Shire of
Bridgetown-Greenbushes
.... simply beautiful

NATURAL ENVIRONMENT STRATEGY

(Updated 11 July 2008)

Index

Introduction

The biota (the plant and animal life of a particular region or period) is by far the most important aspect of the integrity of this region. It is components of the biota that have guided the settlement and development, and made this area rich in history and diverse in enterprise. These aspects reflect a need to maintain this rich diversity for future generations to be able to experience the unique nature of this region.

Modern environmental awareness probably began in the 1950s when a technological solution to pest management was highlighted as an environmental disaster and has evolved in more recent times with the idea that nature's resilience is not "never-ending" and her resources are not "free". After the UN sponsored environmental conference in Brazil (Rio de Janeiro 1992) and with the unfolding world wide debates on climate change with the forming of the Kyoto Protocol (December 1997), a much more critical look at how humanity uses the natural environment began. This has resulted in a cultural shift in thinking which is changing the legislative landscape of local government. The rise in environmental consciousness and community expectations to conserve our precious biological assets has prompted the preparation of this Strategy to address these issues and strategically plan for sustainable environmental outcomes for the municipality. It brings into our thinking the ecologically sustainability of our natural environment. It checks economic development against the sustainability of our natural resources upon which we rely for our survival.

The Shire of Bridgetown-Greenbushes covers an area of 1,691 square kilometers of which 53% of the land within the Shire is state forest, national park or reserve and 47% as private freehold land. There is only 7% of private freehold land that is remnant vegetation.

The Shire's Strategic Plan 2006/07 – 2010/11 states as one of the key objectives, "to protect and enhance the significant natural and cultural assets of the Shire and deliver to all our community a high quality of life which is based on sound environmentally sustainable principles". Further, Council intends to ensure greater involvement in sustainable natural resource management (NRM) and has given an undertaking to plan and manage urban growth, land use and provision of infrastructure to minimise adverse environmental effects. Failure to meet these objectives "may cause widespread destruction of the natural environment that leads to the breakdown of natural ecosystems, species extinction, adverse human health impacts, and ultimately to a loss of lifestyle values for residents in the south west" (State of the Environment Report WA 2007).

The purpose of this document is to endeavour to ensure that proposed development is environmentally sustainable, that consumption of limited natural

resources is minimised, and that the impact on the environment in delivering Shire services is minimised.

Vision

The vision of the Shire of Bridgetown-Greenbushes is:

> *"To preserve and enhance the unique natural and built environment of the Shire".* (Strategic Plan 2007/08-2011/12)

This vision sets the broad direction for the municipality with key components relating to the natural environment. This Natural Environment Strategy seeks to assist in implementing the Shire's Strategic Plan and achieve this vision by introducing a way of thinking about our actions and how they impinge upon the continuation or existence of the natural environment.

Aims

The Natural Environment Strategy shapes how we view our unique natural assets, their value and the threats to these assets to be able to set priorities within the constraints of the Shire's resources, thus protecting important natural assets, and obtaining value for the expenditure of ratepayers' money

The aims of this Natural Environment Strategy are to:

- develop a local approach to important environmental issues in the Warren-Blackwood region;
- identify a range of strategies and actions that will improve environmental outcomes in the Shire;
- develop partnerships with stakeholders to more effectively integrate environmental outcomes; and
- encourage the best use of available information in decision-making.

To achieve successful outcomes from this Strategy it is envisioned that the aims of the Strategy are accepted across communities, agencies and stakeholders. It needs a combined, coordinated approach to be sustainable and achieve the desired outcomes across the Warren-Blackwood region. This can only be achieved by partnerships and/or collaboration with other groups, agencies and stakeholders. The Shire must start somewhere and in the absence of a comprehensive State of the Environment Report for this region the Council must focus on what the Shire can achieve and not on other agencies, stakeholders or communities. In future reviews of the Strategy targets from non-Shire sources could be added so that a collaborative pathway is forged.

Objectives

The objectives of this Strategy are embedded within the concepts of the sustainable management of natural resources and the protection of the biodiversity that may be affected by human activity. The implementation of the strategy will be through the acceptance of the concepts described below and their consideration in all Council decision-making including the day to day process of carrying out the Shire's responsibilities within the constraints of the Shire's resources and in accordance with legislative requirements.

"Natural Resource Management (NRM) is the ecologically sustainable management of the land, water, air and biodiversity resources of the state for the benefit of existing and future generations, and for the maintenance of the life support capability of the biosphere" (WA NRM Council).

The objectives of this Strategy are to:

- provide leadership by demonstrating and encouraging behaviour that is environmentally sensitive and as ecologically sustainable as possible;
- provide technical information and advise where applicable;
- manage natural areas vested in the Shire based on NRM principles;
- ensure land-use planning is compatible with NRM; and
- support local groups and NRM stewardship where appropriate and affordable.

Achieving the Objectives

- **Provide leadership by demonstrating and encouraging behaviour that is environmentally sensitive and as ecologically sustainable as possible.**

This objective is achievable through the consideration of: the three long term goals of NRM; the guiding principles of NRM; and the natural resource assets that maybe affected by any decision that one makes. By being open about these considerations it would be hoped that leadership in ecological stewardship is being displayed and that this will encourage others to adopt the same considered approach to our natural resource assets, thus endorsing a more ecologically sustainable future.

NRM has been documented as having three, broad, long term goals:

- healthy ecosystems and catchments in which the integrity of soils, water, and flora and fauna is maintained or enhanced wherever possible;
- innovative and competitive industries that make use of natural resources, within their capability, to generate wealth for social and economic well-being; and

- self-sustaining proactive communities that are committed to the ecologically sustainable management of natural resources in their region (National Natural Resource Management Taskforce, 1999).

From a human perspective, the biotic (of, or relating to living organisms) and abiotic (not living) components of ecosystems may be viewed as natural assets such as air, water, land, plants, animals and micro-organisms.

Two of these goals relate to people, the communities they live in, and the social and economical systems that nurture them. Thus, management of natural resources involves understanding, maintaining and, where necessary improving the interactions that people have with the biotic and abiotic components of ecosystems. The third goal indicates that management of natural resources also involves understanding, maintaining and, where necessary, improving the ways in which people relate to each other as part of communities that interact in these ecosystems. Decisions that may lead to the achievement of these goals will need to be informed by appropriate knowledge and ethics.

An ethical approach for explaining the relationship between people and their non-human surroundings is by considering human nature in three forms: self-centered (egocentric); a holistic approach (homocentric); and nature-centered (ecocentric). Sustainable management of natural resources is homocentric, constituting a blend of the egocentric and ecocentric perspectives whereas an ethical approach to biodiversity *tends* toward the ecocentric.

The guiding principles of NRM are:

- we recognize the value to humanity of the natural assets within our landscape, and strive to protect and enhance those values wherever possible;
- wherever possible we focus on dealing with the cause not just the symptoms of the threats to our natural assets;
- all life forms have intrinsic value and warrant conservation independent of our needs, which means that the “precautionary principle” is an important consideration (see Appendix 1 for an explanation of the “precautionary principle”);
- the prime responsibility for the management of natural resources is with the land owner/manager;
- the community has the right to be consulted on the decisions and actions that affect them in accordance with legislative requirements;
- decision-making processes should effectively integrate long- and short-term economic, environmental and social consequences, and be open and equitable; and
- NRM action priorities will be determined with stakeholder involvement, be based on the best available knowledge and on adaptive management.

To better understand how these relate to our natural resource assets refer to the Natural Resource Asset section below.

- **Provide technical information and advise where applicable.**

This is embedded within the guiding principles of NRM and our considerations of our natural resource assets where information sharing, stakeholder and or community involvement, and educative processes can produce a coordinated, combined, collaborative approach to ecologically sustainable processes within the Warren Blackwood.

- **Manage natural areas vested in the Shire based on NRM principles.**

The process of developing management strategies for the natural areas within the Shire relies on a process of knowledge of what each natural area contains and then developing plans accordingly and within the considerations of the guiding principles of NRM and our considerations of our natural resource assets.

- **Ensure land-use planning is compatible with NRM.**

Achievement of this objective will seek to ensure that the natural resource assets will be conserved and enhanced and best practice NRM and biodiversity outcomes achieved through a number of planning processes including:

- seeking to meet the targets outlined in this Strategy;
- implementing the Shire's Local Planning Policy – Managing the Natural Environment;
- the Shire developing and retaining effective partnerships;
- monitoring and lobbying; and
- using the best available information where possible and practical.

- **Support local groups and NRM stewardship where appropriate and affordable.**

This objective is a reflection of the guiding principles of NRM where, for example, a local business that displays NRM stewardship in their product production maybe given preferential treatment or friends groups or local landcare groups that work on local natural areas are afforded what ever support is appropriate, and affordable.

Natural Resource Assets

The natural resources that are referred to as assets include:

- Biodiversity;
- water resources (includes waterways and wetlands);
- agricultural lands;
- remnant vegetation;
- conservation and productive forests;

- mineral resources and basic raw materials;
- air;
- climate; and
- people, culture and infrastructure (including sustainable settlements).

Each of these asset fields have distinct values and threats that need to be identified in a local context and within the parameters of influence of the Shire. It is through community consultation, awareness raising, working in partnership and committing resources that the objectives may be realized.

When considering any decision that may impinge upon our natural resource assets one should look to the following guidelines (based on WAPC Statement of Planning Policy No 2 – Environment and Natural Resources Policy, 2003):

General

Council decision-making and Shire practice should:

(i) Keep environmental damage to a minimum.

(ii) Actively seek opportunities for improved environmental outcomes, including that which provides restoration or enhancement of ecological function.

(iii) Take account of the availability and condition of natural resources, based on the best available information at the time.

(iv) Conserve significant natural, indigenous and cultural features, including sites and features significant as habitats and for their floral, cultural, built, archaeological, ethnological, geological, geomorphological, visual or wilderness values.

(v) Take into account the potential for economic, environmental and social (including cultural) effects on natural resources.

(vi) Recognise that certain natural resources, including biological resources, are restricted to particular areas and that these geographical areas or land types may need to be identified and appropriate provision made to protect these resources.

(vii) Take into account the potential for on-site and off-site impacts of land use on the environment, natural resources and natural systems.

(viii) Support conservation, protection and management of remnant vegetation where possible, to enhance soil and land quality, water quality, biodiversity, fauna habitat, landscape amenity values and ecosystem function.

(ix) Take into account the potential impacts from climate change on human activities including urban communities, natural systems and water resources.

Biodiversity

"Biodiversity is the variety of all forms of life – the different plants, animals and micro-organisms, the genes they contain and the ecosystems of which they form a part" (Dept of Environment & Conservation, Naturebase 2007).

"Biodiversity represents the very foundation for human existence.

Beside the profound ethical and aesthetic implications, it is clear that the loss of biodiversity has serious economic and social costs. The genes, species, ecosystems and human knowledge that are being lost represent a living library of options available for adapting to local and global change.

Biodiversity is part of our daily lives and livelihood and constitutes the resources upon which families, communities, nations and future generations depend" (The United Nation's Global Biodiversity Assessment, 1995).

The South West Province of Western Australia is listed as a global biodiversity "hotspot" (one of 34 worldwide). Western Australia has about 11,500 species of vascular plants with 80% being endemic to this area. In comparison Great Britain has about 1,600 species of vascular plant. In the South West Province, a total of 3,022 species of flora (2,625) and fauna (397) were listed as threatened or priority flora or fauna in 2007. This is an increase of 14% for flora and 28% for fauna since 1998 (State of the Environment Report WA 2007).

Extensive clearing of native vegetation, weed encroachment, "dieback", salinity and introduced feral animals are some of the threatening processes to this diversity.

Since European settlement, 1,233 exotic plant species have established as weeds in Western Australia, which is about half of the recognised weeds in all of Australia. The Warren-Blackwood region has between 500 and 700 weed species identified (State of the Environment Report WA 2007). Weeds are a bigger threat to native species of flora and fauna than salinity. Weeds increase the risk of fire, reduce the amenity of recreational areas and increase maintenance costs (WA State Weed Plan 2001).

"Phytophthora dieback" (death or modification of vegetation by *Phyphtophora cinnimona*, an Oomycete or "water-mould" known to cause root rot in Australian flora species) has been called the "silent bulldozer". It has been listed in the worst 100 invasive species of the world. Of native flora in the region, 14% are highly susceptible and a further 40% are considered susceptible. This equates to 2,284 plant taxa and thus the disease poses a real threat of extinction for many species of flora and fauna (State of the Environment Report WA 2007).

Another form of "dieback" affecting some tree species (Flooded gum (*Eucalyptus rudis*) and Blackbutt (*Eucalyptus patens*) to name two) is thought to be the result

of a possible combination of factors beginning with a lowering of natural resistance from water stress (drying climate) and/or possibly compounded by chemicals (fertilizers and spray residues) that may be present in the substrate, leaving the tree susceptible to massive damage from insect attack.

Effective biological diversity conservation is inextricably related to issues such as land use planning and development, green house gas abatement and the management of natural resources (State Sustainability Strategy 2003).

This strategy will enable Council to make decisions in consideration of the protection or enhancement of indigenous biodiversity which is a key component of the Shire's natural environment. It will enhance Federal and State biodiversity strategies by concentrating on the local biodiversity issues within the Shire's influence.

This Strategy aims to integrate biodiversity conservation into the Shire's core business by providing a strategic, consistent and well-informed framework for decision making with regard to biodiversity.

When considering issues which may impact on the natural environment and in particular biodiversity, Council decision-making and Shire practice should:

(i) Give priority to protection of areas of high biodiversity and or conservation value and avoid or minimise any adverse impacts, directly or indirectly, on areas of high biodiversity or conservation as a result of changes in land use or development.
(ii) Safeguard and enhance linkages between terrestrial and aquatic habitats which have become isolated, including the re-establishment of habitat corridors.
(iii) Assist the return of areas of high biodiversity conservation value to the public estate or otherwise ensure the protection of these areas through mechanisms including planning controls or conservation covenants.
(iv) Support the use of management plans to protect areas of high biodiversity conservation value in the long term.

Water Resources

Water is fundamental to human life and the environment. Alteration of areas from their natural state inevitably results in detrimental changes to water quantity and quality (State of the Environment Report WA 2007). The careful management of water resources, both in terms of quantity and quality, is essential to support natural ecosystems as well as future growth and development. This includes all water catchments and waterways.

Council decision-making and Shire practice should:

(i) Protect, manage, conserve and enhance: wetlands; waterways; and other water resources which sustain catchments or have identified environmental values.
(ii) Take account of the availability of water resources to ensure maintenance of water quantity and quality for existing and future environmental and human uses.
(iii) Encourage best management practices through water sensitive designs that better manage stormwater quantity and quality; that reduce the impacts of stormwater flows; and control or remove pollutants and nutrients so as to improve water quality, retain habitats, conserve water and provide for recreational opportunities and conservation functions through multiple use drainage systems.
(iv) Ensure the provision of buffer zones around wetlands and waterways to maintain or improve the ecological and physical function of water bodies. Such buffer zones will aim to maintain the natural drainage function, protect wildlife habitats and landscape values, lessen erosion and facilitate filtration of sediment and wastes associated with surface run-off.
(v) Consider flood risk and avoid intensifying the potential for flooding as a result of inappropriately located land uses and development.
(vi) Progressively ensure that Shire managed buildings adopt best practice in their use of water.

Air Quality

Decision-making should reflect that the primary problems of local air quality are the result of domestic and industrial emissions, vehicle use and various land use practices of the agriculture and forestry industries. The major local air quality issues are photochemical smog and haze from particulates (solid and liquid), sulphur dioxide, dust and air toxins.

Council decision-making and Shire practice should:
(i) Have regard to the potential for conflict between sensitive land uses and activities with air emission impacts.
(ii) Encourage alternative methods or best management practices for all activities with air emission impacts, such as domestic fires and burning-off practices in the agriculture and forestry industries.
(iii) Establish benchmark data on air quality within the Shire.
(iv) Facilitate measures in order to reduce air emissions and improve air quality.

Soil and Land

Council decision–making and Shire practice should:
(i) Consider the capability of land to accommodate different land uses with respect to; erosion hazard, absorptive capabilities of the soil, slope

stability, potential for variable settlement or subsidence and active fault lines.

(ii) Recognise and consider land that is degraded or contaminated, or has the potential to become so, and facilitate rehabilitation or remediation for appropriate future use.

(iii) Ensure that future land uses that may result in land contamination such as storage/use of chemicals, waste, and other toxic materials or liquid are not permitted unless it can be demonstrated that the proposed activities will not result in contamination of land or adversely effect future land use.

(iv) Identify existing and potential areas affected by salinity, acid sulphate soils, or other severe land degradation problems and, where appropriate, facilitate measures such as vegetation retention, vegetation restoration, and prevention of inappropriate development in order to reduce impacts on land, buildings and infrastructure.

Agriculture

Council decision-making and Shire practice should:

(i) Protect areas of agricultural significance ("priority agriculture" areas).

(ii) Diversify compatible land use activities in agriculture areas based on principles of sustainability and recognizing the capability and capacity of the land to support those uses.

Landscape

Council decision-making and Shire practice should:

(i) Seek to identify and safeguard landscapes with high geological, geomorphological or ecological values, as well as those of aesthetic, cultural or historical value to the community, and encourage the restoration of those that are degraded.

(ii) In areas identified in (i), consider the capacity of the landscape for development and incorporate appropriate planning, design and siting criteria to ensure the development is consistent and sensitive to the character and quality of the landscape.

(iii) Consider the need for a landscape, cultural or visual impact assessment for land use or development that may have a significant impact on sensitive landscapes.

Greenhouse Gas Emissions and Energy Efficiency

Council decision-making and Shire practice should:

(i) Promote energy efficiency at all levels from development and urban design incorporating issues such as energy efficient building design and orientation of building lots for solar efficiency, to reducing general electrical consumption by best management techniques.

(ii) Support the retention of existing vegetation and revegetation to reduce the carbon "foot print" of the community.
(iii) Support the use of alternative energy regeneration, including renewable energy, where appropriate.
(iv) Progressively ensure that Shire managed buildings adopt best management practice in energy use.

Purchasing Practices

Purchasing should acknowledge quality, function, value for money, stability of supply, etc, have favourable environmental considerations, and reflect corporate social responsibilities in the providers.

Council decision-making and Shire practice should:
(i) Only purchase products that are determined as necessary.
(ii) Take into consideration the ecological and economic costs, impacts and benefits of a product or service over the whole of its life.
(iii) Purchase products that are reusable or recyclable, designed for ease of recycling, re-manufacture or otherwise minimise waste.
(iv) Purchase products that are reliable, durable and where possible easily upgraded or updated.
(v) Purchase products that where possible can be returned to the manufacturer for recycling and reuse (product stewardship).
(vi) Choose energy efficient and/or water efficient products.
(vii) Where possible purchase products that are non-toxic and non-polluting;
(viii) Where possible purchase in bulk or with minimal packaging.
(ix) Purchase products and or services that have a suitable length of warranty for their purpose.
(x) Purchase products manufactured in socially acceptable circumstances that are in accordance with Human Right's conventions, laws or treaties where labour considerations, social exclusion and equal opportunity are taken into account.
(xi) Encourage minimal consumption in the work environment.

Climate Change

Climate change scenarios must be considered as an influence on any target set. Risk management strategies need to incorporate plans for dealing with the estimated climate changes. For example; an increase in extreme daily rainfall intensity needs appropriate strategies to accommodate this, or a decrease in annual rainfall needs consideration to be made of alternative potable water supplies, or a combination of increase in temperature coupled with a decrease in rainfall will affect available habitat.

Action Targets

The targets set by this Strategy demonstrate the Shire's intention to:

- promote appropriate "best practice" for ecologically sustainable development;
- promote the ecologically sustainable management of natural resources; and
- reduce the impact of resource consumption on the environment and community.

The following sets out actions to achieve the aims and objectives of this Strategy: detailing time frames; indicators of success; sources of funding (where known); and responsible parties. Targets set are specific, measureable, achieveable, relevant, and time bound (SMART). Targets are not static goals, but rather a continually evolving consensus of community views and aspirations. They will be refined as new data, concepts and opportunities arise.

The Shire of Bridgetown-Greenbushes has endorsed a number of strategies in the Strategic Plan 2006/07-2010/11. These targets have been SMARTened and the relevant officers responsible for their implementation identified.

Existing commitment	**Timeframe**	**Indicators of success**	**Source of funds**	**Responsible parties**
Continue to review planning and heritage policies to offer increased protection of built/natural values.	By end of 2009.			Manager Planning(MP), Regional Environment Officer(REO).
Progress the integration of NRM principles into its Local Planning Strategy and Council operations.	By end of 2007.	Natural Environment Strategy and Local Planning Policy-Managing the Natural Environment.		MP, REO.
Develop a Roadside Conservation Strategy.	By end of 2010.	Roadside Conservation Strategy.		REO, Executive Manager Works and Services(EMWS).
Prepare management/conservation plans for key bushland reserves within the Shire with the primary objective of conserving the biological diversity of the land whilst accommodating public use of the reserve in accordance with its purpose and vesting.	By end of 2010.			REO, Senior Ranger(SR), EMWS.
Have regard to the potential impact on the environment in Council's decision-making processes.	By end of 2007.	Natural Environment Strategy.		MP, REO.

Review the Shire's list of vested reserves to determine whether the land is still appropriate for Council vesting and ensure the purpose of the reserve reflects the community's use and value placed on the land.	By end of 2011.			DCEO, REO, MP.
Review our road building practices and resources to ensure environmental sustainability and ongoing economical supply of natural resources.	On an ongoing basis.			EMWS, Senior Engineering Technical Officer(SETO), REO.
Continue to develop an effective and environmentally sustainable storm water drainage network.	On an ongoing basis.			EMWS, SETO, REO.
Support and partner local Land Care Development Committees.	On an ongoing basis.	1 project each year.	LCDC.	CEO, REO.
Develop and implement a Climate Change Impacts and Risk Management Strategy inline with National and State strategies.	2yrs.	Climate Change Strategy.		CEO, REO.
Develop the Geegelup Brook parklands in order to restore the health of the brook, provide passive recreation areas that are attractive to visitors and provide an important greenbelt corridor linkage between the Blackwood River and Somme Creek.	5 yrs	A more attractive, better managed parkland and/or brook	LCDC, Blackwood Environmental Society(BES)	CEO, REO, EMWS.
Develop strategies for the enhancement of key areas of parkland within the Shire.	2yrs.	Works guidelines for systematical and sustainable maintenance, weed control/eradication and revegetation.		REO.
Increase community awareness and participation in protection of the environment.	On an ongoing basis.	Number of media releases and public displays.	LCDC.	All staff
Enhance and protect our natural environment and where practicable promote the use of local native vegetation.	On an ongoing basis.	Inclusion of local species lists within developments and in the use of local species in remedial or mitigation requirements.		MP, REO.
Develop a policy on Rural Road Verge Vegetation Management and Clearing including for fence line clearing.	1 yr.	Roadside conservation policy.	RCC, Friends/groups.	REO.

Develop policies for weed management and eradication.	3 yrs.	Weed management policy.		REO.
Maximise retention of significant trees and other vegetation within new subdivisions.	On an ongoing basis.			MP, REO.

Reviewing the Strategy

The Natural Environment Strategy should be a "living" document that will require review as required in the light of the changing environment in which it operates. This should be biannually by the Regional Environmental Officer and reviewed by Council every five years. It needs to be flexible as it will be influenced by changing priorities and availability of resources. Evaluation will improve the process as it measures the efficiency and effectiveness of implementation against the timely achievement of targets. Actions will be adjusted as required through adaptive management. This will assist the Shire to make informed choices on projects, management actions and targets as management of the natural resources continues to evolve.

APPENDIX 1

An Explanation of the Precautionary Principle

Over the last decade the principles of ecological sustainable development have inexorably become woven into environmental law, and the precautionary principle is no exemption. This has been because of governmental policies and practices and in part because of statute law, the highest form of government policy. However the inclusion of the principles in Australian legislation has been confined to objectives of statutes or agencies without any real guidance to decision-makers as to whether and how to apply the core principles or what weight to give them. This has given rise to difficulties of interpretation and application.

The precautionary principle first appeared in the mid 1960's and was a measure by which to judge political decisions. In the 1970's it could be found in West German legislation in respect of environmental policies aimed at combating the problems of global warming, acid rain and maritime pollution.

Definition

The Intergovernmental Agreement on the Environment (1992) endorses the precautionary principle in the following terms:

> Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:
>
> (i) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and
>
> (ii) an assessment of the risk-weighted consequences of various options.

The precautionary principle has been described as a decision making approach which ensures that a substance or activity posing a threat to the environment is prevented from adversely effecting the environment, even if there is no conclusive scientific proof linking that particular substance or activity to environmental damage. The principle provides the philosophical authority to make decisions in face of uncertainty. In this way, it is symbolic of the need for change in human behaviour towards the ecological sustainability of the environment.

It is accepted that the precautionary principle is a guiding principle. The principle also has operational effect. The purpose of the principle is to "encourage, perhaps even oblige, decision-makers to consider the likely harmful effects of their activities on the environment before they pursue those activities" (The

Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment, J. Cameron and J. Abouchar, 1991). The concept is linked to ideas of acceptable risk in attempting to deal with scientific uncertainty. It challenges scientific understanding and advocates caution in dealing with risk. Proponents of the precautionary principle acknowledge that the principle contains some ambiguities and uncertainties but strongly maintain that such problems do not discredit the principle.

Application

In applying the precautionary principle, these conceptual elements should be considered:

- ***The threshold – threats of serious or irreversible damage.*** The existence of threats is the threshold which must be satisfied before the principle is enacted. Uncertainties associated with scientific investigation, and the different disciplinary approaches adopted by scientists in assessing evidence, does not present a unified view of the consequences of a particular action. The precautionary principle takes into account the conflict within sciences and the social construction of acceptable risk.

- ***Lack of scientific certainty.*** "No scientific method will be able to ask all the right questions, let alone find the answers about what we do to the environment. Science does not give absolute proof; it is intrinsically "soft" and its results are always open to interpretation… Rather than commit society to a blind faith that scientific knowledge can and does address all uncertainties, mature and rational policy should recognise the inherent limitations of scientific knowledge. A greener science would make these limitations explicit, and so produce more critical public debate about the interventions in nature that are made in the name of economic necessity" ('How Science Fails the Environment', B. Wayne and S. Mayer,138 New Scientist).

  In terms of "scientific rationality" there is within society an obsessive attachment to scientific rationality and expertise. "Among the illusions which have invested our civilization is an absolute belief that the solutions to our problems must be a more determined application of rationally organized expertise. The reality is that our problems are largely the product of that application" (Voltaire's Bastards – The Dictatorship of Reason in the West, J. R. Saul, 1992.). Modernist science tends, via reductionism, to focus more effort on the understanding of increasingly smaller parts of systems which results in the risk of making and acting on decisions that when viewed holistically are without sense or morality. The appropriate use of common sense, ethics, intuition, memory and reason can help to overcome this problem.

  Lack of full scientific certainty will always exist because full scientific certainty is neither achievable nor provable. The precautionary principle is

a step forward in the development of an environmental framework within which soundly based scientific data can be integrated with the political, economic and social pressures and considerations upon which decisions rest.

- ***Not to be used as a reason for postponing measures.*** "Once the threshold test has been satisfied the burden of proof in relation to scientific questions falls on those wishing to engage in the activity. If the suggested threat cannot be disproved by evidence advanced by the proponent, then it is a factor to be taken into account in the cost benefit calculus" (Reconstituting Decision Making Process and Structures in Light of the Precautionary Principle, D. Farrier and L. Fisher, 1993). There is little guidance in the principle on how to weigh the conflict between environmental harm and economical benefit.

- ***The precautionary principle and ecologically sustainable development.*** The precautionary principle needs to be considered in the context of the wider principles and philosophies forming the concept of ecologically sustainable development. This is where development is defined as sustainable if "it meets the needs of the present without compromising the ability of future generations to meet their own needs" (The Brundtland Report, 1987). Thus decision-makers need to; consider the economic, social and environmental implications of their actions on the community and biosphere, and adopt a long-term view rather than a short-term view. In this the precautionary principle ensures a better integration of environmental considerations in decision-making.

The precautionary principle is not absolute or extreme. It does not prohibit an activity until the science is clear. It does change the underlying presumption from freedom of exploitation to one of conservation.
From: "Are Decision-makers too cautious with the Precautionary Principle?" The Hon Justice Paul L. Stein, Land and Environment Court of NSW Annual Conference 1999.

Local Planning Policy – Managing the Natural Environment

(Updated 11 July 2008)

1. Background and Issues

With the international debate on climate change and the resulting implications for the environment there is an evolving change in the legislative landscape in which local government operates. This Planning Policy is a result of this changing landscape. The Shire needs to bring into its operations an awareness of the natural environment and the threats to the natural resource assets upon which we rely for our existence. This policy reviews relevant legislation and other planning policies to ensure the inclusion of sustainable natural resource management (NRM) principles into the planning framework to assist implementation of the Shire of Bridgetown-Greenbushes Town Planning Scheme No.3 and No.4 (TPS3 and TPS4).

There is a variety of legislation, strategies and policies concerned with NRM and a large number of government agencies and other stakeholders that are involved in the regulation and management of issues associated with NRM.

This Policy compliments the Western Australian Planning Commission's (WAPC) Statement of Planning Policy No.2 – Environment and Natural Resources Policy, TPS3 and TPS4 and the Shire's Natural Environment Strategy.

2. Objectives

The objectives of this Policy are to:

- within planning decisions promote conservation of ecological systems and the biodiversity they support including ecosystems, habitats, species and genetic diversity;
- within planning decisions assist in the conservation and management of natural resources, including air quality, energy, waterways and water quality, landscape, agriculture and minerals to support both environmental quality and sustainable development over the long term;
- within planning decisions adopt a risk-management approach that aims to avoid or minimize environmental degradation and hazards;
- prevent or minimise environmental problems that might arise as a result of siting incompatible land uses together;
- outline what matters Council will address through the planning system and outline which matters are addressed through other legislation and other agencies; and
- within planning decisions encourage other stakeholders to fulfill their responsibilities to NRM through an environmentally sustainable approach.

3. Areas of Application

The Policy does not bind Council in respect of any application for planning approval but Council will have due regard to the objectives and policy measures of the Policy before making its determination.

This Policy is also intended to:

- assist Council's consideration of structure plans; and
- guide Council's advice to the WAPC regarding subdivision applications.

This Policy applies throughout the Shire of Bridgetown-Greenbushes in relation to scheme amendments, structure plans, guide plans, subdivision/strata applications and development applications which are referred to as "proposals" in this Policy.

4. Links to Town Planning Scheme/Local Planning Strategy

This Policy relates directly to the provisions set out in TPS3 and TPS4, the Draft TPS5, the Shire's Natural Environment Strategy, the guidelines provided in the Shire of Bridgetown-Greenbushes Draft Local Planning Strategy and also to the overall principles and guidelines set out in the WAPC's Warren-Blackwood

Regional Strategy, the Warren-Blackwood Rural Strategy and other relevant policies

5. Policy Measures

5.1 General

(i) The above objectives provide the context for the Policy measures which are set out under the following headings:
- General;
- Water Resources;
- Soil and Land;
- Biodiversity;
- Land Management;
- Carbon Sequestration; and
- Fire Management.

(ii) This Policy should be read in conjunction with the Shire of Bridgetown-Greenbushes Natural Environment Strategy.

(iii) This Policy is intended to complement and be used in conjunction with relevant Legislation, the Shire's Town Planning Scheme(s), the Shire's Local Planning Strategy, other Local Planning Policies, WAPC Policies and Strategies, and other guidelines that apply to planning and the management of natural resources.

(iv) Council may impose conditions for development applications or request conditions to be imposed subdivision applications approved by the WAPC that require the preparation and/or implementation of environment management plans that may be contained within a separate legal agreement with the proponent and or landowner.

(v) Council may require proponents and or the landowner to prepare, where appropriate, additional information that shows the "ecological footprint analysis" of the proposal to the satisfaction of Council. This may include: water management; acid sulphate soils management; fire management; waste management; and/or energy conservation.

(vi) Where, in the opinion of Council, a proposal may have a high likelihood for environmental impact, such as hydrological, biodiversity or geotechnical implications, a robust monitoring programme should be required to properly inform the decision-making prior to Council determining the proposal and/or assist in ensuring implementation and compliance post-construction.

(vii) Assessment of any possible environmental impacts/constraints should occur at an early stage in the development process so that the proposal can be developed with required design modifications made to alleviate any possible adverse impacts to the environment.

5.2 Water Resources

(i) A proponent may be required by Council to develop a Hydrological Management Plan and/or a Drainage Management Plan to show how the proposal will suitably address possible environmental effects on surface and ground water flow and quality. This plan may need to be extended to include any off-site impacts that may result from the development. Council expects that water flows should be maintained at pre-development levels, with no significant increase or decrease (including such recurrent events as a 10 year storm flow) unless appropriately justified by the proponent and agreed to by the Council.

(ii) Nutrient levels in water resources are not to be increased as a result of the proposal, and ideally should decrease after development. If in the opinion of Council this is unavoidable Council may determine and require relevant mitigation measures.

(iii) Stormwater retention, use and quality treatment should be at source or as high as possible in the catchment and adopt best practice water sensitive design wherever possible and practical to the satisfaction of Council. This applies to all catchment scales from a residential lot to a river catchment.

(iv) Installation of wet stormwater basins as artificial ponds or lakes will not be supported unless the proponent can demonstrate long term cost effectiveness and sustainability of these structures. Areas that provide the dual function of water management and public open space (POS) may be supported where other functional POS sites exist. The POS will need to ensure that community need and the amount, function and amenity of the POS are not compromised and the water management facility does not impose an unreasonable maintenance burden on the Shire.

(v) Where there is any proposed or expected change to the hydrology such as; altering groundwater flow and/or lowering of groundwater levels or disturbance of waterlogged soils, a detailed and extensive assessment for the presence of active acid sulphate soils or passive/potential acid sulphate soils will be required to the satisfaction of Council unless appropriately justified by the proponent and agreed to by Council.

(vi) In considering proposals which may have an impact on any waterway or waterbody Council will have regard to:
- maintaining water balance;

- maintaining and where possible enhancing water quality;
- encouraging water conservation; and
- maintaining and where possible enhancing water related environmental values.

(vii) Council may require the establishment of a native vegetation buffer/riparian zone that reflects the original vegetation community type(s) along any perennial watercourse/drainage line for the protection of water quality. Unless suitably justified by the proponent and agreed to by Council, Council will apply a 50m buffer and may require other protection measures to ensure there is a lesser risk to water resource quality and the sustainability of the downstream ecosystems.

(viii) Council may require "streamlining" to enhance the biodiversity by improving the water quality and vegetation within the stormwater management system by requiring as appropriate:
- planting sedges and rushes as filter beds;
- installing pools and riffle sequences to improve aeration and oxygenation and reduce erosion events;
- create ponds, pools or stormwater gullies designed as sediment traps; and
- create watercourse profiles that provide a range of fauna habitats.

5.3 Soil and Land

(i) Where there may be a risk of creating or disturbing acid sulphate soils (whether these be active acid sulphate soils or passive/potential acid sulphate soils) in the opinion of Council and/or other government/NRM agency, a management plan or other measures will be required in accordance with the latest guidelines from the Department of Environment and Conservation (DEC) and the WAPC.

(ii) Where there is the possibility of the existence of a contaminated site proponents should minimize the risk to human health and the environment by ensuring that the proposal is such as to minimize the potential for any adverse impacts from the contaminated site to the satisfaction of Council.

(iii) Where there maybe the possibility of creating any erosion in the opinion of Council a management plan will be required to prevent or minimise the impact to the satisfaction of Council.

5.4 Biodiversity

(i) Subject to the nature and scale of the proposal, its location, proposed level of servicing and anticipated impacts on the natural environment, proponents are required to submit an appropriate level of information

and/or assessment to ensure biodiversity values are identified and maintained, and where adverse impact is unavoidable there is a plan of mitigation to the satisfaction of Council.

(ii) Clearing of high conservation value vegetation, wetlands or riparian vegetation is not supported unless in exceptional circumstances and where justified by the proponent subject to State and Federal legislation. Council encourages the retention and regeneration of native vegetation and where appropriate, replanting areas adjacent to watercourses and in other areas with local native vegetation. This is in order to promote better overall NRM practices including maintaining and improving riverine ecosystem function and water quality.

(iii) Linkages between high value conservation areas should be maintained and where possible enhanced to the satisfaction of Council.

(iv) As determined by Council, applicants will be required to provide a statement confirming whether the application proposes any clearing of native vegetation on the application site generally and/or within the adjoining road reserve(s) to achieve vehicular access. If native vegetation is proposed to be cleared, the site plan/plantation management plan will need to clearly identify these areas. Further, Council may require the proponent to prepare a flora and fauna assessment to the satisfaction of Council.

(v) Council may impose planning conditions restricting the clearing of native vegetation and/or may require any clearing requests to be separately considered by DEC as part of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.

(vi) Council encourages applicants/operators to work in partnership with relevant government agencies, catchment management groups and the local community to develop relevant "best management practice" in the protection of native vegetation.

(vii) Council may require exotic/non-local native vegetation to be removed and replaced with local native vegetation, except where the exotic/non-local native vegetation has identified landscape or heritage value (and is not classified as a moderate or high risk environmental weed species).

5.5 Land Management

For "rural life-style" subdivisions (including special residential, special rural and conservation lots), Council may require the proponent to prepare or financially contribute to an education programme for the new owners, prior to the issue of

titles, concerning their obligations to the environment and community including stock rates, fencing, weeds, fire-risk abatement and fire break maintenance.

5.6 Carbon Sequestration

Council acknowledges that there will be increasing efforts to minimise the production of carbon including seeking carbon sequestration. While Council supports carbon sequestration overall, it does not support the use of non-local species plantations on rural land (freehold) throughout the Shire of Bridgetown-Greenbushes for carbon sequestration. Council is concerned for the loss of rural land for extensive periods of time which are greater than the typically one or two rotations applied to plantations. In comparison Council does support proposals for carbon sequestration that are of local native vegetation. The ultimate vegetation sink is a mixed vegetation stand that will be in situ for at least 100 years (Kyoto Protocol).

5.7 Fire management

Council will assess proposals, where relevant, against the "Planning for Bush Fire Protection" document produced by the Fire and Emergency Association (FESA) and the WAPC (December 2001) along with any associated updates. Council seeks to ensure that the safety to people and property as well as appropriate management of the natural environment is maximised in making its decisions. If proponents cannot demonstrate compliance with safety and the protection of the natural environment, then Council may refuse or not support the proposal.

6. Administration

6.1 Need for applications

Development applications and other proposals will be assessed in accordance with the principles and objectives of this Policy, the Shire's Town Planning Scheme(s), the Shire's Local Planning Strategy and other relevant strategies/documents in the opinion of Council.

6.2 Application requirements

Depending on the nature and scale of the proposal, its location, proposed level of servicing and anticipated impacts on the natural environment, Council may require the submission of an appropriate:

- "ecological footprint analysis" (such as: water management and/or drainage management, acid sulphate soil management, flora/fauna assessment, fire management, waste management, and or energy conservation);

- biodiversity assessment;
- statement confirming whether the application proposes any clearing of native vegetation;
- water impact statement relating to water quantity and quality; and
- any other information considered necessary by Council.

6.3 Procedural requirements

The Shire administration will:

- publicly advertise proposals where required to under the relevant TPS;
- publicly advertise proposals as deemed appropriate by the Shire administration where there are likely to be significant environmental impacts; and
- seek comments, as determined by the Shire administration, from relevant government agencies, stakeholders, adjoining/nearby landowners and the community.

In the event that substantive objections are received against the application, the following will apply:

- objections from State Government authorities will require the matter to be considered by Council;
- where the objection is for matters not deemed relevant to the Council, for the purposes of this Policy (outlined in Section 5 or which can be addressed through planning conditions), then the Shire's Planning Services section will assess the application based on all relevant information and advice in accordance with the Policy, operative TPS, any Draft TPS, the Local Planning Strategy, and other relevant planning and NRM documents; and
- where the objection falls within the range of relevant issues (Section 5), then the Shire's Planning Services section will assess the application based on all relevant information and advice in accordance with this Policy, operative TPS, the Local Planning Strategy and other relevant planning and NRM documents, and determine whether the matter needs to be considered by Council.

Applications that are recommended for refusal are to be determined by Council.

6.4 Implementation

The Shire expects proposals, when approved, to be implemented under the principle of sustainable land management based on endorsed Best Management Practice/Code of Practice documents for key land, water and biodiversity areas. Additionally, any approved proposal shall be carried out in full compliance with any conditions imposed with that approval.

7. Future Directions

The Shire is reviewing TPS3 and TPS4 and will reconsider this Policy as required to ensure consistency between the gazetted Town Planning Scheme and the adopted Policy.

8. Approval Authorization

Authority to approve applications in conformity with this Policy has been delegated to the Chief Executive Officer.

9. Right of Review

Decisions made by Council with respect to applications for Planning approval under the discretionary provisions of TPS3 and TPS4 will normally afford a right to apply to the State Administrative Tribunal for a review of the decision (a process previously known as a planning appeal). Such applications must be made within 28 days of the relevant decision.

10. Endorsement

This Policy was adopted by Council on XXXX.