for the proposed initiatives and Council's position.

Following the release of Victoria's Environmental Sustainability Framework (2005) and Sustainability Action Statement (2006), the Victorian Local Sustainability Accord and establishment of a Sustainability Fund by the State, it is an opportune time for the preparation and implementation of the City of Ballarat's Environment Sustainability Strategy. The Strategy has been prepared with consideration of the goals and objectives expressed in these key Council strategic documents, and where appropriate, specific strategies, objectives and actions have been incorporated.



3.2 The Triple Bottom Line Approach

As thinking has evolved around the need for sustainability, so has the way in which the community, non-government organisations, government authorities and businesses have approached this goal. Based on past experience, current thinking indicates that organisations which take a long-term integrated or holistic approach to protecting the environment, and which operate on Triple Bottom Line (TBL) principles, are more likely to make progress towards sustainability.

Figure 3-1 shows the changes that are required for organisations to move towards a triple bottom line approach and Figure 3-2 demonstrates the key sustainability outcomes for organisations which apply TBL principles to their planning and management.

Triple Bottom Line (see Box 4) has evolved as a way of considering social and environmental impacts of decision making and action, in addition to the traditional financial assessment. There are a number of models for applying a TBL approach, varying from accounting models which attempt to quantify impacts and outcomes, to more qualitative assessment. In relation to local government in Victoria, a particularly successful model has been developed by Melbourne City Council and the International Council for Local Environmental Initiatives (ICLEI). The toolkit assists with sustainability assessment in relation to Council reports, capital works projects and corporate planning process. It provides staff and Councillors with checklists, guidelines, templates and case studies for the application of the TBL decision making and reporting framework. This toolkit is available to all local governments to modify and apply for their own purposes.

Figure 3-1 A Triple Bottom Line Organisation
Source: National Centre for Sustainability, University of Ballarat

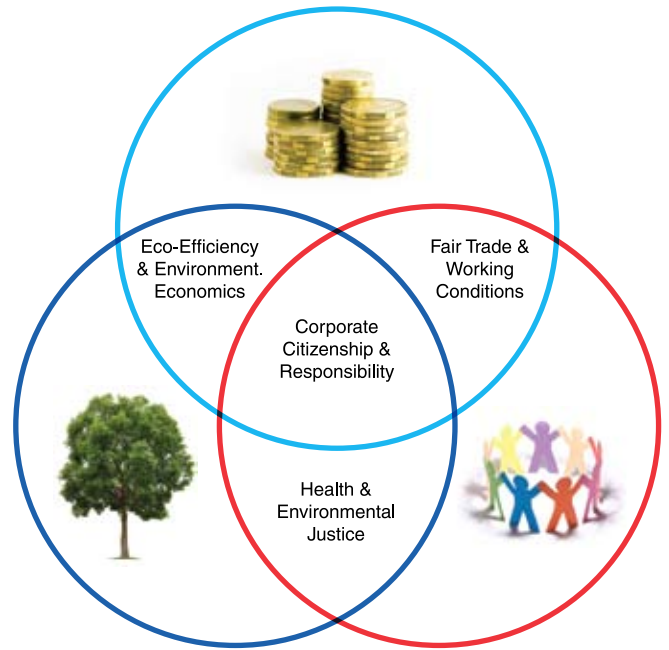


Figure 3-2 Evolution to a Sustainable Future
Source: National Centre for Sustainability, University of Ballarat

Box 4: TRIPLE BOTTOM LINE (TBL):

TBL is a framework that underpins and reviews environmental, economic and social performance. It emerged from the business sector and its practice shifts the focus from the purely financial bottom line to encompass the outcomes of all three elements. TBL can be a vehicle to achieve sustainable development, as this goal is reliant upon compatible environmental, economic and social outcomes.

In effect, Triple Bottom Line can be viewed as both a reporting device (eg. information presented in annual reports) and/or an approach to decision making (eg. the use of decision making and reporting tools to understand the economic, environmental and social implications of decisions) that can be applied across council activities.

Excerpt from "The Business Case For Local Government And Triple Bottom Line", Melbourne City Council and ICLEI, 2002)



3.3 Summary of Benefits of Sustainability

There are many benefits of adopting sustainability as a goal for Ballarat's environment, community and economy. Some positive outcomes include:

- **Healthier Environments and Communities**
 - Cleaner environments
 - Less pollution
 - Reduced cost of waste disposal
 - Improved health for all (people, plants and animals)
- **Protection of Precious Resources and Natural Assets**
 - Protection of life supporting natural environments and systems
 - Reduced resource consumption and waste
 - Reduced cost of waste disposal
 - Protection of water supply catchments
- **Economic Gains**
 - Cost savings in energy, water and materials
 - Growth in green/innovative technologies/industries
 - Increasing community/consumer support for green products
 - Reduced costs associated with material and energy waste/inefficiencies
- **Stronger Communities**
 - A unified vision for the future
 - Integrated and holistic decision making which meets the needs of all
 - Strengthened council, community and business/industry partnerships



4. CITY OF BALLARAT ENVIRONMENT SUSTAINABILITY STRATEGY FRAMEWORK

City of Ballarat Vision for Sustainability

Council is a leader in environmental sustainability with its commitment to organisational change to achieve sustainability. Council staff, businesses and residents show strong support for sustainability through initiatives to reduce resource consumption and waste production.

Principles

The following principles are essential for guiding progress towards sustainability:

- Leading by example – Achieve leading practice and continuous improvement in Council's own operations and in the way it supports others.
- Proactive action – Council acts proactively to establish a vision for sustainability for the City and to encourage leading practice by all residents and businesses.
- Ecological integrity - Protection and restoration of natural assets which are fundamental to sustaining natural life.
- Integration - Application of an integrated economic, social and environmental decision making and action process (e.g. TBL).
- Long-term planning - Application of long-term thinking to planning and decision making beyond traditional political terms.
- Precautionary approach – Prevention of environmental degradation is not delayed due to lack of full scientific certainty.
- Equity – Ensuring fairness and equal access to opportunities for our current community and future generations.
- Whole of community approach - Change requires awareness and participation by all sectors of the community.

Key Directions

In order to achieve the City of Ballarat Vision for Sustainability in a manner which incorporates the sustainability principles suggested above, three key directions have been identified to provide a focus for Council's sustainability program. These include:

- 1. Developing a culture of sustainability;**
- 2. Restoring and maintaining natural assets; and**
- 3. Reducing our resource consumption and everyday impact.**

Developing a culture of sustainability focuses on the organisational culture and ways in which Council can make sustainability integral to its operations. This key direction also explores ways in which Council can support and influence others to achieve a culture of sustainability. Integrating sustainability into all of Council's operations is essential to achieving a sustainable future and for Council to achieve status as a leader in the field.

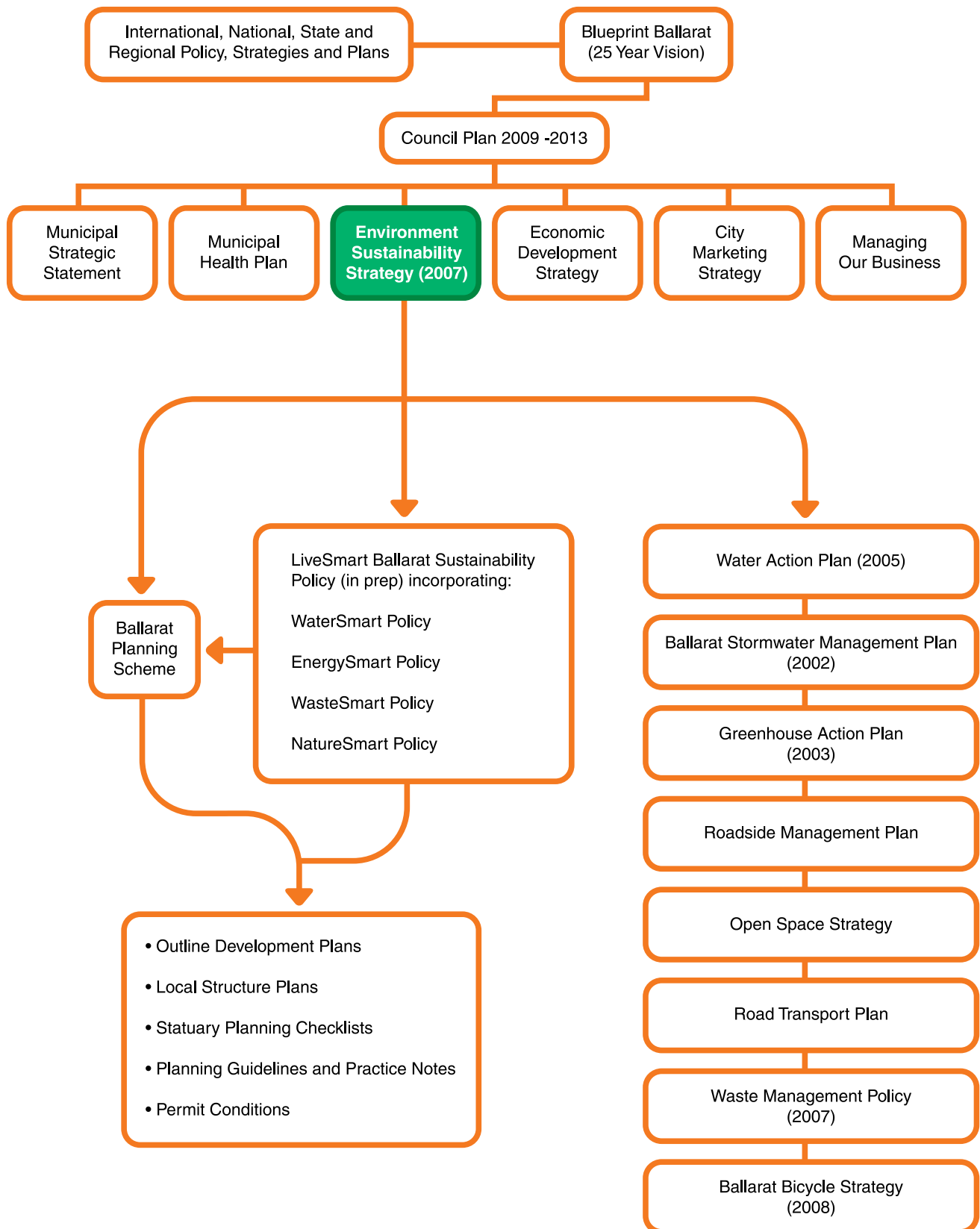
Restoring and maintaining natural assets focuses on protecting and enhancing our precious natural assets that are fundamental to supporting all life on earth. Intrinsic to this is understanding the benefits provided by all natural systems before making decisions about their use. Applying an ecosystems services approach, this includes consideration of the contribution of natural assets to all aspects of our life and economy, e.g. clean air and water.

Reducing our resource consumption and everyday impact focuses on efficient use of our natural resources, reducing our production of waste and addressing our impact on the global climate. This involves using our natural resources and raw materials as sparingly as possible, focusing our resource consumption on renewable sources, re-using or recycling resources that we have used and reducing the production of greenhouse gases.

These key directions have been used as the basis for developing the sustainability strategies and actions presented in section 5. Within this section, the themes specified in the project brief (biodiversity, land health, water quality and quantity, energy, waste, recycling and reuse and air quality) have been addressed as appropriate.

City of Ballarat Environmental Sustainability Structure

Figure 4-1 City of Ballarat's Sustainability Structure



5. SUSTAINABILITY STRATEGIES AND ACTIONS

5.1 Developing a Culture of Sustainability

Developing a culture of sustainability is essential to achieving Council's vision for sustainability. This applies to Council as an organisation itself and the broader community and local business and industry. Local Agenda 21 identifies the role of local governments in promoting and supporting community cultural change towards sustainability, including:

- Helping communities to understand sustainability;
- Encouraging debate on sustainability issues;
- Improving their own operations;
- Forming strong local, regional, national and international partnerships; and
- Implementing action in the community to make areas more sustainable.

Central to creating a culture of sustainability is Council's ability to lead by example in relation to its own operations and facilities. To achieve this Council staff and Councillors must be fully informed about best practice in their areas of operation and be working in an environment which encourages and supports innovation and change. Consistent with the role identified for Councils in achieving sustainability (Table 3.1), the key areas where the City of Ballarat can influence change include:

- Preparing and implementing planning policies and strategies which integrate sustainability objectives;
- Managing its own properties and activities sustainably;
- Supporting community and industry to become more sustainable;
- Regulating development with environmental sustainability as a key consideration; and
- Providing services to the community and local businesses to facilitate sustainable behaviour, e.g. appropriate waste management.

Blueprint Ballarat (City of Ballarat 2004) identifies a number of relevant strategic priorities which relate to the creating a culture of sustainability theme, including:

- Integration of environmental planning and management, based around the triple bottom line approach, with the city's other planning processes from the outset of all projects;
- Ensuring that the community is involved in implementing environmental programs;
- Learning from the experience of other cities of similar population, size and character in protecting and maintaining environment and heritage;
- Leveraging the environmental momentum produced by the current water shortage and concern for climate change to gain community commitment to environmental programs;
- Increasing opportunities for business involvement in planning and delivering environmental sustainability; and
- Bringing developers, business people, the community and conservationists together to:
 - develop a consensual approach for sustainable development;
 - identify problems in need of research;
 - resolve conflicts between planning and development; and
 - work on the conservation of natural landscapes.

Ballarat has a strong culture of community involvement in environmental activities (particularly land protection and rehabilitation) with key organisations such as the Ballarat Environment Network (BEN), Leigh Catchment Group, numerous landcare, environmental, and 'friends' groups, school initiatives and various clubs. Council and other organisations/businesses are also involved in a number of regional initiatives such as the Highlands Regional Waste Management Group and the Central Victorian Greenhouse Alliance. Building and expanding on these will be essential for achieving a culture of sustainability across Ballarat.



Key Issues:

- Clarifying use of the word sustainability. This term is often confusing and one that is used in a range of ways, not all relating to the environment;
- Integrating a culture of sustainability throughout Council. This will involve all staff and all aspects of Council's operations;
- Influencing others where possible. Council's influence on other sectors of the community varies and is often via community education processes and through offering incentives for behavioural change; and
- Understanding Council's impact and measuring improvements. Our impact on the environment can be difficult to understand or quantify, but should not prevent us from making changes to reduce this impact. Reports on the state of Ballarat's environment should be used to inform priority projects.

Objectives:

- Establish the City of Ballarat as a leader in achieving environmental sustainability;
- Raise the profile of sustainability and establish it as a key consideration for decision making and action within the Ballarat community;
- Continue to improve Council's sustainability profile for its own operations and assets; and
- Establish Ballarat as a city known for its sustainable environment.

Strategies:

- Establish systems to guide sustainable development within Council;
- Promote sustainability as a central value for Council and the local community;
- Manage Council's facilities and infrastructure sustainably.
- Ensure Council's planning and development processes facilitate sustainable development;
- Support, recognise and reward sustainable behaviour and achievements;
- Encourage learning and support action for sustainability and develop sustainability resources; and
- Understanding and reporting on Council's impact on the environment.

Actions:

The stated objectives will be achieved by implementing the following proposed actions:
(Actions highlighted in yellow identified as priority initiatives or projects – see section 6)

1. Establish systems to guide sustainable development within Council

Actions	Partners	Priority
<p>1. Develop and implement a Triple Bottom Line (TBL) management and reporting framework for Council which incorporates sustainability into all levels of decision making and action. This will include:</p> <ul style="list-style-type: none"> • developing checklists and protocols for Council reports, capital works projects, tender briefs/contractor – consultant selection etc; • establishing a Sustainability Working Group with representatives of each department to work collaboratively to implement initiatives across the organisation; • undertaking a TBL audit and developing an action plan for each department to identify issues and opportunities and to establish a basis for measuring/ monitoring change; and • developing a Sustainable Office Policy for Council (incorporating recycling, purchasing, energy use and water use). 	<p>ICLEI, other councils, Environs Australia, Centre for Sustainability (UB)</p>	<p>Immediate</p>
<p>2. Establish an environment/sustainability Councillor portfolio.</p>		<p>Immediate</p>
<p>3. Identify and implement staff training needs on sustainability (at least 4 workshops per year).</p>		<p>Immediate</p>
<p>4. Implement a Green Purchasing Policy to:</p> <ul style="list-style-type: none"> • ensure coordinated purchasing of sustainable products across the organisation; • improve Council's buying power and achieve cost savings; and • encourage Council suppliers to address issues of sustainability or avoid purchasing from suppliers with poor sustainability or environmental profile. 		<p>3-4 years</p>
<p>5. Continue to develop and resource Council's Sustainability Unit which:</p> <ul style="list-style-type: none"> • Plays a key role in the establishment of sustainability systems and procedures within Council; and • Links in with other key initiatives and organisations. 	<p>DSE Sustainability Victoria University of Ballarat – National Centre for Sustainability</p>	<p>Immediate</p>

2. Promote sustainability as a central value for the City of Ballarat and local community

Actions	Partners	Priority
6. Continue to participate in the Local Sustainability Accord and promote Council's participation in this program.	State Government, Sustainability Victoria, other LGAs	Immediate
7. Promote Council's sustainable initiatives and outcomes of programs – e.g. water reduction, CCP etc.	Local media	Ongoing

3. Manage Council's facilities and infrastructure sustainably

Actions	Partners	Priority
8. Ensure new Council buildings and facilities are constructed to best practice environmental/sustainability standards (e.g. 5 star or better).		Ongoing
9. Develop and promote Council facilities as models/examples of sustainable development.		Ongoing
10. Retrofit existing Council buildings with water and energy saving features as extensions and renovations occur.		Ongoing
11. Investigate and implement opportunities for using recycled water to irrigate Council managed parks, ovals, reserves and gardens.	CHW	Immediate
12. Implement the Open Space Strategy and undertake a sustainability audit of Council's open space assets and develop a program to reduce resource consumption with a focus on reducing water use for the maintenance of parks, gardens and other horticultural assets managed by the City of Ballarat.		1-2 years

4. Ensure Council's planning processes facilitate sustainable development

Actions	Partners	Priority
13. Adopt the proposed LiveSmart Ballarat Sustainability Policy (see Appendix 3) and implement through a range of regulatory and non-regulatory mechanisms.		Immediate
14. Develop practice notes for different types of development and different sustainability themes (see WaterSmart Discussion Paper) and ensure these are listed as reference documents in the amendment to the Planning Scheme. Construction design standards should be developed as required to support Practice Notes.	Developer & Building Industry	Immediate
15. Establish a technical reference group to monitor and advise on implementation of the policy and practice notes, with relevant experts from: <ul style="list-style-type: none"> • The development industry – developers, consulting engineers, landscape architects; • Government authorities and agencies – Sustainability Victoria, DSE, DPI, water authorities; and • Educational / research institutions – e.g. University of Ballarat – Centre for Environmental Management and National Centre for Sustainability. 		1-2 years
16. Lobby the State Government to implement Action 14.4 (Better Buildings) of the Victorian Sustainability Action Statement (2006) to develop and “implement a flexible tool as part of building and planning regimes to reduce energy, materials and water use in residential buildings”. Lobby the State Government to develop similar tools for commercial and industrial development.		Ongoing
17. Adopt the STEPS (residential) and SDS (commercial and industrial) assessment tool programs as a voluntary system for all new development requiring either building or planning approval.		Immediate
18. Amend the Ballarat Planning Scheme to include the following: <ul style="list-style-type: none"> • Continue to review and update the MSS to ensure consistency with new Ballarat Environment Sustainability Strategy and Policy and Practice Notes developed as part of this process. In particular Clause 21.04 – Environment, Clause 21.05 – Settlement and Clause 21.06 – Economic Development. Ensure that Council's sustainability policy is integrated through all clauses. • Develop a Local Policy - Sustainable Development which clearly states which types of development the policy applies to, the City's objectives in relation to sustainable development (including targets), policy statements including a requirement that developers demonstrate compliance with Council's Sustainable Development Policies and Practice Notes: Contact Council for further information. • Include the new City of Ballarat Environment Sustainability Strategy as a reference document in the scheme. 		1-2 years

<p>19. Update Council's Statutory Planning checklists and Planning Permit Application guides to reflect requirements of the amended Planning Scheme, including a requirement to demonstrate compliance with Council's new Local Policy and Sustainable Development Practice Notes.</p>		<p>1-2 years</p>
<p>20. Review Council's suite of planning permit conditions to ensure consistency with the requirements of the amended Planning Scheme, including a requirement to demonstrate compliance with Council's new Local Policy and Sustainable Development Practice Notes.</p>		<p>1-2 years</p>
<p>21. Review Council's tender specification documents to ensure they include sustainable development assessment criteria.</p>		<p>1-2 years</p>
<p>22. Develop guidelines for sustainable renovation/retrofitting of heritage buildings.</p>	<p>Heritage Victoria, DSE</p>	<p>3-4 years</p>
<p>23. Run a series of development forums with speakers in areas of innovative sustainable development – e.g. energy, water, landscape etc (see action 36).</p>	<p>Sustainability Victoria, DSE</p>	<p>Ongoing</p>
<p>24. Use SPEAR (Streamlined Planning through Electronic Applications and Referrals) for all types of applications to reduce paper usage.</p>	<p>DSE</p>	<p>3-4 years</p>





5. Support, recognise and reward sustainable behaviour and achievements

Actions	Partners	Priority
25. Develop a Sustainability Incentive Program to encourage and assist landholders and developers to undertake environmentally sustainable practices.		Immediate
26. Develop a LiveSmartBallarat accreditation program for Ballarat to reward developers who achieve best practice sustainable development.		1-2 years
27. Encourage local developers to achieve GreenStar or National Australian Built Environment Rating System (NABERS) rating for national recognition of their sustainable development achievements.		Ongoing
28. Review the guidelines for Council's community funding program to strengthen support for local environmental groups and initiatives and support local community environmental initiatives through this program.		Ongoing
29. Provide local environmental groups with information about relevant funding programs and assist/support groups to prepare funding submissions for environmental activities.		Ongoing
30. Sponsor the bi-annual Ballarat Environment Awards run by the Ballarat Environment Network (BEN).		Ongoing
31. In association with BEN conduct regular workshops and forums for local environmental/landcare groups on topical issues.		Ongoing
32. Establish a Business Sustainability Challenge to seek out, support and promote sustainability 'champions' in key industry groups.		Ongoing

6. Encourage learning and support action for sustainability and develop sustainability resources

Actions	Partners	Priority
<p>33. Investigate the feasibility of establishing a 'Sustainable Living Resource Centre' in conjunction with the operation of the City's Indigenous Plants Community Nursery, the Ballarat Horticulture Centre and the Ballarat Botanical Gardens.</p>	<p>BEN National Centre for Sustainability Leigh Catchment Group University of Ballarat</p>	<p>Immediate</p>
<p>34. In association with the University of Ballarat's National Centre for Sustainability and BEN, establish a 'Sustainable Ballarat' seminar / workshop series (run 3 – 4 a year) addressing a range of audiences and topics including:</p> <ul style="list-style-type: none"> • City of Ballarat's TBL decision making framework (once developed); • Development forums addressing sustainability in new developments (see Action 14); and • Sustainability techniques and technology for the community/household. 	<p>National Centre for Sustainability (UB), DSE, Sustainability Victoria.</p>	<p>Ongoing</p>
<p>35. Work in partnership with one or more local developers to design and establish a model sustainable development 'Sustainable House' in Ballarat. Explore options for funding through Sustainability Victoria.</p>	<p>DSE, Developers, Sustainability Victoria</p>	<p>Immediate</p>
<p>36. Support and work with networks such as the Central Highlands Sustainability Group to develop and promote sustainability initiatives and opportunities for local businesses and industry.</p>	<p>Central Highlands Sustainability Group</p>	<p>1-2 years</p>
<p>37. Develop a new sustainability section on the City's website that contains information about/links to:</p> <ul style="list-style-type: none"> • The Council's approach to sustainability; • Sustainability issues and requirements in relation to new development; • The Environment Sustainability Strategy (this document); • Key projects, initiatives and events; • Local environmental groups including contact details; and • Other sustainability resources including other internet sites. 		<p>Immediate</p>
<p>38. Continue to develop and provide sustainability information to the community through various media including newspaper, television, radio and Council publications.</p>		<p>Ongoing</p>

7. Managing, understanding and reporting our impact on the environment

Actions	Partners	Priority
<p>39. Continue and develop partnerships with relevant authorities/agencies to ensure a coordinated approach to protecting and managing Ballarat’s natural environment (MSS). Work with CMAs to implement their Regional Catchment Strategies and other associated plans and strategies. (See specific actions recommended in the following sections).</p>	<p>DSE, CMA’s, Parks Victoria, water authorities, environment and landcare groups/networks, Blueprint Ballarat Committee, Leigh Catchment Group</p>	<p>Ongoing</p>
<p>40. In association with Council’s Blueprint Ballarat Committee, develop a regular biennial report card on the state of Ballarat’s environment. The Ballarat state of the environment report should detail current status/conditions, trends and identify priority actions.</p>	<p>Blueprint Ballarat Committee, DSE, CMA’s, Water Authorities, landcare groups</p>	<p>1-2 years</p>



5.2 Restoring and Maintaining Natural Assets

The need for environmental sustainability is based on understanding that environmental functions must be sustained to support life. We have a stock of natural assets — air, land, waterways, plants and animals. These assets provide essential services that support our life, communities, industries, economy and jobs.

Our Environment Our Future, 2005

5.2.1 Healthy and Productive Land

Land is the foundation for our living systems. Land contains the abiotic and biotic resources needed to support the range of terrestrial ecosystems found throughout the municipality including native forests and woodlands, native grasslands, plantations, pastures, crops and horticultural systems. We rely on these ecosystems to provide life-sustaining resources such as food, fibre and construction materials. The condition or health of the land is therefore an important component of environmental sustainability.

The condition of land throughout Ballarat is influenced by many factors. Processes such as salinity, soil erosion, soil acidification, and soil compaction all affect the capacity of land to support living systems such as remnant native vegetation and wildlife as well as agricultural activity. Many of these degrading processes have been caused or exacerbated by the way land has been managed. Widespread clearing of native vegetation, for example, has had a significant impact on the condition of land throughout the municipality. While there is limited information on local condition and trends, the condition status of processes such as dryland salinity and soil acidification within the Glenelg Hopkins, Corangamite and North Central CMA regions is rated as poor and the trend indicates that conditions are worsening. (Health of Our Catchments – a Victorian Report Card, 2002).

Land degradation in Ballarat is being tackled by a range of stakeholders including private landholders (often through Landcare groups), the Department of Sustainability and Environment, the Department of Primary Industry, Catchment Management Authorities and various community groups. Table 5.1 lists the key strategies and plans that have been developed by the various land management agencies.

The City of Ballarat's role in addressing land degradation on private land is primarily delivered through the planning scheme. The Ballarat Planning Scheme currently contains a combination of zones and overlays that provide planning controls for the protection and management of land including:

- Environmental Rural Zone (being replaced by the Rural Conservation Zone);
- Erosion Management Overlay;
- Salinity Management Overlay;
- Environmental Significance Overlay;
- Land Subject to Inundation Overlay;
- Flooding Overlay; and
- Environmental Audit Overlay.

The City of Ballarat can also support a range of land managers, particularly private landholders, in addressing land degradation through financial assistance for Landcare and other community groups as well as offering incentives for individual landholders to undertake land rehabilitation works.

The State Government has recently undertaken a review of all the existing Rural Zones in Victoria and has developed four new Rural Zones to apply to rural land including:

- Farming Zone – Replaces the Rural Zone;
- Rural Activity Zone – New Zone;
- Rural Living Zone – Upgrades the existing Rural Living Zone; and
- Rural Conservation Zone – Replaces the Environmental Rural Zone.

As part of the statewide rural areas review the City of Ballarat is preparing a Ballarat Rural Areas Plan which will include recommendations for the new rural zones and overlays. Land capability and protection issues will be examined as part of this process.

Table 5.1 Land management strategies, plans and frameworks

Context	Key Documents
National	National Action Plan for Salinity and Water Quality
State	Our Environment Our Future: Victoria’s Environmental Sustainability Framework Victoria’s Salinity Management Framework Victorian Pest Management – Rabbit Management Strategy Victorian Pest Management – A Framework For Action
Regional	Catchment Management Authority (Corangamite, North Central and Glenelg Hopkins) Plans and Strategies including: <ul style="list-style-type: none"> • Regional Catchment Strategies; • Landcare Strategies; • Salinity Plans; • Weed Action Plans; • Soil Health Strategies; • River Health Strategies; • Wetlands Strategies; • Native Vegetation Plans; • Water Quality Plans; • Floodplain Management Strategies; • Nutrient Management Plans; and • Rabbit Action Plans.
Local (City of Ballarat)	Ballarat Region Conservation Strategy Open Space Strategy

Key issues:

- Protection and enhancement of soil;
- Waterway protection;
- Matching land use and land capability;
- Prevention and minimisation of native vegetation removal;
- Sustainable agricultural practices; and
- Impact of climate change on landuse and catchment health.

Objectives:

- Improve the condition of land; and
- Enhance partnerships with other land management agencies and groups.

Strategies:

- Prevent land degradation and rehabilitate existing degradation on Council managed land;
- Ensure that future development responds to land capability and condition; and
- Assist land management agencies and landholders in preventing and repairing land degradation.

Actions:

The stated objectives will be achieved by implementing the following proposed actions:

8. Prevent land degradation and rehabilitate existing degradation on Council managed land.

Actions	Partners	Priority
41. Undertake a land condition assessment of land managed by Council to identify areas of land degradation requiring treatment (could be integrated with the biodiversity assessment – see action 71). Develop management prescriptions to address identified land degradation sites.		1-2 years

9. Ensure that future development responds to land capability and condition

Actions	Partners	Priority
42. In association with the CMA's and DSE, review and identify salinity and erosion risk areas and update the SMO and EMO as appropriate to manage development in these areas (MSS).	CMA's DSE	1-2 years
43. Require land management plans to be submitted with all rural and rural living planning applications, including identification of issues and recommendations in relation to soil, waterways, flora, fauna, drainage, pest plants and animals etc (MSS).		Ongoing
44. Require that any land degradation be repaired before land is developed as a condition of a planning permit (MSS).		Ongoing
45. Prevent, minimise and offset native vegetation removal (see section 5.2.3).	DSE	1-2 years
46. Ensure that land degradation issues are addressed in Outline Development Plans.		Ongoing

10. Assist land management agencies and landholders in preventing and repairing land degradation.

Actions	Partners	Priority
47. Review and update the Invermay Regional Study and Land Management Plan 1991, and amend the planning scheme accordingly.		1-2 years
48. Consult with CMA's, DSE and DPI to assist with the implementation of salinity and erosion management plans and to identify opportunities and joint initiatives for assisting landowners to manage salinity and erosion.	DSE DSE DPI	1-2 years



5.2.2 Healthy and Productive Waterways and Wetlands



The network of rivers, creeks, lakes, groundwater systems and wetlands in the municipality is a vital system that many plants and animals depend on, and is one that supports a wide variety of human activity. Waterways and wetlands contain ecosystems that support unique assemblages of plants and animals not found in other drier landsystems. These systems are an important part of the water cycle-capturing, storing, transporting, filtering and supplying water for the benefit of living things throughout the landscape. Like all other regions, the waterways and wetlands in Ballarat have been used for human activity such as drinking water, food, cleaning, cooling and recreational activities.

Waterways and wetlands are also sensitive ecosystems and susceptible to rapid degradation. Like many other areas throughout Victoria, water systems in the municipality have been affected by removal of native vegetation, erosion, salinity, nutrification, pollution, sedimentation, flow regulation and the introduction of pest plants and animals. In particular, waterways and wetlands in urban and semi-urban areas have been highly modified following mining activity, vegetation removal, channelisation, altered stormwater flows and pollution.

In recent years rivers, creeks and wetlands have become a focus for environmental restoration. In particular, the LINCS Yarrowee River restoration project has become a flagship environmental initiative for the municipality and a model of community participation.

Other key water quality issues for the municipality include stormwater management and household wastewater treatment. The City of Ballarat's Stormwater Action Plan (City of Ballarat 2002) contains strategies and actions to reduce the impact of stormwater on water quality.

New technologies are being developed for treating and retaining household waste water on property, so that the environmental impact of wastewater on waterways is reduced and treated water can be recycled for domestic and garden use. These systems are particularly important as the level of development in semi-urban and low density residential areas not connected to the reticulated sewer system is increasing. Planning, regulatory and accreditation issues need to be addressed to ensure consistent and rigorous standards are met by onsite household wastewater treatment systems.

Table 5.2 Waterway and wetland management strategies, plans and frameworks

Context	Key Documents
National	National Action Plan for Salinity and Water Quality
State	Our Environment Our Future: Victoria’s Environmental Sustainability Framework Our Water Our Future: Securing Our Water Future Together Victorian River Health Strategy Victorian Floodplain Management Strategy Victoria’s Salinity Management Framework Environment Protection Authority (EPA) - State Environment Protection Policy (Waters of Victoria)
Regional	Our Water Our Future: Ballarat Regional Action Plan Glenelg Hopkins Regional Catchment Strategy Glenelg Hopkins CMA Salinity Plan Glenelg Hopkins River Health Strategy Corangamite Regional Catchment Strategy Corangamite CMA Salinity Plan North Central Regional Catchment Strategy North Central CMA Salinity Plan
Local (City of Ballarat)	Ballarat Region Conservation Strategy Ballarat Water Action Plan Leigh Catchment Plan Yarrowee River Plan LINCS Strategy





Key Issues:

- Urban stormwater management;
- Protection and rehabilitation of riparian zones of waterways and wetlands;
- Protection and improvement of water quality;
- Household wastewater management; and
- Educating and assisting the community to improve water quality.

Objectives:

- Improve the quality of stormwater runoff entering City of Ballarat waterways;
- Improve the condition of riparian, semi-aquatic and aquatic ecosystems;
- Reduce salinisation of waterways and wetlands;
- Reduce the amount of rubbish and pollutants in waterways and wetlands; and
- Reduce physical degradation of waterways and wetlands.

Strategies:

- Rehabilitate and protect waterways and wetlands;
- Develop partnerships and joint initiatives with authorities, the community and developers;
- Prevent household effluent contamination of groundwater, waterways and wetlands;
- Prevent chemical contamination of water;
- Achieve best practice stormwater management; and
- Ensure adequate protection and management of floodplains.

Actions:

The stated objectives will be achieved by implementing the following proposed actions:
(Actions highlighted in yellow identified as priority initiatives or projects – see section 6)

11. Rehabilitate and protect waterways and wetlands.

Actions	Partners	Priority
49. Identify and map riparian zones and wetlands and update Schedule 2 of the ESO to protect all relevant waterways and wetlands within the municipality.	CMA's Central Highlands Water DSE	Immediate
50. Continue improvement and management of public reserves, frontages and wetlands of the Yarrowee River and its tributaries by continuing to implement the LINCS program. Include promotion of the Yarrowee Trail (MSS, BB).	BEN, CMA's, DSE, Leigh Catchment Group, community groups, Schools	Immediate
51. Create more multi-purpose wetlands in urban areas where appropriate. Ensure wetlands have a variety of benefits including flood management, water quality protection, provision of wildlife habitat, visual and open space values (MSS). Undertake a study to identify key appropriate locations and a developers contribution scheme.	CMA's	Ongoing
52. In association with CMA's and DSE, identify areas affected by shallow groundwater tables and develop an appropriate planning control (e.g. ESO) to control development in these areas (MSS).	CMA's, DSE	3-4 years
53. Maintain the environmental health of Lake Wendouree through the adoption of the Lake Wendouree Water Supply Investigation Recommended water supply options ensure supply options consider the current and future impact of water diversion, on other waterways and wetlands.		Ongoing

12. Develop partnerships and joint initiatives with authorities, the community and developers.

Actions	Partners	Priority
54. Conduct an annual one day waterway and wetland forum to bring together key waterway management stakeholders, share information, identify priorities, discuss and plan waterway management projects and develop joint initiatives. (MSS - Establish a network of agencies relevant to waterway management in Ballarat to ensure a coordinated approach).	CMA's Central Highlands Water DSE Leigh Catchment Group Landcare groups Businesses	3-4 years
55. Support Waterwatch program by assisting volunteer groups with publicity and organisation of Waterwatch events.	Schools, Central Highlands Water, Landcare groups, CMA's	Ongoing

13. Prevent household effluent contamination of groundwater, waterways and wetlands.

Actions	Partners	Priority
56. Implement the Septic Tank and Waste Water Management Plan.		1-2 years
57. Develop onsite waste water treatment guidelines and make available on the City of Ballarat website. Include list of EPA approved treatment systems (link to EPA website).	EPA, CHW	1-2 years

14. Prevent chemical contamination of water.

Actions	Partners	Priority
58. Undertake a review of Council's chemical use and disposal procedures and develop chemical use policy and guidelines. Include cleaning agents, herbicide, pesticides, fertilisers, fuels, oils and other potentially harmful chemicals (CoB Water Action Plan).		1-2 years

15. Achieve best practice stormwater management.

Actions	Partners	Priority
59. Review and implement the Ballarat Stormwater Management Plan.		Immediate
60. Implement the stormwater and water quality components of the City of Ballarat Water Action Plan.		Immediate
61. Continue Council's waterway and stormwater quality testing.		Ongoing
62. Establish best practice stormwater management for all new developments, including site management during construction and design and infrastructure initiatives to achieve Water Sensitive Urban Design (MSS, BB).		Immediate
63. Establish a water flow impact assessment process for new developments to ensure that new land use and development does not have a detrimental affect on rural flows and the natural conditions of waterways (MSS).	CMAAs, CoB Water Resources 'Committee	Immediate

16. Ensure adequate protection and management of floodplains

Actions		Priority
64. Identify areas; (subject to inundation) and include them within the appropriate overlay (e.g. LSIO) in the Planning Scheme. Use these controls to prevent inappropriate development and works within flood prone areas that will impact on flood flow, water quality and river health (MSS). Identify catchments that require mapping and seek funding to undertake the work. Include existing mapped catchments in planning scheme.		3-4 years
65. Ensure that flood mapping and drainage flows are considered in the development of all new land use strategies and plans.		Ongoing
66. Review drainage at Doug Dean Reserve		1-2 years
67. Work with the CMA's to implement their Floodplain Management Strategies in a coordinated manner (MSS).	CMAs	Ongoing



5.2.3 Protecting and Enhancing Biodiversity



Biodiversity is the foundation of the natural world. It represents the variety of living organisms, their genetics and the range of habitats they create. The interactions of these organisms form systems that drive critical processes that sustain life such as nutrient cycles, atmospheric processes and hydrological cycles. Biodiversity and the systems it creates operate at all scales, from micro soil ecosystems to global water and atmospheric processes.

Our place in biodiversity and the influence we have on it also ranges across local, regional, national and global scales. People of the City of Ballarat belong to the biodiversity of the region and interact with it. They also belong and interact with national and global biodiversity. Our management of the interactions can influence the impact on those local, regional and global life sustaining processes formed by biodiversity.

Box 5: BIODIVERSITY FACTS AND FIGURES:

- Approximately 87% of the original native vegetation within the municipality has been removed or highly modified (DSE 2002);
- 46 threatened animals recorded within the municipality (AVW 2004);
- 32 rare or threatened plants recorded within the municipality (FIS 2004); and
- Approximately 3,500 ha of private land and roadsides in the urban and semi urban area of the municipality supports threatened vegetation communities (Milne et al. 2005).

The Ballarat landscape supports forest, woodland, grassland, wetland, riparian, agricultural and urban systems. These systems provide habitat for many native and introduced plants and animals. While many areas of remnant ecosystems remain, a large proportion of the region’s original biodiversity has been lost and fragmented through mining, agricultural development, urban development, forestry, water storage development, road and rail development and other infrastructure projects. Many of the remaining ecosystems have been modified by disturbances such as altered fire regimes, weed invasion, selective removal of vegetation, altered hydrological processes, grazing by introduced animals, soil disturbance and pollution. The majority of these activities have been undertaken with little or no regard for the impact on biodiversity and the processes it sustains.

In more recent times opportunities have been taken by community groups, private landholders, non-government organisations, and government agencies (including the City of Ballarat), to protect, conserve and enhance biodiversity. Projects have been undertaken to manage remnant ecosystems for conservation on private and public land and other projects have re-established native plants and animals in areas where they had been lost. Remnant vegetation on roadside and railway reserves is being managed to conserve environmental values. Wetlands have been created and riparian systems improved to reintroduce or enhance aquatic and semi-aquatic biodiversity. Planning controls have been introduced, such as the Vegetation Protection Overlay and the Environmental Significance Overlay, to manage the impact of development on native vegetation on private and public land.

There are further opportunities to protect and enhance biodiversity within the City of Ballarat. Additional conservation and building of biodiversity can be undertaken on Ballarat’s open spaces and other land managed by the City including roadsides. Planning tools under the Ballarat Planning Scheme can be modified or new ones created to improve the balance between urban and rural development and the conservation of biodiversity. The City of Ballarat can contribute to building systems for identifying and maintaining information on the existing biodiversity values of the city alongside the development of techniques for managing these values. All Council operations can be examined in relation to the impact they have on biodiversity in the region and outside the region.





The City of Ballarat's recognition of the importance of biodiversity is reflected in the city's key strategic documents — Blueprint Ballarat, Ballarat Planning Scheme Municipal Strategic Statement and the Ballarat Region Conservation Strategy. The protection of biodiversity is identified in Blueprint Ballarat as requiring increased attention alongside other environmental initiatives that contribute to the enhancement of biodiversity. Environmental objectives listed under Clause 21.04 of the Ballarat Planning Scheme Municipal Strategic Statement include:

- To minimise any adverse impacts of use and development on native flora and fauna and their habitats;
- To protect and enhance regional native vegetation; and
- The Ballarat Planning Scheme MSS also lists a number of strategies for achieving the above objectives.

Key issues:

- Improving knowledge of the natural values within the municipality;
- Protection and management of existing remnant native vegetation, particularly in relation to urban and semi-urban development;
- Protection of threatened species and communities.
- Reducing habitat fragmentation;
- Reestablishment of indigenous native vegetation and fauna habitat;
- Improved management of offset plantings established in response to the Native Vegetation Framework;
- Protection of waterway and wetland ecosystems; and
- Educating and assisting the community to conserve and improve biodiversity.

Objectives:

- Improve the extent and quality of biodiversity within the City of Ballarat;
- Prevent loss of remnant native vegetation and fauna habitat; and
- Increase community involvement in protecting and enhancing biodiversity.

Strategies:

- Develop a better understanding of the type and quality of biodiversity within the City of Ballarat;
- Conserve and enhance biodiversity on land managed by Council;
- Reduce the impact of Council operations on biodiversity within and outside the region;
- Increase community awareness of biodiversity;
- Develop and enhance partnerships with other land managers;
- Reduce degrading activities and develop and implement planning controls that protect local biodiversity;
- Assist landholders, land managers and the broader community to conserve and improve biodiversity; and
- Expand Council environmental expertise and liaison capacity.

Actions:

The stated objectives will be achieved by implementing the following proposed actions:
(Actions highlighted in yellow identified as priority initiatives or projects – see section 6)

17. Develop a better understanding of the type and quality of biodiversity within the City of Ballarat.

Actions	Partners	Priority
68. Develop a GIS based environmental information database to store, manage and access biodiversity information (flora records, fauna records and native vegetation mapping) for use in planning permit assessments and management of flora and fauna values on land managed by Council.	DSE, CMAs	1-2 years
69. Undertake a biodiversity assessment of land managed by Council and enter information into the GIS environmental database (see above).	Community groups, Field Naturalists Club of Ballarat, Ballarat Environment Network, University of Ballarat, DSE, CMAs	Immediate
70. Submit biodiversity information (flora, fauna, vegetation, community data) obtained by Council for planning purposes and other projects with DSE.	DSE, CMAs	Ongoing
71. Support research being undertaken in the region on biodiversity.	Tertiary Institution, Ballarat Environment Network, AKF, CMAs	Ongoing

18. Conserve and enhance biodiversity on land managed by Council.

Actions	Partners	Priority
72. Develop and implement biodiversity management regimes for all sites on land managed by Council containing native biodiversity.	DSE Ballarat Environment Network	Immediate
73. Through the LINCS program identify opportunities for further revegetation of Council managed land (including roadsides) with native species and undertake planting at suitable sites.	BEN, Leigh Catchment Group, CMAs, DSE, Creswick Landcare Centre and Seedbank, AKF, volunteer agencies, community groups, Landcare Groups	Ongoing
74. Develop and implement a pest plant and animal control action plan.	DSE BEN CMA	1-2 years
75. Review and implement the City of Ballarat Roadside Management Plan (MSS).		Immediate

19. Reduce the impact of Council operations on biodiversity.

Actions	Partners	Priority
76. Undertake environmental impact assessments on all new Council projects and developments where natural values exist on the site.		Ongoing
77. Develop and implement environmental best practice code for CoB contractors.		1-2 years

20. Increase community awareness of biodiversity.

Actions	Partners	Priority
78. Develop biodiversity interpretive material and resources as part of a sustainability demonstration building project or sustainability centre project (see Action 35).	CMA's, DSE, CMA's, Field Naturalists Club of Ballarat	3-4 years
79. Promote Leigh Catchment Group's indigenous plants and animal brochures. Offer for sale through visitor information centre.	Leigh Catchment Group	Ongoing
80. Develop and promote Ballarat region biodiversity hotspot poster/ brochure and web page to promote parks and reserves containing indigenous plant and animal values. Make available at visitor information centre and promote through schools.	Joint BEN, DSE, CMA's, Parks Victoria and CoB initiative	3-4 years
81. Develop biodiversity interpretive sites in the botanic gardens/lake to promote local and regional plant and animal values and sites. Integrate with the proposed 'Sustainable Living Resource Centre' (action 22). Develop a biodiversity walk with interpretive signs at the Botanic Gardens - integrate with North Gardens Wetlands Indigenous plant showcase section in botanic gardens (include showcase for indigenous plants for gardens and revegetation projects).	DSE, CMA's, Field Naturalists Club of Ballarat	3-4 years
82. Develop biodiversity section on Council website and provide links to relevant sites containing information such as the values present in the municipality, biodiversity hotspots, sources of information, Landcare groups and planting species lists. (sub section of a new sustainability section: see Action 26).	DSE, BEN, BIRD wiki	1-2 years
83. Investigate options for reestablishment of the Biodiversity Art Competition following a review of the previous projects (BB).	Art Gallery of Ballarat University of Ballarat Art Department CMA's Schools	1-2 years

21. Develop and enhance partnerships with other land managers.

Actions	Partners	Priority
84. Continue involvement with the Biodiversity Network.	DSE, CMAs, BEN, Leigh Catchment Group, Parks Victoria, AKF, community groups	Ongoing
85. Establish Council representation on other biodiversity related forums and committees as appropriate.	DSE, CMAs, BEN Leigh Catchment Group	Ongoing

22. Reduce degrading activities and develop and implement planning controls that protect local biodiversity.

Actions	Partners	Priority
86. Avoid, minimise and offset the removal of native vegetation through implementation of the native vegetation planning controls (State Planning Policy Framework Clause 15.09, Particular Provisions Clause 52.17) under Victoria’s Native Vegetation Management – A Framework for Action.		Ongoing
87. Amend the Ballarat Planning Scheme to incorporate the revised Vegetation Protection Overlay (MSS, BB).		Immediate
88. Develop Vegetation Protection Overlay information package for planning permit applicants.		1-2 years
89. Protect areas of high biodiversity value on private land through the Ballarat Planning Scheme by developing and applying a suitable schedule of the Environmental Significance Overlay (Biodiversity Protection). This overlay could complement the Vegetation Protection Overlay, existing ESOs and the proposed Koala habitat ESO schedule. The objective of this schedule would be to identify and protect sites with high flora and fauna values including areas supporting rare or threatened plants, animals, threatened vegetation communities and or significant wetlands.	DSE, CMAs	Immediate
90. Require mandatory biodiversity assessments and impact statements for all developments occurring in Environmental Significance Overlay (Schedule 2), Vegetation Protection Overlay (Schedule 1) areas and the proposed biodiversity protection ESO (see above).		Immediate
91. Implement the City of Ballarat Open Space Strategy	DSE, CMAs, BEN (LINC)s Parks Victoria, AKF	Ongoing
92. Ensure that development and infrastructure projects do not threaten the viability of rare and threatened flora and fauna populations and remnant vegetation communities (including treeless native vegetation such as grasslands and wetlands).	DSE, BEN, Field Naturalists Club of Ballarat	Ongoing

23. Assist landholders, land managers and the broader community to conserve and improve biodiversity.

Actions	Partners	Priority
93. Continue to support and promote the LINC's program	BEN, CMAs, DSE, Landcare and community groups	Immediate
94. Investigate the establishment of a biodiversity protection and enhancement incentive scheme for private landholders to support and encourage the conservation of plants and animals on privately owned land.	Joint initiative between City of Ballarat, DSE and CMAs	3-4 years
95. Provide information or links to other sources of information and expertise on the identification, protection and enhancement of native plants and animals. Part of CoB website (see action 26). Also provide information on funding opportunities.	DSE CMAs BEN BIRD Wiki	1-2 years
96. Continue involvement with Sustainable Gardening Australia to run programs in Ballarat for gardening businesses, nurseries and home gardeners.	Sustainable Gardening Australia	Immediate
97. Require the collection of seeds from trees to be removed from development sites and the seed supplied to the Ballarat Region Seed Bank for use in future revegetation projects in the area (MSS).	CMAs	Ongoing

24. Expand Council environmental expertise and liaison capacity

Actions	Partners	Priority
98. Train Council staff in biodiversity and other ecological concepts (develop as a component of sustainability training: Section 5.1)		Ongoing



5.2.4 Air Quality

Issues of air quality for the City of Ballarat are essential to the quality of life in the city and for its further development. Whilst a range of air quality issues exist, the main air quality issues for the city differ from those of large metropolitan areas. The main issues of air pollution and quality for the City of Ballarat are:

- Criteria pollutants
- Air toxics

Criteria Pollutants

'Criteria air pollutants' is a term employed internationally to describe air pollutants that have been regulated and are used as indicators of air quality. The regulations or standards are based on criteria that relate to health and/or environmental effects. A key feature of criteria air pollutants is that they are generally widely distributed across the country.

Australia has set national standards for six criteria air pollutants in outdoor air; these are carbon monoxide, lead, nitrogen dioxide, ozone, particles and sulphur dioxide.

Air Toxics

Air toxics are sometimes referred to as 'hazardous air pollutants'. The Living Cities-Air Toxics Program defines air toxics as 'gaseous, aerosol or particulate pollutants which are present in the air in low concentrations with characteristics such as toxicity or persistence so as to be a hazard to human, plant or animal life'. Typical sources of air toxics include motor vehicle emissions, solid fuel combustion, industrial emissions, and materials such as paints and adhesives in new buildings.

Wood fuelled heaters and fire places are a common method of heating homes in the region. The main impacts are on people with respiratory problems particularly under certain weather conditions that give rise to temperature inversions producing a concentration of pollutants for a limited time.

Air toxics have the potential to cause serious harm to human health and/or the environment. The Living Cities: Air Toxics Program, which concluded in June 2003, was established by the Australian Government to focus attention on this area.

The State of Knowledge Report: Air Toxics and Indoor Air Quality in Australia (2001) was prepared under the Living Cities Air Toxics Program. The report provides a compilation of existing information on air toxics and indoor air quality in Australia. It contains a glossary providing definitions of the technical terms used in relation to air toxics and profiles of the individual air pollutants.

From a City of Ballarat perspective both of the above have an impact. The major sources are:

- Vehicle exhaust emissions;
- Wood burning; and
- Bush fires.

Key issues:

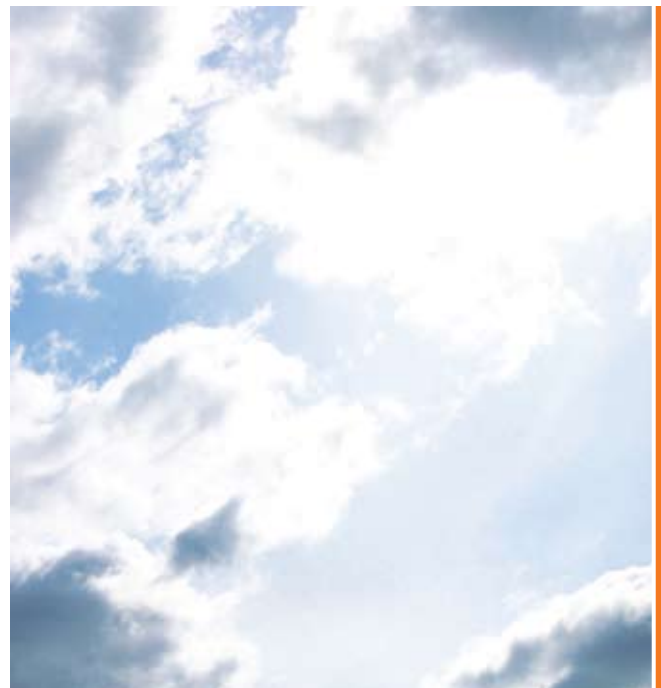
- Reduction of vehicle exhaust emissions; and
- Management of wood fuelled heater emissions.

Objectives:

- Reduce criteria pollutants and air toxics.

Strategies:

- Decrease vehicle exhaust emissions; and
- Reduce air toxics produced by burning wood fuel.





Actions:

The stated objectives will be achieved by implementing the following proposed strategies and actions:

25. Decrease vehicle exhaust emissions.

Actions	Partners	Priority
99. Continue use of biodiesel blend for Council fleet and investigate alternative technologies and fuel sources as they arise.		Ongoing
100. Encourage City of Ballarat residents and businesses to take up alternative lower emission fuels.		Ongoing
101. Develop and encourage the use of alternative travel methods to reduce the use of cars for private and business purposes (see Action 99).		3-4 years

26. Reduce air toxics produced by burning wood fuel

Actions	Partners	Priority
102. Promote the use of alternative low pollution methods of heating in new and existing homes.		Ongoing
103. Promote the State Government's high efficiency gas heater rebate.		Ongoing
104. Promote best practice with regard to wood burning. Wood-Smoke handbook: wood heaters, firewood and operator practice – 2003.		Ongoing

5.3 Reducing our Resource Consumption and Everyday Impacts

5.3.1 Water Conservation

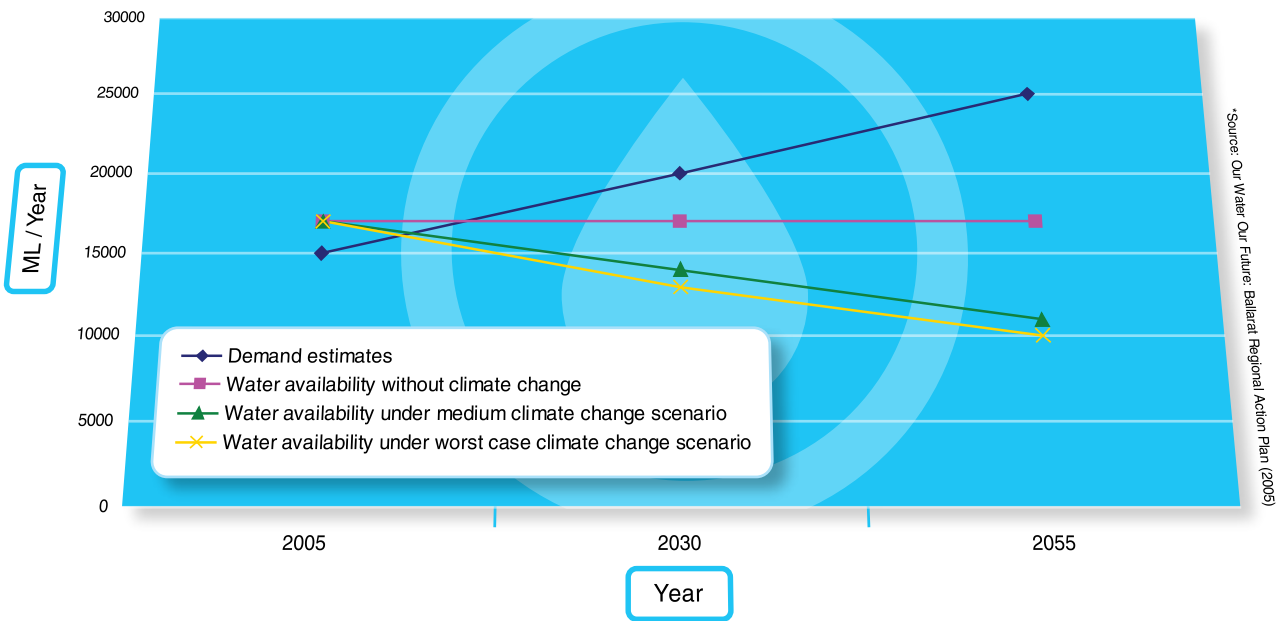
Water management is a critical element of sustainability. Our lifestyles and the survival of other living things depend on ongoing access to good quality water. The municipality is fortunate to be situated in a typically reliable rainfall area. The position of the municipality in the headwaters of four catchments, however, reduces water capture and storage potential. This coupled with below average annual rainfall over recent years has served to highlight the vulnerability of our community to water supply deficiencies (see Figure 5-1 and Figure 5-2) and has also triggered the development of strategies and plans for improved water management.



Figure 5-1 Ballarat Water Storage Levels 1997 - 2007



Figure 5-2 Water Availability and Demand Projections for the Ballarat Region



At the time of producing this strategy two key action plans for water management were released. The City of Ballarat has developed a Water action plan for the municipality and the State Government has produced an action plan for the Ballarat region as part of the Our Water Our Future initiative. These action plans form the basis for water management objectives and actions for this strategy.

The key organisations responsible for supply and management of water within the municipality include:

- Central Highlands Water;
- Southern Rural Water;
- Department Sustainability and Environment;
- Corangamite Catchment Management Authority;
- Glenelg Hopkins Catchment Management Authority; and
- North Central Catchment Management Authority.

Though not a primary water management authority, the City of Ballarat is an important stakeholder and is well placed to demonstrate leadership by continuing to reduce water consumption throughout the organisation as well as supporting the community to also reduce consumption.

Our Water Our Future Regional Action Plan: Ballarat

In 2004 the State Government released its Our Water – Our Future Action Plan (DSE 2004b). The plan aims to create improved ways to use and manage Victoria’s water resources over the next 50 years. Under the framework of Our Water Our Future, the Ballarat Region Action Plan (DSE 2005c) has been developed to address water issues in the Ballarat region. The action plan identifies the following key water related challenges;

- Increased demand for water – population growth;
- Uncertainty of climate change;
- Below average rainfall;
- Maintaining waterway health; and
- Maintaining Lake Wendouree.

The plan proposes a set of actions to address the above challenges. These actions are based on the following key initiatives:

- Reduce demand through smarter water use in urban areas including smarter water pricing, education and awareness programs and incentive programs;
- Realise the opportunities of recycled water through substitution for existing uses;
- Explore options to augment supplies; and
- Improve the health of rivers and protect groundwater.

In relation to sustainable development, the plan includes an action (3.5) to “reform the water component of the five star standard for buildings to make it performance-based, in line with the recommendations of the Victorian Competition and Efficiency Commission. The Government will:

- Complete a regulatory impact assessment that considers benchmarks, water savings targets and energy saving targets;
- Develop and implement a computerised sustainability assessment tool, similar to BASIX, to support the new performance-based approach, and modify the Victorian building regulatory framework to support the tool; and
- During 2007-08 the government will explore the feasibility of implementing performance-based water savings requirements for commercial and industrial buildings through the Building Code of Australia.

City of Ballarat Water Action Plan

The Water Action Plan for the City of Ballarat (City of Ballarat 2005b) is the result of a number of influences at a local, state, national and global level. It builds upon Blueprint Ballarat 2030 and its vision to be a leader in environmental management and the Municipal Strategic Statement.

The action plan has also been driven by Council's commitment to the International Council for Local Environmental Initiatives (ICLEI) Water Campaign™.

The City of Ballarat has set two water consumption reduction goals:

- Council will reduce its corporate water consumption by 40% based upon 1999/2000 levels by 2008 (completed); and
- A community goal of 20% reduction based upon 1999/2000 levels by 2008 (completed).

The targets are ambitious but realistic to achieve given the current situation in relation to water resources within Ballarat.

Due to climatic conditions and the resultant significant drop in water levels, the City of Ballarat and its community has made significant conservation advances. The City of Ballarat has reduced its water consumption by 49% based upon 1999/2000 figures, which pre-date the introduction of water restrictions. Analysis undertaken as part of the Central Highlands Water Ballarat Demand Management Strategy study (Centre for Regional Innovation and Competitiveness 2004) indicates that water restrictions have resulted in an effective means of controlling water use, particularly external water use which has a direct impact on the City of Ballarat's water use (gardens, sports ovals etc). However, despite growth within the City of Ballarat, direct correlation between water consumption prior to the implementation of water restrictions and post water restrictions cannot be ascribed to a single water saving

measure other than the overall effect of water restrictions. Despite this the action plan does provide a blueprint that provides leadership from Ballarat City Council to achieve sustainable water savings over the three year focus of the plan and well into the future.

WaterSmart Development Discussion Paper and WaterSmart Ballarat Consultation Paper

In early 2007 Council prepared a Water Smart Development Discussion Paper to explore a range of regulatory and non-regulatory mechanisms to improve the sustainability of new developments, with a particular focus on water. The discussion paper outlines the purpose, proposed structure and content for a proposed Sustainability Policy and presents a range of regulatory mechanisms for introducing and implementing the policy and associated practice notes for developers.

In relation to water conservation the paper proposes policy objectives of:

- Reduce water consumption, in particular potable water;
- Match quality of water to type of use;
- Reduce stormwater run-off and increase onsite detention;
- Improve stormwater quality;
- Achieve leading practice water sensitive urban design; and
- Enhance and protect our waterways and wetlands.



The proposed targets for water conservation include:

Target	Source
Water Conservation	
15% of 1999/2000 levels sustained community reduction by 2008	Ballarat Water Action Plan
40% sustained corporate (CoB) reduction	
25% reduction in water consumption for new developments	Victorian 'aspirational' target for water reduction in Government White Paper
Stormwater Quality	
All new development meets with Best Environmental Practice 75% stormwater quality indicator	Melbourne Water, DSE and Association of Bayside Municipalities 'STORM' – Best Practice Stormwater Management

The policy position proposed by Council was presented to the community in the WaterSmartBallarat consultation paper and survey. The community response to this demonstrated strong support for Council's proposed policy position. Seventy seven (77) people responded to the survey and of these 77% supported the policy positions and targets presented in this paper. The responses to the survey showed a strong desire to better regulate water conservation for industrial and commercial developments as well as residential.

Key Issues:

- Managing water demand including consideration of the impact of new development and population growth;
- Matching quality of water to type of use;
- The impact of climate change and below average rainfall;
- Protecting and improving waterway health;
- Management of Lake Wendouree; and
- Educating and assisting the community to adopt water conservation practices.

Objectives:

- Conserve water in Council operations through the implementation of sustainable water use practices;
- Increase the understanding and ownership by Councillors and Council staff of sustainable water use principles and practices;
- Increase the awareness and understanding of sustainable water use principles and practices in all sectors of the community; and
- Encourage and assist the uptake of sustainable water use practices by all sectors of the community.



Strategies:

- Lead by example by implementing sustainable water use practices in Council activities;
- Work with the community to achieve water reductions;
- Provide Council employees with information and advice regarding sustainable water use;
- Prompt improved communication and interaction between Council sections involved in the management of water and Council properties;
- Provide all sectors of the community with practical and informative advice regarding sustainable water usage;
- Provide community members living on un-sewered properties with advice on operating and maintaining their septic tank systems;
- Provide leadership by implementing controls for new developments, redevelopments and infill developments to meet best practice in water conservation; and
- Ensure Council implements best practice for water conservation in all its activities.



Actions:

The stated objectives will be achieved by implementing the actions listed below and those specified by the City of Ballarat Water Action Plan. Supporting information and further detail of the strategies and actions is provided in the Water Action Plan. These strategies and actions are supported and complemented by regional policies and actions of DSE's Our Water Our Future Ballarat Regional Action Plan (DSE 2005c) and the Central Region Sustainable Water Strategy (DSE 2006b).

27. Continue to advocate for a secure water supply for Ballarat.

Actions	Partners	Priority
105. Continue partnership arrangements with DSE, CHW and the CMA's to advocate for a secure water supply for Ballarat and assist with the implementation of Our Water Our Future Ballarat Regional Action Plan and the Central Region Sustainable Water Strategy.	DSE, CMAs, CHW, Southern Rural Water	Immediate
106. Research suitable alternative water supplies for Council assets and community facilities, e.g. recycled water substitution for potable water.	CHW	Immediate
107. Facilitate the 3rd pipe recycled water system infrastructure for broad scale development within reasonable proximity to the source (existing and proposed waste water treatment plants).	CHW	Immediate
108. Facilitate the requirement for on-site stormwater collection and grey water treatment plants for multi-dwelling developments.	CHW	Immediate

28. Ensure Council implements best practice for water conservation in all its activities.

Actions	Partners	Priority
109. Update/renew the Water Action Plan and water consumption reduction goals.	CHW	1-2 years
110. Prepare water conservation plans for Council's open space and other community facilities.	CHW	1-2 years
111. Install rainwater tanks at Council facilities for use in toilets and garden areas and water efficient appliances.		Ongoing
112. Provide Council employees with information and advice regarding sustainable water use.		Ongoing
113. Develop an internal, multidisciplinary Water Action Plan group to oversee implementation of the Water Action Plan.		1-2 years
114. Develop a comprehensive database for storing information about Council's water usage.		1-2 years

29. Work with the community to achieve water reductions.

Actions	Partners	Priority
115. Provide all sectors of the community with practical and informative advice regarding sustainable water usage.	CHW, DSE, Southern Rural Water	Ongoing
116. Provide ongoing support to landholders in implementation of the Septic Tank Operation and Maintenance Guide.		Ongoing

30. Require new developments, redevelopments and infill developments to meet best practice in water conservation.

Actions	Partners	Priority
117. Ensure that the review of Council’s Stormwater Management Plan (2002) includes detailed guidelines for Water Sensitive Urban Design.		Ongoing
118. Lobby the State Government to implement regulatory reforms relating to the water component of the five star standard for buildings to make it performance-based.	DSE DPCD	Ongoing
119. Review and update development plans, with particular emphasis on developing: <ul style="list-style-type: none"> • a coordinated stormwater treatment / water sensitive urban design plan; • a recycled water supply plan; and • catchment assessment to maintain suitable environmental flows. 	DSE DPCD	1-2 years
120. Develop new Local Laws and enforcement guidelines to cover: <ul style="list-style-type: none"> • Stormwater quality generally; • Stormwater quality during construction; and • General environmental management of construction sites. 		1-2 years



5.3.2 Energy Conservation and Climate Protection

Australians have the highest per capita production of greenhouse gases in the world. Global greenhouse gas emissions have led to the “enhanced greenhouse effect”, responsible for climate change. These emissions are due to the high use of energy – mostly generated from the combustion of fossil fuels to generate electricity, heat and provide transport. In Victoria, 50% of greenhouse gas emissions are the result of electricity generation. Most of the energy consumed by the average Victorian household is for home heating, followed by hot water heating and refrigeration (George Wilkenfeld & Associates 1998). At least 38% of home greenhouse gas emissions come from the use of transport, and this percentage is growing. However, it is estimated that at least 50% of energy used could be saved.

The conservation of energy has positive impacts on the environment, the community and the economy. Environmentally, measures that save energy will decrease greenhouse gas emissions, air pollution, light pollution and noise pollution. In the long term, reduced emissions will hopefully contribute to readdressing climate change. However, it is expected in the future that Ballarat will experience climate change in the form of more hot summer days (5 – 17 days over 35°C by 2070, compared with four days per year currently), reduced rainfall and more intense storm activity (DSE 2004a).

The energy efficiency of housing is regulated by three levels of government. Traditionally regulation has been used in Australia to eliminate worst building practice. Under the state government’s 5-star rating system, all new houses built in Victoria must comply with a 5-star rating for building fabric, incorporate water-saving measures and have either a rain water tank or a solar hot water system. The average house in Victoria built prior to 1991 has an energy rating of significantly less than 2.2 stars.

There is also scope for the Victorian regulations to be broadened to not only address energy efficiency and some water issues but other sustainable design elements, as is the case in New South Wales. Some progressive local governments, including Port Phillip and Darebin City Councils, have taken the lead in promoting sustainable housing design through the development of their own environmental sustainability assessment tools. However, state government leadership and consistency between local governments is required. The sustainability assessment tool that is currently being formulated by the Department of Sustainability and Environment should be finalised and implemented across the state as a matter of priority.

Local government has shown strong leadership to the community on the management of energy and greenhouse gas emissions through its involvement in the Cities for Climate Protection program. Fifty eight out of Victoria’s 79 councils are involved in the program which requires councils to actively

reduce emissions from their own operations. The State Government has emphasised the importance of leadership in the Victorian Greenhouse Strategy Action Plan Update (DSE 2005e). However mandatory minimum environmental design standards for state government infrastructure projects, including schools, are required. Energy efficiency labelling of public buildings and homes for sale and rental should also be investigated to make energy more visible, promote energy efficiency and better inform consumers.

The energy services industry is undeveloped in Australia, including Victoria. Consumers rely on professionals such as builders, electricians, plumbers and architects for advice on sustainable housing design. The main barrier to the implementation of environmentally sustainable housing is a lack of skills in the building and construction industries. TAFE and university curricula do not satisfactorily address environmental sustainability in the built environment. The absence of accreditation and performance standards for the installation of energy appliances and related fittings was also identified as a problem. The State Government has an important role to play in fostering the energy services industry in Victoria.

Renewable energy currently accounts for 3 to 4% of Victoria’s electricity consumption although the State Government has a target of increasing this to 10 per cent by 2016 under the Victorian Renewable Energy Target scheme (VRET) and the Renewable Energy Action Plan (DSE 2006c). Information on the environmental and economic performance of household renewable energy technologies needs to be provided to consumers. The uptake of Green Power products is increasing nationally with almost 220,000 customers participating by 2005 with Victoria having the highest uptake with over 80,000 customers as of December 2005 (URS Australia Pty Ltd 2006).

In 2006 the State Government developed an energy efficiency action plan (DSE 2006a). The Plan identifies actions to drive improvements in energy efficiency and greenhouse gas abatement. The Plan establishes the context for action, identifying current and future energy efficiency opportunities, and outlines the government’s broad objectives and strategies.

The Victorian Government is introducing the Victorian Energy Efficiency Target (VEET) scheme to reduce greenhouse gas emissions through energy conservation (DSE 2007). The VEET is a market-based scheme and is similar to the VRET scheme introduced to increase renewable energy. The scheme places an obligation on energy retailers to meet specific energy conservation targets. Energy retailers will be required to help households cut their power bills through such measures as the provision of energy efficiency appliances and products for little or no additional cost.

Consumers would benefit from the provision of further information on their energy bills, aside from greenhouse gas emissions. Information that allows households to benchmark their consumption with an energy efficient household of a similar size and location would encourage energy saving.

The City of Ballarat should continue to play a leadership role in energy conservation and emissions reduction through an arrange of measures including the planning approval process, energy efficiency measures, public transport, community engagement and education.

Cities for Climate Protection Program

The City of Ballarat is an active member of the Cities for Climate Protection Program (CCP). Through the development of a Local Greenhouse Action Plan (City of Ballarat 2003), Council has made a commitment to a wide range of programs that aim to achieve a 20% reduction in greenhouse gas emissions from Councils activities by 2010 and to work with the community to achieve a 10% reduction in its greenhouse gas emissions by 2010.

Council has completed an inventory of greenhouse gas emissions from it's own functions and those within the city as a whole, taken from base year figures of 1999-2001. Emissions are now monitored annually.

This Local Greenhouse Action Plan identifies a range of actions to be undertaken by Council and in other parts of the community to reduce emissions, and has been developed with the assistance of staff from the ICLEI office, the University of Ballarat and the Australian Greenhouse Office.

It is anticipated that these activities will reduce both the communities and Council's greenhouse gas emissions and energy costs for future years, providing environmental, social and economic benefits for residents for city residents.

CCP membership requires Council to adopt a resolution and make a commitment to meet the five step milestone program. The five milestones for Councils to complete under the Cities for Climate Protection Campaign are:

1. Establish a base year emissions inventory and forecast for the community and corporate sector;
2. Set an emissions reduction goal;
3. Develop and adopt a greenhouse reduction strategy the Local Action Plan;
4. Implement the greenhouse action plan; and
5. Monitor and report on emissions and implementation of actions and policies. The CCP program provides councils with a strategic framework to reduce greenhouse emissions. Ballarat has already begun to reduce emissions and cut financial losses through project implementation in a range of areas. Following is an example of an EnergySmart program.

Solar Cities project

The Solar Cities initiative was announced in June 2004 as part of the Energy White Paper, Securing Australia's Energy Future. Solar Cities is designed to demonstrate how solar power, smart meters, energy efficiency and new approaches to electricity pricing can combine to provide a sustainable energy future in urban locations throughout Australia.

Under the Central Victorian Solar Cities proposal, the CVGA has joined with a consortium consisting of Bendigo Bank, Origin Energy, PowerCor, Central Victorian Greenhouse Alliance, E3i Developments, Sustainability Victoria, the University of Ballarat, and the Central Victorian Area Consultative Committee. To facilitate the development of the CVGA bid, a special purpose company called Sustainable Regional Australia Pty Ltd (SRA) was established with its sole shareholder being the CVGA. It conducts its business under the business name of The Zero Net Emissions Company, ZCO2e (pronounced "Zed Co").

Announced in July 2007, the Central Victorian Solar Cities Project centres around the engagement of 2,500 households and more than 100 businesses, schools and community facilities. ZCO2e will make a one-step rollout of technologies and measures that address all the objectives of the Solar Cities programme. They include energy-efficiency measures (both changing behaviour and retrofitting assets), demand management with cost-reflective pricing, and the acquisition of assets that generate renewable energy. Solar assets will be acquired through innovative asset financing, providing participants with the opportunity to rent a portion of a Solar PV Park and ultimately the opportunity of community-based ownership after five years.

With Ballarat and Bendigo being the showcase municipalities the bid involves a mix of energy efficiency and renewable energy "offerings" for up to 250 households and approximately 26 businesses, two schools, and two community facilities in Ballarat. This would take the form of technology installation, as well as encouraging behavioural change regarding energy usage and wastage.

As well, ZCO2e plans to develop two Solar Parks, one in Ballarat and one in Bendigo. Each park would have approximately 150 electricity producing Photovoltaic Panels (with a capability for 300kW of electrical demand), requiring around 2,500m² of space to operate. The Solar Park will be located at the Ballarat Aerodrome.



EnergySmartBallarat Consultation Paper



In early 2007 Council prepared the EnergySmartBallarat consultation paper. The consultation paper outlines the purpose, objectives, and targets for energy conservation and outlines the Council's preferred position on energy sustainability in relation to new development.

In relation to energy conservation the paper proposes the following objectives:

- Reduce energy consumption;
- Increase the use of renewable energy sources and GreenPower;
- Support and help grow the energy efficiency industry;
- Increase the use of public transport; and
- Educate and assist the community to adopt energy conservation practices.

The community response to EnergySmartBallarat demonstrated strong support for Council's proposed policy position. Seventy seven people responded to the survey and of these 83% supported the policy positions and targets presented in the paper. The responses to the survey showed a strong desire to better regulate energy conservation for industrial and commercial developments as well as residential.

Key issues:

- Management of greenhouse gas emissions;
- Reduction of energy usage;
- Energy efficient building design;
- Alternative energy and fuel generation and uptake;
- Reducing transport impacts and increasing public transport utilisation; and
- Educating and assisting the community to adopt energy conservation practices.

Objectives:

- Fulfil Council's commitment to the CCP program; and
- Reduce local energy consumption and greenhouse emissions.

Strategies:

- Provide leadership in energy conservation and emissions reduction;
- Achieve energy efficient development;
- Promote the utilisation of renewable energy technologies; and
- Be an advocate for equitable energy pricing, energy efficiency and renewable energy.

Actions:

The stated objectives will be achieved by implementing the following proposed actions:
(Actions highlighted in yellow identified as priority initiatives or projects – see section 6)

31. Provide leadership in energy conservation and emissions reduction.

Actions	Partners	Priority
121. Join Cities for Climate Protection Plus (CCP)	ICLEI	1-2 years
122. Continue implementation of the City of Ballarat Greenhouse Action Plan		Immediate
123. Participate in and assist with the implementation of the Central Victorian Solar Cities project. Develop a Memorandum of Understanding with ZCO2e on the implementation of the Solar Cities project.		Immediate
124. Incorporate energy efficiency aspects into Council's vehicle fleet policy including: <ul style="list-style-type: none"> the use of alternative fuels; smaller cars with fuel efficient engines; and non car transport options. 		1-2 years
125. Develop and implement a TravelSmart Green Transport Plan to reduce the financial and environmental costs of Council staff travelling to, from and for work. Participate in joint project with the University of Ballarat with an initial focus on the Canadian Valley.	TravelSmart, University of Ballarat	Immediate
126. Continue to collaborate in regional partnerships including the Central Victorian Greenhouse Alliance and BREAZE.	CVGA, BREAZE	Ongoing
127. Implement the Sustainable Public Lighting Action Plan.		Ongoing
128. Develop and promote an annual 'Car Free Week' event.		1-2 years
129. Develop a plan for Council to become carbon neutral through the use of renewable energy and carbon off-setting.		Immediate
130. Identify opportunities for revegetation works that jointly deliver biodiversity enhancement and carbon abatement outcomes. Register carbon credits generated by the planting of native vegetation undertaken by the City of Ballarat with a accredited/recognised carbon credit program (e.g. CarbonSmart).		3-4 years
131. Prepare and assist the community with the transition from fossil fuel based transport to alternative fuel based transport. Incorporate consideration of the transport technology transition in infrastructure, residential, business and industry planning and development.	BREAZE, CVGA, Sustainability Victoria	Ongoing
132. Council to purchase Green Power.		Immediate

32. Improve energy efficiency of new and existing industrial, commercial and residential developments.

Actions	Partners	Priority
<p>133. Develop and apply a set of energy efficiency requirements for new residential developments that augment existing state planning and building energy efficiency standards. Target areas include:</p> <ul style="list-style-type: none"> • Energy efficient hot water systems; • Energy efficient heating systems; • Dwelling orientation; • Proximity to public transport and services; • Energy efficient street lighting; and • Walking and cycling facilities. 		Immediate
<p>134. Develop and apply a set of energy efficiency requirements for new industrial and commercial developments that augment existing state planning and building energy efficiency standards. Target areas to include:</p> <ul style="list-style-type: none"> • Minimum building energy rating standard; • Energy efficient hot water systems; • Energy efficient heating systems; and • Bicycle friendly facilities and design. 		Immediate
<p>135. Develop and apply a set of energy efficiency requirements for renovations and extensions to existing buildings that augment existing state planning and building energy efficiency standards.</p>		1-2 years



33. Promote energy efficiency and the utilisation of renewable energy technologies.

Actions	Partners	Priority
<p>136. Promote energy efficiency and renewable energy development and usage through:</p> <ul style="list-style-type: none"> • Assisting with the implementation of the Solar Cities project; • Developing and distributing of energy efficiency and renewable energy information to the community; • Developing of case studies to demonstrate successful examples of renewable energy projects; • Working with schools to develop energy conservation programs/events; and • Supporting community initiatives. 	<p>CVGA, Sustainability Victoria, BREAZE, Schools</p>	<p>Ongoing</p>
<p>137. Establish energy efficient development workshops or information sessions for industry, businesses and home owners.</p>	<p>CVGA, Sustainability Victoria, BREAZE</p>	<p>Immediate</p>
<p>138. Develop a energy conservation and climate change section on the City of Ballarat website that provides information, tools and links relating to reducing energy use, renewable energy, climate change and carbon off-setting.</p>		<p>1-2 years</p>



5.3.3 Waste Reduction



Australia is one of the highest producers of waste per head of population in the world, with 2006 statistics showing Australia ranked second behind the USA in terms of domestic waste generation. The average Victorian household produces 886 kilograms of waste per year, of which on average 28% is recycled, in particular paper, plastics and glass. However, what is not recycled, including green waste, usually goes to landfill. A large proportion of waste going to landfill in Victoria could be recycled.



Box 6: WASTE FACTS

Each year household recycling in Victoria saves:

- 8,960 mega litres of water – that’s the water consumption of 3,370,000 people for one week; and
- 309,964 tonnes of greenhouse gasses – equivalent to taking 51,661 cars off the road for a year.

“Although Victorians are among the most dedicated recyclers in the world, our solid waste stream has increased a massive 60 per cent in the past decade.”

Source: EcoRecycle Fact Sheet 2005 & www.ecorecycle.sustainability.vic.gov.au

Significant advances have been made at a community, business, industry and government level, with particular emphasis on recycling. Innovative businesses are designing products which are more durable and incorporate reused or recycled parts, and converting gases produced at landfill sites to energy for commercial sale.

Box 7: THE WASTE HIERARCHY

- Avoidance
- Reuse
- Recycling
- Recovery of energy
- Treatment
- Containment
- Disposal

Source: Sustainability in Action: Towards Zero Waste Strategy (2005)

Despite major advances in waste recovery through kerbside recycling over the past decade, we are continuing to increase quantities of waste (solid waste increased 40% between 1992 – 2002). Efforts to manage waste in Australia have traditionally focused on managing waste once it has been created, increasing the efficiency of existing collection systems and developing new treatment technologies. Yet waste avoidance is the preferred method of waste management, according to the waste hierarchy in the Victorian *Environment Protection Act 1970* (see Box 7).

The amount of organic waste currently going to landfill in Victoria is regarded as a major barrier to achieving the targets for waste reduction (approximately 47% of the waste stream in 2002/03). The low cost of land filling household waste and the absence of a mature recycled organics market are additional challenges to developing more environmentally sustainable methods of waste management.

The institutional and policy frameworks for managing household waste in Victoria include the Environment Protection Authority, Sustainability Victoria, local government and Regional Waste Management Groups.

Sustainability in Action: Towards Zero Waste Strategy (DSE 2005d) is the key Victorian State Government strategy document that establishes the goals and directions for Victoria’s solid waste management and resource recovery framework. The strategy is guided by three main objectives:

- Generate less waste;
- Increase the amount of materials for recycling and reprocessing; and
- Reduce damage to our environment caused by waste.

Statewide targets for improvements in waste management and resource recovery by 2014 are identified as a challenge for all Victorians to improve their practices. These include:

- Increasing the amount of household waste recycled from 35 to 65 per cent by 2014;
- Increasing the amount of all waste recycled in Victoria from 53 to 75 per cent by 2014; and
- Reduce littering by 25 per cent by 2014.

Table 5.3 below shows progress towards these targets for 2004/05

Table 5.3 Towards Zero Waste target progress for 2004-05

2014 Towards Zero Waste Targets	2004-05	
	Actual Result	Projected Result
1.5 million tonne reduction in solid waste generated (reported as total solid waste generated).	9.88 million tonnes generated	9.77 million tonnes generated
75% by weight of solid waste recovered for reuse, recycling and/or energy generation.	55%	55%
Sectoral recovery rates achieved:		
• Municipal waste (65%);	38%	35%
• Commercial and industrial waste (80%); and	65%	64%
• Construction and demolition waste (80%).	58%	59%
A 25% improvement in littering behaviours from 2003 levels.	6.25%	5%

Source: Table reproduced from Energy Efficiency for Victoria Action Plan (DSE 2006a)

In addition to the State strategy, the Highlands Regional Waste Management Group has a goal of zero waste to landfill by 2015.



Ballarat

In 2003-2004, the City of Ballarat collected around 75,000 tonnes of waste material from households. Around 26% of the waste collected was recycled, in particular metal, plastics and glass. Audits undertaken in 2003 and 2004 showed the volumes of green and organic waste going to landfill were at 40% and 55% respectively.

Box 8: A SURVEY UNDERTAKEN BY THE CITY OF BALLARAT IN 2003 – 2004 SHOWED THAT DOMESTIC WASTE WAS MADE UP OF:

- 15-20% food waste;
- 30% paper, plastics, aluminium, cans and glass jars;
- 20% green waste; and
- 30% non recyclables.

Based on more recent data collected for the draft Waste Management Policy (City of Ballarat 2007), recycling participation has steadily improved with the introduction of the fully commingled service” in October 2004. This report identifies that the increase in recycling volumes was approximately 37% between 2001/02 and 2005/06. However, consistent with Victorian trends, the volume of waste generated per household is actually increasing.

Council’s current kerbside collection services include weekly garbage, fortnightly recyclables (fully commingled - glass, steel cans, paper and plastic) and an on call greenwaste (fee for service) collection. Additional services are available for a fee at the transfer station. Council’s transfer station also caters for commercial waste disposal, including significant proportions of organic waste from food manufacturers and the hospitality industry. The household greenwaste collection service has not been well used by residents (approximately 4% of households).

In 2003 Council explored options for a three bin waste system, which would provide for the collection of green/ organic waste for recycling through a “modern organics processing facility” into a range of composted products. According to a survey undertaken by Council, community support for a greenwaste recycling service was strong. Concerns by Council about the commercial viability of such a process and facility prevented the development of this three bins system and service at the time. Given the advances in this area in recent years, it would be valuable to again test the market viability of this important facility.

The Council also has a litter taskforce, with extensive community representation, that seeks to identify means of decreasing littering behaviour. The current issues of priority are seen as entrances to the city and “hot spots”, including the CBD.

Recent community consultation on Council’s WasteSmart Ballarat paper indicates that there is a high level of support for Council’s efforts to reduce waste generation, increase recycling and decrease the incidence of littering. The consultation findings indicate a clear need for more or different types of information and education to assist the community to minimise their waste. There was strong support for green and organic waste recycling and improved hard waste management.

Key Issues:

- Reducing waste production;
- Continuing to increase the proportion of waste that is recovered (in line with Statewide targets);
- Reducing the amount of green and organic waste going to landfill and developing a commercial composting/ energy recovery program;
- Continuing and expanding litter reduction programs; and
- Continuing to encourage and educate the community about improved waste management practices.

Objectives:

- Decrease consumption of products and materials used by Council;
- Increase recycling of waste produced by Council;
- Educate and support the community to decrease community waste generation and increase recycling rates;
- Reduce building and construction waste and littering; and
- Decrease littering and illegal rubbish dumping.

Strategies:

- Improve Council’s waste management practices and services;
- Improve and streamline recycling programs;
- Educate and support local communities and industries/ businesses to improve their waste management practices and encourage innovation; and
- Strengthen enforcement and disincentives for littering and illegal waste dumping.

Actions:

The stated objectives will be achieved by implementing the following proposed actions:
(Actions highlighted in yellow identified as priority initiatives or projects – see section 6)

34. Improve Council’s waste management practices and services.

Actions	Partners	Priority
139. Develop a program of waste reduction with targets for each department within Council, including regular audits of waste volumes and types.		Immediate
140. Finalise and implement a Waste Management Policy for Ballarat.	Highlands Regional Waste Mgt Group, EPA	Immediate
141. Continue to run and support waste wise events for community activities/ festivals.	Community groups / organisations	Ongoing
142. Continue with installation of landfill gas flaring and power generation at Whitehorse and Smythesdale landfills. Develop this as an income source for Council.		Ongoing
143. Establish public place recycling facilities in key areas such as major areas of public open space and recreational facilities.	Sporting groups	3-4 years
144. Require contractors to demonstrate compliance with Council’s WasteSmartPolicy.	Contractors	Ongoing
145. Design and construct all new Council facilities based on waste wise principles, including minimising material use, use of durable and recycled materials and providing waste minimisation infrastructure, e.g. recycling bins.	Contractors	Ongoing
146. Ensure compliance and reporting on best practice environmental management of landfill sites.	Contractors	Ongoing
147. Establish a resource recovery centre based at Council’s transfer station (BB).	Contractors	1-2 years
148. Explore options for establishing a permanent “Detox” facility at Council’s transfer station for disposal of chemicals and hazardous wastes.		Completed

35. Improve and streamline recycling programs.

Actions	Partners	Priority
149. Establish a green/organic waste collection and composting facility, including establishment of a third bin system for residential properties. Explore options for renewable energy generation from this facility.	Highlands Regional Waste Management Group (HRWMG), SV (Ecorecycle), Commercial enterprise	Immediate
150. Establish co-mingled waste sorting and processing facility appropriate for Ballarat.	HRWMG, SV (Ecorecycle), Commercial enterprise	5 years plus
151. Explore options for private/commercial and public funding to establish the facilities identified above, including Sustainability Victoria's grant programs.	Sustainability Victoria	1-2 years



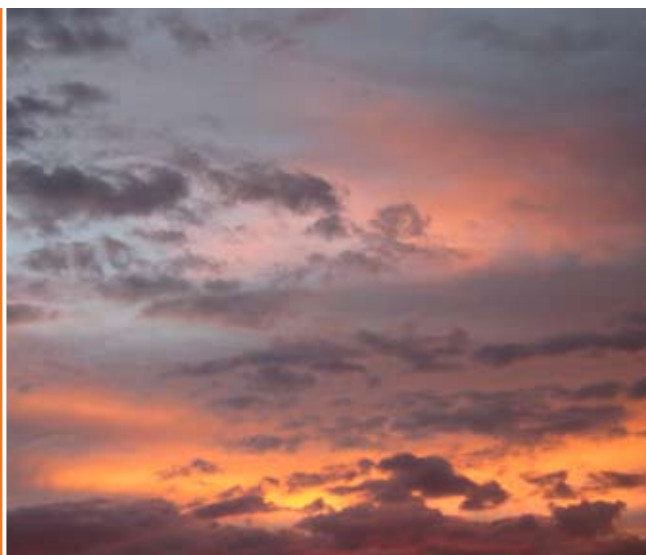
36. Educate and support local communities and industries/businesses to improve their waste management practices and encourage innovation.

Actions	Partners	Priority
152. Work with the Highlands Regional Waste Management Group to promote and establish Sustainability Victoria's Waste Wise Program for schools and businesses in Ballarat.	Highlands Regional Waste Management Group SV (EcoRecycle)	Ongoing
153. Participate in and promote Zero Waste Week run by Sustainability Victoria (SV).	SV (EcoRecycle)	Ongoing
154. Develop and promote a Waste Wise Construction program in Ballarat to reduce the amount of waste produced by the construction / demolition industries.	Master Builders Association, UDIA, Highlands Regional Waste Management Group	3-4 years
155. Continue to educate the community to reduce waste, to increase recycling rates and reduce contamination of the recycling stream.	Highlands Regional Waste Management Group Schools Keep Ballarat Beautiful Committee	Ongoing
156. Audit the municipal waste stream and communicate progress towards waste reduction targets to the community. Establish a regularly updated progress chart on Council's website.		Immediate
157. Participate in national education campaigns such as Butt Free City and the National Day of Action against littering.		Ongoing
158. Establish partnerships with the waste and recycling industries to reprocess more products.	HRWMG, commercial enterprise	3-4 years
159. Work in partnership with SV and local businesses to establish plastic bag free zones / shopping areas, e.g. Bridge St Mall, Central Square etc. Access support through the Plastic Bag Free Challenge - SV.		1-2 years
160. Support the Detox your Home initiative, established by SV, as an annual program for disposal of chemical / hazardous waste.		Ongoing
161. Encourage participation in State awards programs, e.g. Waste Wise Schools and Clean Up Australia.		Ongoing

37. Strengthen enforcement and disincentives for littering and illegal waste dumping.

Actions	Partners	Priority
162. Appointment of Litter Officer and enforcement of littering fines.		1-2 years
163. Develop a promotional program for improved community understanding of penalties for littering and illegal waste dumping, and the EPA Litter Report Line.	EPA, HRWMG	
164. Run regular clean up events, participate in and promote "Litter Free Month" and Clean Up Australia Day.	SV(EcoRecycle), Schools Litter Task Force Keep Ballarat Beautiful Committee Ballarat Clean Up Australia Committee	Ongoing





6. PRIORITY ACTIONS SUMMARY

The following list contains actions from Section 5 that have been identified as high priority feature projects or initiatives that can be targeted for implementation within 12 months of the release of this Strategy. These actions have the potential to deliver significant sustainability outcomes in the short term or address priority sustainability issues. A number of the actions can be used to highlight and promote the positive outcomes of sustainable initiatives to the broader community. It is recommended that these actions be planned and implemented at the earliest opportunity and that an action plan is produced annually to identify and implement priority actions from this strategy on an ongoing basis. Further details of each of the actions below are provided in the corresponding section (Section 5).

No.	Action	Strategy	Section
DEVELOPING A CULTURE OF SUSTAINABILITY			
1	Develop and implement a Triple Bottom Line (TBL) management and reporting framework for Council which incorporates sustainability into all levels of decision making and action.	1	5.1
2	Establish an environment/sustainability Councillor portfolio.	1	5.1
3	Identify and implement Council staff training needs on sustainability (at least four workshops per year).	1	5.1
5	Continue to develop and resource the Council's recently formed Sustainability unit.	1	5.1
6	Continue to participate in the Local Sustainability Accord and promote Council's participation in this program.	2	5.1
11	Investigate and implement opportunities for using recycled water to irrigate Council managed parks, ovals, reserves and gardens.	3	5.1
13	Adopt the proposed LiveSmart Ballarat Sustainability Policy and implement through a range of regulatory and non-regulatory mechanisms.	4	5.1
14	Develop practice notes for different types of development and different sustainability themes.	4	5.1
17	Adopt the STEPS (residential) and SDS (commercial and industrial) assessment tool programs as a voluntary system for all new development requiring either building or planning approval.	4	5.1
25	Develop a Sustainability Incentive Program to encourage and assist landholders and developers to undertake environmentally sustainable practices.	5	5.1
33	Investigate the feasibility of establishing a 'Sustainable Living Resource Centre' in conjunction with the operation of the city's Indigenous Plants Community Nursery, the Ballarat Horticulture Centre and the Ballarat Botanical Gardens.	6	5.1
35	Work in partnership with one or more local developers to design and establish a model sustainable development / "Sustainable House" in Ballarat.	6	5.1
37	Develop a new sustainability section on Council's website.	6	5.1
40	In association with Council's Blueprint Ballarat Committee, develop a regular biennial report card on the State of Ballarat's Environment.	7	5.1

No.	Action	Strategy	Section
RESTORING AND MAINTAINING NATURAL ASSETS			
49	Identify and map riparian zones and wetlands and update Schedule 2 of the ESO to protect all relevant waterways and wetlands within the municipality.	11	5.2.2
50	Continue improvement and management of public reserves, frontages and wetlands of the Yarrowee River and its tributaries by continuing to implement the LINC program.	11	5.2.2
59	Review and implement the Ballarat Stormwater Management Plan.	15	5.2.2
60	Implement the stormwater and water quality components of the City of Ballarat Water Action Plan.	15	5.2.2
62	Establish best practice stormwater management for all new developments.	15	5.2.2
63	Establish a water flow impact assessment process for new developments.	15	5.2.2
69	Undertake a biodiversity assessment of land managed by Council.	17	5.2.3
72	Develop and implement biodiversity management regimes for all sites on land managed by Council containing native biodiversity.	18	5.2.3
75	Review and implement the City of Ballarat Roadside Management Plan.	18	5.2.3
82	Develop biodiversity section on Council website and provide links to relevant sites containing information such as the values present in the municipality, biodiversity hotspots, sources of information, Landcare groups and planting species lists. (sub section of a new sustainability section: see Action 26).	20	5.2.3
87	Amend the Ballarat Planning Scheme to incorporate the revised Vegetation Protection Overlay.	22	5.2.3
89	Protect areas of high biodiversity value on private land through the Ballarat Planning Scheme by developing and applying a suitable schedule of the ESO (Biodiversity Protection).	22	5.2.3
90	Require mandatory biodiversity assessments and impact statements for all developments occurring in Environmental Significance Overlay (Schedule 2), Vegetation Protection Overlay (Schedule 1) areas and the proposed biodiversity protection ESO (see above).	22	5.2.3
93	Continue to support and promote the LINC program.	23	5.2.3
96	Continue involvement with Sustainable Gardening Australia to run programs in Ballarat for gardening businesses, nurseries and home gardeners.	23	5.2.3



No.	Action	Strategy	Section
REDUCING OUR RESOURCE CONSUMPTION AND EVERYDAY IMPACTS			
105	Continue partnership arrangements with DSE, CHW and the CMA's to advocate for a secure water supply for Ballarat and assist with the implementation of Our Water Our Future Ballarat Regional Action Plan and the Central Region Sustainable Water Strategy.	27	5.3.1
106	Research suitable alternative water supplies for Council assets and community facilities.	27	5.3.1
107	Facilitate the requirement for third pipe recycled water system infrastructure.	27	5.3.1
108	Facilitate the requirement for on-site stormwater collection and grey water treatment plants for multi-dwelling developments.	27	5.3.1
122	Continue implementation of the City of Ballarat Greenhouse Action Plan.	31	5.3.2
123	Participate in and assist with the implementation of the Central Victorian Solar Cities project.	31	5.3.2
125	Develop and implement a TravelSmart Green Transport Plan to reduce the financial and environmental costs of Council staff travelling to and from work.	31	5.3.2
127	Implement the Sustainable Public Lighting Action Plan.	31	5.3.2
129	Develop a plan for Council to become carbon neutral through the use of renewable energy and carbon off-setting.	31	5.3.2
132	Council to purchase Green Power.	31	5.3.2
133	Develop and apply a set of energy efficiency requirements for new residential developments that augment existing state planning and building energy efficiency standards.	32	5.3.2
134	Develop and apply a set of energy efficiency requirements for new industrial and commercial developments that augment existing state planning and building energy efficiency standards.	32	5.3.2
137	Establish energy efficient development workshops or information sessions for industry, businesses and home owners.	33	5.3.2
139	Develop a program of waste reduction with targets for each department within Council, including regular audits of waste volumes and types.	34	5.3.3
140	Finalise and implement a Waste Management Policy.	34	5.3.3
149	Establish a green/organic waste collection and composting facility, including establishment of a third bin system for residential properties.	35	5.3.3
156	Audit the municipal waste stream and communicate progress towards waste reduction targets to the community. Establish a regularly updated progress chart on Council's website.		

7. REFERENCES

- Centre for Regional Innovation and Competitiveness (2004).** Ballarat and District Water System Demand Management Study. Report prepared for Central Highlands Water, Ballarat, School of Business and University of Ballarat, Mt Helen, Victoria.
- City of Ballarat (1999).** Ballarat Region Conservation Strategy: A Strategy for Sustainable Living. City of Ballarat, Ballarat, Victoria.
- City of Ballarat (2002).** City of Ballarat Stormwater Management Plan. Prepared by Ecological Engineering P/L, Thompson Berrill Landscape Design P/L and Environment & Land Management P/L for the City of Ballarat, Ballarat, Victoria.
- City of Ballarat (2003).** Cities for Climate Protection: City of Ballarat Draft Local Greenhouse Action Plan. City of Ballarat, Ballarat, Victoria.
- City of Ballarat (2004).** Blueprint Ballarat. City of Ballarat, Ballarat, Victoria.
- City of Ballarat (2005a).** Ballarat Planning Scheme - Municipal Strategic Statement. City of Ballarat, Ballarat, Victoria.
- City of Ballarat (2005b).** Water Action Plan. City of Ballarat, Ballarat, Victoria.
- City of Ballarat (2007).** Draft Waste Management Policy. City of Ballarat, Ballarat, Victoria.
- DSE (2004a).** Climate Change in the Corangamite Region. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2004b).** Our Water Our Future: Securing Our Water Future Together. Victorian Government White Paper. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2004c).** Victoria in Future 2004: Victorian State Government Population and Household Projections 2001–2031. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2005a).** Our Environment Our Future: Sustainability Action Statement 2006. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2005b).** Our Environment Our Future: Victoria's Environmental Sustainability Framework. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2005c).** Our Water Our Future: Ballarat Regional Action Plan. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2005d).** Sustainability in Action: Towards Zero Waste Strategy. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2005e).** Victorian Greenhouse Strategy Action Plan Update. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2006a).** Energy Efficiency for Victoria: Action Plan. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2006b).** Sustainable Water Strategy Central Region: Action to 2055. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2006c).** Victorian Renewable Energy Action Plan. Victorian Government, Department Sustainability and Environment, Melbourne.
- DSE (2007).** Victorian Energy Efficiency Target Scheme: Issues Paper March 2007. Victorian Government, Department Sustainability and Environment, Melbourne.
- George Wilkenfeld & Associates (1998).** Household Energy Use in Australia: End Uses, Greenhouse Gas Emissions and Energy Efficiency Program Coverage. Report prepared for the Appliance Energy Labelling Review Committee and the National Appliance and Equipment Energy Efficiency Committee.
- Steering Committee of the Ballarat Region Conservation Strategy (1991).** Ballarat Region Conservation Strategy: A Strategy for Sustainable Living. Steering Committee of the Ballarat Region Conservation Strategy, Ballarat, Victoria.
- URS Australia Pty Ltd (2006).** National GreenPower Accreditation Program Annual Audit. Audit Period 1 January 2005 to 31 December 2005. Prepared for The National GreenPower Steering Group. North Sydney, New South Wales, Australia.

APPENDIX 1. LIST OF CONVENTIONS, FRAMEWORKS, AGREEMENTS, POLICIES, PROTOCOLS, STRATEGIES AND PLANS

d= Pdf or Word Document; i= Internet; h= Hardcopy

Format*	Title	Year	URL	Biodiversity, land & wetland protection	Energy Conservation	Water Conservation	Waste	Air
	INTERNATIONAL							
d	United Nations Conference on Environment and Development (Agenda 21)	1992	http://www.un.org/esa/sustdev/documents/agenda21/	✓	✓	✓	✓	✓
i	Convention on Biological Diversity	1993	http://www.biodiv.org/convention/articles.asp	✓				
i	Cartagena Protocol on Biosafety	2000	http://www.biodiv.org/biosafety/default.asp	✓				
d	Global Strategy for Plant Conservation	2002	http://www.biodiv.org/programmes/cross-cutting/plant/default.shtml	✓				
d	Kyoto Protocol	2005	http://unfccc.int/essential_background/kyoto_protocol/items/2830.php		✓			
i	United Nations Framework Convention on Climate Change		http://unfccc.int		✓			
i	Red List of Threatened Species	2004	http://www.redlist.org/	✓				
i	Convention on the Conservation of Migratory Species of Wild Animals (BONN)		http://www.cms.int	✓				
i	Japan-Australia Migratory Birds Agreement	1981	http://www.austlii.edu.au/au/other/dfat/treaties/1981/6.html	✓				
i	China-Australia Migratory Birds Agreement	1988	http://www.austlii.edu.au/au/other/dfat/treaties/1988/22.html	✓				
	NATIONAL							
i	National Strategy for the Conservation of Australia's Biological Diversity	1996	http://www.deh.gov.au/biodiversity/publications	✓				
i	National Framework for the Management and Monitoring of Australia's Native Vegetation	2000	http://www.deh.gov.au/land/publications/nvf/index.html	✓				
d	National Weeds Strategy	1999	http://www.daff.gov.au/brsweeds	✓				
d	National Greenhouse Strategy	1998	http://ngs.greenhouse.gov.au/		✓			

Format*	Title	Year	URL	Biodiversity, land & wetland protection	Energy Conservation	Water Conservation	Waste	Air
	National Soil Conservation Strategy	1998		✓				
d	Wetlands Policy of the Commonwealth Government of Australia	1997	http://www.deh.gov.au/water/wetlands/about.html#policy	✓				
i	National Strategy for Ecologically Sustainable Development	1992	http://www.deh.gov.au/esd/national/nsesd/	✓	✓	✓	✓	✓
i	Intergovernmental Agreement on the Environment	1992	http://www.deh.gov.au/esd/national/igae/index.html	✓	✓	✓		✓
	Ozone Protection Strategy	1989						✓
d	Our Community our Future: A Guide to Local Agenda 21	1999	http://www.deh.gov.au/esd/la21/index.html	✓	✓	✓	✓	✓
d	Our Vital Resources: A National Action Plan for Salinity & Water Quality	2000	http://www.napswq.gov.au/			✓		
d	Feasibility Study – A National Approach to Energy Efficiency Measures for Houses	2000			✓			
d	Integrated National Strategy for Lowering Emissions from Urban Traffic	No date	http://www.atcouncil.gov.au/documents/emissions_strategy.aspx		✓			
d	National Local Government Bio-diversity Strategy	2000	http://www.alga.net.au	✓				
d	National Objectives and Targets for Biodiversity Conservation 2001-2005	2001	http://www.deh.gov.au/biodiversity/publications/objectives/index.html	✓				
i	National Framework for Energy Efficiency	In prep	http://www.nfee.gov.au/		✓			
d	Towards a National Framework for Energy Efficiency – Issues and Challenges	2003	http://www.nfee.gov.au/		✓			

Format*	Title	Year	URL	Biodiversity, land & wetland protection	Energy Conservation	Water Conservation	Waste	Air
	STATE							
d/h	Our Environment Our Future: Victoria's Environmental Sustainability Framework	2005	http://www.dse.vic.gov.au	✓	✓		✓	✓
d/h	Our Environment Our Future: Sustainability Action Statement 2006	2006	http://www.dse.vic.gov.au	✓	✓		✓	✓
d/h	Inquiry into Sustainable Communities	2005	http://www.parliament.vic.gov.au/enrc/inquiries/sustainablecommunities/	✓	✓	✓	✓	✓
d	Learning to Live Sustainably: Victoria's approach to learning base change for environmental sustainability (Draft)	2005	http://www.dse.vic.gov.au	✓	✓	✓	✓	✓
h	Victorian Greenhouse Strategy	2002			✓			
d	Victoria's Greenhouse Strategy Action Plan Update Action: Responding to Global Warming	2005	http://www.greenhouse.vic.gov.au/		✓			
h	Victoria's Native Vegetation Management: A Framework for Action	2002	http://www.dse.vic.gov.au	✓				
d	Victorian Pest Management – A Framework For Action	2002	http://www.dse.vic.gov.au/dse	✓				
d	Victorian Pest Management – Public Land Pest Management Strategy	2002	http://www.dse.vic.gov.au/dse	✓				
d	Victorian Pest Management – Fox Management Strategy	2002	http://www.dse.vic.gov.au/dse	✓				
d	Victorian Pest Management – Rabbit Management Strategy	2002	http://www.dse.vic.gov.au/dse	✓				
d	Victorian Pest Management – Weed Management Strategy	2002	http://www.dse.vic.gov.au/dse	✓				
h	Victoria's Biodiversity Strategy: Directions in Management Our Living Wealth Sustaining Our Living Wealth	1997	http://www.nre.vic.gov.au/plntanml/biodiversity/	✓				

Format*	Title	Year	URL	Biodiversity, land & wetland protection	Energy Conservation	Water Conservation	Waste	Air
h	Our Water Our Future: Securing Our Water Future Together	2004	Http://www.dse.vic.gov.au/waterfuture			✓		
d	Sustainability in Action: Towards Zero Waste Strategy	2005	http://www.ecorecycle.sustainability.vic.gov.au				✓	
d	Policy and Planning Guidelines for Developing Wind Energy Facilities in Victoria	2003	http://www.seav.sustainability.vic.gov.au/renewable_energy/policies_and_initiatives/wind_policy_and_planning_guidelines.asp		✓			
d	EPA - Industrial Waste Management Policy (Protection of the Ozone Layer) and Policy Impact Assessment	2001	http://www.epa.vic.gov.au/Publications/Legislation/sepps.asp					✓
d	EPA - State Environment Protection Policy (Ambient Air Quality)	1999	http://www.epa.vic.gov.au/Publications/Legislation/sepps.asp					✓
d	EPA - State Environment Protection Policy (Air Quality Management)	2001	http://www.epa.vic.gov.au/Publications/Legislation/sepps.asp					✓
d	EPA - State Environment Protection Policy (Prevention and Management of Contamination of Land)	2002	http://www.epa.vic.gov.au/Publications/Legislation/sepps.asp					
d	EPA - State Environment Protection Policy (Groundwaters of Victoria)	1997	http://www.epa.vic.gov.au/Publications/Legislation/sepps.asp	✓				
d	EPA - State Environment Protection Policy (Waters of Victoria)	2003	http://www.epa.vic.gov.au/Publications/Legislation/sepps.asp	✓				
REGIONAL								
d/h	Ballarat Region Action Plan: A Strategic Review	2004		✓	✓	✓		
d/h	Glenelg Hopkins Regional Catchment Strategy	2003	http://www.glenelg-hopkins.vic.gov.au/	✓				
h	Glenelg Hopkins Weed Action Plan	2000	http://www.glenelg-hopkins.vic.gov.au/	✓				
h	Glenelg Hopkins Rabbit Action Plan	2000	http://www.glenelg-hopkins.vic.gov.au/	✓				
h	Glenelg Hopkins Rural Drainage Strategy (Draft)	2002	http://www.glenelg-hopkins.vic.gov.au/	✓				

Format*	Title	Year	URL	Biodiversity, land & wetland protection	Energy Conservation	Water Conservation	Waste	Air
h	Glenelg Hopkins Flood Plain Strategy	1999	http://www.glenelg-hopkins.vic.gov.au/	✓				
h	Glenelg Hopkins River Health Strategy (Draft)	2002	http://www.glenelg-hopkins.vic.gov.au/	✓				
h	Glenelg Hopkins Land Care Strategy (Draft)	No date	http://www.glenelg-hopkins.vic.gov.au/	✓				
h	Glenelg Hopkins Nutrient Management Plan	2001	http://www.glenelg-hopkins.vic.gov.au/	✓				
h	Glenelg Hopkins Native Vegetation Plan (Draft)	2000	http://www.glenelg-hopkins.vic.gov.au/	✓				
	Salinity Plan (Draft)	2002		✓				
	North Central Regional Catchment Strategy	2003	http://www.nccma.vic.gov.au/	✓				
	North Central Native Vegetation Plan (Draft)	2000	http://www.nccma.vic.gov.au/	✓				
	North Central Weed Action Plan 2001-2005		http://www.nccma.vic.gov.au/	✓				
	North Central Rabbit Management Action Plan 2000-2005		http://www.nccma.vic.gov.au/	✓				
h	Corangamite Regional Catchment Strategy	2003	http://www.ccma.vic.gov.au/	✓				
	Corangamite Native Vegetation Plan		http://www.ccma.vic.gov.au/	✓				
h	Corangamite Regional Nutrient Management Plan	2000	http://www.ccma.vic.gov.au/	✓				
d/h	Our Water Our Future: Ballarat Regional Action Plan	2005	http://www.dse.vic.gov.au			✓		
d/h	Our Water Our Future: Sustainable Water Strategy Central Region, Action to 2055	2006	http://www.dse.vic.gov.au			✓		

Format*	Title	Year	URL	Biodiversity, land & wetland protection	Energy Conservation	Water Conservation	Waste	Air
	LOCAL (CoB)							
d	Blueprint Ballarat	2004	http://www.ballarat.vic.gov.au	✓	✓	✓	✓	
d	Municipal Strategic Statement	2005	http://www.ballarat.vic.gov.au	✓	✓	✓	✓	
i	Ballarat Planning Scheme			✓		✓	✓	
d/h	Cities for Climate Protection – City of Ballarat Greenhouse Action Plan (draft)	2003			✓			
d/h	City of Ballarat Water Action Plan	2005	http://www.ballarat.vic.gov.au			✓		
d	Ballarat and District Water System and Demand Management Study	2004				✓		
d/h	Canadian Valley Outline Development Plan	2005	http://www.ballarat.vic.gov.au	✓		✓		
h	Lake Wendouree Water Supply Investigations	2005				✓		
d/h	City of Ballarat Native Vegetation Mapping and Review of the Vegetation Overlay (VPO1)	2005	http://www.ballarat.vic.gov.au	✓				
h	City of Ballarat Roadside Management Plan	No date		✓				
c	LINCS Strategy	1995	http://www.ballarat.vic.gov.au/customWeb/Lincs/index.htm	✓				
	Yarrowee River Plan			✓				
d/h	Ballarat Region Conservation Strategy	1999	http://www.ballarat.vic.gov.au/customweb/ConservStrat/index.html	✓				
h	Ballarat Strategy Plan	1998			✓			
	Industrial Land Use Strategy	2005		✓				
	Ballarat Open Space Strategy	(in prep.)		✓				
	Ballarat Central Business Area Strategy 1995	1995						
d	Ballarat Stormwater Management Plan 2002	2002				✓		

Format*	Title	Year	URL	Biodiversity, land & wetland protection	Energy Conservation	Water Conservation	Waste	Air
	Buninyong Outline Development Plan			✓				
	Invermay Regional Study and Land Management Plan 1991	1991		✓				
	Miners Rest Outline Development Plan			✓				
	Mount Clear Outline Development Plan			✓				
	Nerrina & Brown Hill Outline Development Plan			✓				
	South West Sebastopol Outline Development Plan			✓				
h	Ballarat Bicycle Strategy	2008			✓			
	OTHER							
i	Regional environmental strategies: How to prepare and implement them: A guide for local government, regional organisations, catchment and landcare groups	1997	http://www.alga.net.au	✓				
d	Triple bottom line assessment: an examination of the economic, environmental and social costs and benefits of strategic waste management options		http://www.ecorecycle.sustainability.vic.gov.au/resources/documents/TZW_TBLFinal03v2.pdf	✓	✓	✓	✓	✓
i	EcoBuy		http://www.mav.asn.au/buyrecycled/		✓		✓	
i	EcoRecycle Website: Highlands Regional Waste Management Group Waste Wise Schools Program Waste Wise Events Program Waste Wise Communities Waste Wise Office Toolkit Best Practice Kerbside Recycling Program		http://www.ecorecycle.sustainability.vic.gov.au		✓		✓	

Format*	Title	Year	URL	Biodiversity, land & wetland protection	Energy Conservation	Water Conservation	Waste	Air
i	Sustainable Energy Authority Victoria Website: Business Energy Innovation Initiative Commercial Office Building Energy Innovation Initiative Energy Task Force Renewable Energy Support Fund Sustainable Energy Innovation in Educational Facilities Sustainable Public Lighting Victorian Solar Innovation Initiative 5 Star home standard Green Power Australian Building Greenhouse Rating Scheme		http://www.seav.sustainability.vic.gov.au		✓			
i	Sustainability Victoria On October 1 2005, Sustainable Energy Authority Victoria and Sustainability Victoria joined forces to become Sustainability Victoria. Sustainability Victoria will act as a catalyst for change by: <ul style="list-style-type: none"> • providing a vehicle to support the tangible delivery of the State Government's Framework for Environmental Sustainability; • focusing on changing behaviour by providing advice and assistance to inform decision-making by individuals, businesses, governments and communities to act in a more environmentally sustainable way; and • facilitating innovation through supporting the development and application of technologies and processes that will produce change that may not otherwise garner support. 		http://www.sustainability.vic.gov.au		✓	✓	✓	✓
l	Sustainable Manufacturing		http://www.seav.sustainability.vic.gov.au/manufacturing/sustainable_manufacturing		✓			
l	Green Building Council of Australia 'Green Star' program		http://www.gbcaus.org/		✓	✓	✓	✓
l	Australian Building Greenhouse Rating		http://www.abgr.com.au		✓			
l	EPA Programs <ul style="list-style-type: none"> • Sustainability Covenants • Business Sustainability • Eco-footprint • Sustainability Fund Greenhouse Program Neighbourhood Environment Improvement Plans Victorian Stormwater Action Program		http://www.epa.vic.gov.au/Programs/	✓	✓	✓		

APPENDIX 2. SUSTAINABILITY PROGRAMS AND INITIATIVES

d= Pdf or Word Document; i= Internet; h= Hardcopy

Programs and Initiatives	Purpose	Responsible Organisations	Web
BIODIVERSITY			
Catchment Management Authority programs	Waterway, revegetation, land management programs	CCMA/NCCMA/GHCMA	
LINCS	Revegetation program	Ballarat Environment Network/CoB/CCMA	
Leigh Catchment Group programs	Revegetation and conservation project funding, support and education	Leigh Catchment Group/CCMA	
Landcare	Revegetation and land restoration program/network	DSE/Landcare Australia/CMA	
Ballarat Region Seedbank	Native plant seed suppliers and education programs	Creswick Landcare Centre/DSE/CoB	
Victorian Landcare Centre Education Programs	Revegetation and land rehabilitation education programs		
Planning scheme overlays	Statutory controls	Victorian Government/City of Ballarat	
Envirofund	Environmental project funding program	Department of Environment and Heritage	
Mitre 10 junior landcare grants	Environmental project funding program	Mitre 10	
Frogwatch	Educational and monitoring program	DSE	
Bushtender/Plains Tender	Environmental project funding program		
Trust for Nature	Land purchase, conservation covenants and a revolving fund program		http://www.tfn.org.au/
BIRD website	Environmental information and news resource		http://bird.net.au
Friends Groups	Conservation reserve interest group		http://home.vicnet.net.au/%7Efriends/
Gorse Task Force	Gorse control program		
Field Naturalists	Plant and animal interest group. Survey program		
Conservation Volunteers Australia programs	Conservation activities program for volunteers		
Greening Australia programs	Landscape protection and rehabilitation and educational programs		http://www.greeningaustralia.org.au
Greencorp	Conservation and Land Management traineeship program		
Weedbuster	Educational/awareness raising initiative	Australian Government/Weeds Australia	http://www.weedbusterweek.info.au/
Significant Roadside Signage Program	Identification and labelling of significant roadside vegetation and fauna habitat	CoB/VicRoads	

Programs and Initiatives	Purpose	Responsible Organisations	Web
Land for Wildlife	Wildlife conservation education and accreditation program	DSE	
Parks Victoria Community Grants Program	To assist community groups to achieve positive environmental outcomes in States/National Parks	Parks Victoria	http://www.parkweb.vic.gov.au
SWIFFT (South-west Integrated Flora and Fauna Team)	Threatened species program	DSE	
Rivercare	Waterway conservation initiative	Australian Government/NHT	
Rabbit Free program	Rabbit management program	DSE	
Fox on the Run program	Fox management program	DSE	
Weeds and Pests on Public Land (Including National Parks) Initiative (inc. Good Neighbour program)	Four-year State Government initiative to commence major weed and pest animal control projects in National Parks, State Forest and other public land	DSE	
Tackling Weeds on Private Land initiative	Three-year State Government initiative aiming to encourage land managers to work collaboratively to manage weeds	DSE	
WATER			
Water restrictions	Water saving regulations	Central Highlands Water	
Waterwatch	Water quality monitoring and education program		
Water saving product rebate program	Water saving initiative	Victorian Government	
Water Efficiency and Labelling Standards Scheme	Water saving initiative		
Reduced flow rate fittings for households– Plumbing regulations	Water saving initiative		
Building Water Efficiency rating/labelling	Water saving initiative		
Clearwater Program	Urban stormwater management initiative	MAV/Stormwater Industry Association of Victoria/EPA	http://www.clearwater.asn.au/
GreenPlumbers Program	Training and accreditation program for plumbers	Master Plumbers and Mechanical Services Association of Australia	http://www.greenplumbers.com.au/
Victorian Stormwater Action Program	Three-year grant program to assist local government with the development and implementation of their Stormwater Management Plans	EPA	

Programs and Initiatives	Purpose	Responsible Organisations	Web
ENERGY			
Cities for Climate Protection	Greenhouse gas reduction program	Australian Greenhouse Office	http://www.greenhouse.gov.au/solarcities/
5 Star home standard	Energy efficiency initiative	Sustainability Victoria	http://www.sustainability.vic.gov.au
Solar Cities Program	Renewable energy initiative	Australian Greenhouse Office, CVGA	http://www.greenhouse.gov.au/solarcities/
Solar energy rebate program	Sustainable energy production initiative	Australian Greenhouse Office/Sustainability Victoria	http://www.greenhouse.gov.au
Solar hot water rebate program	Energy efficiency initiative	Sustainability Victoria	http://www.sustainability.vic.gov.au
High Efficiency Gas Heater Rebate	Energy efficiency initiative	Sustainability Victoria	http://www.sustainability.vic.gov.au
High Efficiency Gas Hot Water Rebate	Energy efficiency initiative	Sustainability Victoria	http://www.sustainability.vic.gov.au
Green Power	Greenhouse gas reduction initiative	Sustainability Victoria/Electricity retailers	http://www.sustainability.vic.gov.au
Greensmart	Training and accreditation program for builders, designers and manufacturers	HIA/Australian Greenhouse Office	http://www.greensmart.com.au/
Energy Task Force	Assists low income Victorians to cut their energy bills, improve the comfort and quality of their homes and participate in job training opportunities	Sustainability Victoria	http://www.sustainability.vic.gov.au
Sustainable Energy Innovation in Educational Facilities	Program to identify cost-effective and commercially viable energy efficiency measures in educational facilities	Sustainability Victoria/Department of Education and Training	http://www.sustainability.vic.gov.au
Sustainable Public Lighting	Develop and showcase sustainable energy in public lighting	Sustainability Victoria	http://www.energy-toolbox.vic.gov.au/publiclighting/
Victorian Solar Innovation Initiative	\$3 million over four years which aims to encourage the innovative use of solar energy design and technology, and demonstrate their application in buildings which are widely used by the community	Sustainability Victoria	http://www.sustainability.vic.gov.au
Renewable Energy Support Fund	Encourage innovative applications of medium-scale proven renewable energy technologies in Victoria, such as energy generated from farm waste or mini-hydro projects	Sustainability Victoria	http://www.sustainability.vic.gov.au
Business Energy Innovation Initiative	The Business Energy Innovation Initiative assists Victorian businesses to significantly improve performance and productivity by helping them to identify, evaluate and invest in leading energy efficient solutions. Includes funding program	Sustainability Victoria	http://www.sustainability.vic.gov.au

Programs and Initiatives	Purpose	Responsible Organisations	Web
Commercial Office Building Energy Innovation Initiative	Assists developers, property owners and tenants to demonstrate innovation in the design and application of sustainable energy. Includes funding program	Sustainability Victoria	http://www.sustainability.vic.gov.au
Australian Building Greenhouse Rating scheme	Energy efficiency/greenhouse rating for buildings	NSW Department of Energy, Utilities and Sustainability (DEUS)	http://www.abgr.com.au
Greenhouse Program	Energy efficiency program for EPA licence holders	Environment Protection Authority	http://www.epa.vic.gov.au
TravelSmart	TravelSmart aims to reduce people's dependency on cars and persuade them to choose sustainable travel alternatives such as travelling by public transport, cycling and walking	Victorian Government	http://www.travelsmart.vic.gov.au/
WASTE			
Clean Up Australia Day	To assist community groups to clean up waste from local parks, reserves, creeks and waterways	Clean Up Australia	http://www.cleanup.com.au
Kerbside recycling program	Kerbside collection program	City of Ballarat	
Best Practice Kerbside Recycling Program	Guidelines and support program for developing Best Practice Kerbside Recycling programs	National Packing Covenant/Sustainability Victoria	http://www.sustainability.vic.gov.au
Litter, waste management and recycling grants program	Grants program for waste management	Sustainability Victoria	http://www.ecorecycle.sustainability.vic.gov.au
Waste Wise Schools Program	Education and support program for waste and litter programs in schools	Sustainability Victoria	http://www.sustainability.vic.gov.au
Waste Wise Events Program	Tools and advice to event organisers on how to create effective recycling and waste management systems at public events	Sustainability Victoria	http://www.sustainability.vic.gov.au
Waste Wise Communities	Assists groups, organisations, local governments, clubs, retailers, restaurants and small business to reduce waste for the benefit of our environment	Sustainability Victoria	http://www.sustainability.vic.gov.au
Waste Wise Business	Certification, information and support program for business	Sustainability Victoria	http://www.sustainability.vic.gov.au
Waste Wise Office Toolkit	Structure and the tools to successfully implement an office waste management program	Sustainability Victoria	http://www.sustainability.vic.gov.au
Higher Education Waste Reduction Manual	Information and support for higher education institutions to manage waste	Sustainability Victoria	http://www.sustainability.vic.gov.au
Mobile Muster	Official mobile phone recycling program	Australian Mobile Telecommunications Association	http://www.amta.org.au

Programs and Initiatives	Purpose	Responsible Organisations	Web
drumMuster	National program for the collection and recycling of empty, cleaned, non returnable crop production and on-farm animal health chemical containers		http://www.drummuster.com.au/
Product Stewardship for Oil Program	Used oil recycling program	Australian Government (DEH)	
ChemClear (in development)	Agricultural chemical collection program	AGSAFE	
AIR			
Airwatch	Environmental education program where students learn about air pollution through 'hands-on' social and air monitoring activities	EPA	http://www.epa.vic.gov.au
GENERAL SUSTAINABILITY			
Victorian Local Sustainability Accord	Initiative to strengthen cooperative efforts between local governments and the Victorian Government for the environmental sustainability of Victoria	Victorian Government (DSE)	
Sustainability Fund	Established to provide a resource to support projects and initiatives that will foster the environmentally sustainable use of our resources and best practices in waste management	Sustainability Victoria	http://www.sustainability.vic.gov.au
EcoBuy	Program that supports local government and businesses in purchasing environmentally friendly products	MAV	http://www.mav.asn.au/buyrecycled/
Green Star program	Environmental rating system for buildings	Green Building Council of Australia	http://www.gbcaus.org/
The Sustainables Household Challenge		DSE	
Sustainability Covenants	Sustainability covenants are voluntary agreements through which EPA and a company, a group of companies or an industry sector can explore new commercial opportunities by using creative ways of reducing the environmental impact of their products and services	EPA	http://www.epa.vic.gov.au
Brian Robinson Fellowship for Environmental Sustainability	Fellowship to nurture young people making a significant contribution to the future sustainability of Victoria.	EPA	http://www.epa.vic.gov.au
Eco-footprint	Tool to measure ecological performance	EPA	http://www.epa.vic.gov.au
Neighbourhood Environment Improvement Plans	Framework for development of a local community plan to address environmental issues	EPA	http://www.epa.vic.gov.au

APPENDIX 3 PROPOSED LIVESMARTBALLARAT SUSTAINABILITY POLICY

LiveSmart Ballarat City of Ballarat Sustainability Policy

Background

Sustainability involves meeting present needs whilst not compromising the ability of future generations to meet their own needs. It is a process of continually improving the way we live, minimising costs to the environment and avoiding depletion of natural resources. This involves consideration of current ecological, social and economic environments and managing these for ourselves and for future generations.

A commitment to sustainability means following the guiding principles of ecological sustainable development (ESD) and creating objectives for sustainable practice that enhance the health of people and our natural environment, provide or support social justice and ultimately ensure prosperity.

We have to be resolute and resourceful in achieving sustainability. We need to understand that resources are finite, that the way we are currently living is in excess of the level that can be sustained and that change must occur to ensure the future for generations to come.

The City of Ballarat is developing and implementing this Sustainability Policy, "LiveSmartBallarat", to ensure that all new development within the municipality achieves leading practice in sustainability. This imperative derives from:

- Council's vision for the municipality to be a leader in sustainability and sustainable development;
- The need to proactively address the current, extremely serious, climate change challenges for Ballarat, in particular reduced rainfall and water shortages;
- The direction presented in Council's key strategic documents, including Blueprint Ballarat and the Municipal Strategic Statement;
- The direction presented in Council's new Ballarat Environmental Sustainability Strategy;
- Introduction of the new Clause 56 Residential Subdivision into the Planning Scheme which aims to achieve more liveable and sustainable communities; and
- Significant growth projections for Ballarat, including residential, commercial and industrial development.

In line with State Government Policy and the City of Ballarat's strategic framework, Council and the Ballarat community must:

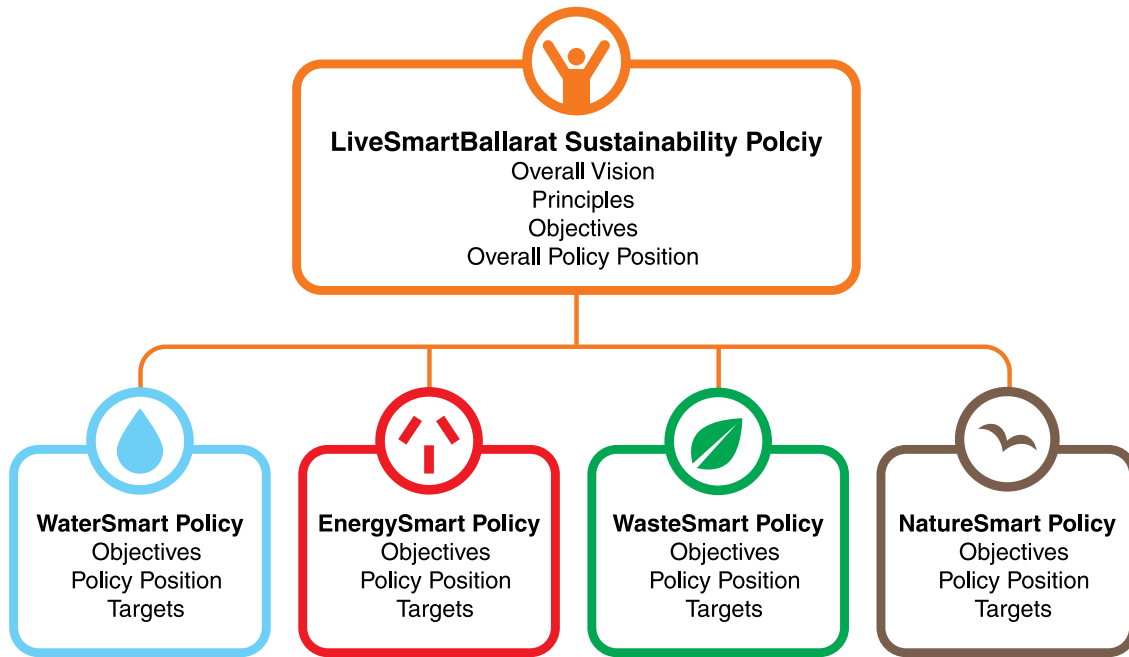
- Respond to the challenge of climate change;
- Maintain and restore our natural environment;
- Use our resources more efficiently;
- Reduce our environmental impact; and
- Display strong leadership to our community.

Purpose

The purpose of the LiveSmartBallarat Policy is to establish and commit Ballarat as a sustainable city and to set policy positions for how this will be achieved. The Policy provides a combination of policy guidance, regulation and incentives to achieve sustainability.



Policy Structure



Vision

The City of Ballarat is a leader in environmental sustainability with its commitment to organisational change to achieve sustainability. The natural environment within the city is well protected and Council staff, businesses and residents show strong support for sustainability through initiatives to reduce resource consumption and waste production. (source Draft Ballarat Environmental Sustainability Strategy, 2006)

Sustainability Principles

The following principles are identified as essential for guiding progress towards sustainability:

- **Leading by example** – achieve leading practice and continuous improvement in Council’s own operations and in the way it supports others;
- **Proactive action** – council acts proactively to establish a vision for sustainability for the city and to encourage leading practice by all residents and businesses;
- **Ecological integrity** - protection and restoration of natural assets which are fundamental to sustaining natural life;
- **Integration** - application of an integrated economic, social and environmental decision making and action process;
- **Long-term planning** - application of long term thinking to planning and decision making beyond traditional political terms;
- **Precautionary approach** – prevention of environmental degradation is not delayed due to lack of full scientific certainty;
- **Equity** – ensuring fairness and equal access to opportunities for our current community and future generations; and
- **Whole of community approach** - change requires awareness and participation by all sectors of the community.

Overall Sustainability Objectives

The Policy and its implementation will:

- Clearly identify and communicate Council's vision and expectations with respect to sustainability;
- Establish Council as a leader in working towards sustainability;
- Establish partnerships between Council, community and businesses to undertake productive and beneficial projects;
- Integrate sustainability objectives into planning and design for new and existing developments;
- Establish mechanisms and processes to facilitate sustainable development, including practice notes and assessment and monitoring tools;
- Address sustainability issues relating to water conservation, water quality / waterway health, stormwater management, greenhouse gas reduction, natural resource / materials conservation and native vegetation/biodiversity protection;
- Identify opportunities with the greatest potential to improve sustainability and respond to these as a priority;
- Ensure consideration and assessment of on-site and off-site impacts of development; and
- Ensure appropriate consideration is given to both long and short term outcomes and benefits.

Overall Policy Position



The City of Ballarat will achieve its sustainability vision and objectives by:



1. **Developing a Culture of Sustainability.** This involves making sustainability integral to Council's operations and supporting and influencing others to achieve a culture of sustainability. Integrating sustainability into all of Council's operations is essential to achieving a sustainable future and for Council to achieve status as a leader in the field;
2. **Restoring and Maintaining Natural Assets.** This involves protecting and enhancing the city's precious natural assets that are fundamental to supporting all life on earth. Intrinsic to this is understanding the benefits provided by all natural systems before making decisions about their use. Applying an ecosystems services approach, this includes consideration of the contribution of natural assets to all aspects of our life and economy, e.g. clean air and water; and
3. **Reducing our Resource Consumption and Everyday Impact.** This involves using our natural resources and raw materials as sparingly as possible, focusing our resource consumption on renewable sources, reusing or recycling resources that we have used and avoiding the production of waste.

The following table identifies proposed targets for improvement in environmental performance and against which performance can be assessed. The basis for these targets is explained, and is generally a target identified in a state, regional or local strategic document.



City of Ballarat WaterSmart, EnergySmart, WasteSmart and NatureSmart Policies

Policy Theme	Objective(s)	Policy Position	Target	Basis for target
	<ul style="list-style-type: none"> Reduce water consumption, in particular potable water; Match quality of water to type of use; Reduce stormwater run-off and increase onsite detention; Improve stormwater quality; Achieve leading practice water sensitive urban design; and Enhance and protect our waterways and wetlands. 	<ol style="list-style-type: none"> Apply hierarchical alternative water supply provisions for new developments. Key provision requirements include: <ul style="list-style-type: none"> Supply of treated wastewater to all new major developments within reasonable proximity to existing / future wastewater treatment plants; Provision of on-site grey water recycling for significant multi dwelling developments for supply of toilet cisterns and outdoor watering; Provision of a minimum of 2000 litre tanks connected to toilet cisterns and for outdoor use for all new residential developments; and Provision of rain water tanks for all commercial, industrial developments connected to toilet cisterns and for outdoor use commensurate to roof size, on site demand and pre-development natural run off flows. New developments and major renovations to demonstrate 25% reduction in water consumption from base levels (pre water restrictions) using an endorsed method. Voluntary use of electronic (web-based) sustainable building assessment tools (eg. STEPS & SDS) for all new developments and redevelopment of land within established urban areas. 	<ol style="list-style-type: none"> 15% of 1999/2000 levels sustained community reduction by 2008. 25% reduction in water consumption for new developments. All new development meets with stormwater Best Environmental Practice. STEPS/SDS targets where applicable. 	<ul style="list-style-type: none"> Ballarat Water Action Plan; and Victorian 'aspirational' target for water reduction in government White Paper.
	<ul style="list-style-type: none"> Reduce production of greenhouse gasses; Reduce energy consumption / maximise use of passive solar design; Increase the use of renewable energy sources and GreenPower; Encourage use of renewable energy sources; Increase the use of public transport; and Educate and assist the community to adopt energy conservation practices. 	<ol style="list-style-type: none"> Mandatory gas solar hot water systems for all houses within residential developments in new growth areas. Minimum five star energy rating for all major extensions to existing dwellings. All new commercial and industrial buildings to have a minimum four star energy rating. Voluntary use of electronic (web-based) sustainable building assessment tools (eg. STEPS & SDS) for all new developments and redevelopment of land within established urban areas. At least 95% of all new allotments within residential subdivision to be within 400m of public transport. At least 70% of all allotments within residential subdivision to have correct solar orientation. Street reservations to be designed in an integrated way to provide for pedestrian and cyclists with other forms of transport. Sub-divisions to be designed to provide new dwellings with safe walkable distances to activity centres, schools, public open space and public transport. Require the installation of energy efficient street lighting in all new developments. 	<ol style="list-style-type: none"> 30% below 2000 levels by 2010. Zero net emissions by 2020. Consumption of electricity generated from renewable sources be increased to 10% by 2016. STEPS/SDS targets where applicable. 	<ul style="list-style-type: none"> Central Victorian Greenhouse Alliance targets; and Victorian Renewable Energy Scheme target.

Policy Theme	Objective(s)	Policy Position	Target	Basis for target
	<ul style="list-style-type: none"> Decrease consumption of products and materials used by Council; Increase recycling of waste produced by Council; Educate and support the community to decrease community waste generation and increase recycling rates; Reducing building and construction waste and littering; and Decrease littering and illegal rubbish dumping. 	<p>21. Use the EPA “Waste Hierarchy” as the basis of waste avoidance and materials recovery planning and decision making.</p> <p>22. Achieve best practice environmental management of waste and landfill sites.</p> <p>23. Actively involve its community, businesses and industries in waste reduction and recycling initiatives.</p> <p>24. Require developers to demonstrate a commitment to waste minimisation and the EPA “waste hierarchy” through the development approvals process.</p> <p>25. Become an accredited Waste Wise organisation and run or support only waste wise community events.</p>	<p>26. Recovery of 75% of solid waste (by weight) to be reused, recycled or converted to energy.</p> <p>27. Sectoral recovery rates achieved - Municipal waste (65%), Commercial and industrial waste (80%), Construction and demolition waste (80%).</p> <p>28. 25% improvement from 2003 levels in littering.</p>	<ul style="list-style-type: none"> State Government Toward's Zero Waste strategy.
	<ul style="list-style-type: none"> Improve the extent and quality of biodiversity within the City of Ballarat; Prevent the loss of remnant native vegetation and fauna habitat; and Increase community involvement in protecting and enhancing biodiversity. 	<p>29. Ensure that development and infrastructure projects do not threaten the viability of rare and/or threatened vegetation communities, flora and fauna.</p> <p>30. Require detailed biodiversity impact assessments to be undertaken for all developments occurring in areas covered by an ESO(2) or VPO(1).</p>	<p>31. Zero net loss of native vegetation.</p> <p>32. No further loss of threatened vegetation communities, flora or fauna.</p>	<ul style="list-style-type: none"> Victorian Native Vegetation Framework; FFG Act; EPBC Act; and Victoria's Biodiversity Strategy.

Implementation

The accountability for implementing this policy is assigned to the City of Ballarat's Senior Management team. Through this team, policies and procedures that influence and support key decision-making within Council will incorporate consideration of sustainability.

Training will be provided for Council staff in the application of this policy and all employees are responsible for developing an understanding of how their work functions are affected by this Sustainability Policy. As with issues such as Occupational Health and Safety, sustainability must become the responsibility of everyone.

As the Responsible Authority, Council is responsible for ensuring that the policy is complied with. This will involve amending the Planning Scheme and/or entering into an agreement with the relevant authorities and developers. Practice Notes and planning checklists will be developed, updated and communicated to developers to assist with implementation of the policy.

Review process

The LiveSmartBallarat Sustainability Policy will be reviewed biennially or as required in response to new information or changes to State and Federal regulations.

Date

March 2009



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