



# ENVIRONMENTAL MANAGEMENT STRATEGY

## LOCAL AGENDA 21

'Geelong's pathway to environmental sustainability'  
February 1999

### GEELONG IN PERSPECTIVE

The City of Greater Geelong has an approximate area of 1,300 square kilometres and a population of 184,800 (1997 estimate). It is Australia's eleventh largest city and Victoria's largest regional centre and municipality. It is a coastal city and the major commercial and service centre for south western Victoria.

The natural topography of Geelong includes Corio Bay and the Barwon River, the undulating hills of the Bellarine Peninsula, Barrabool Hills, Lovely Banks escarpment, You Yangs, Brisbane Ranges, Mount Duneed and the low lying wetlands of Reedy Lake/Lake Connewarre.

The land was known as 'Corayo' by the local Wathaurong aboriginal people and the bay was 'Jillong', meaning a place of the seabird over the white cliffs. In 1835, John Batman landed at Indented Head and explored the Bellarine Peninsula, Barrabool Hills and You Yangs. A treaty between Batman and the Watharong referred to the land as Geelong and, subsequently, the bay became Corio Bay.

There are a number of environmentally significant areas throughout the municipality. These include the Brisbane Ranges National Park, You Yangs Regional Park, Barwon River/Buckley Falls, Swan Bay, Reedy Lake, Lake Connewarre, Lake Victoria, Limeburners Bay and the north shore of Corio Bay, Breamlea wetlands, Serendip Sanctuary, Ocean Grove Nature Reserve and the numerous surf beaches. Many of the waterways and wetlands contain habitats that are classified as being of national and international importance due to the diversity of birdlife frequenting these areas throughout the year. Geelong falls within the Corangamite Catchment Region within which there are eighty-seven rare or threatened species listed under the Flora and Fauna Guarantee Act 1988.

It is clear that the diverse character of Geelong requires a holistic approach to environmental management to ensure that Geelong continues to function as a vital regional centre whilst protecting and enhancing its environmental values.

# CONTENTS

Foreword

Preface

Acknowledgments

Executive Summary

Chapter One - What we want for the City of Greater Geelong in the year 2010

Chapter Two - Introduction

Chapter Three - Preparation of the Strategy

Chapter Four - Questionnaire Results

Chapter Five - Analysis of the Strategy

Chapter Six - Air Quality

Chapter Seven - Energy Efficiency and Resource Use

Chapter Eight - Waste Management

Chapter Nine - Natural Environment and Waterways

Chapter Ten - Rural Environment

Chapter Eleven - Urban Environment

Chapter Twelve - Marine and Coastal Environment

Chapter Thirteen - Community Education

Chapter Fourteen - Summary of Critical & High Priority Actions

Chapter Fifteen - Implementation and Monitoring

Abbreviations

Glossary of Selected Terms

Appendices

References and Further Reading

# FOREWORD

Achieving a sustainable future will be one of the biggest challenges facing not only the City of Greater Geelong and its community but also the world in general in the next millennium.

In addressing the issue of sustainability it is important to recognise that the responsibility does not belong to someone else. It belongs to us, all of us, and we all must accept and respond to these issues. We also need to recognise that achieving sustainability will take a long term commitment as many of the changes we have to make will range from the immediate to the longer term. The time to start making these changes, however, is now.

The Council has prepared this Environmental Management Strategy - Local Agenda 21, as its response to the challenge made in 1992 at the Earth Summit in Rio de Janeiro.

This strategy has been prepared following a process of extensive community consultation and participation involving a wide cross-section of the community.

A draft Environmental Management Strategy was released for consultation on World Environment Day, 5 June, 1998 and has been amended to reflect both the comments put forward by the community and an achievable outcome within the next few years. The Council has now adopted this EMS, confirming its commitment to environmental management in Geelong.

The success of this Strategy will depend on commitment and co-ordination from the many and varied parties to the implementation of the recommended actions. I am confident from the overwhelming interest shown throughout the development of this Strategy that commitment exists. The Council will be working to undertake the actions listed and will be fostering and encouraging partnerships with the community to achieve improvements to our environment.

I encourage you to read this Strategy and think about ways in which you can make a contribution to improve our environment for both current and future generations.

**Cr Michael Crutchfield**

*Chairperson Environmental Management Strategy Steering Committee*

# PREFACE

The preparation of this Environmental Management Strategy (EMS) highlights the wide range of environmental issues facing Geelong. The consultation process has reminded those participating that we can only make real progress if there is broad agreement and co-operation between Council, community, business and industry.

The Strategy highlights the large number of environmental programs already being carried out by Council and other bodies and identifies a range of actions for future years. As this Strategy is aimed at achieving long-term sustainability, it is about developing an understanding of ecologically sustainable development and taking initial steps towards achieving it. The timeframes for the various actions range from the immediate to more than seven years.

The Strategy will help us:

- > to explain to a wide range of people what we mean by ecologically sustainable development;
- > to develop partnerships for program delivery;
- > to plan budgets to address identified problems;
- > to consider targets, timelines and responsibilities; and
- > to establish benchmarks.

If you would like to know more about this Strategy please contact:

**Senior Environmental Planner**

City of Greater Geelong  
PO Box 104  
GEELONG 3220

Telephone: 5227 0837

Facsimile: 5227 0855

Email: [bhumphries@geelongcity.vic.gov.au](mailto:bhumphries@geelongcity.vic.gov.au)

# ACKNOWLEDGMENTS

The preparation of the EMS was made possible by the contributions of many people who willingly gave up their time to complete questionnaires and to attend workshops and Steering Committee meetings. These people ranged from interested community members to representatives from industry, business, educational institutions, government departments, Councillors, Council officers and the project consultants.

This Strategy and the overall project was managed by Bruce Humphries (CoGG) and Sue Halstead-Lyons (AGC Woodward-Clyde Pty Ltd) under direction from Neil Savery (Director City Planning and Waterfront Geelong). Thanks are extended to all who have assisted in the preparation of this Strategy for their commitment, enthusiasm and support.

These are some of the many people who have contributed to the development of this Strategy:

## STEERING COMMITTEE MEMBERS

Councillor Michael Crutchfield	Chairperson
Councillor Rob Binnie	(appointed 22 April 1998)
Councillor Tim Santalucia	(appointed 22 April 1998)
Neil Savery	Manager - Integrated Planning
Mark Gerzee/Gareth Smith	Environment and Open Space Officer
Henk Egberts	Alcoa of Australia Ltd
Colin Briggs/Carney Doyle	Ford Motor Company of Australia Ltd
Tony Robinson/John Frame	Environment Protection Authority
Bill Middleton	Trust for Nature
Dr Bas Baskaran	Deakin University
Dr Barry Thomas	Landcare
Joan Lindros	Geelong Environment Council
Trevor Pescott	Geelong Field Naturalist Club
Rob Jolly/Amanda Hills	Department of Natural Resources and Environment
Steve Kauffman/Ian Grose	The Shell Company of Australia
John King	Teacher - Community Representative
Susan Howells	Victorian Wetlands Trust - Community Representative
Former Councillor Margrette Lewis	(until March 1998)

## WORKSHOP PARTICIPANTS

Paul Turner	Bryan Southall	Russell Irving
Allen Jones	Mark Rodrigue	Leanne Said
Dale Jennings	Tony Veitenheimer	Ross Lee
Rosemary Coleman	Kelly Bradley	Philip Walter
Aubrey Jones	Janine Blazer	Brian Gibbons
Vicky Blazer	Valda Dedman	Jo Kirtley
Therese Self	Leon McNamara	Jan Laidlaw
Georgia Quill	Peter Linaker	Alan Bremner
John Willet	Sue Gower	Jean Gardiner
Tony Woolford	Peter Carroll	Peter Byrnes
Mark Trengove	Richard Stone	Janine Bindokas
Fred Gower	Steve Sodomaco	Kevin McManus
Helene Robertson	Rosemary Faris	Kathy Barker
Helen Lucas	Nino Portaro	Glenda Brokling
Louise Hobbs	Jenny Baker	Ray Davey
Theo Comber	June Ryan	Trish Edwards
Mrs J Kloester	Martine Holdsworth	Stuart McCallum
Wendy Vaughan	Thomas Gartlan	Janet Day
Sue Longmore	Ann Magee	Peter Bufton
Judith Ross	Katrina Hedditch	Greg Sceneay
Marjory Magher	Peter Wasylewski	Franceska Dezelak
Jennifer Lyons	Stan Rodgers	Steve Williams
David May	Carolyn Jones	John Frame
Cr Anthony Aitken	Fiona Ray	

**COUNCIL OFFICERS**

Ian McCartney  
 Gavin Mathieson  
 Kathy Pippett  
 Neil Savery

Steve Adams  
 Kathryn Grundell  
 Chris Lewis  
 Ned Turcinov

Peter Jeffreys  
 Rob Giddings  
 Liz Horler  
 Richard Wojnarowski

**QUESTIONNAIRE PRODUCTION**

NCS Australasia Pty Ltd

**PARTICIPATING SCHOOLS**

Bellarine Secondary College  
 Belmont High School

Christian College  
 Newcomb Secondary College

Norlane High School

**EXECUTIVE OFFICER**

Bruce Humphries

Senior Environmental Planner

**PROJECT CONSULTANTS**

Sue Halstead-Lyons  
 Samantha Peck  
 Natalie Ward

AGC Woodward-Clyde Pty Ltd

**SUBMITTERS TO DRAFT STRATEGY**

The following people/organisations lodged written submissions on the draft Strategy

<b>SUBMISSION NUMBER</b>	<b>NAME OF SUBMITTER</b>
1	Geelong Environment Council Inc.
2	Recreation, Culture and Open Space Department (CoGG)
3	Richard Stone
4	Peter Bufton
5	Larry Waldron
6	Parks Victoria - Anne Casey - City and Bays Region
7	Swan Bay Integrated Catchment Management Committee
8	Department of Natural Resources and Environment
9	Jan Laidlaw - Save the Barwon Committee
10	Helene Bender
11	Geelong Community Forum
12	June Ryan
13	Victorian Farmers Federation - Bellarine Branch
14	Barwon Water
15	Bellarine Landcare Group
16	Corangamite Catchment Management Authority
17	Franceska Dezelak
18	The Geelong Chamber of Commerce
19	Deakin University

# EXECUTIVE SUMMARY

**The EMS is a document that aims to promote ecologically sustainable development within the City of Greater Geelong.**

At the Earth Summit held in Rio de Janeiro in 1992, Australia, together with over one hundred other countries, agreed on Agenda 21 - an agenda for sustainability in the twenty-first century. Chapter 28 of Agenda 21 required municipalities throughout the world to work with their communities to prepare their own versions of Local Agenda 21. (A copy of Chapter 28 is attached as Appendix 1).

A Local Agenda 21 is an environment strategy prepared by government and all sections of the community to establish a vision and to integrate programs for change. This EMS is therefore Council's Local Agenda 21 and represents a commitment to addressing global issues at the local level.

Ecologically sustainable development is the goal of a number of Commonwealth, State and local government strategies and agreements that require us to think about what it means to prevent damage to our environment, both now and in the future. It acknowledges that there are significant economic benefits in undertaking actions sooner rather than later.

This Strategy recognises that the management of the City's environment is not a task just for Council. Environmental sustainability is the sum of countless individual actions and the product between partnerships of different levels of government, business, industry, community and residents.

The Strategy has been prepared following a planning process that has seen representatives from a range of industries, government and community interests working with elected members and staff of Council. Preparation of the EMS began in May 1997, following a report to Council that outlined the proposed approach to the preparation of the Strategy. Council subsequently established a Steering Committee to oversee the project and appointed AGC Woodward-Clyde Pty Ltd to assist with the preparation of this Strategy.

A questionnaire and comment sheet was distributed to 4000 people throughout the municipality and the findings from this process highlighted the key environmental areas of most concern to the community. Three workshops were held, at which seven working groups focused on the specific issues of concern, identified actions to address these issues, determined who was responsible and prioritised each action.

A draft Strategy was launched on 5 June, 1998 and placed on public exhibition for four months. A Community Arts Talent Search competition was also launched at the same time, seeking submissions from local artists to provide artistic input into the final Strategy.

A total of nineteen submissions were received on the draft Strategy and ten entries into the Arts Search Competition. A detailed analysis of each submission was undertaken and the final Strategy was adopted by Council on 24 February 1999.

The completed Strategy, with its 250 Actions, spreads the responsibility for implementation over some 58 key participants, maintaining a sense of common purpose. Concerns may be raised as to what the Strategy will cost to implement. Whilst costings are provided in Chapter 14, it is argued that the real cost of ignoring the environment and rectifying the damage later cannot be calculated.

This Strategy concentrates on eight key areas of environmental aims and programs to promote sustainability. These are:

- > Air quality
- > Energy efficiency and resource use
- > Waste Management
- > Natural environment and waterways
- > Rural environment
- > Urban environment
- > Marine and coastal environment
- > Community education

The critical recommendations from this Strategy include the following:

- > Prepare a detailed inventory of all greenhouse gas sources and emissions in the municipality. (AQ 7)
- > Establish a high profile Industrial Air Quality Improvement Trial Program with major local industry to demonstrate how air quality emissions can be reduced over the long term and regularly report results. (AQ 18)
- > Undertake a review of the *Energy Conservation Strategy 1995* with respect to timelines and implement the recommendations. (EU 2)
- > Investigate the 'real cost' of waste disposal and identify the relative costs of services as a means of encouraging waste minimisation. (WM1)
- > Maximise the effectiveness of recycling collection systems and investigate opportunities for the development of technology and markets for end products. (WM 6)
- > Investigate options of the removal of green and other organic waste from the waste stream. (eg large scale commercial composting/domestic composting). (WM 17)
- > Conduct annual household chemical collection days and produce a chemical waste disposal brochure. (WM 25)
- > Undertake a Biodiversity Mapping Program to provide a comprehensive inventory of remnant flora and fauna habitat sites, the threats to them and associated management guidelines and incorporate this in Council's Land Information System. (NW 6)
- > Introduce measures that ensure that all areas of identified flora, fauna and environmental significance are reflected in the Greater Geelong Planning Scheme policy framework and through appropriate zonings and overlays. (NW 7)
- > Investigate the appointment of an Environment/Conservation Officer to implement, and monitor the implementation of actions within this Strategy as part of a team responsible for environmental improvement at the local level. (NW 16)
- > Produce a State of the Environment Report every two years addressing changes in the environmental condition of the municipality. (NW 53)
- > Develop a training program for Council staff/contractors that addresses the importance of minimising soil disturbance, weed identification, native vegetation identification and tree pruning/clearance works. (RE 27)
- > Develop a Stormwater Management Plan that investigates and identifies a range of solutions to the following issues:
  - Water quality
  - Litter
  - Sediment
  - Nutrients
- > As part of the Stormwater Management Plan, limit the number of stormwater outlets and investigate the opportunities to adopt and utilise alternative stormwater management techniques, such as wetland filtration, to address stormwater quality discharged into bays, oceans and estuaries. (MC 13)
- > Recognise the importance of environmental sustainability within the Council City Plan and other relevant strategies. Ensure that all Council reports take account of environmental issues under a separate sub-heading. (CE 1)
- > Develop a comprehensive list of environmental indicators to monitor the effectiveness of Actions implemented under the EMS. (CE 3)
- > Investigate the appointment of an Environmental Education Officer to produce education programs and presentation material to assist residents, business, industry and schools in ways of achieving environmental sustainability. (CE 6)
- > Produce an Environmental Awareness and Action Kit containing information on environmental sustainability, Council services and regulations for distribution to new residents, estate agents, schools, libraries, universities and interested people. The kit will contain information on:
  - actions an individual can take to protect the environment;
  - natural features of the municipality;
  - how to access information and what resources Council has;
  - Council contacts; and
  - all environment groups. (CE 16)

In summary, the key aims of the EMS are the implementation of a strategic management plan for the protection of the natural environment and the promotion of ecologically sustainable development throughout the municipality. The Strategy will give effect to the following objectives:

- > To develop an understanding of the objectives and principles of ecologically sustainable development.
- > To develop local commitment to the principles and practice of ecologically sustainable development.
- > To integrate environmental management planning into the Council's strategic planning.
- > To draw up action plans for implementing policy.
- > To recommend a set of objectives for achieving best practice environmental management in respect of the Council's operation.
- > To involve wide community participation in the planning and implementation process.
- > To recommend a process for on-going monitoring and review.

# CHAPTER ONE

## WHAT WE WANT FOR THE CITY OF GREATER GEELONG IN THE YEAR 2010

In preparing an EMS with the aim of developing a more sustainable future, it is important to have not only a benchmark of where we have come from, but also a vision of where we want to go and what we need to do in order to get there.

For the City of Greater Geelong (CoGG) part of this vision was established in 1995 with the preparation of a strategy entitled Geelong 2010: A Preferred Future. This Strategy, developed by Council and the community, confirmed the commitment of both the Council and the community to implementing ecologically sustainable development (ESD) at all levels to ensure that the future of Geelong is environmentally, economically and socially sustainable.

The vision for the future of the City of Geelong in the year 2010, as outlined on pages 23-27 of Geelong 2010: A Preferred Future, is detailed below:

‘When I was growing up in the 1980s, people who were concerned about environmental issues and alternative lifestyles were often ridiculed and given the derogatory label ‘Greenie’. My children find this hard to believe: in Geelong of the early 21st century they are growing up in a society that places great emphasis on sustaining and preserving the environment. Perhaps their generation will invent a derogatory term for the people who don’t care for the environment.

In 1994 Geelong was seen by many as a city with more past than future. Our infrastructure was adequate but in need of a new vision and new commitment. We had a choice to continue to invest in the old infrastructure or go with new 21st century approaches such as the autonomous home and the abolition of waste, both of which were components of the future, sustainable society. We chose the latter route.

We sought to become a sustainable society in the broadest sense: economically, culturally, socially and ecologically, and we also sought to develop a program which would not only contribute to the planning of Geelong but would develop within this region new expertise, products and services which could be exported.

We started promoting the development of the autonomous house: a concept of developing houses which are self-sufficient in terms of their energy and water use, and which do not produce waste which cannot be reused in some way. In 1996 the Deakin Architecture and Building School commenced a sustainable home project, and from this we pioneered an industry which is generating considerable economic prosperity for us, for it is influencing the whole building industry in Australia and elsewhere.

These buildings can harvest electricity from solar energy for power, and for heating and cooling. All new houses built after 1996 were sited to the sun, and constructed to maximise their warmth in winter and coolness in summer. Air conditioning is now unnecessary in most situations, and heating from external sources such as gas and electricity is rare.. Most old buildings are being retrofitted to permit much of these capabilities to be added to them.

Most buildings also capture rain into water tanks, and recycle all sewerage and sullage through composting toilets into ‘grey water’ for use on gardens and for irrigation of parks and playing fields. The service networks which provide energy and water are now used in a backup capacity.

All energy forms are now managed by a single energy authority established in 1998, with the individual user’s needs being assessed and provided on the basis of the most appropriate combination of autonomous and networked systems. Specialised companies provide home energy rating services; when houses are sold these days, their energy and water budgets are listed, just as the number of bathrooms was once listed. The degree of autonomy and sustainability of houses is an important determinant of market value.

Systems were developed to recycle waste, some in the home and the remainder composted at a city-wide level, with the putrescible fraction used for the restoration of degraded agricultural land, and for organic gardening and clean food production. We were the first city in Australia to develop a system of totally recycling all of our garbage; the Geelong landfill system was closed in 2002.

Motor vehicles are not used very much because many of us work wholly or partly from home; we have computerised shopping, we have cluster housing and, more importantly, we have a good public transport system. We have reduced the land area used for streets and highways since 1994. Much of this land has been used for housing to increase urban density, while some has been used for parks, recreation and for nature conservation.

We have made huge progress in repairing our damaged environment. Our waterways are no longer used as drains: we have a clean and clear Corio Bay, a beautiful foreshore and a clean Barwon river, no longer a dumping ground for salt and other pollutants. Dredging of Corio Bay is by an efficient and more environmentally friendly suction method, and the last of the heavy metals has been cleaned from the floor of the bay. Dredging spoils were used to create island sanctuaries for water birds, while the heavy metal was dredged and disposed of on land.

Bayside wetland areas are flourishing despite being on the same location as a major port. In 1994, planned developments for armaments and chemical storage went ahead, but the decision was made to locate the major storage inland, away from the unloading zone of the port. Industries and environment groups worked together on environmental protection activities in the area, and it is now considered to be a world model of cohabitation with diverse industries. A fine example of this is the wetland at Moolap, which was developed co-operatively by Cheetham, Alcoa and the Geelong Wetlands Trust on the CERT principle (Conservation, Education, Research and Tourism). The wetlands around Avalon, together with Serendip Sanctuary and the Brisbane Ranges, now form an extensive and important area for ecotourism, attracting large numbers of tourists.

Our heritage buildings and structures such as the Aqueduct over the Barwon River at Marshall have been protected; many are used for appropriate commercial purposes and are focal points in the historical walking trail system which attracts many tourists to the region.

Another tourist attraction is the Geelong Grand Prix, the World Sustainable Speed Championship, which takes place on a circuit at Avalon. The old style Grand Prix events, with vehicles using hydrocarbon fuels, have finally given way to those based on sustainable forms of energy - hydrogen and solar electric. As a result of these developments the last Melbourne Grand Prix was held in 2007. The Geelong Grand Prix, which commenced in 1998, is now the world's premier event in this field. Geelong is now contributing to many aspects of the solar energy industry, particularly at the Ford Plant which made major contributions to the early work on solar-powered vehicles in Australia. We're proud to note that the Ford plant has produced three Geelong Grand Prix winners since the event began.

Finally, we set out to become a world leader in some areas of ecosystem management. One area we chose was in the development of measures for the control of feral pests and weeds through biological control. We also used biotechnological methods such as genetic engineering in order to produce new and more virulent, but species specific, diseases for both feral pests and weeds. We built this world leadership around the resources of the CSIRO and the Animal Health Laboratory, with funding from the Commonwealth Government.

We also developed new methods of organic agriculture that sustained and increased the productivity of our land, developed a reputation for local produce and created a thriving export market - especially to neighbouring Asian countries.

One of the charms of living in Geelong has always been the accessibility of a huge stretch of beautiful coastline and an abundance of clean surf beaches. Largely unchanged, the coastline has continued to be a major drawcard for residential communities and, increasingly, for tourists who now flock to our popular beach resorts all year round.

Through sensible planning and vision in the late 20th century, the environmental integrity of this valuable community-owned and managed asset has been maintained. Funding for conservation works and public infrastructure now comes from three sources: Commonwealth Government, the Regional Council, and 'user-pays' system for tourists, visitors and coastal residents. The fragmented system of management of the early 1990s has been replaced by co-operative and collaborative arrangements between locally elected management committees and the regional and national coastal boards.

Much to the delight of the surfing industry, the oceans are now clean and safe for swimming since the closure of all ocean sewerage outfalls in the late 1990s after the introduction of more sophisticated, often home-based waste recycling systems. Streams feeding into the sea are cleaner through the co-operation of residents and industries in eliminating surfactant use and discharge. Native vegetation now flourishes through the co-ordinated efforts of many thousands of volunteers within the coastal communities and through the removal of pest plants by CSIRO's biological control programs.

The coast and its surf beaches are recognised as vital economic as well as ecological assets. There are many businesses on the Surf Coast which are producing and marketing surf-related products and services, and there is world class expertise on surfing at Deakin's Centre for Surfing Studies.

In 2010 our coast continues to show a diversity of development, however strict planning strategies developed in the mid-90s ensured no ad hoc planning and limited urban growth to the 1994 level. A building height limit is enforced on coastal development, and comprehensive design guidelines have ensured the construction of aesthetically designed buildings which blend into the surrounding environment. The Regional Council now provides design assistance for all rate payers.

Improved public transportation to the coastal areas has removed the former dependence on large intrusive car parks at popular locations; and these carparks have gradually been removed. In line with international practice, major roads have been relocated away from the coast, with feeder roads giving access to beachfronts or viewing bays. The only notable exception to this is the Great Ocean Road.'

'... In 2000, our council marked the commencement of a new era by demonstrating a commitment to effective conservation practices through placing conservation covenants on all government-owned land, and encouraging private land owners along the coast to do likewise.

Many public education programs initiated in the 90s have resulted in increased respect for the coast-line as a national resource. Continuous 'Protect The Coast' media campaigns were developed with local school involvement in conservation programs...'

'... With the protection of environmentally sensitive areas, and minimal commercial development, the coast has been preserved and nurtured for future generations.'

Whilst many of the ideas in this vision may appear unrealistic and difficult to implement, they do provide a snap-shot of the community's hopes and dreams in the late 1990s. It is hoped that, through the implementation of the actions in the EMS, elements of this vision may become a reality.

# CHAPTER TWO

## INTRODUCTION

The environment has become a pivotal issue of the late 20<sup>th</sup> Century. Problems such as the loss of biodiversity, pollution, land degradation, the Greenhouse Effect and the increasing pressures of urban and rural development highlight the implications of human interactions on the environment.

These problems can no longer be dismissed as too vast, too complex or remote. They affect us all. They affect our ability to protect our quality of life and impose a range of costs.

The ability to create a sustainable, clean and healthy Geelong depends therefore on the way we treat the environment. Council presently undertakes a range of environmental programs, all of which assist with improving the community's quality of life. None of these, however, is linked back to an agreed strategy with timelines and measures to assess the performance of Council. Such ad hoc actions fail to address the major issues and are not cost effective with respect to resource allocation. They also do not take into account many of the community's aspirations.

The importance of ESD was highlighted in 1992 at the Earth Summit in Rio de Janeiro, where agreements aimed at providing a broad framework for global sustainable development such as Agenda 21, to which Australia is a signatory, were signed.

The emphasis of Agenda 21 is the achievement of the objectives of ESD at the global scale through action at the local level, which is encapsulated in the statement 'think globally, act locally'. A copy of Chapter 28 from the Agenda 21 Charter is attached as Appendix One.

In the Australian context, the concept of sustainable development has been incorporated into National policy documents, such as the 1992 Intergovernmental Agreement on the Environment and the 1995 Commonwealth-Local Government Accord on the Environment. The Australian Local Government Association (ALGA) is a party to these, which place responsibilities on all local Councils to prepare strategies and policies that will foster sound environmental management and sustainable development. ALGA is also a signatory to 'The Newcastle Declaration', which was endorsed at the International Conference - Pathways to Sustainability in June 1997. A copy of this is attached as Appendix Two.

In order to achieve ecologically sustainable development, it is important to have an understanding of what it means. ESD is a term used to describe a way in which we can live on this planet while not further destroying its environmental 'health and wealth'; in other words, living in balance with the environment. Consistent with the Federal Government's National Strategy for Ecologically Sustainable Development 1992, the City of Greater Geelong defines sustainability 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'.

It is important to note that ESD recognises the interdependence of development and conservation and promotes a shift away from the 'develop now and pay the environmental price later' concept. In practice, ESD shows that sound economic development and conservation can be complementary and that development and the creation of long term jobs can be achieved by protecting the environment.

The way in which Council has determined to improve our local environment, identify pathways that will achieve sustainability and ensure that all our actions are co-ordinated, is for Council and the community to work together to prepare and implement this EMS.

This EMS is the City of Greater Geelong's response to acting locally and will be Geelong's Local Agenda 21 Action Plan. It is an action-oriented document outlining a range of actions that can be undertaken within the municipality to achieve ecologically sustainable development. Through the process of developing the EMS, Council recognises that environmental management is a responsibility for all sectors of the community working together. Local solutions can be found by local people assisted by a strategic vision and a shared framework for implementation. This Strategy does not attempt to discuss ecologically sustainable development in great detail, as it is considered that the principals of ESD have been well documented elsewhere. What is required are details of what actions need to be undertaken, by whom and when. In developing an action-orientated strategy, one of the other key aims is to provide a tool that will facilitate regular and on-going monitoring by all sectors of the community and Council to determine its overall success. In order to facilitate this it is proposed to establish an Implementation Committee to oversee the implementation of the EMS and develop a series of environmental indicators and targets from which to assess Council's environmental performance.

It should be recognised that many of the actions outlined in the following chapters apply to all of the environmental areas. Where this is the case only one reference to the action is made in the most appropriate section.

A summary of Critical and High Priority Actions, estimated costs and availability of external funding services is provided in Chapter Fourteen. This will assist Key Participants in focusing on priority issues, and in the allocation of funding and applications for community grants.

This Strategy complements and builds on the work undertaken in a number of other important strategies prepared by Council, which have also addressed a range of environmental issues. These include the Urban Growth Strategy, Corio Bay Foreshore Management Strategy, Draft Rural Land Use Strategy, Open Space Strategy, Economic Development Strategy and Energy Conservation Strategy. A diagram outlining Council's Integrated Planning Framework is attached as Appendix Three. This diagram outlines the relationship between the EMS, Council's City Plan and its other key strategies. It is intended that the EMS be incorporated into the new Greater Geelong Planning Scheme as part of the Municipal Strategic Statement.

Council already undertakes a diverse range of environmental programs and initiatives, which range from revegetation programs, installation of litter traps, production of inventories on contaminated sites and facilitation of community environmental days, such as Clean Up Australia Day and Arbor Week, to conducting energy audits, methane gas extraction at landfill sites and an extensive recycling service to householders. Many of these actions are included in the Strategy as being of an on-going nature.

It should also be noted that there are large numbers of volunteers who undertake an enormous amount of work on a range of environmental projects. This voluntary work results in significant savings to Council and major improvements to the local environment. Council is indeed fortunate to have such a large number of residents who are committed to protecting and enhancing the natural environment of Geelong.

The success of this Strategy will depend on the wider community, including individuals, community groups, schools, government and non-government agencies, industry and business, and Council accepting their responsibilities. Council urges members of the broader community to read the Strategy and to identify what it is that they can do in order to make the City of Greater Geelong a place that has a sustainable future.

It is inevitable that some projects may proceed even though certain members of the community regard them as being detrimental to the environment. This Strategy will assist Council, the community and developers to minimise impacts and achieve environmental sustainability in all aspects of development and land use. The resultant policies and guidelines developed through its implementation will provide the basis upon which the environmental merits of such projects can be assessed.

Projects will therefore continue to be assessed on their merits, having regard to all Council strategies and policies, a balanced judgement of the competing interests and, ultimately, the benefits to the whole community.

# CHAPTER THREE

## PREPARATION OF THE STRATEGY

In February 1995, Council adopted a policy statement on Environmental Standards, which identified that Council would inter alia, 'prepare and review a conservation plan and in accordance with this plan, seek to protect those wildlife habitats and areas of vegetation which have been identified as being of regional or greater significance'.

In May 1997, a report was presented to Council outlining in detail the proposed EMS project. The Council adopted the proposed approach to the preparation of the Strategy and elected Councillor Michael Crutchfield as Chair of the Environmental Management Strategy Steering Committee.

The overall goal and terms of reference for this Strategy are outlined below:

### Goal

'To prepare and implement a strategic and management plan for the protection of the environment and the promotion of ecologically sustainable development in the City of Greater Geelong.'

### Terms of Reference

- > To develop an understanding of the objectives and principles of ecologically sustainable development.
- > To develop local commitment to the principles and practice of ecologically sustainable development.
- > To integrate environmental management planning into the strategic planning of the Council.
- > To draw up action plans for implementing policy.
- > To recommend a set of objectives for achieving best practice environmental management in respect of the Council's operation.
- > To involve wide community participation in the planning and implementation process.
- > To recommend a process for on-going monitoring and review.

In June 1997, AGC Woodward-Clyde Pty Ltd were appointed after tenders were called for consultant services to assist with the preparation of the EMS. The role of the consultants was to assist the Council in the preparation of the Strategy. To ensure that this Strategy had a strong community focus, a Steering Committee was established in June 1997 that comprised of a wide cross-section of the community. The sixteen people on the Committee included Councillors and Council officers, as well as representatives from local industries, environment groups, government departments, educational establishments and the local community. The Terms of Reference for the Environmental Management Strategy Steering Committee were as follows:

1. To represent the community and respective organisations in determining the content and process of the Strategy.
2. To oversee and contribute to the work of the Strategy.
3. To encourage the involvement and interest of other groups and individuals in the community in the preparation of the Strategy.
4. To chair working group meetings.
5. To attend public forums held throughout the development of the Strategy.
6. To liaise closely with the Project Officer.
7. To make recommendations to the Development and Strategy Committee of Council.
8. To advocate for and promote environmentally sustainable development in Geelong.

At the outset of the project, a review was undertaken of all relevant Council policies and reports in order to identify the current environmental issues of concern. A background research paper was prepared, which outlined five key areas that need to be addressed. These were air quality, energy use, urban environment, natural environment (incorporating rural issues) and waste management.

In developing the EMS, Council adopted an approach that would ensure the maximum amount of direct community input. Community input was seen as integral as it would ensure that the final document was responsive to community concerns and facilitated greater levels of community ownership of the EMS and as a result, commitment to implementing its recommendations.

In order to stimulate community involvement in identifying and prioritising issues of environmental concern within Geelong, a questionnaire and comment sheet was developed. The development of the questionnaire involved members of the Steering Committee, Council officers, AGC Woodward-Clyde and a specialist questionnaire company, NCS Australasia Pty Ltd. The questionnaire posed a series of eighteen questions in relation to environmental issues and linked these into eight general headings. A copy of the questionnaire and comment sheet is attached as Appendix Four.

An ABS statistical software program was used to make a random sample from Council's rateable properties database, which included residential, rural, industrial and commercial properties. Questionnaires were also sent to an extensive range of interest groups, covering such areas as the aged, youth, ethnic, disabled, tourism, charitable institutions, progress associations and student bodies, and to specific groups, including all the environment, Landcare, 'Friends of groups', garden clubs, surfing/angling/diving clubs, State and Federal politicians, the Wathaurong Aboriginal Co-operative, Victorian Farmers

Federation, Trades Hall, Chamber of Commerce and National Trust. Questionnaires were distributed to 212 students from five local secondary schools and a random selection of over ninety CoGG staff. They were also distributed to all the Environmental Management Steering Committee members, Councillors and members of Council's Executive Management Team.

A total of 4000 questionnaires were distributed. The response rate was excellent with 31.8% (1,251) of questionnaires returned. A detailed analysis of the questionnaire results is provided in Chapter Four.

From analysis of the results of the completed questionnaires and comment sheets it was possible to identify the areas of greatest concern to the community and to focus the EMS on addressing these areas. The major environmental areas identified included: waste management/recycling, air quality, biodiversity, litter/pollution, water quality, community education and marine and coastal.

The next important stage in the development of the EMS was the establishment of specialist working groups to work through each of the eight key environmental issues identified through the questionnaire process and agreed to by the Steering Committee.

A project briefing and workshop was held on 9 December 1997 to discuss the background to the EMS, present the results from the survey and establish working groups. Seven working groups were established covering the following areas:

- > Air Quality/Energy Conservation
- > Waste Management
- > Urban Environment
- > Marine and Coastal Environment
- > Natural Environment and Waterways
- > Rural Environment and
- > Community Education.

Members of the Steering Committee chaired a number of these working groups, which were aimed not only at seeking community input into the identification of the specific issues of concern, but also at identification of the actions required to address issues, the key participants responsible for these actions, the priority each action would have, and the timeframe for its implementation.

Two other workshops were held, in late December 1997 and February 1998. All the workshops were well attended by the public with numbers ranging from sixty to ninety persons. Prior to the commencement of the final workshop, an open public forum was held, allowing the public to ask a range of questions about the Strategy and the timing of the project. The working groups played a crucial role in the development of the draft Strategy and allowed a wide cross-section of the community to be directly involved in the process. A substantial amount of work was undertaken by these groups, which comprised between seven and twelve people per group. This work was incorporated within the draft Strategy and formed a key component of the document.

#### **EXHIBITION OF THE DRAFT ENVIRONMENTAL MANAGEMENT STRATEGY**

Council, at its meeting on 27 May 1998, considered and resolved to exhibit the draft EMS for a period of four months from 5 June to 5 October 1998.

It was determined to have a four-month community consultation period to allow sufficient time for all interested persons to read the document and make written submissions to Council.

The draft EMS was launched on World Environment Day, Friday 5 June 1998, as part of the Geelong Environment Expo 98 held at the Deakin University Woolstores Campus.

Copies of the draft were given to all persons attending the launch, as well as being sent to all workshop participants, various groups, organisations, interested persons and Council officers. Copies were available at all Customer Service Centres and Council libraries. A series of public notices and press releases were also undertaken during the four-month consultation period.

In conjunction with the launch of the draft EMS, Council held a Community Arts Talent Search Competition to provide illustrations, a logo and a piece of verse to be incorporated within the final Strategy.

During the consultation, Council received considerable feedback on the draft Strategy. The majority of the informal submissions were supportive of the intent of the Strategy. A total of nineteen formal submissions were received. (Refer to list of written submissions in the Acknowledgments on page iii)

A detailed report was prepared, which considered all submissions to the draft EMS, and this was discussed by the Steering Committee in December 1998. The content of the submissions was excellent and, whilst not all the points raised were agreed to by the Steering Committee, there were a number of significant changes made to the draft.

## **SUMMARY OF MAJOR AMENDMENTS TO THE DRAFT EMS**

### **Layout Change**

In order to improve readability the format has been simplified.

### **Status Column**

The Timing Column has been removed, because associated timeframes are discussed in the report, and the column has been replaced with a Status Column, which identifies whether this is an action that is new, in-progress or an on-going program.

### **Priority Column**

Considerable concern was expressed at the timeframes of the Strategy and whether these were realistic. To address this concern, a new category was created to identify 'Critical' actions to be undertaken within the first two years. The remaining actions were reprioritised to reflect the new timetable, which now extends from one - seven years to correspond with Council's forward business planning.

### **Issues Section**

The Issues Sections of Chapters Six to Thirteen have been expanded to incorporate local issues, as well as reference to the various Federal/State strategies and legislation.

### **Refinement of Actions**

The wording of a number of the Actions have been improved, additional Key Participants included and removal of some Actions to avoid duplication.

### **Project Cost Estimates**

Estimation of potential project costs for all actions was deleted, because five year estimations are highly likely to be subject to alteration. This Chapter now lists costs for the first three years, which is in line with program budgeting. Reference is also made as to whether external funding is available for each Action.

## **COMMUNITY ARTS TALENT SEARCH**

The Talent Search ran from 5 June to 25 September 1998. A total of 10 submissions were received in the following categories:

Illustrations	1
Logo	6
Verse	4

As there was only one submission received in the illustrations section, the Steering Committee agreed to incorporate a number of photographs from selected local photographers.

# CHAPTER FOUR

## QUESTIONNAIRE RESULTS

In analysing the results of the questionnaire, it became immediately obvious that the community had a clear understanding of the full range of environmental issues in the municipality and was concerned about these issues. This level of concern is also highlighted in the high response rate to the questionnaire.

The following is an outline of the major findings, under each of the eight major headings in the questionnaire. The area of greatest concern in a number of categories is indicated by a figure in brackets. The details provided relate to only the two highest categories within each question. A more detailed summary of all questionnaire results can be found in a report held by Council. A total of 183 comment sheets were received and a summary of these is included as Appendix Five.

### AIR QUALITY

How concerned are you about:	Very Concerned	Concerned
Locally emitted air pollution	41.9 %	37.1%
The Greenhouse effect	43.6 %	32.4 %
The depletion of the Ozone Layer	51.2%	30.4%

### ENERGY USE AND CONSERVATION

How concerned are you about:	Very Concerned	Concerned
· the community's dependence on non-renewable resources	30.1%	37.6%
· the availability and affordability of alternative energy sources	36.5%	34.9%

- > 56.2% of respondents use energy conservation measures at home or in the workplace
- > An average of 87% of respondents were not aware of energy efficiency displays provided by Council
- > Only 6 % of respondents have sought advice on energy conservation measures from Council

### WASTE MANAGEMENT

How concerned are you about:	Very Concerned	Concerned
The generation of non-recyclable waste	52.5 %	33.3%
The level of industrial waste being produced	59.1%	28.4%
What importance do you place on:	Very Important	Important
Reducing the amount of household waste	52.6%	33.5%
Provision of a reliable recycling collection system	64.0%	27.3%
Reducing the amount of litter in natural and urban environments (94.6%)	72.1%	22.5%
Provision of a household green waste collection system	38.1%	35.1%
Provision of a household hard waste collection system	33.4%	35.5%
Provision of a safe household chemical disposal system	52.4%	32.0%

- > 83.1 % of the respondents currently participate in Council's kerbside recycling program
- > 96.5 % of respondents stated they would purchase products made from recycled products, and many of these said they would be prepared to pay extra for these products

### RURAL ENVIRONMENT

How concerned are you about	Very Concerned	Concerned
The control of vermin and pests	46.7%	33.3%
Land degradation, erosion and salinity (84.4%)	55.0%	29.4%
The use of chemicals and sprays as part of agricultural activities	50.3%	28.9%
The impacts of nutrients on ground water	39.3%	34.2%
The loss of agricultural land to subdivision and to land degradation (averaged)	36.4%	30.4%
The need to maintain existing natural habitats in rural areas (84.6%)	53.2%	31.4%
The management of roadside vegetation	37.8%	38.1%

## URBAN ENVIRONMENT

What importance do you place on:	Very Important	Important
the control of urban and industrial sprawl	31.6%	40.3%
the provision of adequate and appropriate open space	44.8%	37.6%
the greening of public land and parks to encourage wildlife into urban areas	49.7%	32.8%
the use of bicycle paths and walking tracks as non-vehicular transport routes	49.0%	36.2%
the provision of public transport facilities	52.2%	33.7%
the rehabilitation of contaminated land	50.4%	34.2%
the collection and treatment of stormwater prior to release into natural waterways	53.8%	32.4%
the control of litter in urban areas (averaged) (89.2%)	55.5%	33.7%

## NATURAL ENVIRONMENT AND WATERWAYS

What importance do you place on:	Very Important	Important
the protection and enhancement of natural areas	54.4%	33.4%
the protection of indigenous flora and fauna	50.8%	33.7%
the protection and enhancement of endangered species	62.3%	27.1%
increased planting with indigenous species to either improve or establish wildlife corridors	50.3%	35.0%
the rehabilitation of our local waterways	58.1%	31.7%
the protection of remnant habitats from clearing and subdivisional activities	37.6%	31.2%
the protection of culturally significant aboriginal sites	26.4%	30.4%
good water quality in our waterways (94.4%)	71.9%	22.5%
the establishment and implementation of bushfire management plans for bushland areas	59.8%	29.2%
reducing the amount of litter in natural habitats (92.6%)	66.9%	25.7%
the protection and enhancement of existing wetlands	52.8%	34.9%
the development of wetlands to assist in stormwater control and provision of habitat	42.4%	33.2%

## MARINE AND COASTAL ENVIRONMENT

What importance do you place on:	Very Important	Important
clean and unpolluted coasts and beaches (97.4%)	81.6%	15.8%
a healthy marine environment, not impacted on by introduced species and by contamination (averaged)	71.5%	21.0%
litter control along our beaches and foreshores	73.8%	22.6%
the installation of litter traps to reduce stormwater pollution in our waterways, bay and ocean	72.5%	22.5%
regular beach cleaning	59.8%	30.7%
strict regulatory controls on coastal development	54.0%	31.2%
increased erosion control along the coast	59.1%	30.3%

## MAJOR ISSUES OF CONCERN IN THE CITY OF GREATER GEELONG

These are listed in the order of priority given by respondents.

Issue	1st priority	High priority
Natural Environment and Waterways	40.9%	42.7%
Marine and Coastal Environment	40.8%	40.9%
Waste Management	39.0%	45.2%
Air Quality	37.9%	36.9%
Energy Use and Conservation	19.5%	49.1%
Urban Environment	17.7%	43.9%
Rural Environment	14.3%	42.4%

## WHO IS RESPONSIBLE FOR ADDRESSING THE IDENTIFIED ENVIRONMENTAL ISSUES?

Federal Government	67.3%
State Government	73.1%
Local Government	71.2%
Industry and Retail outlets	57.9%
Community groups	42.3%
All of the above	70.8%

It was also clear from the responses received that people considered that the City does not provide adequate access to information on the many environmental issues raised. Recognising this as an issue, it is important for Council to establish the educational and information framework needed to assist people in understanding and addressing the issues raised in this Strategy.

# CHAPTER FIVE

## ANALYSIS OF THE STRATEGY

This Chapter outlines the framework of the Strategy itself. Chapters Six to Thirteen set out the **Vision, Goals, Issues** and **Actions** for the eight broad environmental areas. These are:

<b>AQ</b>	Air Quality
<b>EU</b>	Energy Efficiency and Resource Use
<b>WM</b>	Waste Management
<b>NW</b>	Natural Environment and Waterways
<b>RE</b>	Rural Environment
<b>UE</b>	Urban Environment
<b>MC</b>	Marine and Coastal Environment
<b>CE</b>	Community Education

Each of the chapters on the environmental areas is set out as follows:

1. A **Vision** that outlines the overall direction the Council wishes to take.
2. The **Goals** that establish the framework from which to implement the actions.
3. The **Issues** involved with the particular environmental area.
4. The **Actions** that will address the problems identified.

The formatting of the action section is set out as follows:

### Action Number

All Actions have been coded with an Action Number for ease of identification when referring to specific activities. This coding system has no reference to the priority placed on each Action.

### Actions

The Action required to address a specific environmental issue.

### Key Participants

This column lists those responsible for action implementation. This may or may not involve those listed in contributing to the costs of implementing the action. This will be dependent upon the circumstances involved with each Action. Whilst many of the Actions fall onto a number of Key Participants, Council has the lead role in facilitating the implementation of the Strategy.

### Priority

Priorities have been allocated to each Action having regard to the following:

- > protecting areas of regional or greater environmental significance;
- > protection of human health or quality of life;
- > statutory and strategic requirements;
- > reducing environmental impact and avoiding risks;
- > costs of implementation; and
- > personnel capacity.

The four categories used and their respective timelines are:

<b>Critical</b>	1 - 2 years
<b>High</b>	2 - 3 years
<b>Medium</b>	3 - 5 years
<b>Low</b>	5 - 7 years

These time periods refer to the period after the Strategy has been adopted by Council.

### Status

The Action Status column indicates whether the Action is New (new action), In Progress (action already commenced) or Ongoing (an on-going program).

The Actions are grouped together under a series of sub-headings to assist in finding the location of specific Actions. As indicated previously, many of the Actions listed in Chapter Six - Thirteen are interrelated and could therefore be listed in a number of areas. In order to reduce this duplication, only one reference has been made to each Action, which is located in the most appropriate and logical Chapter.

# CHAPTER SIX

## AIR QUALITY

### Vision

To create a municipality that has clean air and where the local community demonstrates how global issues, such as the greenhouse effect and depletion of the ozone layer, can be addressed at the local level.

### Goals

- > To take a leadership role in achieving an overall reduction in greenhouse gas emissions and meet national targets.
- > To phase out the use of ozone depleting substances.
- > To reduce the reliance on the motor vehicle through promoting the use of alternative and public transport.
- > To work with industry to improve manufacturing processes to reduce air pollution.
- > To give priority to the clean up of air pollution sources with the greatest potential for improvement.
- > To reduce the incidence of visual air pollution.
- > To provide innovative programs to improve air quality.
- > To monitor air quality and provide regular community reports .

### Issues

Air quality is a significant issue for Geelong as it relates not only to clean air, but also to more far-reaching issues such as global warming and ozone depletion. Whilst these are often perceived as global issues, they are relevant to Geelong and need to be addressed as part of this EMS.

Ozone depletion is a significant problem with associated health implications, and this is highlighted by the emergence of a hole in the ozone layer over Antarctica and the increased incidence of skin cancer. The causes of ozone depletion have been attributed largely to the use of ozone depleting substances, such as CFCs and halons, and, whilst agreements are in place which have seen the banning of CFC in aerosols, much can still be done at the local level.

Global warming is also another significant issue for Geelong. The Intergovernmental Panel on Climate Change - the most authoritative international source of scientific, technical and socio-economic advice on climate change issues - recently concluded that, despite the many uncertainties that remain, the balance of evidence suggests a discernible human influence on the global climate.

In 1992 Australia signed the *United Nations Framework Convention on Climate Change*. Under this agreement, developed countries made voluntary commitments to stabilise greenhouse gas emissions at 1990 levels by the year 2000. Concerns that voluntary commitments were insufficient led to the development of the 1997 Kyoto Protocol, in which developed countries agreed to reduce their greenhouse gas emissions by an average of 5.2% over 1990 levels between the years of 2008 and 2012.

Australia signed the Kyoto Protocol in March 1998, committing the nation to limit greenhouse gas emissions growth to 8% over 1990 levels between the years 2008 and 2012. Meeting this target will be a challenge as Australia's gas emissions are forecast to grow by 28% on 1990 levels by 2010.

In November 1998, the Federal Government launched the *National Greenhouse Strategy*. This document provides the strategic framework for Australia's greenhouse response and is the primary mechanism through which its international commitments on climate change will be met.

In August 1998, the Victorian Government launched *Victoria's Greenhouse Action*, which provides a range of new initiatives that aim to reduce greenhouse gas emissions, enhance our greenhouse sinks and manage the risks of climate change. Geelong is characterised by heavy industrial and commercial uses that can impact significantly on air quality. Whilst improvement has been made and there are now established standards for emissions, it is important to work with industry/commerce to improve practices to further reduce emissions, as well as address existing pollution problems.

As part of the Port Phillip Region airshed, Geelong may influence, and be influenced by, Melbourne's air quality. Air quality standards in Victoria are established under the provisions of the *Environment Protection Act 1970*. The *State Environment Protection Policy (The Air Environment)* (Air SEPP) sets out air quality objectives and establishes attainment programs to ensure that beneficial uses are preserved.

The EPA has begun the process of developing an Air Quality Management Plan (AQMP) which will set out a framework to improve air quality. Two publications produced by the EPA are assisting in the development of the AQMP, including *Taking Stock* - July 1997 and *Improving Geelong's Air Quality* - June 1998.

Whilst it is often considered that air pollution is an industrial problem, other sources of common pollutants in our air come from motor vehicles and smoke from wood fires/heaters. To address these, as well as the other air quality issues described, it is important to undertake regular air quality monitoring and reporting in order to gauge success and to direct appropriate action. The EPA has been measuring Geelong's air quality since 1991. The pollutants monitored are carbon monoxide, fine particles, fluoride, lead, nitrogen dioxide, ozone and sulfur dioxide.

Whilst the EMS may not solve all issues, it can establish programs to work with all sectors of the community to improve air quality. In identifying actions it is important to ensure that they are as varied in both type and scale as the issues themselves, ranging from the elimination of all ozone depleting substances to ensuring the regular servicing of private motor vehicles. Whilst much improvement has been made in air quality over the last decade, there is still scope for significant further improvement.

#### AIR QUALITY ACTIONS

ACTION NUMBER	ACTIONS	KEY PARTICIPANTS	PRIORITY	STATUS
<b>STATUS</b>				
AQ 1	Liaise closely with the EPA regarding the preparation of an Air Quality Management Plan that establishes standards and identifies pollution sources and emission concentrations which need to be addressed in order to improve air quality in Geelong.	EPA Council Community Industry Vic Roads	High	In Progress
AQ 2	Develop emission reduction strategies as part of the implementation of the Air Quality Management Plan.	EPA Council Community Industry	High	New
<b>Ozone Layer Depletion</b>				
AQ 3	Liaise with industry to develop a 'Code of Practice' to phase out the use of ozone depleting substances and to facilitate the rapid implementation of this code.	Council EPA Industry	High	New
AQ 4	Conduct an audit of all Council operations to determine the extent of the use of ozone depleting substances and develop strategies to phase out their use.	Council	High	New
AQ 5	Introduce a requirement that all appliances using controlled ozone depleting substances are decommissioned by authorised service agents prior to disposal or recycling.	Industry Council	High	New
AQ 6	Introduce a condition of any demolition consent that requires evidence of the correct decommissioning of any halon extinguishers, refrigeration units and air conditioner systems.	Council Industry	High	New
<b>Global Warming</b>				
AQ 7	Prepare a detailed inventory of all greenhouse gas sources and emissions in the municipality	Council EPA Industry	Critical	New
AQ 8	Liaise with adjoining municipalities to achieve a reduction in greenhouse gases, having regard to national targets.	All Adjoining Councils	Medium	New
AQ 9	Undertake programs that ensure that methane gas emissions from landfill sites are appropriately managed.	Council EPA	Medium	In Progress
AQ 10	Through education programs, promote awareness in the community of greenhouse gas emissions and the associated consequences.	Council Community	High	New
AQ 11	Encourage schools and tertiary campuses to adopt their own greenhouse reduction targets and implement plans to achieve these.	DoE Universities	Medium	New

<b>AQ 12</b>	Undertake co-ordinated revegetation programs to establish further greenhouse 'sinks' in accordance with Federal and State initiatives.	Council NRE Community	High	In Progress
<b>AQ 13</b>	Encourage and facilitate extensive planting and greening programs throughout the City, incorporating the retention and expansion of existing areas of native vegetation as part of an overall re-greening Geelong program.	Council Vic Roads Community NRE	Medium	In Progress
<b>Industrial &amp; Commercial Emissions</b>				
<b>AQ 14</b>	Discourage the use of wood heaters, both in new houses and in new residential developments.	Council	Low	New
<b>AQ 15</b>	Encourage industrial and commercial premises to prepare Environment Improvement Plans that are accessible to the community.	Council EPA Industry	Medium	On-going
<b>AQ 16</b>	Promote, through the Chamber of Commerce and the Australian Industry Group, the adoption of cleaner production and emission standards in accordance with 'best practice' and recognise achievement in these areas through annual awards.	Council Chamber of Commerce Australian Industry Group Industry	High	New
<b>AQ 17</b>	Work closely with Council's Economic Development Department and Development Board to encourage industry and commerce in the use of cleaner production processes and reduction of sources of pollution and the amount of toxic chemicals used.	Council Chamber of Commerce Australian Industry Group Industry	Medium	New
<b>Urban</b>				
<b>AQ 18</b>	Establish a high profile Industrial Air Quality Improvement Trial Program with a major local industry to demonstrate how air quality emissions can be reduced over the long term and regularly report results.	Council EPA Industry	Critical	New
<b>Motor Vehicle Emissions</b>				
<b>AQ 19</b>	Investigate and implement improvements to road design and signalling to optimise traffic flow and reduce vehicle emissions in built up areas. Minimise heavy vehicle entry into the Central Activities Area (CAA).	Vic Roads Council	Low	New
<b>AQ 20</b>	Actively encourage car pooling and opportunities to work from home. Establish a car pooling program and administer a register of interested participants.	Council Industry Community	Low	New
<b>AQ 21</b>	Liaise with the EPA to actively enforce the <i>Environment Protection Act 1970</i> and the <i>State Environment Protection Policy - Air Environment</i> (SEPP) provisions in relation to vehicle emissions.	EPA	High	On-going
<b>AQ 22</b>	Introduce local education programs focusing on the problems associated with smoky vehicles and introduce a local system where people can report cars with unacceptable emission levels.	EPA Community RACV	Medium	New

<b>Air Quality Monitoring and Reporting</b>				
<b>AQ 23</b>	Undertake regular Air Quality Monitoring and regularly publish the results and other relevant information in the local daily papers and on the radio.	EPA	High	New
<b>AQ 24</b>	Provide on-going reporting of air quality 'black spots' and pollution levels in order to inform the community and activate appropriate action	EPA	High	New
<b>AQ 25</b>	Request State Government support for the installation of an additional air quality monitoring station in the north sector of Geelong.	Council EPA Local Politicians	Low	New

# CHAPTER SEVEN

## ENERGY EFFICIENCY & RESOURCE USE

### Vision

To minimise resource wastage and become the lowest per capita energy user in Australia through the use of energy conservation measures and renewable energy sources.

### Goals

- > To implement the recommendations contained within Council's 'Energy Conservation Strategy' - 1995.
- > To work in partnership with the community to improve energy use and conservation.
- > To lead the way in improving energy efficiency through practical application and demonstration.
- > To ensure that all buildings and new developments incorporate energy efficient design principles and technologies.
- > To develop affordable and accessible programs to encourage people to adopt energy efficiency practices and wise resource use.
- > To improve community awareness of energy efficiency and resource use opportunities.
- > To develop and encourage energy efficient transport systems.

### Issues

In 1995 Council adopted an *Energy Conservation Strategy*, which forms the basis of the recommendations contained within this section of the EMS.

Wise energy and resource use is vital in order to achieve sustainability. Energy is needed for the production of goods and services, transport, lighting, heating and many other everyday uses. In the past, this energy has relied heavily on non-renewable fossil fuels such as oil, coal and gas, not recognising that these are finite resources. In addition, many of the ecologically harmful impacts of unsustainable living, such as global warming, air pollution and biodiversity loss, stem largely from energy consumption.

In order to achieve ecologically sustainable development there needs to be a shift away from the reliance on non-renewable fossil fuels towards renewable power sources such as solar (e.g. solar panels), wind (e.g. the Breamlea wind generator) and biomass energy sources. Our way of living can never be sustained whilst it relies heavily on the depletion of the earth's finite stock of non-renewable fossil fuels.

We therefore need to establish a program for a smooth and managed transition to renewable energy sources. But until such time as we are able to develop these alternative energy sources, it is important to ensure that our current practices establish increased efficiency in energy consumption.

There are many ways in which energy conservation can be achieved at the local level, in all sectors of the community. Whilst many consider that renewable energy use can be achieved only in new developments, there is also significant scope for incorporating renewable energy technology into existing buildings, both at the public and the private level. Another significant benefit associated with wiser energy use is the flow-on effect on the environment, including improved air quality, reduction in greenhouse gases and protection of areas of environmental value.

The importance of sound water and resource conservation is also vitally important. The use of grey water, rainwater tanks and large -scale waste water reuse schemes all need to be explored as part of a shift to a more 'conservative' lifestyle.

## ENERGY EFFICIENCY & RESOURCE USE ACTIONS

ACTION NUMBER	ACTIONS	KEY PARTICIPANTS	PRIORITY	STATUS
<b>Strategic</b>				
EU 1	Participate in National, State and regional programs to achieve sustainable energy and resource use.	Council	High	On-going
EU 2	Undertake a review of Council's <i>Energy Conservation Strategy 1995</i> with respect to timelines and implement the recommendations.	Council Community EEV	Critical	New
<b>Development</b>				
EU 3	Establish mandatory minimum energy efficiency standards and carry out energy rating assessments for all proposed new industrial and commercial buildings to ensure compliance. Introduce a minimum four star rating under the Home Energy Rating Scheme (HERS) for all new dwellings.	Council EEV MBA/HIA	High	New
EU 4	Establish and implement a Building Energy Efficiency Program involving energy audits of selected Council buildings to establish base line data on energy use and opportunities for improvements.	Council CSIRO Deakin University EEV	High	In Progress
EU 5	Introduce a requirement that all new developments incorporate water conservation devices including dual-flush toilets and low-flow showers and promote grey water reuse irrigation and rain water tanks, where appropriate, for domestic use.	Council Barwon Water	Medium	New
EU 6	Introduce a policy that requires Council specifically to use sustainable forest products, plantation grown timber and recycled timber and ban the use of rainforest timbers for all its buildings and landscaping. Liaise with other agencies (eg. Barwon Water and NRE) seeking their support to adopt similar work practices.	Council	High	New
<b>Transport</b>				
EU 7	Implement a program to improve the fuel economy and financial savings associated with the operation of Council's vehicle fleet.	Council	Low	On-going
EU 8	Undertake a detailed investigation into the need for a rail station at Grovedale.	Council PTC Community	Medium	New
<b>Industrial</b>				
EU 9	Investigate, through Council's Economic Development Department, ways to encourage the development of local industries that utilise waste energy and products and locally renewable resources as a component of a Regional Synergies Study.	Council Industry ERV EEV	Medium	New
EU 10	Undertake a feasibility study into the extraction of methane gas from the South Geelong landfill for electricity generation.	Council	Medium	New
<b>Research &amp; Education</b>				
EU 11	Develop an energy efficiency and wise resource use guide for the community, industry and commerce, providing important information and details of	Council EEV	Medium	New

	technologies, goods and services available, and incorporate this into Council's environment web site.			
<b>EU 12</b>	Develop, in partnership with Barwon Water, opportunities to promote large-scale water reuse schemes.	Barwon Water Council	Medium	New
<b>EU 13</b>	Liaise with the Alternative Technology Association regarding the long term development of the Breamlea wind generator site. Investigate the opportunities for an additional generator to be installed within the municipality	Council Alternative Technology Association Energy Australia EEV	Medium	New
<b>EU 14</b>	Investigate the introduction of the <i>Green Power</i> accreditation and facilitation program.	Council EEV	High	New
<b>EU 15</b>	Introduce an energy efficiency and resource conservation award as part of the annual Environmental Achievement Awards.	Council	Medium	New
<b>Monitoring &amp; Reporting</b>				
<b>EU 16</b>	Publish annually in the Geelong Economic Indicators Bulletin and bi-annually in the State of the Environment Report the Council's energy and resource consumption rates.	Council	High	New

# CHAPTER EIGHT

## WASTE MANAGEMENT

### Vision

To achieve ecologically sustainable development through the elimination of waste and total resource recovery.

### Goals

- > To minimise and manage waste in the City of Greater Geelong in the most environmentally sound, economically viable and socially acceptable manner.
- > To reduce the amount of waste going to landfill by promoting waste minimisation, recovery, reuse and recycling.
- > To develop integrated waste management systems in the domestic, commercial, industrial, agricultural and municipal sectors.
- > To provide opportunities for the community to implement waste minimisation and resource recovery.
- > To educate and assist industry and business in waste minimisation and resource recovery.
- > To promote and implement the Barwon Regional Waste Management Strategy.

### Issues

Waste management is one of the biggest issues facing the world in the 21st Century.

A major consequence of urban, industrial and commercial development is the production of a variety of waste types, each with significant implications for ecological sustainability. In addressing waste, the first challenge is to minimise the amount of waste generated. The second challenge is to identify ways to manage the waste in the most appropriate manner.

Integrally linked with waste minimisation is the issue of waste reuse and recycling. Many types of waste produced in the domestic, industrial and commercial sectors have the potential to be reused, such as converting green waste into compost, and people are increasingly beginning to identify commercial opportunities associated with waste reuse. It is important to examine and develop commercial opportunities as the success of waste reuse and recycling will largely depend on the development of these markets.

The State Government has recently established a number of regional waste management groups throughout the State. Geelong is part of the Barwon Regional Waste Management Group (BRWMG), which has recently adopted the Barwon Regional Waste Management Strategy. The Council is working closely with the BRWMG, to implement the recommendations contained within the Strategy, as well as with EcoRecycle Victoria (ERV) and the Environment Protection Authority (EPA) in order to minimise waste and maximise reuse/recycling opportunities.

It is also important to ensure that adequate facilities and services are provided to encourage and cater for waste recycling as a means of reducing the amount of litter, which is a significant issue in Geelong. The Council currently provides a weekly domestic garbage collection service, fortnightly recycling collection and monthly newspaper/cardboard collection service. A household chemical collection is held every two years. Two landfills are operated by Council, located at Corio and Drysdale. The issue of litter was identified in the questionnaire as a major concern to the community and is addressed specifically in a number of Chapters.

Whilst waste minimisation and reuse should be promoted, it is recognised that many wastes cannot currently be recycled, such as certain chemicals and prescribed waste. Many of these will continue to be produced within the urban, commercial, agricultural and industrial sectors in the immediate future, and it is important to ensure environmentally appropriate disposal methods are developed to handle this waste.

In addition to reuse and recycling, it is considered that existing waste facilities may offer opportunities to provide alternative energy sources, such as the use of methane gas for power generation, which also has the added benefit of reducing greenhouse gas emissions.

### WASTE MANAGEMENT ACTIONS

ACTION NUMBER	ACTIONS	KEY PARTICIPANTS	PRIORITY	STATUS
<b>Waste Minimisation</b>				
WM 1	Investigate the 'real cost' of waste disposal and identify the relative costs of services as a means of encouraging waste minimisation	Council	Critical	On-going
WM 2	Develop and promote internal waste minimisation programs	Council Industry EPA	High	In Progress

	and processes within business, industry and institutions in relation to a range of waste types such as chemicals, paper, food, water, etc.	ERV BRWMG Australian Industry Group		
<b>WM 3</b>	Develop a Waste Watchers Kit to assist the community to identify what can be recycled/reused, how to reduce household waste and the availability of products made from recycled materials.	ERV BRWMG Council	High	New
<b>WM 4</b>	Liaise with the Chamber of Commerce and Australian Industry Group to achieve a reduction in packaging and plastic bags and to encourage the sale of string bags	Council Chamber of Commerce Australian Industry Group BRWMG	Medium	New
<b>Recycling</b>				
<b>WM 5</b>	Promote public place recycling/waste-wise events and provide appropriate infrastructure to facilitate it. (CAA/Waterfront Geelong)	Council ERV BRWMG	High	New
<b>WM 6</b>	Maximise the effectiveness of recycling collection systems and investigate opportunities for the development of technology and markets for end products.	Council ERV BRWMG	Critical	In Progress
<b>WM 7</b>	Establish a waste pricing system that encourages increased waste recycling and reuse.	Council	High	In Progress
<b>WM 8</b>	Introduce incentives for increased home-based recycling.	Council ERV BRWMG	Medium	New
<b>WM 9</b>	Develop a program to establish recycling at all building sites. Consider the use of bonds associated with building permits to implement the program.	Council HIA/MBA ERV	Low	New
<b>WM 10</b>	Establish trial school waste minimisation and recycling pilot programs incorporating the Waste Wise Schools Program, and assist schools with	Council DoE BRWMG ERV	High	New

	existing programs			
<b>WM 11</b>	Liaise with supermarkets to allow large recycling bins in car park areas for recycling waste materials.	Council Major Supermarkets Chamber of Commerce ERV	Low	New
<b>Waste collection systems</b>				
<b>WM 12</b>	Implement energy efficient and cost effective collection processes.	Council	High	In Progress
<b>WM 13</b>	Investigate the introduction of volume-based charging to encourage waste minimisation.	Council	High	New
<b>WM 14</b>	Investigate implementing a program introducing mobile garbage bins as waste collection containers throughout the municipality	Council	High	In Progress
<b>Industrial &amp; commercial waste</b>				
<b>WM 15</b>	Liaise closely with industry and commerce to refine manufacturing processes to minimise the amount of waste produced and maximise waste recovery opportunities.	Council Industry Chamber of Commerce Australian Industry Group ERV BRWVG	High	In Progress
<b>WM 16</b>	Review and consolidate performance standards for all landfills, addressing issues such as litter control, odour, noise, groundwater monitoring and future rehabilitation.	Council EPA	Medium	In Progress
<b>Green waste</b>				
<b>WM 17</b>	Investigate options for the removal of green and other organic waste from the wastestream. (e.g. large scale commercial composting / domestic composting).	Council ERV BRWVG	Critical	New
<b>WM 18</b>	Subject to the outcomes from WM17, investigate the introduction of incentives for increased home-based recycling of small volume green and food waste, such as subsidised compost bins and worm farms.	Council ERV BRWVG	High	New
<b>WM 19</b>	Subject to the outcomes from WM17, investigate the provision of mulch at reduced prices for community purposes.	Council	Low	New

<b>WM 20</b>	Provide advice to ratepayers on the effective management of compost and worm farms to avoid disease, odour and vermin.	Council	Low	In Progress
--------------	--	---------	-----	-------------

**Food waste**

<b>WM 21</b>	Develop food recovery systems for food waste and explore opportunities for maximising reuse, (e.g. manufacturing pet food).	Council Industry	Low	New
--------------	---	---------------------	-----	-----

**Hard waste**

<b>WM 22</b>	Investigate the introduction of annual hard waste collection days and encourage hard waste recycling.	Council	High	New
<b>WM 23</b>	Encourage the development of end markets for recycled hard waste products.	Council ERV Industry	Medium	In Progress

**Chemical waste**

<b>WM 24</b>	Prohibit the disposal of chemicals to landfills, other than Prescribed Wastes in appropriate facilities, through the introduction of significant fines for such activity.	EPA Council	High	On-going
<b>WM 25</b>	Conduct annual household chemical collection days and produce a chemical waste disposal brochure.	Council ERV	Critical	In Progress

**Litter**

<b>WM 26</b>	Investigate the provision of adequate recycling opportunities in commercial areas.	Council ERV BRWMG	High	New
<b>WM 27</b>	Co-ordinate pick up and maintenance of street and public reserve litter bins to match required service levels and replace inappropriate litter bins in accordance with the litter bin rationalisation program.	Council	Medium	On-going

<b>WM 28</b>	Negotiate with managers of fast food chains, shopping centres and individual operators producing items with a high waste content to improve packaging and waste disposal systems.	Council Chamber of Commerce ERV BRWVG	Medium	New
<b>WM 29</b>	Improve enforcement of litter control, including associated fines.	Council	High	On-going
<b>WM 30</b>	Liaise with key agencies to develop strategies to reduce cigarette butt litter. Undertake an on-going program of installing butt disposal receptacles outside Council buildings.	Council ERV BRWVG	High	New

**Waste reporting and information**

<b>WM 31</b>	Provide information with rate notices on waste minimisation services and initiatives.	Council	Medium	New
<b>WM 32</b>	Create a Waste Wise Hotline where people can report waste related problems.	Council	Medium	New

# CHAPTER NINE

## NATURAL ENVIRONMENT & WATERWAYS

### Vision

To create a natural environment that is rich in biodiversity and is managed and maintained to protect, both now and in the future, the ecological systems upon which life depends.

### Goals

- > To identify areas of environmental and cultural significance and ensure the protection and enhancement of these areas.
- > To maintain and improve the ecological processes and the biodiversity dependent upon terrestrial and freshwater environments.
- > To ensure that there is no further preventable decline in the viability of any rare or threatened species and associated habitats.
- > To improve the knowledge and understanding of the biological diversity of the region.
- > To create waterways with high water quality that support a range of aquatic life and associated flora.
- > To manage environmental flows within waterways in order to protect their environmental values.

### Issues

The natural environment of Geelong is rich in diversity, including many rare and unique native flora and fauna communities, major waterways and complex fresh water and coastal wetlands.

Since European settlement, human activity has extensively altered the biological diversity of the Geelong region. The pace of change has increased dramatically to the point where habitats, including wetlands, have been removed, species have disappeared, water quality has been severely affected and large areas of land have been significantly degraded. This is due largely to development pressures, bad land management practices and a failure to understand the interrelationship between man's actions and the environment. Conserving our biological diversity is fundamental to our quality of life and our economic well-being, both now and in the future.

In 1996, Environment Australia on behalf of the Federal Government produced *Australia: State of the Environment*, which now forms the benchmark for the future tracking of environmental conditions and trends in Australia.

The conservation of biological diversity is a foundation of ecologically sustainable development and is one of the three core objectives of the *National Strategy for Ecologically Sustainable Development*. In 1996, the Federal Government produced the *National Strategy for the Conservation of Australia's Biological Diversity*. This aims to bridge the gap between current activities and the effective identification, conservation and management of Australia's biological diversity. In 1997, the State Government released the *Victorian Biodiversity Strategy*, which provides details on ways of protecting the environment and the State's biodiversity, as well as meeting national and international obligations. The Strategy is directed to local government as a means of assisting with improvements in long-term planning and achieving better conservation outcomes and forms a key step in the *Flora and Fauna Guarantee Program*. These strategies supplement a range of treaties and legislation aimed at protecting our natural environment and waterways.

This work compliments the actions contained within the *Corangamite Regional Catchment Strategy* and the *Draft Nutrient Management Plan*, which also address a number of key waterway issues. With respect to waterways, there are a number of specific issues that are currently impacting on their intrinsic values. These include water quality of the Barwon and Moorabool River systems, the amount and type of nutrients, sediments and litter entering local waterways, blue-green algae outbreaks, changes to environmental flows and loss of riparian and in-stream biota.

In order to achieve the sustainable use of our natural environment and waterways, it is vital to document thoroughly the biodiversity of Geelong and assess carefully the impact of development, land uses and current management practices. It is no longer appropriate to be reactive; we need to be proactive and look at what we can do to conserve our biodiversity, whilst balancing the needs of our present and future generations.

**NATURAL ENVIRONMENT AND WATERWAYS ACTIONS**

<b>ACTION NUMBER</b>	<b>ACTIONS</b>	<b>KEY PARTICIPANTS</b>	<b>PRIORITY</b>	<b>STATUS</b>
<b>Catchment Management</b>				
<b>NW1</b>	Liaise closely with the CCMA and adjoining municipalities about proposed uses and developments that have wider catchment implications	Council CCMA Adjoining Councils Community	Medium	On-going
<b>NW 2</b>	Increase community awareness of the importance of catchment management planning and its associated land management implications	CCMA Council	Medium	In Progress
<b>Land Use &amp; Management</b>				
<b>NW 3</b>	Prepare guidelines/policies to ensure that development and/or activities in environmentally sensitive areas are carefully assessed and incorporate specific conditions requiring the protection and enhancement of environmental, cultural, recreational and landscape values.	Council	High	In Progress
<b>NW 4</b>	Investigate, where appropriate, the retention of functional bushland areas as part of the overall open space provision for all new subdivisions and, where such bushland is retained, establish an on-going management program.	Council	Medium	In Progress
<b>NW 5</b>	Develop management plans for flora and fauna reserves managed by Council	Council NRE CCMA Community	Medium	New
<b>Flora &amp; Fauna</b>				
<b>NW 6</b>	Undertake a Biodiversity Mapping Program to provide a comprehensive inventory of remnant flora and fauna habitat sites, the threats to them and associated management guidelines and incorporate this in Council's Land Information System.	Council NRE Community Parks Victoria	Critical	New

<b>NW 7</b>	Introduce measures that ensuring all areas of identified flora, fauna and environmental significance are reflected in the Greater Geelong Planning Scheme policy framework and through appropriate zonings and overlays.	Council NRE CCMA	Critical	In Progress
<b>NW 8</b>	Establish habitat management principles for areas identified as significant remnant vegetation or wildlife corridors to ensure the protection, restoration and enhancement of these areas.	Council NRE Community	Medium	New
<b>NW 9</b>	Provide an atlas of the flora and fauna values within the municipality. The atlas will contain distribution maps, species descriptions and conservation status for each species	Council NRE Community Parks Victoria	High	New
<b>NW 10</b>	Develop an 'Environmental Code of Practice' to ensure that all Council staff and contractors are appropriately trained in undertaking works in an environmentally sound manner.	Council NRE	High	New
<b>NW 11</b>	Develop an environmental manual for tendering to ensure that all Council contracts for works and maintenance include conditions requiring contractors to be accredited and works be performed in accordance with the 'Environmental Code of Practice'.	Council Enviros Australia MAV	High	New
<b>NW 12</b>	Identify opportunities and programs to consolidate and link existing fragmented habitat areas and identified wildlife corridors and, where possible, create new habitat corridors.	Council Parks Victoria	Medium	New
<b>NW 13</b>	Investigate the introduction of an environmental levy, charged to each rateable property, to fund the implementation of a range of environmental initiatives.	Council	Low	New

<b>NW 14</b>	Promote the use of Conservation Covenants and the Land for Wildlife Program on private property where significant flora and fauna habitats exists.	Council Trust for Nature NRE	Medium	On-going
<b>NW 15</b>	Investigate the introduction of incentives for owners who actively retain and manage areas with significant flora and fauna values on private land	Council Community NRE CCMA Environs Australia	Low	New
<b>NW 16</b>	Investigate the appointment of an Environment - Conservation Officer to implement and monitor the implementation of Actions within this Strategy as part of a team responsible for overall environmental improvement at the local level.	Council	Critical	New
<b>NW 17</b>	Prepare and distribute guidelines for the appropriate management of flora and fauna values on private land.	NRE Community CCMA	Low	New
<b>NW 18</b>	Develop a planting program concentrating on the regeneration of indigenous vegetation and species reintroduction to improve biodiversity on private and public land, including roadside reserves.	Council Community	Medium	In Progress
<b>NW 19</b>	Produce a planting guide outlining a list of indigenous species most appropriate for the various soils and conditions in the municipality and details of nurseries where these can be purchased.	Council Community CCMA NRE Nursery Industry Association	Medium	In Progress
<b>NW 20</b>	Support initiatives to revegetate public and private land through community education and training programs and facilitate increased public involvement in Landcare activities.	Council	Low	On-going
<b>NW 21</b>	Increase community awareness of existing Council and community flora and fauna rehabilitation programs.	Council	Low	On-going
<b>NW 22</b>	Co-ordinate and assist	Council	Medium	New

	'Friends of groups' to rehabilitate disturbed/degraded natural areas. Investigate the introduction of a Community Environment Grants Scheme.			
<b>NW 23</b>	Establish a permanent display at Council depots detailing maps of roadside conservation zones and significant flora/fauna and cultural sites. Distribute maps to relevant authorities.	Council	High	New
<b>NW 24</b>	Minimise the threat to wildlife from domestic animals through enforcement of appropriate legislation.	Council	High	On-going
<b>NW 25</b>	Develop and implement a koala conservation program for the koala population in the Brisbane Ranges/Anakie area.	Council NRE Community	Low	New

#### **Waterways & Water Quality**

<b>NW 26</b>	Undertake a survey of significant waterways to determine environmental values and develop a strategy identifying future use, protection and management requirements.	Council CCMA NRE	Medium	New
<b>NW 27</b>	Develop catchment plans for improving degraded riverine environments that will minimise erosion, improve water quality, stabilise creek or river banks and establish buffer zones to manage access.	Council NRE CCMA Landcare Groups	Medium	New
<b>NW 28</b>	Liaise closely with CCMA to improve in-stream water quality of all local waterways in accordance with the Corangamite Regional Catchment Strategy	CCMA Council Community	Medium	New
<b>NW 29</b>	Implement requirements to ensure that land management practices along waterways are environmentally sound, particularly with respect to grazing along waterways.	Council CCMA	Medium	New
<b>NW 30</b>	Identify areas subject to flooding and develop	Council CCMA	Medium	On-going

	and implement appropriate flood management measures and practices.			
NW 31	Develop and undertake programs for the re-establishment of wetlands and waterways with locally indigenous vegetation.	NRE Council Community	Medium	On-going
NW 32	Require all new development near waterways to be connected to reticulated sewer or septic tank systems that comply with the Code of Practice for Septic Tanks. Investigate and promote the use of composting toilets and other latest technologies in appropriate locations.	Council	High	New
NW 33	Develop policies and programs to ensure that environmental flows within waterways are maintained in order to protect their environmental values.	Council CCMA	Low	New
NW 34	Investigate the use of sediment traps on major stormwater outfalls draining into local waterways.	Council CCMA Barwon Water	Low	New
NW 35	As part a Stormwater Management Plan investigate the use of water retention basins and reed beds (artificial wetlands) to improve waterway quality.	Council CCMA	Medium	New
NW 36	Document appropriate response actions and long term strategies to counter blue-green algae outbreaks having regard to the <i>Draft Nutrient Management Strategy</i> , (once approved).	Council Barwon Water CCMA	Low	In Progress
<b>Wetland Management</b>				
NW 37	Prepare a comprehensive inventory of all wetlands in the municipality, including those listed as Ramsar sites. This inventory is to include details on size, condition, species composition, external impacts and vulnerability.	Council NRE Parks Victoria Community CCMA	High	In Progress
NW 38	Develop a strategy for reducing the use of	Council NRE	Medium	New

	herbicides, pesticides and fertilisers.	VFF		
NW 39	Introduce appropriate Planning Scheme overlays and designate buffer zones with associated management requirements around significant wetlands in order to protect environmental quality.	Council NRE Parks Victoria	High	New
NW 40	Undertake a rehabilitation program of remnant wetlands on major creek drainage lines to improve water quality and the value of these ecosystems	Council CCMA	Medium	New
NW 41	Introduce policies and procedures to ensure sustainable management of streambanks, riverbanks and wetland margins to minimise erosion and preserve and enhance habitat values.	Council CCMA	Low	New

**Culturally Significant Sites**

NW 42	Identify all areas of cultural significance in the municipality and include this information on Council's Land Information System.	Council Wathaurong Aboriginal Co-operative AAV	Medium	In Progress
NW 43	Implement appropriate planning controls and overlays through the Greater Geelong Planning Scheme to ensure that all sites of cultural significance are protected.	Council	High	In Progress
NW 44	Establish guidelines to ensure that local indigenous people are included in the pre-planning of any development involving sites of cultural significance	Council Wathaurong Aboriginal Co-operative	Medium	In Progress
NW 45	Investigate the potential to establish a fund to be used for the purchase/protection and maintenance of sites of cultural significance	AAV	Low	New
NW 46	Investigate the provision of incentives to assist owners of land containing sites of cultural significance to protect and enhance these values.	AAV	Low	New
NW 47	Develop education	Council	Medium	New

	programs to increase the community's understanding and appreciation of culturally significant sites.	Wathaurong Aboriginal Co-operative		
<b>Roadside Management</b>				
<b>NW 48</b>	Undertake a detailed assessment of all remnant roadside vegetation and identify roadside areas of significance as wildlife corridors containing important biodiversity values.	Council NRE Community CCMA RCAC	High	New
<b>NW 49</b>	Develop and implement a Roadside Vegetation Management Strategy for the City, in conjunction with adjoining municipalities and relevant agencies, to ensure a consistent approach to the management, threats and conservation of roadside reserves	Council NRE Adjoining Councils Power Cor Barwon Water Community Parks Victoria CCMA RCAC	Medium	New
<b>NW 50</b>	Develop an 'Adopt a Road Program' aimed at addressing roadside environmental management and improvement.	Council Vic Roads Community CCMA	Low	New
<b>Fire Management</b>				
<b>NW 51</b>	Develop and implement fire management plans for bushland and native grassland areas.	NRE CFA Parks Victoria	Medium	New
<b>NW 52</b>	Develop guidelines to maximise the value of fire as part of the regeneration of indigenous flora.	Community NRE CFA	Low	New
<b>Monitoring &amp; Reporting</b>				
<b>NW 53</b>	Produce a State of the Environment Report every two years addressing changes in the environmental condition of the municipality	Council CCMA	Critical	New
<b>NW 54</b>	Investigate the introduction of an Environmental Accounting System having regard to the outcomes of the Public Accounts and Estimates Committee Issues Paper on Environmental Accounting and Reporting.	Council	Medium	New
<b>NW 55</b>	Continue to support	Community	Medium	On-going

	community water quality monitoring programs such as Water Watch.	Schools Barwon Water Council CCMA		
--	--	--	--	--

# CHAPTER TEN

## RURAL ENVIRONMENT

### Vision

To protect the agricultural and environmental resource base of Geelong's rural area for future generations.

### Goals

- > To ensure that high quality agricultural land is used for productive purposes and is managed in the most environmentally sustainable manner.
- > To ensure that local rural environmental groups are supported and encouraged to undertake improvements to the wider rural environment.
- > To achieve a balance between agricultural production and environmental protection.
- > To address all causes and effects of land degradation and loss in water quality and ensure that appropriate management practices are adopted.
- > To ensure that development on rural land is appropriately located and serviced.
- > To maintain the amenity of the City's rural areas.

### Issues

The use of rural land is a significant issue for sustainable living. As we derive our food from the land, it is in our vested interest to ensure that it is in the best environmental condition. The City of Greater Geelong has a large rural area of some 49,236 ha, which supports primary activities such as cereal crops, grazing and wool production, potato farming and viticulture.

As the population within the municipality has increases so does the loss of prime agricultural land to urban development, particularly through rural residential subdivision. This form of development reduces the ability of the region to yield agricultural products and can result in greater land degradation through the introduction of feral animals, weeds and litter. Urban uses in rural areas can also lead to conflicts in land use and management practices, particularly on the rural-urban fringe.

In the past, agricultural practices have had serious impacts on local environments through the clearing of vegetation, overgrazing, fertilising, irrigating and burning. The cumulative negative effects of these practices have resulted in significant environmental degradation. The greatest cause of decline in species diversity and population numbers has been habitat loss through such actions as native vegetation removal.

Council has produced a *Draft Rural Land Use Strategy*, which establishes a series of implementation tools combining progressive methods of planning and land management to ensure a productive and sustainable rural resource base for the region into the next Century.

- > Corangamite Catchment Management Authority (CCMA) released the *Regional Catchment Management Strategy* in 1997. It lists some twenty-two different land degradation issues that have been identified in the region, including intrusion of pest plants and animals, biodiversity decline, erosion, salinity, groundwater quality and eutrophication. The CCMA has also recently released the *Draft Nutrient Management Plan*, which is a specific document targeting water quality issues in the catchment.
- > A local perspective, the rural hinterland is under significant pressure through the widespread damage caused by rabbits, serrated tussock and Chilean needle grass, salinity and erosion.
- > Are many volunteer groups (e.g. Landcare, Tree Groups) within Geelong who are undertaking a range of beneficial projects aimed at specifically addressing these rural environmental problems. Council needs to work closely with the CCMA, the various volunteer groups, the VFF and landowners in order to arrest further decline in the quality of Geelong's rural environment.
- > Is important to recognise that, whilst many of the environmental issues relate to private land, these impacts extend onto adjoining public land and roadsides, thereby affecting their environmental values.

## RURAL ENVIRONMENT ACTIONS

ACTION NUMBER	ACTIONS	KEY PARTICIPANTS	PRIORITY	STATUS
<b>Development in Rural Areas</b>				
RE 1	Undertake an implementation program of the recommendations within the <i>Draft Rural Land Use Strategy</i> (once approved).	Council	High	In Progress
RE 2	Introduce a requirement that all septic tanks be assessed every five years for compliance with the <i>Code of Practice for Septic Tanks</i> .	Council	Low	New
RE 3	Investigate the development of farm forestry opportunities.	NRE Central Victoria Plantation Committee CCMA Council	Low	New
<b>Land Degradation</b>				
RE 4	Promote and encourage farmers to undertake Whole Farm Planning to ensure that land use and management practices provide for the sustainable use of rural land. In particular, encourage diversity in farm operations, including planting trees for commercial timber products.	Council VFF NRE Community CCMA	High	New
RE 5	Develop a Land Degradation Map identifying and prioritising degraded land, including soil erosion and salinity.	Council NRE CCMA	Medium	New
RE 6	Develop a Land Degradation Action Plan that focuses on ground works in identified priority areas.	Council Community NRE CCMA	Low	New
RE 7	Develop a Rural Land Owners Kit that provides advice on good land management and related issues.	Council NRE VFF CCMA	Medium	New
RE 8	Develop and distribute a Salinity Resource Kit to assist land managers of affected land to address areas of salinity.	Council CCMA NRE	Low	In Progress
RE 9	Investigate the introduction of a Rural Rate Rebate Scheme that recognises and	Council Community CCMA	Low	New

	rewards good land management practices and retention of indigenous vegetation.			
RE 10	Develop a Best Land Manager of the Year Award Scheme by which land owners/occupiers adopting good land management practices receive recognition.	Council Landcare Groups VFF CCMA	Low	New

#### Water Quality

RE 11	Implement the <i>State Environment Protection Policy (Waters of Victoria) 1988</i> .	EPA Council CCMA Barwon Water	High	On-going
RE 12	Collate existing chemical/biological data on the Barwon/Moorabool/Little Rivers, creeks and other water bodies and develop actions to assist in the control of blue green algae. Implement the recommendations of the <i>Draft Nutrient Management Plan</i> (once approved).	Council Barwon Water NRE CCMA	High	In Progress
RE 13	Encourage improved farm management practices to minimise the runoff of fertilisers and agricultural chemicals into waterways.	Council VFF Landcare Groups CCMA Australian Fertiliser Services Association	Medium	New
RE 14	Develop appropriate standards for agricultural chemicals and associated use. Provide education material and enforce regulations.	NRE VFF CCMA EPA CSIRO Industry Council	Low	New

#### Vermin & Pest Animals

RE 15	Develop a Vermin and Pest Animal Strategy and implement a co-ordinated program to address vermin and pest animal/waterfowl problems on public and private land and within waterways.	Council NRE CCMA Landcare Groups Parks Victoria	Medium	New
RE 16	Prepare, with industry associations, a register of vermin and pest controllers who practice environmentally sound vermin/pest animal control.	Council Landcare Groups NRE CCMA	Low	New

RE 17	Review the dog registration fee structure based on desexing and improve identification measures. Increase policing and fines for owners who allow dogs/cats to roam unsupervised. Review the Local Laws in relation to cat and dog curfews.	Council	Low	New
RE 18	Develop a school based pet care education program explaining the environmental problems associated with stray animals.	DoE CCMA	Low	New
<b>Noxious &amp; Environmental Weeds</b>				
RE 19	Develop a Noxious and Environmental Weed Strategy and implement a co-ordinated weed management program for both public and private land. Investigate the use of alternatives to chemicals.	Council NRE CCMA Parks Victoria	Medium	New
RE 20	Investigate the introduction of assistance programs to rural landowners for the purchase, supply and application of herbicides for the control of noxious weeds, in particular Serrated Tussock, Chilean Needle Grass and Patersons Curse.	Council NRE VFF Community CCMA	Low	New
RE 21	Prepare a register of weed controllers who practice environmentally sound weed control in association with industry associations	Council NRE Landcare Groups CCMA	Low	New
RE 22	Undertake community awareness programs on the impact of noxious and environmental weeds. Update the Council Pest Plant and Environmental Weed Brochure as required and distribute through local nurseries.	Council Community NRE VFF CCMA	Medium	In Progress
RE 23	Investigate the introduction of a local law to prevent nurseries and garden	Council Nursery Association CCMA NRE	Medium	New

	centres in Geelong from propagating and selling pest plants identified in Council's Pest Plant and Environmental Weed brochure and priority weed list.			
<b>Native Vegetation</b>				
RE 24	Develop and conduct a series of local workshops on native vegetation management, plant identification, planting and protection.	CCMA NRE Landcare Groups VFF Greening Australia	Low	New
RE 25	Investigate the appointment of a Landcare Officer to coordinate and support Landcare activities by local groups and provide advice and assistance to establish sustainable catchment management practices.	Council CCMA NRE	Medium	In Progress
<b>Roadside Reserves</b>				
RE 26	Expand the roadside marker system throughout the municipality to identify significant remnant roadside vegetation. Investigate the use of the Roadside Identification System (RIDS) being used in the Surfcoast Shire.	Council RCAC	High	In Progress
RE 27	Develop a training program for Council staff/contractors that addresses the importance of minimising soil disturbance, weed identification, native vegetation identification and tree pruning/clearance works.	Council	Critical	New
<b>Fire Management</b>				
RE 28	Develop and implement fire management plans for rural areas, having regard to the values of remnant vegetation.	CFA NRE Council	Medium	New
RE 29	Provide fire prevention information to all property owners in rural areas.	CFA Council	Low	On-going
<b>Litter Control</b>				
RE 30	Develop an education program aimed at reducing roadside litter and the illegal dumping	Council ERV	Low	New

	of rubbish in rural areas.			
RE 31	Enforce legislation in relation to littering and rubbish dumping and increase fines associated with contraventions.	Council	High	On-going

# CHAPTER ELEVEN

## URBAN ENVIRONMENT

### Vision

To create vibrant urban areas that exhibit strong elements of amenity and safety and have an overall emphasis on improving the environment and quality of life.

### Goals

- > To ensure that new development is environmentally sustainable and creates a healthy urban area.
- > To create urban areas that meet the needs of present and future citizens and recognise the values of the natural environment.
- > To create urban areas where the transport needs of the local community are addressed in a manner that minimises air pollution, reduces stress and provides for safe pedestrian and cyclist access.
- > To provide a diversity of open space that reflects the needs of neighbourhoods by enhancing amenity, safety and access for people.
- > To promote the clean up of contaminated land.
- > To provide clean streets and public spaces.
- > To improve stormwater quality in urban areas.
- > To establish urban habitat corridors and retain mature trees.

### Issues

Geelong is the largest urban area in Victoria, outside of Melbourne, and is the 11th largest City in Australia. The City of Greater Geelong is the largest municipality in Victoria. It has an urban population of over 153,000 and contains a variety of industrial and commercial uses, dominated by heavy industry such as refining and manufacturing and food processing.

A significant component of Geelong's population resides in satellite townships, particularly on the Bellarine Peninsula. Localities such as Ocean Grove and Drysdale/Clifton Springs are rapidly developing areas, which place additional pressures on their respective local environments.

The urban areas of Geelong are quite dispersed and rely predominantly on the motor vehicle as a means of connecting one urban area to another. Public transport in Geelong includes an extensive bus network and a limited rail network. In fact, one of the local bus companies has an extensive fleet of natural gas powered buses, which is greatly assisting in the reduction of CO2 emissions locally. There has also been an increase in the popularity of cycling as a means of sustainable transport and Council has been involved in the development of a Regional Strategic Bicycle Plan to facilitate the expansion of the bicycle pathway network.

The urban area is also associated with a number of specific environmental issues which impact on the wider community and the municipality as a whole. These include contaminated land (e.g. previous landfills, industrial sites), stormwater quality, litter and the loss of mature trees/habitat corridors.

The creation of sustainable urban areas that are not only attractive and pleasant to live in, but also healthy, functional and well designed, will need to address many issues.

Through the appropriate location and design of urban areas it is possible to prevent unnecessary urban sprawl, manage stormwater, maximise use of existing infrastructure, improve energy efficiency and minimise conflict with industrial areas. Further, it is possible to create urban areas where natural systems and environmental and cultural values are seen as assets and are protected and enhanced.

Equally as important is the need to recognise and address the social aspects of urban design. We need to create an environment that not only engenders a sense of pride, but also is clean and healthy to live, work and play in. The importance of addressing the sustainability of Geelong's urban growth is very real, particularly as it is anticipated that Geelong will experience a substantial population increase in the future. But addressing issues of urban sustainability should not focus exclusively on new development, but also identify ways in which the environmental quality and efficiency of the existing urban areas can be protected and enhanced.

## URBAN ENVIRONMENT ACTIONS

ACTION NUMBER	ACTIONS	KEY PARTICIPANTS	PRIORITY	STATUS
<b>Development</b>				
UE 1	Implement planning measures which encourage the use of appropriately designed and located higher density residential areas to limit urban sprawl.	Council	Medium	On-going
UE 2	Investigate the expansion of the 'Boulevard Project' through a beautification program for all major entrances to Geelong.	Council Vic Roads NRE	Low	In Progress
UE 3	Establish a policy requiring the undergrounding of all new power lines and other utility services throughout the municipality. Continue the powerline relocation program in key commercial and activity areas.	Council Powercor	Medium	New
UE 4	Implement EPA noise regulations in urban areas. Investigate adjusting truck routes to reduce traffic noise.	EPA Vic Roads Council	High	On-going
<b>Transport</b>				
UE 5	Improve public transport facilities such as shelters, seating and information boards at bus stops to encourage increased usage. Liaise with bus operators regarding integrating bus services with train times and railway stations.	Council PTC	Low	On-going
UE 6	Implement 'The Barwon Region Strategic Bicycle Plan' to create a network of bicycle paths for commuter, as well as recreational use, and investigate opportunities to utilise disused railway and road reserves for linear trails.	Council Barwon Regional Bicycle Council	Medium	On-going
UE 7	Provide all-day parking for cars in areas linked to improved transport facilities.	Council	Low	On-going
UE 8	Examine on-street parking price mechanisms in order to maximise efficient use of space	Council	Low	New

<b>Open Space</b>				
<b>UE 9</b>	Develop a program aimed at identifying opportunities to link existing and proposed open space and to provide green corridors through urban areas.	Council	Medium	New
<b>UE 10</b>	Implement the policy guidelines contained in the <i>Open Space Strategy</i> .	Council	High	On-going
<b>UE 11</b>	Provide a greater diversity of open space in urban areas, including community gardening lots, nature reserves and urban forests.	Council	Medium	New
<b>UE 12</b>	Develop landscape guidelines which require that as part of landscaping within open space areas, appropriate indigenous species should be used. Irrigation systems should be installed for non-indigenous plantings.	Council	Medium	New
<b>UE 13</b>	Develop strategies to reduce potable water usage through the recycling of water.	Council Barwon Water	Low	New
<b>UE 14</b>	Develop standards and procedures for street tree planting and pruning throughout the municipality and appropriately train staff/contractors in implementing these standards.	Council Power Cor State Government NRE	Low	In Progress
<b>Contaminated Land</b>				
<b>UE 15</b>	Identify and list all sites known by Council to be contaminated and link this to Council's Land Information System.	Council EPA NRE	High	In Progress
<b>UE 16</b>	Develop a system to enable the potential human health and environmental risk associated with known or suspected contaminated land to be assessed during Council's decision-making process.	Council EPA NRE	High	New
<b>UE 17</b>	Provide guidance for the assessment and cleanup of contaminated areas on residential and agricultural properties.	EPA	High	On-going
<b>UE 18</b>	Prepare information material that outlines Council's role in the	Council	Low	New

	identification, management and prevention of contaminated land.			
UE 19	Undertake education campaigns to minimise the further contamination of land.	Council EPA	High	New
<b>Stormwater Management</b>				
UE 20	Develop a Stormwater Management Plan that investigates and identifies a range of solutions to the following issues: · Water Quality · Outlets · Litter · Sediment · Nutrients.	Council CCMA	Critical	New
UE 21	Adopt the ANZECC <i>Australian Water Quality Guidelines</i> for fresh and marine waters as benchmarks for water quality improvement.	Council CCMA	High	On-going
UE 22	Prepare and implement policies and guidelines for developers of single dwellings and medium density housing to optimise use of stormwater. Encourage the use of rainwater tanks.	Council HIA/MBA CCMA	Low	New
UE 23	Develop a policy for the management and improvement of storm water discharge from all developments. (e.g. residential, commercial and industrial). Investigate the use of alternative stormwater management techniques.	Council CCMA	High	New
UE 24	Implement an education program to increase awareness of the impacts of everyday activities on storm water quality.	Council Community CCMA	Medium	In Progress
UE 25	Undertake education programs which alert the community to the benefits associated with the reuse of waste water.	Community Council Barwon Water CCMA	Low	New
UE 26	Investigate the development of a system to identify abuse of the drainage system through the illegal dumping of sewage, oil and other pollutants and introduce	Council Barwon Water Community CCMA	High	New

	finer to address these cases of abuse.			
<b>UE 27</b>	Establish operating procedures which ensure that Council's street cleaning and maintenance program adopts 'best practice', minimising adverse impacts on water quality.	Council	Medium	New
<b>Litter</b>				
<b>UE 28</b>	Introduce a Geelong Cleanliness Rating to assess the visual impact of litter on the municipality and recommend improvements. Provide a phone number to ring through and report trouble spots.	Council Community	Low	New
<b>UE 29</b>	Educate park users to take their rubbish home and co-ordinate signage to promote Geelong's image and the consequences and fines associated with littering.	Council Community	Medium	On-going
<b>UE 30</b>	Support community award programs, e.g. 'Tidy Towns', 'Tidy School' and 'Rural Pride' etc.	Council KABV Community DoE	Low	On-going
<b>UE 31</b>	Introduce an 'Adopt a Road' program and initiate a trial 'Tidy Street' Competition. Liaise closely with BRWMG as part of its Cleaner Roads Project.	Council Vic Roads Community BRWMG	Low	New
<b>UE 32</b>	Implement a regular main road 'litter patrol' for frequent removal and disposal of roadside litter and dumped waste materials. Investigate the use of persons from the Community Corrections Centre and Barwon Prison.	Vic Roads Council Dept of Justice	High	New
<b>UE 33</b>	Develop designated dog exercise areas in locations identified as 'poo' hot spots. Such facilities should include appropriate bins for the disposal of such waste.	Council Foreshore Committees	Medium	On-going
<b>UE 34</b>	Implement programs for the education of dog owners and increased enforcement of the Dog Act in relation to dog 'poo' on footpaths, open space	Council Foreshore Committees Community	High	New

	reserves and foreshore areas.			
<b>UE 35</b>	As part of a Stormwater Management Plan investigate the introduction of an on-going program of litter trap installation.	Council CCMA	High	New
<b>Landscape</b>				
<b>UE 36</b>	Develop landscaping guidelines for all new development aimed at ensuring the retention of existing vegetation, where appropriate, and the use of indigenous species.	Council Dol	High	New

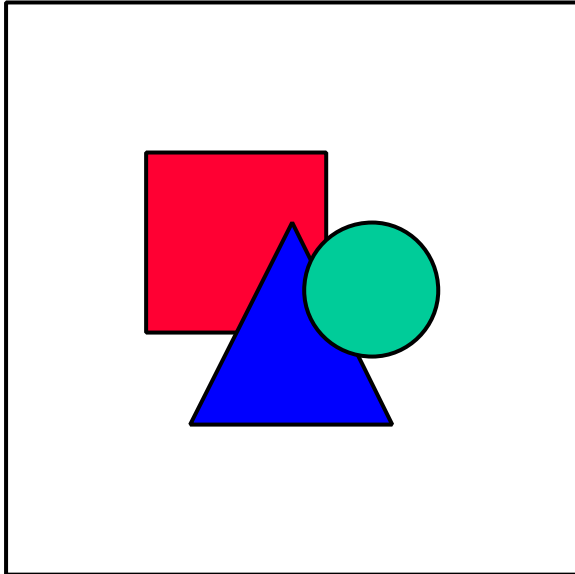
# CHAPTER TWELVE

## MARINE & COASTAL ENVIRONMENT

### Vision

To protect and enhance our beaches, bay, ocean and saline wetlands so as to maintain a high level of aquatic biodiversity and environmental quality, whilst accommodating a range of uses.

### Goals



- > To ensure that significant environmental features along the coast are protected and enhanced.
- > To improve the quality of water in the bay and ocean.
- > To ensure that industrial and commercial activities which rely on the bay and ocean adopt the highest environmental standards.
- > To undertake regular monitoring in order to assess the health of marine and coastal ecosystems.
- > To ensure that stormwater entering the bay and ocean is clean.
- > To ensure that appropriate hazard contingency arrangements are in place.
- > To reduce the amount of litter in the coastal environment.
- > To preserve the natural foreshore environment and ensure the sustainable utilisation of marine resources.

### Issues

The City of Greater Geelong has approximately 185km of coastline, from intertidal mudflats, saline wetlands and sandy beaches to rocky reefs. Areas of this coastline are internationally recognised as containing significant habitat for migratory waterbirds and threatened species (e.g. Orange-bellied Parrot), whilst, at the same time, it is subject to a number of uses and functions that have a significant impact on this sensitive environment.

The main commercial district of Geelong is located adjacent to the Bay, thus the origin of the term 'City by the Bay'.

The coast is a significant recreational, boating and tourism asset, as well as a major focus for industries, both large and small, from those that require major port facilities to boat builders. The port facilities within Geelong are a vital and important economic resource for the region. It must be recognised, however, that the management of these facilities requires processes such as dredging, which can have significant environmental consequences. In addition, the marine environment is also a major source of food, with established fishing and aquaculture industries, which rely on clean and healthy seas. Whilst the marine and coastal environment may have many human related purposes, it should not be forgotten that it is also home to a large diversity of fish and marine animals and birds, and that their survival depends on the maintenance of the quality of this environment.

Council is directly involved, as Committee of Management, in the management of a significant section of foreshore land. This role has recently widened through the transfer of a number of parcels of land previously owned by the Port of Geelong Authority. Other key agencies involved in the planning and management of the coastal environment in Geelong include the Victorian Coastal Council, Central Coastal Board, Parks Victoria, NRE, Bellarine Bayside Foreshore Committee and Barwon Coast Committee of Management.

There have been a large number of strategic planning documents recently produced impacting on the marine and coastal environment. The Federal Government has released *Australia's Ocean Policy* which addresses issues of environmental

sustainability of Australia's marine resources. The Victorian Coastal Council recently released the *Victorian Coastal Strategy* which provides the State with strategic direction for coastal management issues. On the local scene, Council has recently prepared a Coast Action Plan for the Steampacket/Waterfront Geelong area, as well as the *Corio Bay Foreshore Management Strategy*. Other coastal strategies and masterplans have also been prepared for specific sections of the remaining coastline by both Council and the Foreshore Committees. A specific project is currently addressing the impacts on Swan Bay from a catchment management approach.

The inner portion of Corio Bay has suffered from past industrial contamination and continues to receive significant nutrients and litter from the various stormwater drains and creeks which discharge into the Bay. Other sections of the coast have been severely affected by erosion and land degradation. The Black Rock sewerage outfall is also located within the municipality.

Given the competing interests, the biggest challenge in the future will be the management of all these interests while, at the same time, maintaining the quality of the environment. When addressing the health of this environment, it is necessary to broaden the focus further than just activities on the water, as many land-based activities already have, and have the potential to have, significant environmental impacts on the marine environment.

Our track record on marine and coastal management has been poor, with significant levels of pollution, the destruction of seagrass, degradation of saline wetlands, loss of species and litter problems. The challenge for the future is to achieve a balance between human impact and natural quality.

#### MARINE AND COSTAL ENVIRONMENT ACTIONS

ACTION NUMBER	ACTIONS	KEY PARTICIPANTS	PRIORITY	STATUS
<b>Coastal Development</b>				
MC 1	Prepare Coast Action Plans and associated guidelines/policies to ensure that any land use, development or activity adjacent to the coast does not have a detrimental impact on the marine environment or on cultural, recreational and landscape values.	Council NRE Central Coastal Board	High	New
MC 2	Identify and map areas of environmental significance along the coast utilising resource information and include this information on Council's Land Information System.	Council NRE Central Coastal Board Parks Victoria Coast Action/Coast Care	High	New
MC 3	Develop guidelines to promote the planting of indigenous coastal species on private land, in particular adjacent to foreshore reserves, and to minimise the use of inappropriate plant species.	Council Foreshore Committees NRE Community Coast Action/Coast Care	Low	New
MC 4	Introduce planning measures to ensure that all dunal systems are protected as part of any coastal development.	Council CCMA	Medium	New
<b>Coastal Land Uses</b>				
MC 5	Encourage industries that rely on the bay and ocean as part of their operations to prepare Environmental Management Plans, as well as contingency	Council Industry EPA	High	New

	plans to address possible environmental hazards.			
<b>MC 6</b>	Liaise with State and Commonwealth authorities to actively enforce regulations regarding ship washing and ballast water discharges and investigate the treatment of ballast water.	Council Government TNT Geelong Port EPA	High	On-going
<b>MC 7</b>	Introduce a requirement that all development near coastal areas be connected either to reticulated sewer or to septic tank systems which comply with the <i>Code of Practice for Septic Tanks</i> .	Council	High	On-going
<b>MC 8</b>	Introduce a requirement that toilet facilities along the coast be connected to sewerage, and where sewerage is not available, undertake regular maintenance of septic tank systems or investigate the installation of composting toilets where appropriate	Council Foreshore Committees	High	New
<b>MC 9</b>	Liaise with Barwon Water regarding strategies to identify the potential reuse of sewage effluent in order to minimise the amount discharged via the Black Rock sewer outfall.	Barwon Water Council Surfrider Foundation Industry	Low	New
<b>MC 10</b>	Liaise with key agencies seeking support to introduce controls on the use of motor boats and personal watercraft in areas that contain sensitive marine habitats and actively enforce these regulations.	Council State Boating Council Parks Victoria	Low	New
<b>MC 11</b>	Establish environmental standards for yacht clubs, boat building and maintenance operations and undertake regular inspection and monitoring, having regard to the EPA guidelines for marinas.	EPA Council	Low	New
<b>MC 12</b>	Undertake an extensive environmental assessment and community consultation	NRE EPA ECC Council	High	On-going

	process prior to the development of any marine-based aquaculture using non-indigenous species.			
<b>Water Quality</b>				
<b>MC 13</b>	As part of a Stormwater Management Plan, limit the number of stormwater outlets and investigate the opportunities to adopt and utilise alternative stormwater management techniques, such as wetland filtration, to address stormwater quality discharged into the bay, ocean and estuaries.	Council CCMA Coast Action / Coast Care	Critical	New
<b>MC 14</b>	Ensure that monitoring is undertaken of landfill and industrial sites adjacent to the coast to ensure that appropriate controls exist for leachate and other groundwater pollutants. Future landfill sites shall attain the highest environmental and social standards.	EPA Council Industry	High	On-going
<b>MC 15</b>	Identify appropriate locations for the placement of potentially contaminated dredge spoil in consultation with other relevant authorities and the community having regard to relevant Acts and regulations.	Channel Corp TNT Geelong Port EPA Council	High	On-going
<b>MC 16</b>	Expand existing marine water quality testing along beaches, the bay and waterways and establish a database to monitor changes. (e.g. Beachwatch program).	EPA Foreshore Committees Council Community Coast Action / Coast Care	Medium	New
<b>MC 17</b>	Provide a Hotline for emergency calls regarding water pollution along the coast	EPA Council	High	New
<b>Beach Quality &amp; Maintenance</b>				
<b>MC 18</b>	Develop programs for coastal stabilisation, maintenance and enhancement of degraded coastal landforms.	Council Foreshore Committees NRE Coast Action / Coast Care	Medium	New
<b>MC 19</b>	Undertake an assessment of beach erosion and determine appropriate measures for restoration and	Council Central Coastal Board Foreshore Committees NRE	Medium	New

	renourishment.			
<b>Litter</b>				
<b>MC 20</b>	Undertake a 'Drains to Waterways' awareness campaign to increase understanding of the impacts of litter, stormwater and pollution on the marine environment.	Council DoE Rotary Community CCMA Coast Action / Coast Care	Medium	In Progress
<b>MC 21</b>	Liaise with Foreshore Committees to assist with the provision of additional rubbish and recycling bins where required in foreshore reserves and car parks.	Council Foreshore Committees Coast Action / Coast Care	Low	On-going
<b>MC 22</b>	Undertake a regular program of litter removal from beaches and coastal carparks.	Council Foreshore Committees	Low	On-going
<b>MC 23</b>	Provide 'dog poo' collection and disposal facilities at beaches and other coastal areas.	Council Foreshore Committees	Medium	On-going
<b>MC 24</b>	Liaise with the Victorian Yachting Council to seek their support for the introduction of a range of measures which encourage responsible litter management by vessels on the water.	Council Yacht Clubs Parks Victoria	Medium	New
<b>MC 25</b>	Investigate the development of biodegradable bait bags to minimise coastal pollution and damage to marine life	Council Fishing Clubs Bait Suppliers ERV	Medium	New
<b>Marine Species</b>				
<b>MC 26</b>	Collate existing information and mapping on wetland and seagrass areas to monitor the health of communities and develop programs to address seagrass loss.	MAFRI NRE Coast Action / Coast Care Council	High	New
<b>MC 27</b>	Liaise with NRE and Foreshore Committees regarding the development of policies addressing the depletion of shell fish from intertidal zones and a greater emphasis on policing and enforcement.	NRE Foreshore Committees Council Coast Action / Coast Care	High	In Progress

<b>MC 28</b>	Identify introduced species (non-aquaculture) of both terrestrial and marine flora and fauna and develop programs to address their impact and removal from the ecosystem.	MAFRI NRE CSIRO Parks Victoria	High	On-going
<b>Native Vegetation</b>				
<b>MC 29</b>	Prepare management plans to ensure the protection and enhancement of remnant vegetation within coastal reserves.	Council NRE Foreshore Committees CCMA Coast Action / Coast Care Central Coastal Board	High	New
<b>MC 30</b>	Undertake habitat restoration programs through removal of weed species to encourage the recolonisation of indigenous flora and fauna into the marine and coastal environment.	NRE Council Foreshore Committees Coast Action / Coast Care	Medium	New
<b>MC 31</b>	Provide education material to improve the community's understanding of flora and fauna endangered species and their interdependence on the coastal and marine environment.	MAFRI NRE Parks Victoria Coast Action / Coast Care	Low	New







# CHAPTER THIRTEEN

## COMMUNITY EDUCATION

### Vision

To raise environmental awareness in the Council and the community and increase participation in environmental issues in order to achieve a sustainable way of life in the municipality.

### Goals

-  > To raise awareness of the need for environmental sustainability through environmental education.
-  > To develop a range of environmental education programs to meet the requirements of the community.
-  > To foster recognition of the need for local ownership of environmental issues.
-  > To provide educational opportunities to decision makers to ensure an appreciation of the impact of decisions on the environment.
-  > To create a forum where community groups and individuals can discuss environmental issues and ideas with Council.
-  > To enable the Council to lead by example through implementation of this EMS and adoption of sound environmental work practices.

### Issues

In order to undertake a program of environmental management as outlined in this Strategy, the Council must first get its own house in order before seeking the support and action of others. This Strategy is about a change of culture in all persons within the wider organisation, to ensure sound decision-making and that actions are based on the premise of achieving environmental sustainability.

Education and community awareness are critical to the successful implementation of the EMS. Effective communication to improve understanding is the key to getting the community thinking and acting as environmental managers.

Whilst it is recognised that there is an increasing awareness of environmental issues in general, the importance and implications of these issues in the local context are not as widely accepted. It is therefore necessary to educate people on the range of issues, what can be done to address these issues and what opportunities are available for all sectors of society to participate.

As the range of environmental issues are diverse and the sections of the community which can address these issues are also diverse, ranging from individuals to groups, residents or major industry, it is important to tailor the education and awareness programs to address the specific issues of each group.

Education and awareness are vitally important, as they foster a sense of local ownership in environmental issues. This sense of local ownership is essential in order to ensure that the actions identified in the EMS are implemented. Particular attention has been given to schools, ensuring that school children become the educators of their own families on environmental issues and making an investment in our future.

There are many varied opportunities available to undertake community education and awareness, including newsletters, Internet and information kits, as well as other more subtle approaches such as festivals and plays, which should all be targeted to the particular audience.

Whilst it is important to ensure that the community is educated in the importance of environmental issues, it is also vital to ensure that decision makers are given proper guidance in order to make appropriate decisions and be aware of the potential environmental implications of decisions that may be made.

There are many individuals and groups (e.g. 'Adopt a Park', 'Friends of', Coast Action, Landcare and Tree Groups) already actively involved in a range of environmental programs. Others participate at a more strategic level, such as membership of steering committees or in the writing of submissions to various Council and government projects.

Many schools and industries also participate in environmental projects, as does the wider community in such activities as recycling, composting and events such as Clean Up Australia.

It is vital that this community involvement be acknowledged, supported and expanded in order to assist in facilitating the implementation of the EMS.

### COMMUNITY EDUCATION ACTIONS

ACTION NUMBER	ACTIONS	KEY PARTICIPANTS	PRIORITY	STATUS
<b>Council Operations</b>				
CE 1	Recognise the importance of environmental sustainability within Council's City Plan and other relevant strategies. Ensure that all Council reports take account of environmental issues, under a separate sub-heading.	Council	Critical	New
CE 2	Provide regular information and professional development training to Council staff and contractors on environmental issues and management.	Council BRWMG Environs Australia MAV	High	New
CE 3	Develop a comprehensive list of Environmental Indicators to monitor the effectiveness of Actions implemented under the EMS.	Council Environs Australia	Critical	New
CE 4	Investigate placing a notice in the local papers outlining items on the Council agenda & listing all major planning permit applications received.	Council	Low	In Progress
CE 5	Investigate including an environmental information brochure with the rate notice & a comment sheet for people to report back to	Council	Medium	New

	Council on environmental issues.			
CE 6	Investigate the appointment of an Environmental Education Officer to produce education programs and presentation material to assist residents, businesses/industry and schools about ways of achieving environmental sustainability.	Council	Critical	New
CE 7	Investigate the promotion of Council and community environmental activities on the telephone hold system, and via notice boards and displays at libraries and customer service centres, community centres, Busport and post offices.	Council	Medium	New
<b>Education Programs</b>				
CE 8	Support the continuation of an annual Geelong Environmental Day festival, showcasing the diverse elements of Geelong's natural environment and the improvements being undertaken by local people, groups, business and industry.	Community Council	High	On-going
CE 9	Liaise with the DoE and local teachers to develop curricula activities, professional development for teachers and local environment kits for schools.	DoE Community NRE EPA	Medium	New
CE 10	Organise annual 'Project Earth Awards' for all local schools under the Green Criteria Schools Program covering energy conservation, waste minimisation, indigenous landscaping, water conservation and involvement in community environment programs.	DoE Council	Medium	New
CE 11	Promote and support community environment programs, such as Clean Up Australia Day, Arbor Week, World Environment Day	Schools Council Barwon Water Community	High	On-going

	and Coast Action / Coast Care Programs.			
<b>CE 12</b>	Provide assistance, encouragement and promotion to the development & maintenance of 'Friends of' Groups, Adopt-a-Park, Landcare, Coast Action and other environment groups.	Council NRE	High	On-going
<b>CE 13</b>	Hold annual Environmental Achievement Awards, similar to the Geelong Business Awards and Banksia Environment Awards, to recognise efforts in achieving environmental sustainability in the broader community. Establish an acknowledgment garden landscaped with award trees.	Council Community Media	Medium	New
<b>CE 14</b>	Investigate developing a demonstration house for the public to learn about alternative energy and other environmental features, including organic farming, to be built by local youths to educate them with new skills.	Council MBA/HIA EEV	Low	New
<b>Information</b>				
<b>CE 15</b>	Produce an information folder for builders, applicants and developers, etc, to include information on inter alia: · the Council's environmental regulations; · building design, siting and materials in relation to energy efficiency and water conservation; · timber selection; · energy conservation guidelines and products; · water conservation; · indigenous plant selection; · noxious and environmental weeds; · living with wildlife and responsible pet ownership; and · native vegetation controls and protected flora permits.	Council NRE EEV	High	New
<b>CE 16</b>	Produce an Environment	Council Community	Critical	New

	Awareness & Action Kit containing information on environmental sustainability and Council services & regulations for distribution to new residents, estate agents, schools, libraries, universities and interested people. The kit will contain information on: <ul style="list-style-type: none"> <li>- actions an individual can take to protect the environment;</li> <li>- natural features of the municipality;</li> <li>- how to access information and what resources Council has;</li> <li>- Council contacts; and</li> <li>- all environment groups.</li> </ul>			
<b>CE 17</b>	Establish a Council environment web site, as part of Council's home page, providing information on environmental issues and initiatives.	Council	Medium	New
<b>CE 18</b>	Liaise with the regional librarian to expand the library's environmental resources to include material on local fauna & flora, natural habitat management, sustainable land management practices, energy efficiency and conserver lifestyles.	Council	Low	New
<b>CE 19</b>	Produce an environmental section for the annual Council calendar listing contacts and event dates, etc.	Council	Low	New
<b>CE 20</b>	Investigate establishing permanent/semi permanent displays at shopping centres and the CAA. Investigate renting a billboard along the highway highlighting environmental issues/events and the use of environmental street theatre in the CAA.	Council Chamber of Commerce	Low	New
<b>Reporting</b>				
<b>CE 21</b>	Provide details of environmental issues and initiatives regularly in City Link and Interlink.	Council	High	On-going

CE 22	Provide quarterly open forums/information nights for residents of the municipality to discuss environmental issues.	Council Community	High	New
CE 23	Publish a quarterly environmental article in each of the local papers outlining environmental issues and actions being undertaken.	Council	Medium	New
CE 24	Provide environmental announcements on K-Rock, Bay FM and 3YYR.	Council	Low	New

## CHAPTER FOURTEEN

### SUMMARY OF CRITICAL AND HIGH PRIORITY ACTIONS

In order to assist with the implementation and monitoring of the Strategy, the Table below summarises Critical and High Priority Actions that are to be undertaken over the next three years. The estimated cost to Council (where applicable) has been included. These figures are indicative only and are based on 1999 costs. Where the Action will be undertaken by Council staff as part of a works program, the term 'In-kind' has been used. The external funding column outlines which Actions may be funded from external sources and which agencies are responsible for the allocation of such funds.

The implementation of many of these Actions will be dependent upon the availability of funds, having regard to other programs for which the Council is responsible. The range of competing demands for Council's limited resources has been recognised in the Strategy, with the need to investigate the establishment of a municipal wide environmental levy that would be used to fund the projects identified. It should be noted, however, that a number of the Actions listed are currently funded by Council, often with the support of external grants. To further assist in the implementation of all Actions, the community, community groups, industry, commerce and other agencies will also be encouraged to access a range of funding sources external to Council. The capacity of any one body to achieve the outcomes identified is unrealistic and therefore the success of the strategy must be founded on a 'whole of community response'.

### CRITICAL PRIORITY ACTIONS (1-2 YEARS) - TOTAL 18

Action No.	Key Participants	Estimated Cost (Council)	External Funding Sources
AQ 7	Council EPA Industry	\$2,000	AGO EEV
AQ 18	Council EPA Industry	In-kind	—
EU 2	Council Community EEV	Review undertaken in-house. Costs determined after review.	EEV AGO
WM 1	Council	In-kind	-----
WM 6	Council ERV BRWVG	\$140,000	ERV
WM 17	Council ERV BRWVG	\$10,000	—

WM 25	Council ERV	\$30,000	ERV
NW 6	Council NRE Community Parks Victoria	\$100,000	NHT CCMA NRE
NW 7	Council NRE CCMA	In-kind	---
NW 16	Council	\$60,000	---
NW 53	Council CCMA	\$50,000	CCMA NHT
RE 27	Council	\$10,000	---
UE 20	Council CCMA	\$100,000	CCMA NHT
MC 13	Council CCMA Coast Action/Coast Care	In-kind	-----
CE 1	Council	In-kind	---
CE 3	Council Environs Australia	In-kind	---
CE 6	Council	\$50,000	---
CE 16	Council Community	\$15,000	---
<b>High Priority Actions (2-3 years) - Total 85</b>			
AQ 1	EPA Council Community Industry Vic Roads	In-kind	---
AQ 2	EPA Council Community Industry	In-kind	---
AQ 3	Council EPA Industry	In-kind	---
AQ 4	Council	\$20,000	---
AQ 5	Industry Council	In-kind	---
AQ 6	Council Industry	In-kind	---
AQ 10	Council Industry	In-kind	---
AQ 12	Council NRE Community	\$60,000	AGO NRE CCMA NHT
AQ 16	Council Chamber of Commerce Australian Industry Group Industry	In-kind	---
AQ 21	EPA	---	---
AQ 23	EPA	---	---
AQ 24	EPA	---	---
EU 1	Council	In-kind	---
EU 3	Council EEV MBA/HIA	\$10,000	---
EU 4	Council CSIRO Deakin University EEV	\$20,000	---
EU 6	Council	In-kind	---
EU 14	Council	In-kind	---

	EEV		
<b>EU 16</b>	Council	In-kind	—
<b>WM 2</b>	Council Industry EPA ERV BRWVG Australian Industry Group	In-kind	—
<b>WM 3</b>	ERV BRWVG Council	\$5,000	ERV BRWVG
<b>WM 5</b>	Council ERV BRWVG	\$20,000	ERV BRWVG
<b>WM 7</b>	Council	In-kind	—
<b>WM 10</b>	Council DoE BRWVG ERV	\$5,000	ERV BRWVG
<b>WM 12</b>	Council	In-kind (tender process)	—
<b>WM 13</b>	Council	In-kind	—
<b>WM 14</b>	Council	\$3 M	—
<b>WM 15</b>	Council Industry Chamber of Commerce Australian Industry Group ERV	\$20,000	ERV
<b>WM 18</b>	Council ERV BRWVG	Subject to outcomes from Action WM17. (\$280,000- \$420,000) if subsidised to each residential tenement.	ERV
<b>WM 22</b>	Council	In-kind	—
<b>WM 24</b>	EPA Council	—	—
<b>WM 26</b>	Council ERV BRWVG	\$10,000	ERV
<b>WM 29</b>	Council	In-kind	—
<b>WM 30</b>	Council ERV BRWVG	\$10,000	ERV
<b>NW 3</b>	Council	In-kind	—
<b>NW 9</b>	Council NRE Community Parks Victoria	In-kind	—
<b>NW 10</b>	Council NRE	In-kind	—
<b>NW 11</b>	Council Environs Australia MAV	In-kind	—
<b>NW 23</b>	Council	In-kind	—
<b>NW 24</b>	Council	In-kind	—
<b>NW 32</b>	Council	In-kind	—
<b>NW 37</b>	Council NRE Parks Victoria Community CCMA	In-kind (NHT funded position)	—
<b>NW 39</b>	Council NRE Parks Victoria	In-kind	—
<b>NW 43</b>	Council	In-kind	—
<b>NW 48</b>	Council NRE	\$60,000	NHT

	Community CCMA Roadside Conservation Advisory Committee		
RE 1	Council	In-kind	---
RE 4	Council VFF NRE Community CCMA	In-kind	---
RE 11	EPA Council CCMA Barwon Water	In-kind	---
RE 12	Council Barwon Water NRE CCMA	\$25,000	CCMA
RE 26	Council Roadside Conservation Advisory Committee	\$5,000	---
RE 31	Council	In-kind	---
UE 4	EPA Vic Roads Council	In-kind	---
UE 10	Council	In-kind	---
UE 15	Council EPA NRE	In-kind	---
UE 16	Council EPA NRE	In-kind	---
UE 17	EPA	---	---
UE 19	Council EPA	In-Kind	---
UE 21	Council CCMA	In-Kind	---
UE 23	Council CCMA	In-kind	---
UE 26	Council Barwon Water Community CCMA	In-kind	---
UE 32	Vic Roads Council Dept. of Justice	In-kind	---
UE 34	Council Foreshore Committees Community	\$5,000	---
UE 35	Council DoI	In-kind	---
UE 36	Council DoI	In-kind	---
MC 1	Council NRE CCB	\$100,000	NHT
MC 2	Council NRE CCB Parks Victoria Coast Action/Coast Care	In-kind	---
MC 5	Council Industry EPA	In-kind	---
MC 6	Government TNT Geelong Port EPA	---	---

	Council		
MC 7	Council	In-kind	—
MC 8	Council Foreshore Committees	In-kind	—
MC 12	NRE EPA ECC Council	—	—
MC 14	EPA Council Industry	In-kind	—
MC 15	Channel Corp TNT Geelong Port	—	—
MC 17	EPA Council	In-kind	—
MC 26	MAFRI NRE Coast Action/Coast Care Council	In-kind	—
MC 27	NRE Foreshore Committees Council Coast Action/Coast Care	In-kind	—
MC 28	MAFRI NRE CSIRO Parks Victoria	—	—
MC 29	Council NRE Foreshore Committees CCMA Coast Action/Coast Care CCB	\$20,000	NHT CCB
CE 2	Council BRWMG Environs Australia MAV	\$10,000	—
CE 8	Community Council	\$10,000	—
CE 11	Schools Council Barwon Water Community	\$15,000	—
CE 12	Council NRE	\$20,000	—
CE 15	Council NRE	\$20,000	—
CE 21	Council	In-kind	—
CE 22	Council Community	\$2,500	—

**AGO** Australian Greenhouse Office  
**BRWMG** Barwon Regional Waste Management Group  
**EEV** Energy Efficiency Victoria  
**CCB** Central Coastal Board  
**CCMA** Corangamite Catchment Management Authority  
**ERV** EcoRecycle Victoria  
**NRE** Department of Natural Resources & Environment  
**NHT** Natural Heritage Trust

# CHAPTER FIFTEEN

## IMPLEMENTATION AND MONITORING

Community involvement and awareness have already been noted as major contributing factors to the successful implementation of this Strategy. It is equally important for Council to drive the implementation by carefully guiding the process and motivating all stakeholders to take part. Another critical factor in the implementation process will be the availability of funding and resources for the recommended actions.

In order to facilitate the implementation process the following actions are proposed:

1. Council rationalise the environmental planning and associated onground delivery functions within the structure of the organisation.
2. Investigate the appointment of an Environment Officer be appointed to co-ordinate the implementation of the EMS by:
  - > reporting to the Environmental Management Strategy Implementation Steering Committee;
  - > ensuring the integration of environmental objectives throughout Council departments and business units; and
  - > linking Council and community actions.
3. Investigate the appointment of an Environment Education officer be appointed to assist with the implementation of the EMS, in particular the production of information kits, displays, presentations to schools, community groups and industry and development of community-based environmental education programs.
4. An Environmental Management Strategy Implementation Committee be established to oversee the on-going implementation of the EMS, once approved by Council. Expressions of interest will be sought from people interested in joining this Committee, which will also include Councillors and Council officers. Terms of Reference will be prepared and reported to Council outlining the functions of this Committee, which will be specifically aligned to implementing the actions contained within the approved Strategy.
5. An Implementation Plan be prepared and adopted by the Implementation Committee and Council for each financial year. Whilst each Action has already been prioritised this Plan will clearly outline which actions will require funding and will assist in the preparation of budgets and grant applications.
6. An annual report on the progress of implementing the Strategy, in particular each year's Annual Implementation Plan, be presented to Council and the community. This report may include a review of priorities for Actions according to progress made.
7. The Strategy be reviewed after a period of three (3) years from its adoption by Council. The functions and performance of the Implementation Committee and the Environment and Environment Education Officers will also be reviewed at this time.

### ENVIRONMENTAL INDICATORS

At present the Council does not have a consistent or comprehensive set of data that can be used to provide a baseline for environmental management.

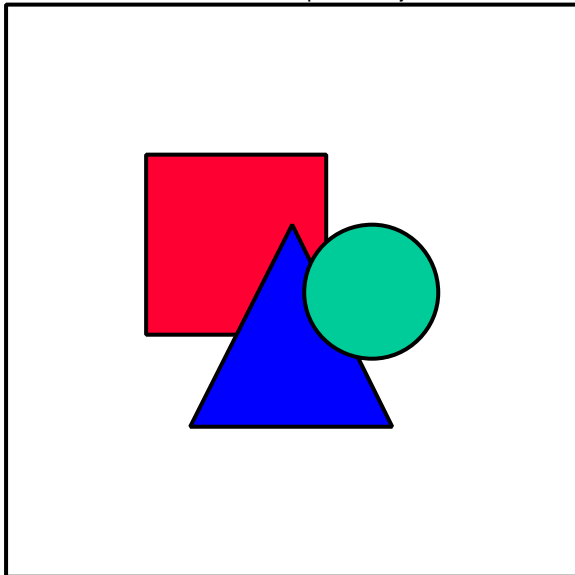
Action No. CE3 within Chapter Thirteen acknowledges the importance of establishing these environmental indicators, which are the mechanism for monitoring Council's progress and performance.

Once these indicators have been formulated, targets will be established for key result areas in order to gauge Council's overall environmental performance. The Implementation Committee will play a major role in the establishment of both the indicators and the targets.

The Australian Institute of Urban Studies (Victorian Division) and the City of Melbourne are currently working on the development of Environmental Indicators for Inner Metropolitan Melbourne. This work will be beneficial to Council when it commences the task of producing its own indicators.

#### **ACTIONS CURRENTLY BEING UNDERTAKEN BY COUNCIL**

- > Fortnightly recycling collection for residents.
- > Monthly paper and cardboard collection for residents.
- > Free household chemical collection day every two years.
- > Preparation of a contaminated sites database.
- > Compost bins and worm farms available for residents at reduced prices.
- > Operation of a Waste Transfer Station.
- > Discounted mulch available to residents.
- > Waste minimisation program within Council offices.
- > Electricity generation from methane gas at Corio landfill.
- > Use of recycled paper and envelopes.
- > Energy audits of selected Council buildings.
- > Energy conservation information available at Belmont offices and Geelong library.
- > Installation of solar panels on selected buildings and facilities.
- > Rationalisation of existing litter bins in shopping centres, carparks and open space reserves.
- > Installation of litter traps on major stormwater drains.



- > Participation in the Beachcare program.
- > Introduction of a 'Drains to Waterways' program.
- > Production of a wetland education and information kit.
- > Production of a Ramsar wetland brochure.
- > Adopt-a-Park program.
- > Community environmental awareness days e.g. Clean Up Australia Day, Arbor Week, World Environment Day.
- > Various revegetation programs e.g. Cowies/Hovells Creek.
- > Supply of environmental information, equipment, etc., to schools/service clubs.
- > Noxious weed removal program (serrated tussock) and Weed Incentive Scheme.
- > Noxious waterfowl removal program.
- > Vermin control program.
- > Emergency response and water testing for blue-green algae.
- > Production of a Pest Plant and Environmental Weeds Brochure.
- > Production of an indigenous plants planting guide.
- > Production of a rabbit control brochure.
- > Introduction of a Roadside Identification System (Serrated Tussock Program)
- > Preparation of guidelines for the management of significant roadside vegetation.

- > Establishment of a Roadside Vegetation Management Committee.
- > Remnant vegetation assessment as part of open space provision in new subdivisions, new development and service provision.
- > Facilitation of meetings of various 'Friends of' groups.
- > Establishment of Tree Strategy Consultative Committee.
- > Preparation of various management plans for Council and Crown land.
- > Management of significant indigenous vegetation areas.
- > Facilitation of revegetation works with Victorian Institute of Marine Science (Breamlea).
- > Co-ordination of beach cleaning grants and programs.
- > Preparation of grant submissions for environmental programs.

## ABBREVIATIONS

<b>AAV</b>	Aboriginal Affairs Victoria
<b>AGO</b>	Australian Greenhouse Office
<b>ANZECC</b>	Australia & New Zealand Environment and Conservation Council
<b>BRWMG</b>	Barwon Regional Waste Management Group
<b>CAA</b>	Central Activities Area
<b>CCMA</b>	Corangamite Catchment Management Authority
<b>CFA</b>	Country Fire Authority
<b>CFC</b>	Chlorofluorocarbon
<b>CoGG</b>	City of Greater Geelong
<b>CSIRO</b>	Commonwealth Scientific and Industrial Research Organisation
<b>DoE</b>	Department of Education
<b>DoI</b>	Department of Infrastructure
<b>ECC</b>	Environment Conservation Council
<b>EEV</b>	Energy Efficiency Victoria
<b>EDU</b>	Economic Development Unit

<b>EMS</b>	Environmental Management Strategy
<b>EPA</b>	Environment Protection Authority
<b>ERV</b>	Eco Recycle Victoria
<b>ESD</b>	Ecologically Sustainable Development
<b>GIS</b>	Geographic Information System
<b>GMC</b>	Geelong Manufacturing Council
<b>HIA</b>	Housing Industry Association
<b>KABV</b>	Keep Australia Beautiful - Victoria
<b>MAFRI</b>	Marine and Freshwater Research Institute
<b>MAV</b>	Municipal Association of Victoria
<b>MBA</b>	Master Builders Association
<b>NHT</b>	National Heritage Trust
<b>NRE</b>	Department of Natural Resources and Environment
<b>PTC</b>	Public Transport Corporation
<b>RACV</b>	Royal Automotive Club of Victoria
<b>RAIA</b>	Royal Australian Institute of Architects
<b>RAPI</b>	Royal Australian Planning Institute
<b>RCAC</b>	Roadside Conservation Advisory Committee
<b>SEPP</b>	Statement of Environment Protection Policy
<b>VFF</b>	Victorian Farmers Federation

## GLOSSARY OF SELECTED TERMS

**Best Practice** - Practices which incorporate latest technology and/or processes from a particular industry/s to result in the most effective or beneficial outcome.

**Biodiversity** - The number of species in an area and the extent of genetic variability within them.

**Biota** - All the organisms at a particular locality.

**Conservation** - The protection, preservation and careful management of natural resources.

**Contaminated site** - One at which hazardous substances occur at concentrations above background levels and where assessment indicates it poses or is likely to pose an immediate or long term hazard to human health or the environment.

**Ecology** - The study of the relationships between living organisms and their environment.

**Ecologically Sustainable Development (ESD)** - Development which aims to meet the needs of people today while conserving our ecosystems for the benefit of future generations. The National Strategy for ESD, agreed by the Council of

Australian Governments in December 1992, defines ESD 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.*'

**Ecosystem** - A community of animals and plants considered as a total unit with its physical environment.

**Environmental weed** - A plant that can establish persistent and threaten local indigenous flora and fauna.

**Global Warming, Climate Change and the Greenhouse Effect** - The greenhouse effect is a natural process whereby some of the sun's heat warms the atmosphere and without which the earth would be too cold to support life as we know it. Gases which are effective in retaining the sun's heat are:

- > carbon dioxide, which is released from burning wood, coal, oil or gas;
- > methane, which is derived from rotting vegetation;
- > CFCs, which are artificial gases thousands of times more effective 'molecule for molecule' than carbon dioxide in trapping the sun's heat.

There is global concern that the large quantities of these gases being released are warming the earth's atmosphere with consequent long-term changes in climate.

**Grey water** - Domestic wastewater from washing machines, showers, baths and dishwashing.

**Habitat** - The normal abode or locality of an animal or plant.

**Indigenous** - Native or original to an area, not introduced from outside the particular region or environment.

**Intertidal** - Between tidemarks i.e. covered by water at high tide and exposed to the air at low tide.

**Local Agenda 21** - A shared management program for a given locality, which incorporates the goals of all stakeholders in the community and balances social, economic and environmental resources. It is one of the major programs that emerged from the United Nations Conference on Environment and Development held in Brazil in 1992 and one to which Australia is a signatory.

**Non-renewable resource** - Resources with finite stocks that can be used up or at least depleted to such a degree that further recovery is too expensive.

**Noxious weed** - A plant proclaimed under the *Catchment and Land Protection Act 1994*, e.g. gorse, blackberry, watsonia, boneseed, boxthorn.

**Ozone depletion** - The destruction of ozone molecules by CFCs and halons, thus affecting the ability of the ozone layer to absorb radiation. The ozone that occurs between 15 and 35 km above the earth in the stratosphere absorbs radiation, thus protecting life on earth from the most damaging effects of ultra violet radiation.

**Remnant Vegetation** - Any small patch of native vegetation remaining in an area where most or all of the original distribution has been removed.

**Renewable resource** - Natural resource that comes from an essentially inexhaustible source e.g. Solar energy from the sun.

**Salinity** - The presence of salt in the soil as a result of a high water table rising to the surface and carrying salts with it. The process usually occurs as a result of increased irrigation and/or removal of vegetation.

**Sediment** - Matter composed of particles which fall by gravitation to the bottom of a liquid.

**Sedimentation** - Deposition of sediment

**Sustainable Forest Products** - Timber derived from a forest plantation where the yield equates with the existing growth rate, i change.

**Wetlands** - Areas of either permanent or ephemeral (temporary) shallow flooding with water that is fresh, brackish or saline.

**Wildlife corridor** - A vegetated strip of land linking wildlife habitat areas.

# APPENDICIES

Appendices 1 to 4 are not published on this web page. These appendices are available from the strategy coordinator, Bruce Humphries on telephone number 5227 0837. These 5 appendices are:-

- Appendix 1 - CHAPTER 28 OF AGENDA 21 CHARTER
- Appendix 2 - `THE NEWCASTLE DECLARATION`
- Appendix 3 - COUNCIL'S INTEGRATED PLANNING FRAMEWORK
- Appendix 4 - QUESTIONNAIRE
- Appendix 5 - SUMMARY OF QUESTIONNAIRE COMMENTS

## SUMMARY OF QUESTIONNAIRE COMMENTS

### Air quality

- > Air Quality - use of incinerator outside business hours. Urban Environment traffic noise caused by trucks early in the morning (2.30-5.00am). Other noise-neighbours playing loud music. Visual - overhead cables in the streets.
- > Traffic noise from motorbikes need to be controlled.
- > More positive approach to cleaner air in the inner city - zero emission vehicles, industry away from residential

- areas, open space to be increased, increase pedestrian malls.
- > Need to improve emissions from Geelong Cement.
- > Noise from hobby aeroplanes is very annoying and disruptive.
- > Additional tax imposed on residents installing wood heaters.
- > Noise and dust pollution from Blue Circle Cement is a problem.
- > Backyard incinerators are still a problem, particularly in Newtown.
- > Pollution from Shell and Alcoa causes unhealthy conditions for the health of ratepayers in that area.
- > Truck exhaust emissions should be the main target of the EPA.
- > Cars with smoky exhaust pipes should be targeted and owners fined if problem not fixed within certain time frame.
- > Air pollution discharges from Geelong Hospital, Valley Mills and Godfrey Hirst.

#### **Energy conservation**

- > Council offers incentive scheme for building homes using energy saving measures.
- > Council apply points on energy conservation when plans are approved for buildings and permit fees structured to reflect this.
- > Council should offer subsidised low wattage light globes.
- > Gas heating compulsory for all units and houses.
- > Alternative energy conservation measures are currently not cost effective.

#### **Waste management**

- > Council should not introduce big bins.
- > Introduce green waste collection (two a month) from nature strip. Mulch at depot and available for residents to collect free of charge.
- > Council liaises with retailers to encourage less use of plastic and paper bags. Establish an incentive program.
- > Waste recycling system introduced for household and organic wastes.
- > Council needs to establish an easy method of chemical disposal.
- > Remove rubbish bins and encourage people to take their rubbish home.
- > Recycle depot in Duoro Street is a disgrace - airborne particles are too high.
- > Recycle bins should be supplied and recycling continually pushed to ratepayers.
- > Why doesn't Geelong have mobile garbage bins like other towns and cities?
- > Trees lopped/cut down be offered to residents for firewood instead of being chipped.
- > Advice people about the truth with the recycling crisis.
- > More comprehensive recycle program and information to residents.
- > Rural areas need to have a recycling service.
- > People should use a new product made from recycled oil for their cars, trucks and machinery.
- > Use plastic baskets/crates for recyclables and paper rather than nylon bags.
- > Stockpile of pesticides and other intractable wastes.
- > Lack of communal composting/worming stations.
- > Re-introduce tip vouchers encourages people to use the landfill and not dump waste. Raising tip fees further discourages responsible behaviour.
- > Discount mulch to ratepayers bringing green waste to the tip.
- > Should be pre-treatment of industrial waste entering the sewer.
- > Mobile garbage bins must be introduced, together with collections of household refuse etc.
- > Council should inform householders to manage organic wastes on their own properties, minimise packaging and maximise recyclable waste.
- > Introduce an incentive program to recycle via a system of price per bin/weight.
- > Council should use 100% recycled paper.
- > Levy placed on all truck owners to assist with the collection and disposal of truck tyres along roadways.
- > Control over rubbish blown away from building sites.
- > Recycling receptacles be provided in shopping malls and tourist areas.
- > Concept of 'throw away' society needs to be reviewed.
- > Education program established by Council on waste minimisation.
- > Larger bins required at fast food outlets.
- > Plastic carry/shopping bags phased out - encourage reintroduction of brown paper bags.
- > Recycling bins installed within CBD area.
- > Recycling service required in Little River.
- > Introduce (trial) recycling service in industrial areas.
- > Council establishes community-composting areas.
- > Weekly collection of recyclables and paper introduced.
- > Waste management needs to become the responsibility of whoever creates the waste.
- > Allow public to chip/mulch their green waste on the weekends using Council equipment.
- > No hard waste collection service.

- > Lack of tipping sites encourages illegal dumping.
- > Need to promote recycling more - what exactly can be recycled and what happens to it if it isn't recycled.
- > No green waste recycling at Drysdale tip.
- > No separation of dumped waste at Drysdale tip.
- > Better to first spend time and resources on devising ways of reusing recycled materials in a cost-effective way.

#### **Natural environment and waterways**

- > More time needs to be spent on protecting the natural areas we already have.
- > Loss of indigenous habitat is occurring at an alarming rate, particularly along roadside corridors, through cutting for firewood, overslashing, weed encroachment and over grazing.
- > Some of the roads around Mt Duneed area should be listed as roadside conservation zones, being degraded by tree removal.
- > Need to reassess roadsides for their significant conservation values before degradation is irreversible.
- > Many roadsides with remnant vegetation are being choked out by weeds such as gorse, boneseed, flax-leaf broom etc.
- > Re-greening of rural roadsides required to provide wildlife corridors.
- > More native trees/shrubs need to be planted along roadsides.
- > Council should liaise with nurseries to encourage selling more native plants.
- > Greater control over preservation of existing unspoiled forest/wetlands.
- > Native tree planting strategy for public/crown land areas.
- > Tree plantings need to be followed up and maintained.
- > Concern over the proposed Watersports Complex at Belmont Common.
- > Concern over material entering Councils drainage system and draining into Lake Connewarre.
- > Concern over industrial wastes being dumped into waterways.
- > Flood plains need to be protected, minimising flood risk to property.
- > Dog droppings and the lack of control by CoGG requiring owners to pick them up.
- > Industrial wastes entering the Barwon & Moorabool rivers.
- > Promote the regeneration of the Bellarine Peninsula with indigenous species.
- > Council should ensure adequate 'green belts' are provided for habitat protection.
- > Council and senior management need to recognise the importance of the natural environment and provide sufficient funds for its maintenance and restoration.
- > Council needs to have a greater input into the environmental management of Geelong's water catchment/supply areas.
- > Indigenous vegetation, particularly along streetscapes and foreshore, need to be reintroduced.
- > More bins provided in picnic areas (none at Buckley Falls Park).
- > Standard of water quality - drinking, Corio Bay, Barwon River and 13th Beach.
- > Intensive reforestation program with indigenous species.

#### **Rural environmental issues**

- > Roadsides need to be kept clear of weeds and rubbish.
- > Reduce rabbit and fox numbers.
- > Need for a budget to provide for noxious weed removal and a strategic eradication program put in place.
- > Spread of furze on the Bellarine Peninsula and the lack of control of its encroachment along roadsides and onto private properties.
- > Farmers should have the right to clear and plant their own land but be required to plant indigenous trees on the boundaries.
- > Control of exotic weeds escaping from gardens into reserves.
- > No control over rabbits and foxes in Waurin Ponds.
- > Serious levels of rabbit/hare infestations, particularly in the north.
- > Serrated tussock is a major problem in rural areas.
- > Restoration of areas stripped for topsoil and gravel must be improved.
- > Need to control feral animals (e.g. dogs, cats) from destroying wildlife.
- > Allow/encourage periodic controlled community burnoffs.
- > Need for a local law requiring the removal of environmental weeds from freehold and Crown Land.
- > Bushfire management plans are vital in certain localities.

#### **Urban environmental issues**

- > Concerns with the policy of the SEC by clearing every tree under powerlines.
- > Condition of vacant school grounds, in particular Norlane Primary and South Barwon College.
- > Exotic trees e.g. Plane trees should not be planted as they block gutters and do not readily decompose.
- > Careful selection of trees for street planting.
- > Introduce litter trap and sediment control program.
- > Council promote grey water recycling, provide information and reduced water rates to those using such a system.

- > Vandalism should be viewed the same as littering.
- > Maintenance of toilets, traps etc. to save water wastage.
- > Concern over redevelopment of waterfront.
- > Important to improve entrance to Geelong.
- > Council needs to clean out its stormwater pits and grates.
- > Damage to roadside trees from tree pruning contractors.
- > Native street trees are too bushy and block the footpath.
- > Moorpanyal Park and beach area is a disgrace.
- > Remove the bushes from Moorabool Street would improve the environment in Moorabool Street.
- > Vacant building blocks and nature strips are a disgrace and fire hazard.
- > Lack of promotion of grey-water use.
- > Illegal stormwater and sewer connections.
- > Houses encouraged to install small water tanks.
- > Control over amplified music is very important and not covered by survey.
- > Council should promote conservation of water by encouraging installation of water saving devices.
- > Street sweepers should be used more frequently and reduce rubbish in the streets - City is very untidy.
- > Concern over extent of units being erected in the inner suburbs. Little space on these sites to replant trees and established ones are removed as part of the development.
- > Silt management plans need to be developed prior to commencing any construction works.
- > Major street tree planting program introduced, not with small shrubs like bottlebrushes but large trees to create attractive tree lined streets and canopies.
- > Tree pruning of plane trees is a disgrace.
- > Introduce Tidy Street competitions.
- > Alternative methods of transport need to be promoted and made more accessible and safer e.g. public transport, bike use.
- > Need to encourage the retention of stormwater as part of residential and commercial developments.
- > Appearance of Highton Shopping Centre - litter in gutters, footpaths etc. needs more regular cleaning.
- > Litter traps must be cleared on a regular basis, particularly in flood prone areas.
- > Extensive 'bike to work' program needs to be promoted.
- > Heavy vehicles using residential streets.

#### **Marine and coastal issues**

- > Reduce catchment impacts on the Bay.
- > Stormwater drains and their impact on the Barwon River and the Bay.
- > Seaweed should be available for householders to collect as garden mulch.
- > Concern over the state of Western Beach gardens and foreshore,
- > Concern over removal of scallop fishermen from using the Bay.
- > Unattractive and polluted beaches.
- > Industrial waste going into the Bay and rural land degradation.
- > Level of 'wash-down' effluent entering the Bay,
- > Monitoring of beach contamination should include heavy metals, not just E-coli.
- > Council has little control over the marine environment as it is outside its jurisdiction.
- > Coastal management should be left to elected committees of management and NRE, with Council support where appropriate.
- > Loss of trees along foreshore in Indented Head.
- > Pollution/rubbish around Corio Bay is a disgrace.
- > Corio Bay water monitoring by the EPA needs to be reintroduced.
- > Pre-treatment of industrial waste and investigate land based disposal of sewage.

#### **Community education**

- > Students should be used to undertake a range of environmental problems (monitor water quality, salinity, etc. e.g. Gordon Institute course - Natural Resources Management).
- > Training required for Council staff in tree surgery/pruning.
- > Environment day/fair established.
- > Council needs to publicise and promote its environment policy and strategy and show annually its performance, based on certain targets.
- > Need to support small local groups working to help the environment - financial and promotion.
- > More communication with service clubs who are keen to improve their local environment.
- > Lack of visual support for environmental/conservation groups.
- > Improved access to environmental information.
- > Single phone number contact required for environmental problems/emergency.
- > City establish a register of businesses already involved in environmental management and note if they are prepared

to share their knowledge, information etc.

- > Community education with respect to all the major issues should be given a high priority.
- > Need to work closely with children and families. Issues need to be personalised so people can see how it affects them.

#### **General issues**

- > All strategies involving change should be cost benefit analysed.
- > The cultivation of hemp needs to be encouraged.
- > Drug use is the number one issue.
- > Department of Natural Resources and Environment are not interested in the total environment.
- > Environment costs should not be a ratepayer charge, they should be the provinces of Federal Government funding and implemented in conjunction with local Councils.
- > Exclusion of sectional interests where it would clash with the environment. Environmental health should come first before beautification.
- > Need to support groups/investors trying to promote/develop areas which will provide jobs and boost economy . Shift away from listening to noisy minority.
- > Committee overseeing the project was established after the agenda was set, negating the possibility of creative input.
- > Results of the survey are only as good as the survey.
- > Money better spent on gathering a complete account of sites of botanical/faunal significance.
- > Ingamells should be retained as an open space reserve in Ocean Grove.
- > Survey did not address the long-term problem of educating people to understand the compromises/sacrifices needed to achieve sustainability.
- > Local government should be more of an organising and information supplying body. Federal and State governments should be more financially involved with setup and on-going costs.
- > NRE & EPA are largely ineffective in protecting the natural environment.
- > Benefits of living in Geelong are its beaches, relatively clean air and lighter traffic these attributes need to be preserved.
- > Outer Ring Road needs to be immediately constructed.
- > More all day carparking in the CBD.
- > Rates will increase through any action taken relating to this Strategy.
- > Council should be working to implement international, national and state environmental policies at the local level.
- > Council needs to capitalise on areas within its control.
- > Encourage new 'clean' industries to Geelong.
- > The Strategy should make reference to other relevant policies, documents etc.
- > Need to employ a full-time Environmental Officer.
- > Need to introduce large penalties for serious polluters.
- > Geelong community powerless against large multi-national companies.
- > Permaculture principles need to be adopted and encouraged.
- > Increase fines for dropping litter.
- > Concern expressed that the questionnaire invites responses which indicate more about the values and beliefs of respondents than it reveals about environmental priorities.
- > Need to create employment as well when protecting and spending \$'s on the environment.
- > Impact of tourism on the environment in Wallington.
- > Concern over logging in the Otways and the use of rainforest timbers.
- > Council adopts the principles of sustainable development as its overarching guiding concept for the development of its corporate strategy and integrates its EMS into it.
- > Concern over the poor standard of roadside maintenance.
- > Work for the dole programs should be used to assist in upgrading parks, reserves etc.
- > Sale of Torquay tip and concern over future monitoring and maintenance by new owner.

## REFERENCES AND FURTHER READING

ANZECC (Australia and New Zealand Environment and Conservation Council) (1995) *Australian Water Quality Guidelines for Fresh and Marine Waters*, AGPS, Canberra

Australian Academy of Technological Sciences and Engineering (1997) *Urban Air Pollution in Australia - Community Summary*

Australian Local Government Association (1997) *Regional Environmental Strategies - How to prepare and implement them*

Ballarat Regional Board for Planning and Development (1991) *Ballarat Region Conservation Strategy*

Barwon Regional Bicycle Council (1997) *Barwon Region Strategic Bicycle Plan*

Beder, Sharon (1993) *The Nature of Sustainable Development*, Scribe Publications, Australia

City of Adelaide (1997) *City of Adelaide Environmental Management Plan*

City of Dandenong (1994) *Dandenong's Conservation Strategy*

City of Geelong West (1992) *Better Environment Plan*

City of Greater Geelong (1994) *Geelong 2010: A Preferred Future*

City of Greater Geelong (1995) *Corio Bay Foreshore Management Strategy*

City of Greater Geelong (1995) *Energy Conservation Strategy Parts One and Two*

City of Greater Geelong (1996) *Greater Geelong Arterial Roads Study*

City of Greater Geelong (1996) *Urban Growth Strategy*

City of Greater Geelong (1997) *Draft Rural Land Use Strategy*

City of Greater Geelong (1998) *Open Space Strategy*

City of Greater Geelong (1998) *Economic Development Strategy*

City of Kingston (1996) *Kingston State of the Environment Report*

City of Newcastle (1995) *Newcastle Environmental Management Plan*

Commonwealth of Australia (1992) *Intergovernmental Agreement on the Environment*

Commonwealth of Australia (1992) *National Strategy for Ecologically Sustainable Development*, AGPS, Canberra

Commonwealth of Australia (1995) *Local Government Accord on the Environment*, AGPS, Canberra

Commonwealth of Australia (1996) *Australia: State of the Environment*, CSIRO Publishing

Commonwealth of Australia (1996) *National Strategy for the Conservation of Australia's Biological Diversity*, AGPS, Canberra

Commonwealth of Australia (1998) *The National Greenhouse Strategy*

Commonwealth of Australia (1998) *Australia's Ocean Policy*

Corangamite Catchment and Land Protection Board (1997) *Corangamite Regional Catchment Strategy*.

Corangamite Catchment Management Authority (1998) *Draft Nutrient Management Plan*

Department of Conservation and Natural Resources (1993) *Notes from Rio - Highlights of the United Nations Conference on Environment and Development and the Global Forum - June 1992*

Department of the Environment, Sport and Territories (1996) *Australia - State of the Environment*

Department of Natural Resources and Environment (1997) *Victoria's Biodiversity*

Earth Summit 92 (1992) *The United Nations Conference on Environment and Development*, Rio de Janeiro

Environment Protection Authority (1996) *Planning Measures for Environment Protection - A Practical Guide for Local Government*

Environment Protection Authority (1997) *Taking Stock - Port Phillip Region*

Environment Protection Authority (1998) *Improving Geelong's Air Quality - Port Phillip Region*

Geelong Environment Council (1988) *Flora and Fauna Database - Geelong Region*

Greening Australia (1995) *Local Greening Plans - A guide for vegetation and biodiversity management*

Industry Commission (1997) *A Full Repairing Lease: Inquiry into Ecologically Sustainable Land Management*

Municipal Conservation Association (1994) *Local Agenda 21 - Managing for the Future, A Local Government Guide*

Port Phillip City Council (1995) *Sustainable Development Strategy*

Royal Australian Planning Institute (1996) *Royal Australian Planning Institute (Vic. Division) Policy Statement on Ecologically Sustainable Development*

Shire of Hastings (1994) *Conservation Strategy*

Shire of Melton (1994) *Local Conservation Strategy*

State Government of Victoria (1970) *Environment Protection Act*

State Government of Victoria (1981) *State Environment Protection Policy (The Air Environment)*

State Government of Victoria (1988) *State Environment Protection Policy (Waters of Victoria)*

State Government of Victoria (1998) *Victoria's Greenhouse Action*

Trust for Nature (Vic) (1997) *Conservation Covenants, Information Paper*

University of Tasmania (1992) *The Role of Local Government in Environmental Management*

University of Western Sydney Hawkesbury (1997) *Managing for Local Sustainability*, Canberra

Victorian Coastal Council (1997) *Victorian Coastal Strategy*.

Waste Management Council (1996) *Best Practices in Litter Management - A Guide for Local Government*