

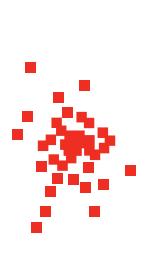


GREATER SHEPPARTON 2030

BACKGROUND and ANALYSIS REPORT NO. 4: ENVIRONMENT

Adopted by Council at Ordinary Council Meeting on 3 October 2006

coomes consulting



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Abbreviations / Acronyms

ABS	Australian Bureau of Statistics
CBD	Central Business District - Shepparton city centre
GSCC	Greater Shepparton City Council
CMA	Catchment Management Authority
DPI	Department of Primary Industries
DSE	Department of Sustainability and Environment
GB-CMA	Goulburn-Broken Catchment Management Authority
G-MW	Goulburn-Murray Water
Greater Shepparton	Refers to the whole municipality of Greater Shepparton
Shepparton	Refers to the urban areas of Shepparton only
MSS	Municipal Strategic Statement
SIR	Shepparton Irrigation Region
VPPs	Victorian Planning Provisions
WFP	Whole Farm Plan

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1 Introduction

1.1 Greater Shepparton 2030 – Process and Outcomes

The Greater Shepparton City Council and the Department of Sustainability and Environment have prepared *Greater Shepparton 2030*, a blueprint for building sustainable economic activity and maximising the quality of life in the municipality over the next 30 years.

This plan will update the previous City of Greater Shepparton Strategy Plan 1996 which formed the basis for the current Municipal Strategic Statement (MSS). The MSS is the local strategy component of the Greater Shepparton Planning Scheme.

A key element of the preparation of this plan was the integrated planning approach, and the process and extent of community engagement involving all stakeholders. This engagement was achieved from a number of initiatives to obtain a depth of understanding of issues from both technical and personal perspectives. The feedback from the community consultation assisted in the development of visions for the municipality.

The methods of community engagement included an open invitation for community representatives to attend a number of advisory groups. These workshops covered the specialist topics of:

- Environment
- Heritage and culture
- Community services
- Infrastructure
- Transport
- Business and tourism
- Agriculture
- Recreation and open space
- Youth

In addition, specific workshops were held to discuss the townships of:

- Congupna
- Dookie
- Katandra West
- Merrigum
- Mooroopna
- Murchison
- Shepparton
- Tallygaroopna
- Tatura
- Toolamba
- Undera

Specialist input was also received from single purpose workshops with Councillors, Council officers and Regional Development agencies.

A number of individual interviews were held with representatives of key statutory agencies. In addition to community engagement, the preparation of the strategy involved detailed research and investigation of the main issues.

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Current and emerging issues are considered, ranging from global issues such as world economics, global warming, energy sources and population migration. Domestic issues are considered, including changes to the horticultural and dairy industries, potential for new rural enterprises, water distribution, the highway bypass, changes to road and rail freight patterns, and community development and settlement patterns.

This report also provides a profile of the city and the forecast population projections.

The key land use and development principles that together form the basis of a functioning city are:

- People (Demographic Profile)
- Settlement and Housing
- Community Life
- Environment
- Economic development
- Infrastructure

This grouping generally reflects the land use and development principles embodied in State and local documents including the Victorian Planning Provisions (VPPs), the Greater Shepparton City Council Plan and Melbourne 2030.

Attachment 1 contains a complete list of topics, a key direction for each topic, and a list of themes within each topic, that together comprise the policy coverage of *Greater Shepparton 2030*.

There is a background and analysis report for each of the above topics. This grouping is for ease of description of related sub-topics and for implementation by various public and private agencies. It is recognised that, in practice, these principles are intrinsically interrelated in a holistic view of the municipality.

Greater Shepparton 2030 contains objectives, strategies, and implementation suggestions for each of these topics. These were derived from a set of overarching sustainability principles, which have also driven the Greater Shepparton Council Plan.

In addition, some of the topics will contain framework plans. A framework plan will spatially map the preferred form of future use and development.

In line with the sustainability outcomes sought for the long term, the plan will contain triple bottom line assessments of opportunities and challenges for land use planning, social planning and economic analysis. This analysis will identify priority projects which will be included in *Greater Shepparton 2030: In Summary*, a summary document for the Greater Shepparton City Council.

The outputs of this Strategy will consist of a number of corporate and strategic planning documents for the municipality, including the Municipal Strategic Statement. The implementation of the Actions listed in the Strategy Plan will be undertaken in the context of the constraints of the Strategic Resources Plan as contained in the Council Plan 2004-2008.

The total package of documents comprising the *Greater Shepparton 2030* is shown in Figure 1.

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GREATER SHEPPARTON 2030

THE COMPONENTS OF GREATER SHEPPARTON 2030

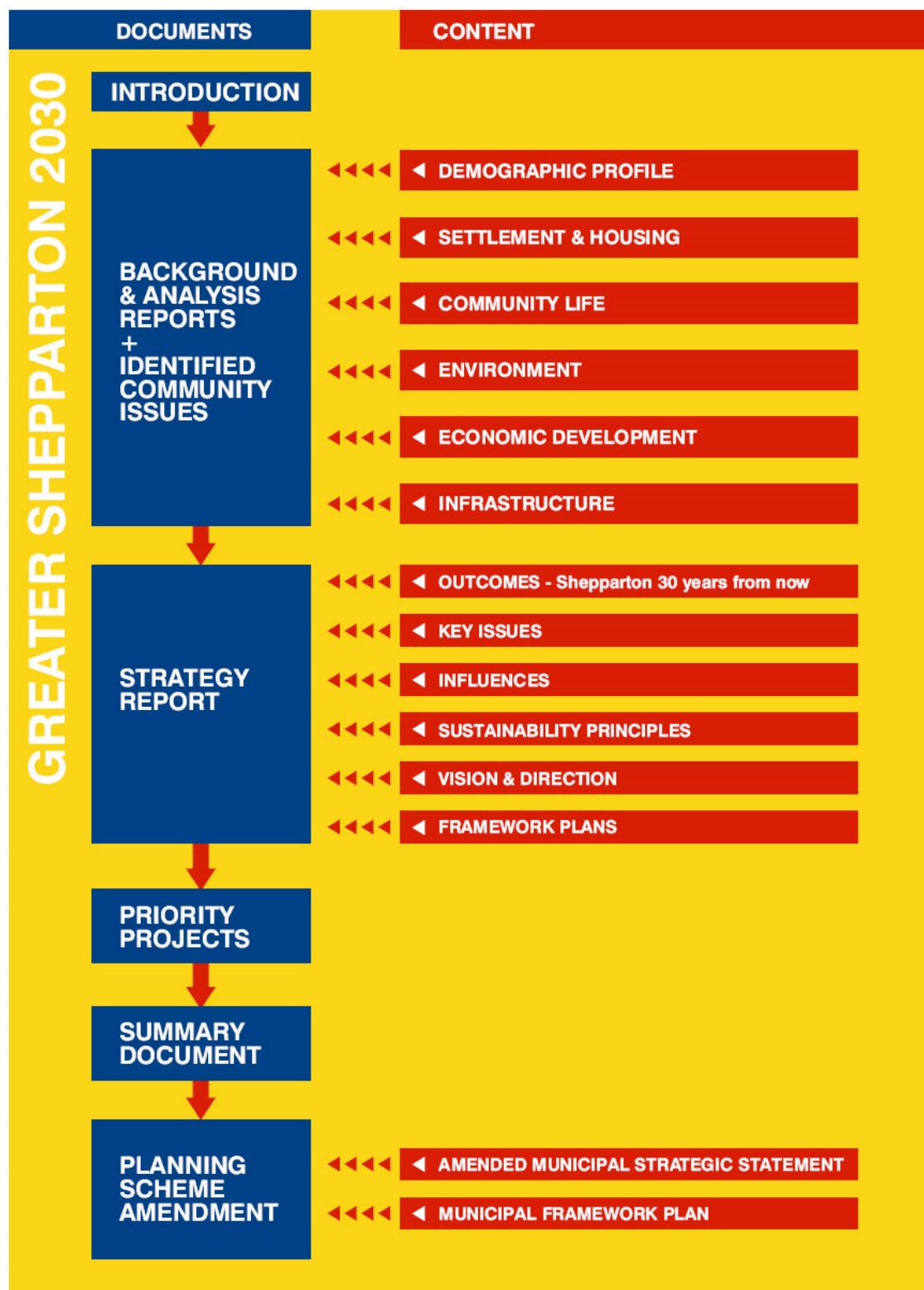


Figure 1: The Components of Greater Shepparton 2030

1.2 This Report – Environment

The environment component of this strategy plan is inclusive of a wide range of sub-topics, or themes, that are interrelated and often interdependent.

The sub-topics that are discussed in this report are:

- The natural environment (Section 4)
- Floodplain management (Section 5)
- Best practice land management (Section 6)
- Aboriginal heritage (Section 7)
- European heritage (Section 8)

The overarching environmental issue is biodiversity - and the protection and enhancement of the earth's basic elements of air, water, soil and nutrients, and the protection of its intricate web of flora and fauna ecosystems.

In the case of Greater Shepparton, biodiversity issues are most evident in the myriad river systems, floodplains, wetlands and areas of remnant vegetation that influence the majority of land, both rural and urban, in the municipality. A major focus of this strategy is to recognise, protect and enhance the remaining natural environment and biodiversity assets within the municipality. Notably, Greater Shepparton has only 2.5% of its original native remnant vegetation remaining.

The environment also encompasses the cultural elements of the Aboriginal tribes in this region, and the built heritage of the original European settlers. These histories are important for the present and future communities to understand the development of the region and its communities, and of what gives the municipality its sense of place.

1.3 Structure of this report

This report is divided into 10 sections:

Section 1 contains an introduction to the strategy plan, an outline of subtopics addressed in this report, and a list of sustainability principles.

Section 2 provides an overview of the topic, with the major issues identified in the 1996 plan and comments about where the future focus should be in this current strategy plan. This section concludes with a singular direction for the topic of environment, which will drive the detailed strategies.

Section 3 contains a summary of comments from the community engagement process: firstly the comments regarding the major issues of environment, culture and heritage; and secondly, ideas and visions for the potential achievements in 20 years time. These comments are displayed graphically to show linkages and common themes.

Sections 4 to 8 address each of the subtopics in detail and may include all or a number of these items:

- Key Issues, including major structural changes and key initiatives undertaken.
- Any reports or studies relevant to the study area, published since the 1996 plan.
- A broader strategy framework, indicating where local strategies fit into regional, state, national and international strategy frameworks.

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- A list of objectives, derived from the community engagement feedback and vision setting plus the above situational analysis. These objectives have been tested against the sustainability principles.
- For each of the objectives, a list of strategies to achieve the objectives.
- For each of these strategies a list of actions to implement the strategies.
- In addition, the role taken by the Council, the priority of the project and an indicative cost are included as part of the implementation process. Council has the following roles:
 - Provider – Council's role is to provide the service
 - Facilitator – Council's role is to provide the service with other providers
 - Advocate – Council's role is to lobby the provider to provide the service
- Where relevant, a framework plan that spatially maps the preferred form of future use and development. This may be an amended version of an existing framework plan from the 1996 strategy plan, or a new plan.

Section 9 contains a summary of strengths, weaknesses, opportunities and threats for this topic.

1.4

Sustainability Principles

There is widespread agreement that solving global problems means the adoption of policies and programmes that lead to sustainable development. Sustainable development is development that meets the needs of the present generation without compromising the ability of future generation to meet their needs.

Sustainability is the equal consideration of economic, social and environmental perspectives and relevance.

The recently released statement of metropolitan planning policy – Melbourne 2030, has advanced a suite of principles as fundamental platforms to the attainment of sustainable development.

These principles, which start with sustainable practice, are equally applicable and relevant to the development of Greater Shepparton and are adopted as principles underpinning the strategy plan.

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Principle	Outcome
Sustainability:	Sustainable economic, social and environmental development
Innovation:	Commitment to finding new solutions
Partnership and Inclusiveness:	Collaboration with others and considerations of their needs and aspirations
Leadership:	Leadership and encouragement of/others
Equity:	Fairer access to benefits of growth and change
Adaptability:	Planning to change and being adaptable when faced with it
Integrated Planning:	Planning and implementation of actions undertaken through an integrated planning process

2 An Overview – Environment

2.1 Strategic Context – From the Current MSS to a Future Focus

The current Municipal Strategic Statement (MSS) in the Greater Shepparton Planning Scheme is based on the findings and recommendations contained in the 1996 Strategy Plan.

This section firstly summarises the key strategic focus of the current MSS as it relates to the environment.

Secondly, this section provides an overview of the preferred future focus, which ultimately will be incorporated as strategic directions in the amended MSS.

2.1.1 Natural Resources

Current Municipal Strategic Statement

The central focus of the current MSS is to preserve and manage areas of remnant native vegetation and natural floodplains.

The significant natural features in Greater Shepparton comprise the floodplains and river systems that support the agricultural base of the region.

It is noted that planning measures are the most cost effective flooding mitigation measures, particularly in the built up urban areas within the municipality. Planning measures can control the negative impacts of water released into the wetlands, and the removal of native deep-rooted vegetation which changes the natural hydrological balance.

The MSS suggests the need for more detailed flood mapping and identification of land suitable for urban development and agricultural purposes.

Future Focus

The critical role of the resource of water is emphasised and its future management will determine the agricultural environmental and economic stability of the municipality.

Therefore the management of the floodplain and watercourses together with native vegetation is paramount for the sustainable growth of the municipality. The different areas of responsibility need to be recognised in that the Council is responsible for urban stormwater flooding in the urban areas and the Goulburn Broken CMA is responsible for the balance of the municipality.

The Floodplain Management Plans for Shepparton-Mooroopna, Tatura, Merrigum and Lower Goulburn region have identified areas of flooding, to input into a review of zones and overlays controls

This strategy plan will focus not only on preservation and protection of natural resources, but on the regeneration of native vegetation on private and public property, in acknowledgement of the damage caused by decades of vegetation removal and ecological degradation of natural landscapes.

This report raises a new focus of the broader environment and biodiversity, for the long-term benefits of future generations. This includes new strategies for sustainable land management practices, regeneration to improve biodiversity of flora and fauna,

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water conservation and improved quality, and carbon sequestration to combat the global greenhouse effect.

To this end, the Greater Shepparton City Council will need to continue to implement and monitor a number of policies and programs it currently has in place, such as water sensitive urban design, regional management plans, stormwater management policy, cities for climate protection and the like, and to also continue to work in partnership with authorities such as the Goulburn-Broken Catchment Management Authority in the implementation of the Regional Catchment Strategy and its sub-strategies.

2.1.2 Culture and Heritage

Current Municipal Strategic Statement

The MSS contains a strategy for the identification and protection of buildings and sites of heritage significance, which implicitly related to post-European heritage. It is noted that many buildings of heritage significance have already been demolished.

There are 10 buildings listed in the schedule to the Heritage Overlay and 30 buildings identified for further investigation.

In terms of pre-contact history, the MSS refers to anthropological, physical, cultural and genealogical evidence however there are no specific strategies to undertake a cultural heritage assessment of the municipality.

Future Focus

A heritage study has been completed and a Heritage Overlay applied to sites of post settlement significance. This plan should address links between heritage and tourism, particularly the unique aspects of the irrigated farming areas and the establishment of the food production and processing industries.

The cultural heritage study of pre-settlement sites of significance within Greater Shepparton should be undertaken in the near future. Such a study requires a dedicated commitment to identification, documentation and awareness.

The acknowledgement of the myriad of cultural influences will enrich community acceptance, local history, education and tourism.

2.2 The Direction – Environment

To achieve the overall vision and outcomes of Greater Shepparton 2030 (as outlined in the Strategy Plan report) a major direction has been developed for each topic. This key direction is derived from the background analysis and the comments from the consultation process for each of the subtopics or themes

The direction for the topic of environment is:

Conservation and enhancement of significant natural environments and cultural heritage

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3 Community Engagement

The figures on the following pages provide a summary of the feedback from the community consultation sessions.

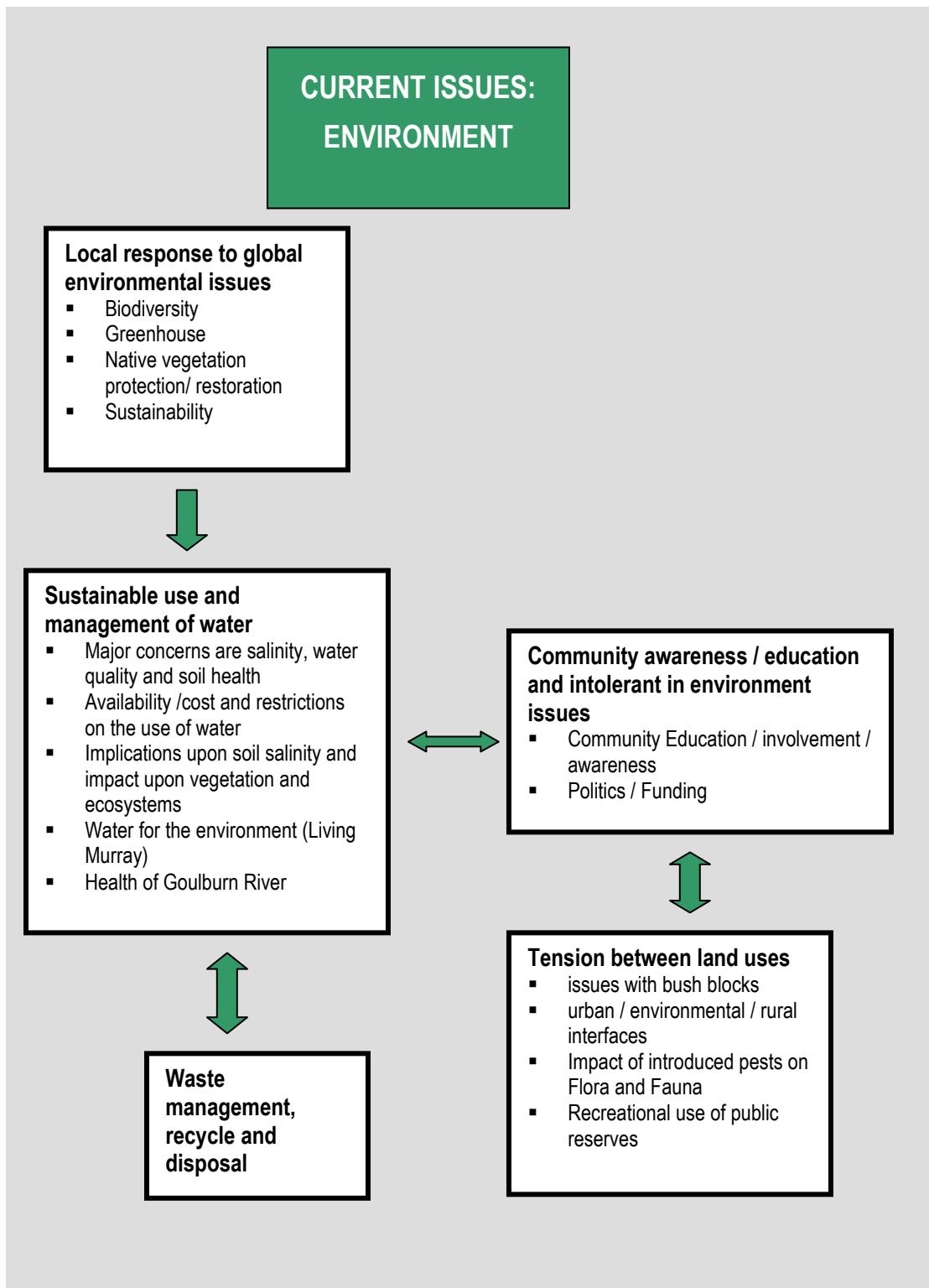
The discussion was focussed on two stages:

- Current issues in the topic areas of environment, heritage and culture; and
- Visions for the environmental, heritage and cultural achievements in 20 years time in Greater Shepparton.

In regard to community engagement the Goulburn Broken Catchment Management Authority has a responsibility to engage with the Council in Community Capacity Building activities, and undertakes this in a partnership approach.

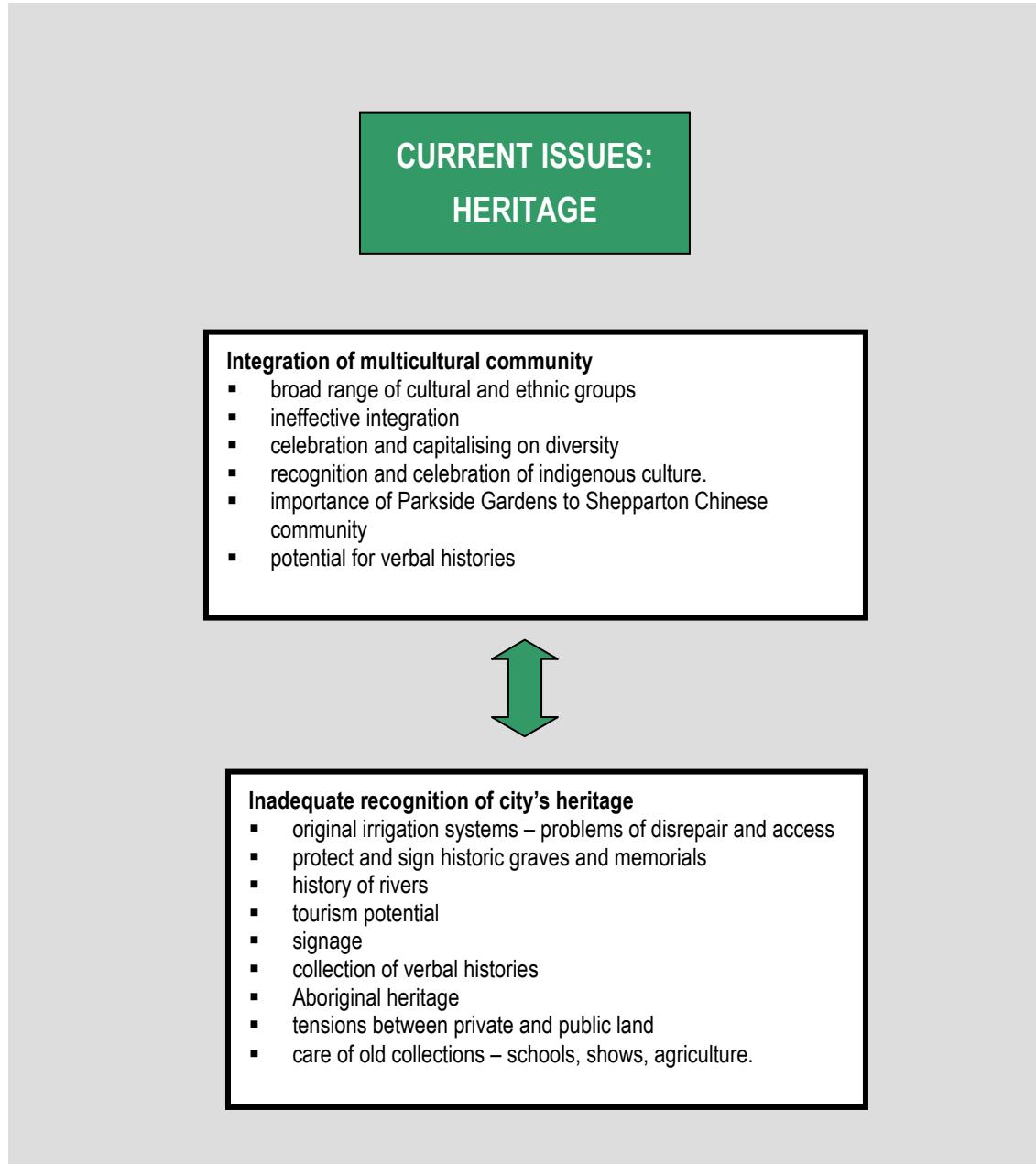
The responses are shown diagrammatically to indicate the common themes from the discussion and also to show the inter-linkages between the themes.

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Figure 2: Community Consultation on Environment- Current Issues



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Figure 3: Community Consultation on Heritage -Current Issues

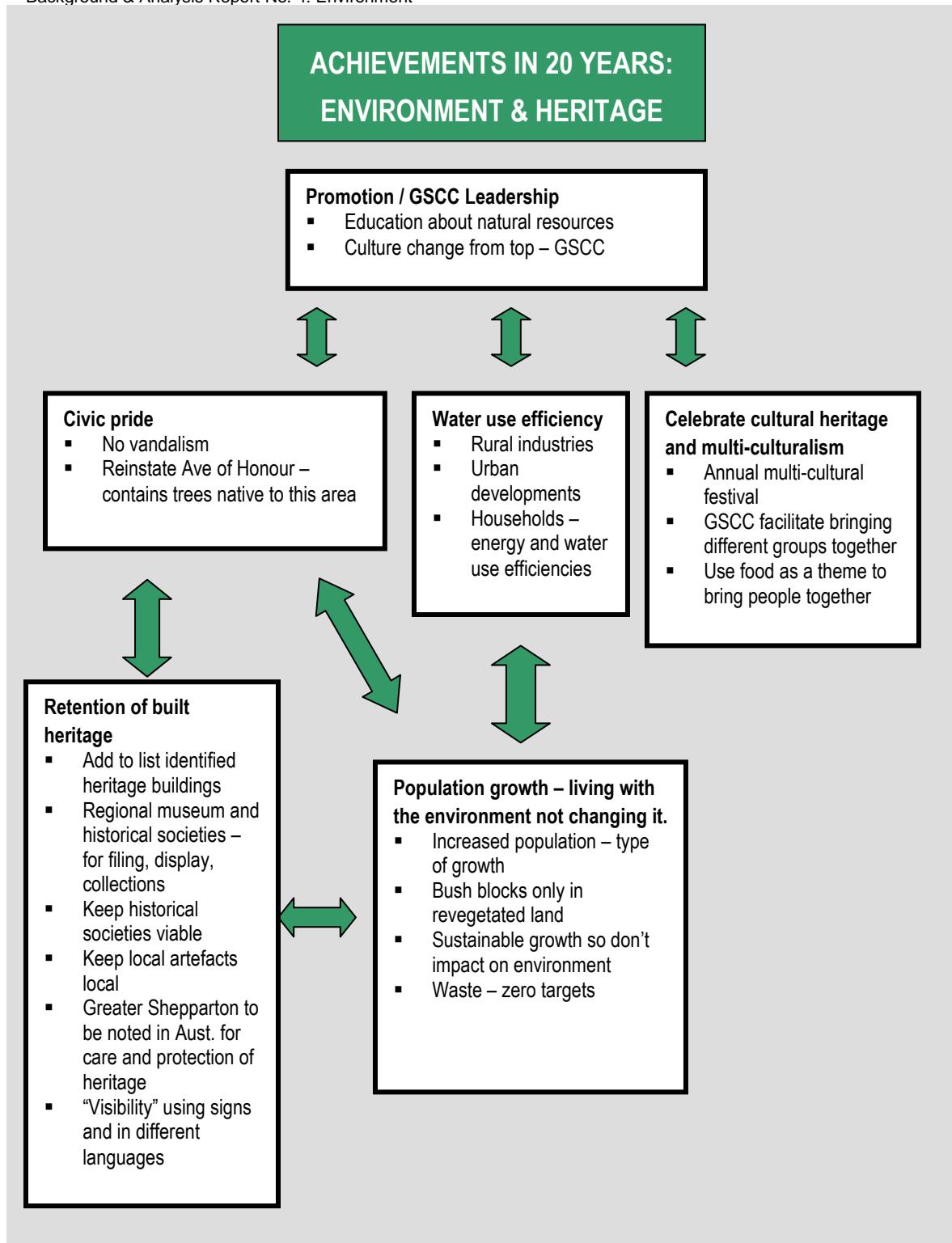


Figure 4: Community Consultation on Environment, Culture and Heritage Achievements in 20 years

4 The Natural Environment

4.1 Key Issues

The natural landscape of the Greater Shepparton region is predominantly degraded due to numerous modifications over the history of settlements, from early pastoralists to the irrigated farmlands. Therefore areas of remnant native vegetation are generally confined to creek reserves and road reserves, although there are existing pockets of remnant vegetation on private land.

The protection and enhancement of these corridors is important to provide habitat links for flora and fauns, links to larger areas of native vegetation, wildlife habitat, and biological diversity.

Some areas of significant native vegetation on private land may be vulnerable to clearing, it is therefore important for GSCC in conjunction with the GBCMA to identify these areas in the planning scheme and provide a policy basis for the consideration of proposals to remove native vegetation. This consideration must include an assessment of net gain.

In the previous MSS, the large scale of biodiversity mapping undertaken by the then Department of Natural Resources and Environment (DNRE) was considered to have limited applicability to Greater Shepparton in terms of zones and overlays.

The then DNRE published detailed landscape plans at a regional level (see section 4.2 following). These studies provide a valuable source of information about threatened flora and fauna species. It is this information that can be overlayed in a Rural Strategy and/or a local Environmental Strategy to determine areas that are unsuitable for urban or agricultural development for the protection of local biodiversity values.

4.2 An update on relevant strategies/ reports

Goulburn Broken Catchment Management Authority (November 2003) *Regional Catchment Strategy*

A Regional Catchment Strategy (RCS) is a blueprint for integrated natural resource management across a geographic area.

The Goulburn Broken RCS will have a major influence over the investment decisions made by the Commonwealth and State governments, the Greater Shepparton City Council and the community in natural resource management and sustainable regional development.

The RCS provides the context in which the Goulburn Broken Catchment community will work with Commonwealth and State agencies, rural and urban water authorities, landholders, the broader community and local government to achieve its vision.

Department of Sustainability and Environment, and Goulburn-Broken Catchment Management Authority (2003) *Biodiversity Action Planning Landscape Plans*

These plans are undertaken by the Goulburn-Broken Catchment Management Authority and form the regional component of the state Biodiversity Strategy. These regional plans can then inform action at the local level, and also complement other environmental programs for salinity control and greenhouse amelioration.

The plans contain information about land systems and remaining biodiversity assets in the region together with a list of threatened species flora and fauna. The municipality of Greater Shepparton is largely located in the Victorian Riverina and Northern Inland Slopes bioregions.

The goal of the regional plan is for the conservation and restoration of biodiversity. Conservation is achieved by management of key threats.

The regional landscape plan was subject to consultation process and includes a survey on the most important issues to farmers. They were, in order: weeds, salinity, rising groundwater, native vegetation and water quality. The full range of issues for landowners included weeds, soil compaction, pest animals, native vegetation decline, soil acidity, soil fertility, water quality/salinity and viability – commodity prices, water security, high water tables.

Greater Shepparton City Council (2001) *Roadside Management Plan*

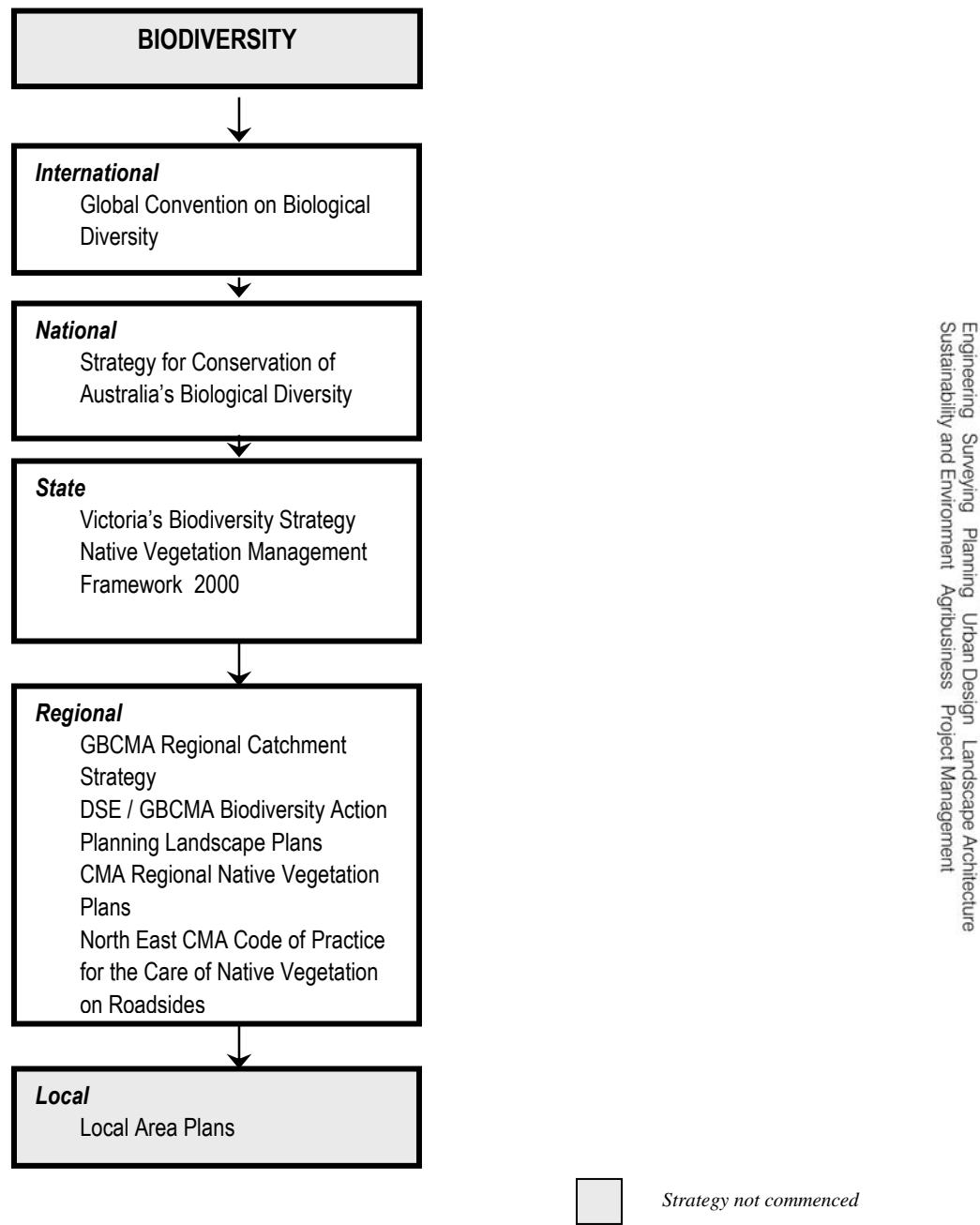
The Greater Shepparton City Council adopted the Roadside Management Plan in June 2001. The Management Plan was developed by consultants Dianne McPherson and Associates in conjunction with the then Department of Natural Resources and Environment, the Roadsides Conservation Advisory Committee and other Councils.

The Roadside Management Plan further develops Council Policies in relation to environmental sustainability and responsible management of natural resources encapsulated in the Municipal Strategic Statement and in Council's Corporate Plan. The Plan falls within a complex legal context and complies with Victoria's Draft Native Vegetation Management Framework 2000.

The Plan covers all rural roads within the City of Greater Shepparton that are not under the direct control of VicRoads. Roads inside town boundaries have not been included and unused roads are still to be classified and will be incorporated within the first review period. It is based on the *Strategy to Develop and Implement a Roadside Management Plan for the Greater Shepparton City Council, 1998*. The Plan focuses on the management of remnant vegetation located on roadsides and recognises the opportunities to protect and enhance our indigenous vegetation.

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4.3 The Broader Strategy Framework



Source: DSE / Goulburn Broken CMA (April 2003) Biodiversity Action Planning Landscape Plans for the Goulburn Broken CMA

Figure 5: Strategy Framework – Biodiversity

4.4 Achieving the Strategic Objectives

The key objectives for this subtopic are:

Objective 1: To maintain and enhance biodiversity of native flora and fauna communities.

Objective 2: To protect and manage the natural resources of water, air and land.

The following table provides the detailed strategies and an action plan.

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Table 1: The Natural Environment – Achieving the Strategic Objectives

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage Theme: The natural environment				
Objectives	Strategies	Actions	Council Role	Priority
1. To maintain and enhance biodiversity of native flora and fauna communities	1.1. Protect and enhance significant remnant native vegetation on both public and private land. 1.2. Ensure appropriate identification of native vegetation on land to be developed or subdivided. 1.3. Protect and enhance the biodiversity assets of the municipality, with the preparation of detailed Local Biodiversity Action Plans 1.4. Promote sensitive design responses and recognition be given to the identification of native vegetation.	<p>These strategies will be implemented by:</p> <p>Using Policy and the exercise of discretion</p> <ul style="list-style-type: none"> ▪ Use the guidelines contained in the Roadside Management Plan. ▪ Utilise the Roadside Conservation Values Assessment Map. ▪ Use the provisions under Clause 65 of the planning scheme to refer application to referral authorities. <p>Applying Zones and Overlays</p> <ul style="list-style-type: none"> ▪ Apply the Wildfire Management Overlay after consultation with the CFA ▪ Apply the Environmental Rural Zone to identified areas of environmental significance. ▪ Apply the Public Use Zone, PPRZ and PCRZ to public land and open space areas containing significant flora and fauna habitats. ▪ Apply the SLO to areas with significant landscapes. ▪ Apply the VPO over areas, including roadsides and lineal reserves containing significant vegetation. 	Provider	H

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage**Theme: The natural environment**

Objectives	Strategies	Actions	Council Role	Priority
		<ul style="list-style-type: none"> ▪ Apply the ESO over waterways, wetlands and other areas of identified significance. <p><i>Undertaking further strategic work</i></p> <ul style="list-style-type: none"> ▪ Prepare a Rural Land Strategy ▪ Prepare an Environmental Strategy, incorporating Local Bio-diversity Action Plans. <p><i>Other actions</i></p> <ul style="list-style-type: none"> ▪ Continue to work in partnership with the GBCMA ▪ Work with authorities to prepare guidelines for the use and development adjacent to public reserves to ensure that public reserves are not affected by the off site effects of adjacent rural operations. ▪ Engage with the Goulburn-Broken Catchment Management Authority and develop stronger linkages between the Regional Catchment Strategy and the Greater Shepparton Planning Scheme. ▪ Work with the authorities to develop a works program with priorities for re-vegetation of degraded areas. ▪ Work with the authorities to prepare a promotions kit about the value of conservation. ▪ Investigate rate rebates for covenants for vegetation protection. ▪ Review and publicise progress on 1 million tree plan 	Provider Provider Advocate/ Facilitator Facilitator Advocate/ Facilitator Advocate/ Facilitator Advocate Advocate Provider Provider	H H \$80,000 H \$60,000 H M-H H M M M

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage				
Theme: The natural environment				
Objectives	Strategies	Actions	Council Role	Priority
2. To protect and manage the natural resources of water, air and land.	<p>2.1. Promote energy efficient and sustainable built forms and development proposals.</p> <p>2.2. Continue to ensure new developments are connected to reticulated services or have provision for adequate on-site disposal with no advised impacts on nearby watercourses.</p> <p>2.3. Protect productive agricultural land from soil pollution.</p>	<p>These strategies will be implemented by:</p> <p>Using Policy and the exercise of discretion</p> <ul style="list-style-type: none"> ▪ Use the provisions under Clause 65 of the planning scheme to refer application to referral authorities. <p>Applying Zones and Overlays</p> <ul style="list-style-type: none"> ▪ Apply the Environmental Rural Zone to identified areas of environmental significance. ▪ Apply the Public Use Zone, PPRZ and PCRZ to public land and open space areas containing significant flora and fauna habitats. ▪ Apply the ESO over waterways, wetlands and other areas of identified significance. <p>Undertaking further strategic work</p> <ul style="list-style-type: none"> ▪ Prepare a Rural Land Strategy to include an assessment of land quality and the preferred sustainable uses and productive capacity of land. <p>Other actions</p> <ul style="list-style-type: none"> ▪ Continue to work in partnership with the GBCMA ▪ Continue to implement programs such as the Storm Water Management Plan, Water Sensitive Urban Design, Water Initiative, Cities for Climate Protection, Waste Water Management Plan and the RMS. 	Provider Provider Provider Facilitator Provider	H H H \$80,000 H H

5 Floodplain Management

5.1 Key Issues

Floodplain management is one of the main land use and development issues for the municipality. The municipality is located on a major floodplain at the confluence of two major rivers, and is characterised by a flat topography. Flooding in the Shepparton-Mooroopna area is a result of the interaction of floods in the Goulburn River, Broken River and Seven Creeks.

Decades of open pasture farming and irrigated agriculture has changed the natural hydrological balance. Consequently the soils in the Shepparton Irrigation Region have higher than average moisture content and higher rainfall run-off. In turn this run-off floods farms and conservation areas. Ponded rainfall can then cause soil salinisation.

Flooding is a natural phenomenon in this region. Floodplain management attempts to reduce the direct costs in terms of loss of stock and damage to property, and the indirect costs of reduced productivity, road rebuilding, and inconvenience.

Therefore the key issue is for the effective drainage of land without causing other environmental impacts.

The Goulburn River supplies water for the irrigated farmlands and for urban water supply and therefore it is critical that this supply be protected.

Planning controls are used to designate areas prone to flooding and limiting developments that will impede natural surface water flows. It is equally important that controls do not move or create a surface water management problem to another area, either within or outside the municipality.

For these reasons the continuation of the co-operative and productive relationship with the Goulburn-Broken Catchment Management Authority is essential.

Water Quality

The State Environment Protection Policy (Waters of Victoria) requires that water bodies reduce the annual nutrient load leaving the Goulburn Valley via Goulburn-Murray Water surface drainage schemes that outfall into major rivers and streams.

Dairy and mixed farming enterprises contribute to the nutrient load by the way of irrigation run-off carrying fertiliser that has been applied to the pasture paddocks. Another issue is the dairy wash down waste that overflows from effluent ponds or from below ground sumps that fill and spill to the surface drainage system or to streams that outfall into major rivers.

The problems associated with low flow streams and high nutrient levels result in the blue green algae blooms that develop and restrict the use of water for human and animal consumption.

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Efforts toward managing the nutrient run-off will be high on the agenda for future farming practices, where landholders will be required to employ an Environmental Management System that requires regular monitoring and audits to ensure nutrients are substantially reduced and managed, to prevent waterway degradation.

The State and Federal Government along with the Murray Darling Basin Authority have recently released a report on the Living Murray. Scientists have identified changes to the river systems' natural environment through damming and regulating stream flows. Native fish and other aquatic animals have difficulty surviving in streams that are regulated, as depth of water is important for breeding and migration. Regulated stream flows also affect aquatic plant species by constant changes in stream flows.

River Management and Restoration

River systems within the municipality support agricultural industries, provide safe drinking water and support recreational activity and regional tourism. These systems are also highly significant ecosystems and these riparian zones often contain the only remaining native vegetation. The river systems also provide a sense of place and belonging for the community.

The Victorian River Health Strategy provides a framework in which government, in partnership with the community will make decisions on the management and restoration of river systems. This River Health Strategy recognises local government as a crucial player in the management of river health and provides a list of specific functions identifying local government as having the lead responsibility.

Catchment Management Authorities are caretakers for river health and as a consequence the Goulburn Broken Catchment Management Authority is already engaged with the Greater Shepparton City Council in a variety of activities relating to the restoration of river health. This important partnership will continue to grow and develop as it is recognised that river health contributes to shaping the size, physical form, character and well being of Greater Shepparton.

Salinity

High levels of salinity impacts on the agricultural productivity of both irrigated and dryland farming in the municipality.

The Goulburn Broken Catchment Management Authority has produced a Salinity Management Plan for the Shepparton Irrigation Region. This plan formed the framework for works that formally commenced in 1990. Recommendations and actions of this Plan will continue to be implemented by the CMA in partnership with the Council, however DSE and DPI (incorporating the CMA) carry the majority of the responsibility for the ongoing implementation of the plan.

In Greater Shepparton, the lighter soils and streams can fill rapidly following continuous rainfall throughout winter and spring. The Shepparton area represents the most complex district in determining possible salinity consequences.

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The Department of Primary Industry and Goulburn-Murray Water have jointly produced research to assist the management of the water table levels throughout the region. The Shepparton Irrigation Region Management Plan addresses the high water table that introduces salinity to the topsoil profile.

Salinity is still a threat to the farming community particularly following extremely wet periods followed by inefficient irrigation practices.

Ground water pumps have been installed throughout the Shepparton East and Ardmona Orchard areas to protect sensitive fruit trees from rising groundwater. These trees are susceptible to wet feet.

Adopting micro-irrigation to irrigate pome and stone fruit is the best method for applying water to orchards, vines and vegetables and has very little impact to groundwater levels.

5.2 An update on relevant strategies/ reports

At a regional level the Goulburn-Broken Catchment Management Authority has produced detailed floodplain maps for the Shepparton Irrigation Region (SIR). The maps provide details of natural drainage lines, community drains, Goulburn-Murray Water channels, and proposed drainage lines. This information can then provide the basis for local planning scheme zones and overlays and the preparation of local farm management plans.

Goulburn Broken Catchment Management Authority (June 2002) Surface Water Management Strategy Review – Strategic Plan, Shepparton Irrigation Region

At the time of the previous 1990 Surface Water Management Strategy, 60% of the Shepparton Irrigation Region did not have surface drainage. The area without drainage was 241,510 hectares in 2000.

The report contains a program for infrastructure to remove excess runoff, provide outfall for ground water pumps and preserve wetlands and areas of native vegetation. Such infrastructure includes: CSD (community surface drains); Goulburn-Murray Water primary drains, drainage course declaration and drain upgrading. The proposed capital works program will be completed by 2020, subject to funding.

The principles of the strategic plan are:

- Community driven
- Provide every property with appropriate drainage service
- Construct drains within natural environment
- Maximum environed benefits (state areas of wetland protected and no of trees planted)
- Identify and protect aboriginal heritage sites
- Maximise social benefits; reduce risk for invest higher value crops drained reduces mosquitos; improve road standards
- Minimise downstream impacts; do not create transfer flooding to another area

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The report identifies numerous environmental benefits of the program including the conservation of 22 wetlands listed in the Shepparton Irrigation Region, protection of native fish habitat in the Lower Goulburn River, Broken River and Broken Creek, and protection of habitat for a number of threatened species.

The management of surface water will improve land use and management by reduced waterlogging, reduced salinity, less road deterioration, and reduced groundwater ‘recharge’.

Sinclair Knight Merz (October 2002) *Shepparton Mooroopna Floodplain Management Study*

This study provides the rationale for the Floodplain Management Plan in the urban areas of Shepparton/Mooroopna. The main objective of the floodplain management plan is “*to minimise the economic and social impacts of flooding on the community, whilst protecting environmental values of the study area*”

The methodology of the study includes qualitative and quantitative assessment of:

- Historical flooding data;
- Community consultation;
- Hydrologic analysis of stream flow to estimate probability of occurrence (flood peaks and volume);
- Computer modelling of flood behaviour to estimate flood extents and levels;
- Flood damage assessment; and
- Flood mapping for emergency response.
- The study recommended measures to reduce the economic and social consequences of flooding.

The Goulburn–Broken Catchment Management Authority has declared flood levels in accordance with the Water Act 1989. The flooding delineation maps are based on these flood levels and will assist GSCC in the application of the relevant planning scheme provisions:

- Land Subject to Inundation Overlay – this overlay applies to land in flood fringe or flood storage areas that is subject to inundation in a 100 year (ARI) flood.
- Floodway Overlay – these areas are largely discretionary with developments assessed on performance based criteria.
- Urban Floodway Zone - contains restrictions on the use and development of land.

The Land Subject to Inundation Overlay requires planning and building regulations for floor levels of 300mm above the nominated flood level.

Key criteria used in this study are:

- the 10 year ARI flood extent (representing high frequency flood risk).
- an extent based on depth and velocity in a 100 year ARI flood event (representing high hazard flood risk).
- an absolute flood depth of 0.5 m.

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The recommended list of mitigation measures includes structural works (floodways, waterway capacity works, levees or flood walls, flood proofing or raising and land acquisition) and non-structural measures (land use planning controls, improved flood warning and community education).

A preliminary assessment of the feasibility of mitigation measures was made considering the cost, practicality and effectiveness of the various measures.

The study assessed structural measures including a number of levee options, construction of East Mooroopna Floodway, realignment of Channel No. 12, and increasing bridge causeway and railway openings. It concluded that none of these measures were supported due to the low benefit to cost ratio.

The study did support non-structural measures, as a means of reducing flood damages in the longer term. These included planning scheme amendments (especially for the effective assessment of applications – these amendments have been incorporated into the Planning Scheme), flood warning arrangements, flood response and recovery, flood monitoring and community awareness (which are currently being implemented).

Victorian Government White Paper – Securing our Water Future Together

The Government White Paper is about achieving a secure water future for Victoria. The key challenges within the Paper include securing reliable water supplies for our homes, farms and industry while meeting the needs of the environment. A further challenge is to maintain sustainable water management regimes. One of the fundamental principles relating to water management is based on an understanding that a healthy economy and society is dependent on a healthy environment. The White paper provides an action plan to secure Victoria's water future over the next 50 years.

Particular aspects relating to the implementation of the White Paper will impact on the work of local government. These issues include:

- A direct impact on rate income as a result of unbundling water title for irrigation areas
- The management of stormwater outfalls
- Water sensitive urban design and water saving on new urban development
- Examining opportunities to recycle and re-use stormwater
- Residential water use
- Irrigation of sports ovals and public parks
- A review of the VPP's to ensure local policy supports government policy
- Participation in the development of Regional Water Plans

Greater Shepparton City Council (2003) Water Conservation Discussion Paper

Council is evaluating and planning for appropriate water saving measures relating to its own water use of approximately 500 mega litres per year for sporting grounds, public open space areas, playgrounds, median strips, and other landscape features.

Conservation measures have been mooted in a public discussion paper and include:

- Planting of indigenous, drought-resistant varieties;
- Reduced number of waterings;
- All watering takes place during early morning and evening;
- No planting of flowering annuals;
- Use of couch and kikuyu only for public open spaces and recreation reserves;
- Conversion of watering systems from manual to automatic; and
- Increase knowledge of water requirements of various grasses.

The aim of the discussion paper is to stimulate debate about community accepted standards regarding the state of the public landscaped areas.

North East Planning Referrals Committee (April 2000) *Guidelines for the Protection of Water Quality.*

The aim of these guidelines is to streamline the referrals process for developments that may impact on water quality. Such developments include: clearing native vegetation, dam constructions, development in floodplains and natural drainage lines, industrial development, intensive animal industries, land forming and laser grading in irrigation areas, septic tanks and package treatment plants, waste water treatment plants.

There is a need for waste water management plans to be prepared in 2005/2006.

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5.3 The Broader Strategy Framework

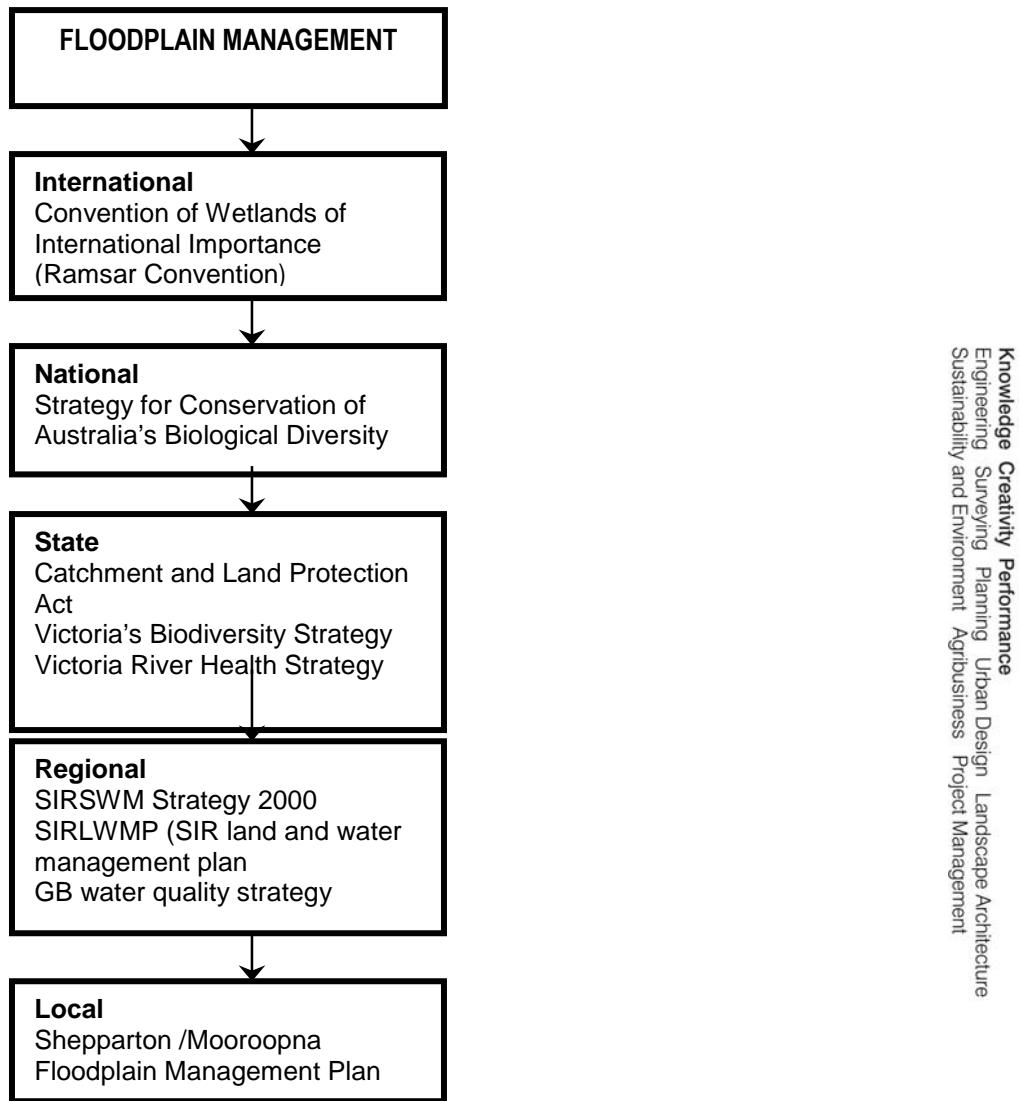


Figure 6: Strategy Framework - Floodplain Management

5.4 Achieving the Strategic Objective

The key objectives for this subtopic are:

- Objective 1:** To recognise the constraints of the floodplain on the use and development of land and minimise the future economic impacts of flooding.
- Objective 2:** To provide a supply of high quality water for urban and agricultural use.
- Objective 3:** To minimise the degree of salinity through an integrated regional surface water management program.

The following table provides the detailed strategies and an implementation plan

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Table 2: Floodplain Management - Achieving the Strategic Objective

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage Theme: Floodplain management					
Objectives	Strategies		Action	Council Role	Priority
1. To recognise the constraints of the floodplain on the use and development of land and minimise the future economic impacts of flooding.	1.1 Minimise the impacts of flooding to people and property by controlling development in flood prone areas and encouraging development and subdivision on land not subject to flooding. 1.2 Protect wetlands of significance. 1.3 Ensure that planning decisions and approval of development plans have regard to the goals and priorities of the Goulburn-Broken Catchment Management RCS. 1.4 Ensure that all new developments maintain the free passage and temporary storage of floodwater, minimises flood damage, is compatible with flood hazard and local drainage conditions, and minimises soil erosion, sedimentation and silting and has a neutral impact up and down stream. 1.5 Promote increased community awareness of floodplain management with the advance community flood warning system.		<p>These strategies will be implemented by:</p> <p>Using Policy and the exercise of discretion</p> <ul style="list-style-type: none"> ▪ Apply the Shepparton Mooroopna Floodplain Management Plan. ▪ Finalise and implement the Floodplain Management Plans of Tatura and Merrigum ▪ Use the provisions under Clause 65 of the planning scheme to refer application to referral authorities. <p>Applying Zones and Overlays</p> <ul style="list-style-type: none"> ▪ Apply the PCRZ to publicly owned land in the catchment and to significant waterways. ▪ Apply the ESO to Ramsar wetlands. ▪ Apply the UFZ to active floodplain areas with high hazards and strictly control use. ▪ Apply the FO to land that has significant risk of flooding in active floodplain areas with high hazards. ▪ Apply the LSIO to both urban and rural land subject to 1 in 100 year flooding. ▪ Apply the SBO to land in urban areas that are subject to flows from drainage systems. 	Provider	H

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage
Theme: Floodplain management

Objectives	Strategies	Action	Council Role	Priority
	<p>1.6 Prevent removal of native vegetation and grasses to minimise loss of riparian vegetation as a result of development on the floodplain</p> <p>1.7 Encourage landholders to carry out works that are compatible with existing and proposed drainage schemes, preferably as part of the Whole Farm Plan certification process.</p>	<ul style="list-style-type: none"> ▪ Apply the VPO to areas of significant riparian vegetation. <p><i>Undertaking further strategic work</i></p> <ul style="list-style-type: none"> ▪ Prepare an Environmental Strategy, incorporating local Bio-diversity Action Plans. ▪ Undertake floodplain management studies for the smaller rural towns (where necessary). ▪ Prepare a Rural Land Strategy <p><i>Other actions</i></p> <ul style="list-style-type: none"> ▪ Implement the CMA Floodplain Management Strategy for surface water management. ▪ Continue to provide a Whole Farm Plan (WFP) program with associated incentives. ▪ Pursue an integrated approach to floodplain management between GSCC, Goulburn-Broken Catchment Management Authority and Department of Primary Industry to maximise the regional benefits to agricultural productivity, reduce road maintenance, and ensure optimum resource management. ▪ GSCC and the Goulburn-Broken Catchment Management Authority to produce joint information about flooding facts. Include emergency recommendations of the floodplain plan. 	Provider Facilitator/ Provider Facilitator/ Provider Provider Facilitator/ Provider Facilitator/ Provider Facilitator/ Provider/ Advocate Facilitator/ Provider/ Advocate	H H \$80,000 M \$40,000 each H \$80,000 H H H H H

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage
Theme: Floodplain management

Objectives	Strategies	Action	Council Role	Priority
2. To provide a supply of high quality water for urban and agricultural use.	<p>2.1 Ensure all new developments have adequate reticulated services or effluent disposal systems to protect watercourses and water quality, and to maintain and enhance water quality for both urban and rural use.</p> <p>2.2 Support and promote approved innovative methods of effluent disposal eg composting.</p> <p>2.3 Promote regular water-wise messages to the community and encourage community wide use of drought resistant plantings.</p>	<p>These strategies will be implemented by:</p> <p>Using Policy and the exercise of discretion</p> <ul style="list-style-type: none"> ▪ Require all developments near waterways to be connected to reticulated sewer or septic systems complying with the Code of Practice for Septic tanks. This should be strengthened through the implementation of the Waste Water Management Plan. <p>Undertaking further strategic work</p> <ul style="list-style-type: none"> ▪ Support the integrated effluent disposal strategy with EPA and CMA. <p>Other actions</p> <ul style="list-style-type: none"> ▪ Commence a regular septic tank assessment program, to ensure compliance with the Code of Practice for septic tanks. ▪ Publish standards for Council's use of water for community purposes. ▪ Encourage the appropriate authority to prepare a Community Response Plan, to reduce and manage incidences of toxic blooms in watercourses in the event of blue-green algal outbreak. 	Provider/ Advocate	H

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage
Theme: Floodplain management

Objectives	Strategies	Action	Council Role	Priority
3. To minimise the degree of salinity through an integrated regional surface water management program.	3.1 Prevent the detrimental impacts of saline water drainage by encouraging best practice water use. 3.2 Assist in the rehabilitation of areas affected by salinity, as identified in the Rural Land Strategy. 3.3 Encourage the development of surface water management systems with run-off into natural systems or into reuse storage for irrigation at a later date 3.4 Promote community awareness of groundwater control, salinity management and water usage	<p>These strategies will be implemented by:</p> <p>Applying Zones and Overlays</p> <ul style="list-style-type: none"> ▪ Apply the SMO to recharge areas. <p>Undertaking further strategic work</p> <ul style="list-style-type: none"> ▪ Prepare a salinity management strategy as part of the Rural Land Strategy <p>Other actions</p> <ul style="list-style-type: none"> ▪ Continue to support programs initiated by DPI, DSE, CMA and the like in regard to management of salinity. ▪ Advocate for a land degradation map identifying actions to rehabilitate land degraded through erosion and salinity. ▪ Encourage best practice with reference to the Rural Land Strategy, which will identify relative land quality, preferred sustainable uses, the productive capacity of land, and the risk of salinity if vegetation is removed. ▪ Support a co-ordinated education campaign in conjunction with the Goulburn-Broken Catchment Management Authority and Department of Primary Industry. 	Provider Facilitator/ Provider Advocate/ Facilitator Advocate Provider/ Advocate Advocate/ Facilitator	H H \$80,000 H H H H

6 Best Practice Land Management

6.1 Key Issues

Land use and development controls and assessment must be compatible with the goals of the protection and enhancement of the natural environment. Therefore it is considered that land use and development management should be based on sustainability principles. As previously described in this report the concept of sustainability must be viewed from all perspectives: environmental, economic and social.

This approach to land management will require GSCC and individual landowners to undertake a rigorous planning approvals process whereby the total future impacts of a development and/or use is assessed, including long term impacts on neighbouring properties and water and soil resources.

The Whole Farm Plan (WFP) is increasingly used as a tool for planning by the farmer and for assessment and decision making by the authorities. The WFP provides information on management of surface water flows and storage, and farming developments and operations that may impact on the natural floodplain. This process should be expanded to include sustainability principles and longer term viability. The benefits of a WFP include:

- Reduced downstream impacts of nutrients on water quality;
- Protection of natural ecosystems;
- Reduced waterlogging and salinity; and
- Viable farming operations.

The first step to managing the land resource of Greater Shepparton in a sustainable way is to identify significant land resources and potential threats to their longevity. The development of a Rural Strategy will provide a data source for assessment of land capability.

6.2 An update on relevant strategies/ reports

Greater Shepparton City Council (2002) *Cities for Climate Protection Program*

The Greater Shepparton City Council joined the program in 2000. The aims of the program are to evaluate and set targets for greenhouse gas emissions for council and community activities, promote energy efficient subdivision and house design and to provide incentives and education.

Australia's target is to reduce its greenhouse gas emissions in the target period to 108% of 1990 levels. In achieving their targets, countries can take account of emission reductions; carbon sink enhancements and changes in land clearing.

GSCC has completed 5 milestones including:

- Establish a base year emissions inventory and forecast, both for the community and corporate sector;
- Set an emissions reduction goal;

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- Develop and adopt a greenhouse reduction strategy – the Greenhouse Local Action Plan;
- Implement the Greenhouse Local Action Plan; and
- Monitor and report on emissions and implementation of actions and policies.

The corporate energy inventory evaluates the energy consumption and costs in Council's buildings and fleet, streetlights, water and sewage operations and waste produced. The dominant source of greenhouse gas emissions relating to Council operations is electricity consumption, and Council has now targeted Council buildings as a key to reducing emissions.

The community inventory evaluates energy consumption in the residential, commercial and industrial sectors, as well as looking at greenhouse gases emitted from transportation and waste to landfill. The industrial sector is the most significant contributor to Shepparton's greenhouse emissions. The operations of large-scale food processing industries involve high-energy inputs and organic waste outputs that contribute to significant greenhouse gas emissions.

The remaining half of greenhouse emissions are shared relatively equally between the residential, commercial and transportation sectors. Overall, emissions from the community are expected to grow by about 2%, even though the residential population is forecast to grow by 6.5% between 1999 and 2010.

The following land use planning measures can assist in reducing the impacts of climate change:

- Reducing the areas of dark roofs and pavement in urban areas, which cause temperatures up to 10 degrees hotter than the surrounding countryside.
- Protecting bushlands and wetlands, for carbon sequestration.
- Minimising vegetation loss when developing land.
- Increasing greenhouse sinks by a store of carbon in trees, shrubs and soil.
- A program for community environmental action can pursue a number of options, for example; environmental trust funds; management plans; voluntary conservation agreements; vegetation protection ordinances; rate rebates; and land for wildlife agreements.

Goulburn-Broken Catchment Management Authority (Sept 2002) *Farm Program Review, Shepparton Irrigation Region*

This report is a review of the Whole Farm Plan (WFP) incentive scheme in the Shepparton Irrigation Region (SIR). The goals of the WFP program are to:

- Improve water management on land;
- Decrease water accessions;
- Decrease soil salinisation;
- Decrease waterlogging;
- Increase productivity of farms; and
- Protect environmental features.

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The plan has a target that all properties in the SIR will have a WFP by 2020. A farm plan covers aspects of farm management including ownership, agronomy, engineering, environment and finance.

The Review Plan was subject to a consultation process and includes a survey on the most important issues to farmers. They were, in order of importance: weeds, salinity, rising groundwater, native vegetation, and water quality.

Goulburn-Broken Catchment Management Authority (Jan 2003) *Floodplain Management Guidelines for Whole Farm Plans*

The Goulburn Broken CMA has prepared guidelines for the design of earthworks and structures that will not aggravate flooding or cause flooding downstream.

Farms require flood storage for flood attenuation. There are financial incentives via a simplified, and cheaper, planning process for farmers with an approved Whole Farm Plan.

The guidelines apply to: raised earthworks or structures (for example levees, contour banks, access tracks, roads, channels, drains and embankments), land forming, and water storages.

Land in the Rural Zone is divided into two categories. Category 1 is for land where there is insufficient information to identify floodway areas. The WFP can show areas at risk of flood at some future stage. Category 2 is for all other land subject to flooding.

For properties in the Rural Zone, a planning permit for earthworks is not required if the WFP is certified under *Planning controls for earthworks in Goulburn Broken Catchment November 1992*. The WFP is jointly approved by the Council, Goulburn-Murray Water, Department of Primary Industry and the Goulburn-Broken Catchment Management Authority.

The guidelines contain the following design considerations:

- No obstruction or restrictions on flows;
- Minimise risk to life, health, and property;
- Utilise flood storage areas;
- Preserve wetland areas;
- No buildings on floodplains;
- Avoid farm storage on floodway; and
- Provide adequate culverts for water flows.

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6.3 The Broader Strategy Framework

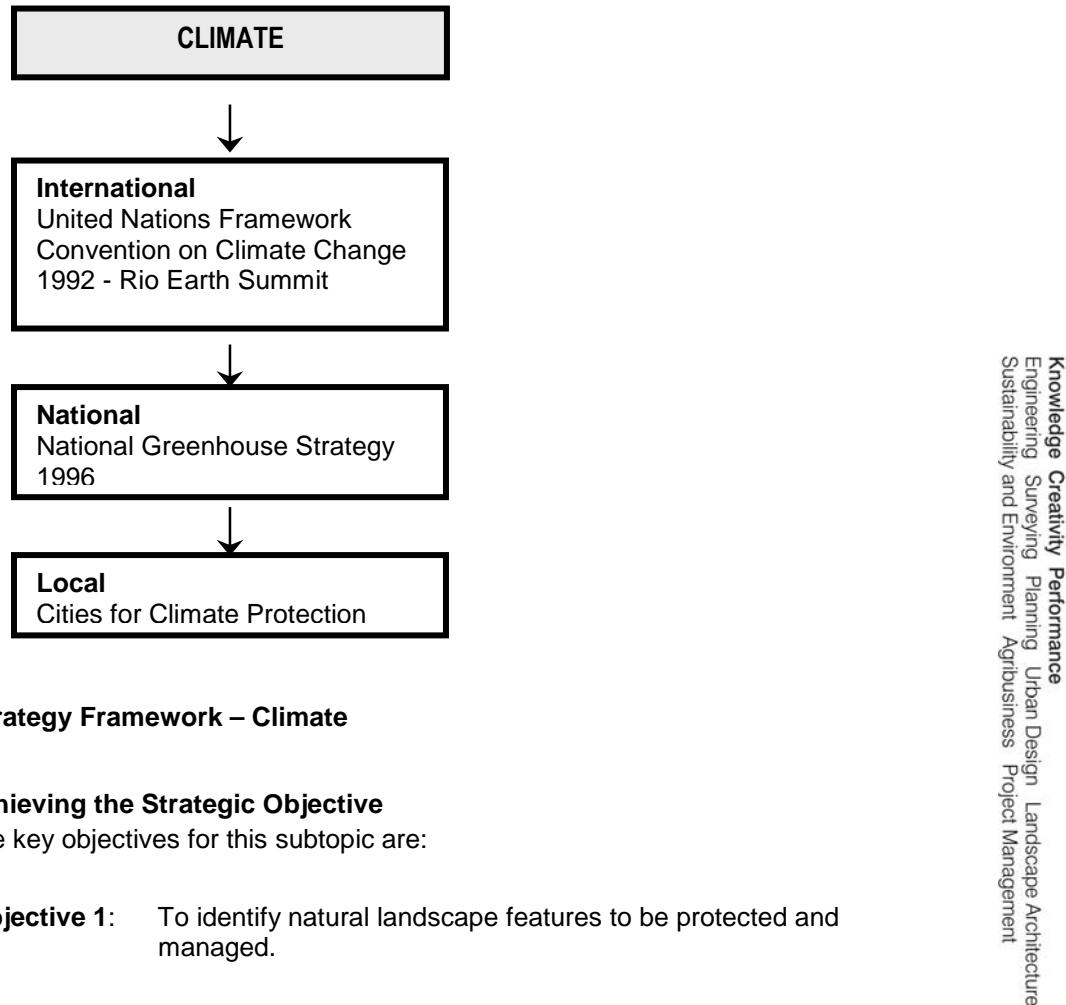


Figure 7: Strategy Framework – Climate

6.4 Achieving the Strategic Objective

The key objectives for this subtopic are:

- Objective 1:** To identify natural landscape features to be protected and managed.
- Objective 2:** To manage irrigated and non irrigated land for long-term sustainable production purposes.
- Objective 3:** To prepare an integrated strategy to address all aspects of the environment and to cooperate in the development of regional environmental plans.
- Objective 4:** To reduce greenhouse gas emissions by local actions, in the interests of current and future generations

The following table provides the detailed strategies and an implementation plan.

Table 3: Best Practice Land Management - Achieving the Strategic Objective

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage Theme: Best practice land management					
Objectives	Strategies		Action	Council's Role	Priority
1. To identify natural landscape features to be protected and managed	1.1 Provide for the identification of the municipality's assets of environmental significance. 1.2 Promote the protection of significant areas of the natural landscape.		These strategies will be implemented by: Undertaking further strategic work <ul style="list-style-type: none"> ▪ Prepare a Rural Land Strategy incorporating a land capability study ▪ Prepare environmental development guidelines to encourage sustainable land use and development that is sensitive to the natural landform and microenvironment. 	Provider Provider/ Facilitator	H \$80,000 M \$50,000
2. To manage irrigated and non irrigated land for long-term sustainable production purposes	2.1 Encourage the adoption of ecologically sustainable development principles and technologies in the future development of both urban and rural areas. 2.2 Encourage sustainable farming practices.		These strategies will be implemented by: Applying Zones and Overlays <ul style="list-style-type: none"> ▪ Use the Schedule to Farming Zone to allow the preparation of WFP. ▪ Apply the Environmental Rural Zone to sensitive rural areas. Undertaking further strategic work <ul style="list-style-type: none"> ▪ Prepare a Rural Land Strategy. Other actions <ul style="list-style-type: none"> ▪ Support the certification of Whole Farm Plans to minimise off site impacts and increase the rate of water re-use. ▪ Publish a Sustainability Indicator Checklist for planning applications, and include in the assessment criteria. 	Provider Provider Advocate/ Facilitator Advocate/ Facilitator	H H \$80,000 H H

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage
Theme: Best practice land management

Objectives	Strategies	Action	Council's Role	Priority
		<ul style="list-style-type: none"> ▪ Promote the design guidelines/fact sheets for: <ul style="list-style-type: none"> - passive solar design - smart lot design - star rating - water conservation resources ▪ Support the undertaking of a study on the assessment of different irrigated industries in the region and the long-term impacts on land base. 	<p>Provider/ Facilitator</p> <p>Facilitator/ Advocate</p>	<p>M \$10,000</p> <p>M</p>
3. To prepare an integrated strategy to address all aspects of the environment and to cooperate in the development of regional environmental plans.	<p>3.1 Foster regional cooperation and resource sharing regarding best practice land management.</p> <p>3.2 Investigate the value of applying a performance based rate as an "Environmental Rate" at the local or state level or a rate rebate to encourage sustainable environmental practices</p>	<p>These strategies will be implemented by:</p> <p><i>Undertaking further strategic work</i></p> <ul style="list-style-type: none"> ▪ Work with the authorities in the preparation of an umbrella Environment Strategy for the municipality to address: <ul style="list-style-type: none"> - Air quality - Water quality and waterways - Native vegetation - Energy efficiency natural resources - Waste management - Rural land and urban environments - Community awareness and education - Water conservation. <p><i>Other actions</i></p> <ul style="list-style-type: none"> ▪ Investigate the expansion of rural rebate scheme as incentive for positive land management practice. 	<p>Provider/ Facilitator/ Advocate</p> <p>Provider</p>	<p>H</p> <p>M-H</p>

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage
Theme: Best practice land management

Objectives	Strategies		Action	Council's Role	Priority
4. To reduce greenhouse gas emissions by local actions, in the interests of current and future generations	4.1 Endorse an urban design approach that includes an assessment of climate and energy costs. 4.2 Support non-renewable energy use by fuel switching and the use of green energy. 4.3 Support the goal of reducing Community greenhouse gas emissions from 1999 levels by 20% by 2010. 4.4 Assist carbon reduction by encouraging development plans to include increased indigenous plantings on private and public land and reduced reliance on motorised transport.		<p>These strategies will be implemented by:</p> <p>Using Policy and the exercise of discretion</p> <ul style="list-style-type: none"> ▪ Use the Roadside Management Plan. ▪ Apply the Bicycle Strategy <p>Undertaking further strategic work</p> <ul style="list-style-type: none"> ▪ Update the Economic Development strategy for use as a tool for targeting the clean green food industry. <p>Other actions</p> <ul style="list-style-type: none"> ▪ Prepare a plan for Greenhouse Gas Reduction. ▪ Publish an information sheet for developers to promote the use of energy efficient water and devices in new developments. ▪ Initiate and co-ordinate a program of community education include initiatives such as: <ul style="list-style-type: none"> - Energy efficient lighting rebates - Solar Energy Initiatives - Revolving Energy Fund ▪ Continue to participate in Cities for Climate Protection and Water Conservation programs. 	Provider Provider Provider/ Facilitator/ Advocate Provider/ Facilitator/ Advocate Facilitator/ Advocate	H H \$60,000 M M M

7 Cultural Heritage – Pre settlement

7.1 Key Issues

Greater Shepparton is located in the traditional territory of the Pangerang tribe, whose descendants have a long ancestral history in the area. The land at the junction of rivers and creeks surrounded by open grassland was suitable for settlement by the original Aboriginal tribes.

A number of potential sites of cultural significance have been recognised throughout the municipality. However GSAC has not undertaken a municipal wide archaeological and cultural heritage study to date. Some information has been obtained from a Biosis report (see below), which was commissioned by VicRoads when assessing the impacts of the Shepparton bypass.

There is no integrated assessment of the cultural heritage assets of the municipality, or a grading system to identify the level of significance and the type of protection to be afforded to the sites or areas.

More detailed investigation is needed to ascertain the importance of the sites and the potential for inclusion into the planning scheme.

7.2 Reports/ strategies published since 1996 Plan

Allom Lovell & Associates (2002) Greater Shepparton Heritage Study

This study focuses on post contact historical themes and the assessment of buildings and structures of heritage significance. The study provides only a brief introduction to the cultural heritage of the original landowners.

The traditional owners of the land are the descendants of the Pangerang tribe. Subgroups of this tribe settled near rivers, which were a source of food and water.

Following European contact, Aboriginal tribes occupied shanty-towns on the banks of the Goulburn River between Shepparton and Mooroopna.

One of four Aboriginal Protectorates was located in Murchison. The protectorate system was abolished in 1851, and the remains of the site have not been established. The Rumbalara (meaning 'rainbow') settlement was created in 1958.

Biosis Research (November 2000) Goulburn Valley Highway – Shepparton Bypass Review of Western Route Planning Study: Archaeology and Cultural Heritage

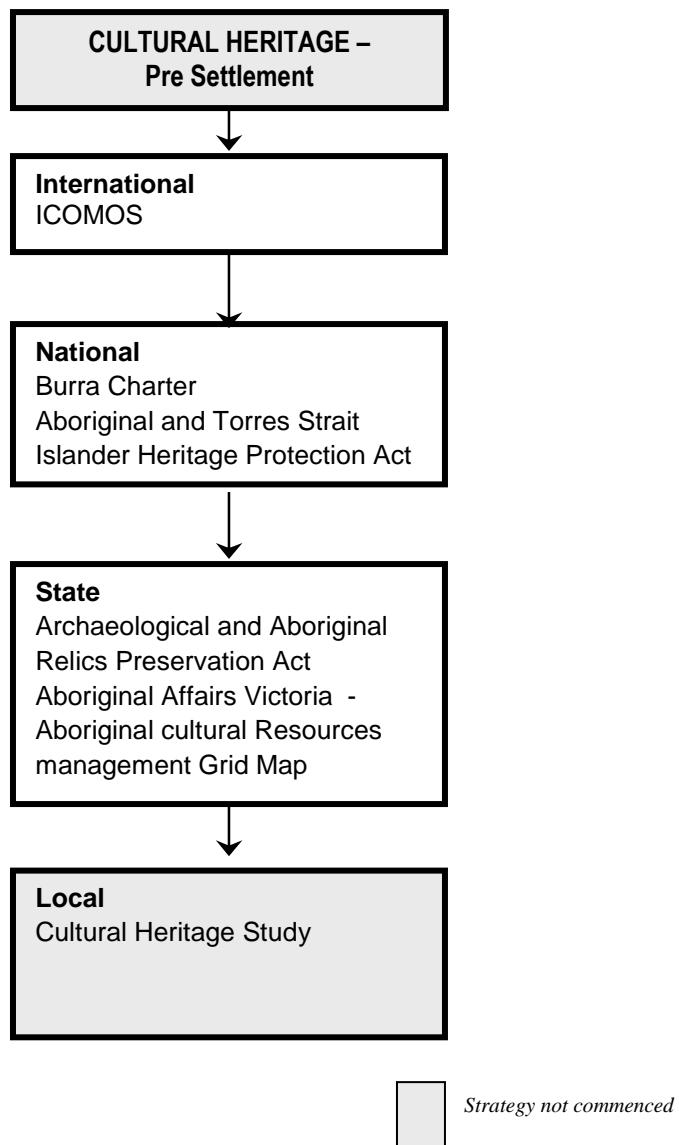
This study identified 8 recorded sites of significance - 6 scar trees, an isolated artefact site and one edge ground axe. (The sites are not specifically mapped at the request of Yorta Yorta Nation Aboriginal Corporation).

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Areas of potential sensitivity for Aboriginal archaeological significance include:

- Riparian corridors of the Goulburn River valley and Castle Creek;
- Sand dunes adjacent to flood plains;
- Areas of native vegetation;
- Raised edges of billabongs and creeks; and
- Raised ridges on flat land adjacent to the flood plain.

7.3 The Broader Strategic Framework



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Figure 8: Strategy Framework - Cultural Heritage

7.4 Achieving the Strategic Objective

The key objectives for this sub-topic are:

Objective 1: To conserve and protect identified sites of cultural heritage significance

Objective 2: To involve local indigenous communities in the collection, identification and promotion of places and items of cultural heritage significance.

The following table provides the detailed strategies and an implementation plan.

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Table 4: Cultural Heritage - Achieving the Strategic Objectives

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage Theme: Cultural heritage – pre settlement				
Objectives	Strategies	Action	Council Role	Priority
1 To conserve and protect identified sites of cultural heritage significance	1.1 Promote the protection of places of heritage significance as these contribute to the character of the municipality. 1.2 Ensure measures are taken to identify places of Aboriginal significance prior to approving a development plan or exhibiting a rezoning. 1.3 Promote community awareness of cultural heritage assets.	<p>These strategies will be implemented by:</p> <p>Applying Zones and Overlays</p> <ul style="list-style-type: none"> ▪ Apply the Heritage Overlay to identified sites and areas of cultural significance. ▪ Apply the Development Plan Overlay to require that development plans must be accompanied by an archaeological report from a suitably qualified expert <p>Undertaking further strategic work</p> <ul style="list-style-type: none"> ▪ Initiate a cultural heritage landscape assessment to identify the significance of important landscapes. <p>Other actions</p> <ul style="list-style-type: none"> ▪ GSCC to continue appointment of heritage advisor. 	Provider Provider Provider	H L \$50,000 H
2 To involve local indigenous communities in the collection, identification and promotion of places and items of cultural heritage significance.	2.1 Promote and provide for recognition of the Aboriginal community and their occupation of the land.	<p>These strategies will be implemented by:</p> <p>Other actions</p> <ul style="list-style-type: none"> ▪ GSCC to use a cultural coordination officer where appropriate. ▪ Work with the local historical societies, local Aboriginal groups and the owners of potentially significant buildings and areas in conducting investigations into historical & cultural heritage. 	Provider Provider/ Facilitator	H H

8 Cultural Heritage – Post Settlement

8.1 Key Issues

Greater Shepparton City Council has commissioned a Heritage Study and recommended sites have been included in a Heritage Overlay to afford planning scheme protection.

Although Greater Shepparton does not contain large numbers of sites or buildings or heritage significance, GSAC can promote the re-use and restoration of the identified items.

There are also opportunities to link some of the identified buildings and sites to economic development and tourism initiatives. For example the unique irrigation system has a high degree of historic value.

8.2 Statement of Significance – City of Greater Shepparton

"The City of Greater Shepparton has a richly layered history which dates back to some of the very earliest European activity in Northern Victoria. The environment of the region has much evidence of this history, located in the towns and settlements, and in the agricultural landscapes. It is also notable for the great diversity and variety of local heritage places, and the sometimes subtle remains of past uses and activities.

The principal historical themes of the Shire are equally varied, and the overwhelming themes – of settlement and migration, utilisation of natural resources and developing primary and secondary industries – are integral to the municipality as it exists today. Immigrants to the region, the squatters, closer and soldier settlers, and those from other colonies, were vigorous in their development of agricultural and pastoral industries. The post-World War Two settlement by European migrants greatly enhanced these industries.

The oldest irrigation and agricultural pursuits in the State were attempted in the Ardenmona district. The subsequent history of farming, including dairying, fruit and vine production, is also strongly evident, with the latter a particularly distinctive feature of the Mooroopna, Murchison, Tatura and Dookie landscapes.

However, unlike any other locality, the City of Greater Shepparton is the site of unusual diversity of memorials to the dead. These include the graves of the last Aboriginal tribe; the early pioneers; and the war dead. As the districts of Tatura and Murchison were the site of World War Two internment and prisoner of war camps, memorials to the foreign war dead are also especially significant to the area.

Less unique to the area, but still distinctively local, is the heritage associated with religious practice, transport and communication, and the establishment of education.

All of these themes and places combine to give the City of Greater Shepparton its individual character and unique place in the Victorian environment."

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Source: Allom Lovell & Associates (Dec 2002) *City of Greater Shepparton Heritage Study, Stage II, Volume 2, p 49.*

8.3 An Update on Relevant Strategies / Reports

Allom Lovell & Associates (Dec 2002) *Greater Shepparton Heritage Study*

This study covers a history of European settlement, and only briefly refers to pre-contact history. Further volumes of the study contain individual data sheets. The history of the municipality can be summarised into the following key themes:

- *Settlement and migration.* The first European explorers were Hume and Hovell, who named the river Goulburn after Major Frederick Goulburn, the Colonial Secretary of the time. Settlers immigrated from NSW and Van Diemans Land in 1834-5 for the excellent grazing land.
- *Squatters.* In 1847 squatters were granted standing in law for their acreages. In 1855 the Victorian constitution created the electoral districts of Shepparton, Kyabram and Rodney. In 1841 a squatter run named Tallygaroopna was set up on the banks of the Goulburn River, and in 1843 it was taken up by Sherbourne Sheppard, who gave the town its present name.
- *Selectors.* The selection era of the 1860s followed separation from NSW in 1851 and the discovery of gold in 1853, as gold seekers passed through and settled. In 1869 the Grant Act enabled selectors to peg out claims of unsurveyed land, fence the land and live on the claim. In 1884 the Land Act permitted leasing of land, which achieved settlement of marginal lands. Closer settlement resulted when large holdings were subdivided for more intensive development. Land previously used for sheep grazing in the lower Goulburn region then became available wheat, fruit and vine crops.
- *Soldier settlers.* Resettlement of returned soldiers and British soldiers after the Great War. This period witnesses the extension of irrigation and new plantings under the soldier settlement scheme. The canned fruit sector increased dramatically.
- *Involuntary German and Italian prisoners of war.* There were 4000 German and Italian prisoners-of-war housed at Murchison, with 12-13,000 living in the internment camps at Tatura, representing 23 nationalities.
- *European immigrants.* Relocation of migrants – Italian, Turkish, Albanian, Dutch, Vietnamese, Chinese and Filipino. In 1999 the City agreed to take large numbers of refugees from Bosnia, Iraq, Kosovar and East Timor.
- *Natural resources.* After the drought of 1877-81 the government expanded irrigation schemes. The Victorian Water Conservation Act, 1881 formed irrigation trusts. Alfred Deakin wanted state ownership of the water supply, and the Irrigation Act 1886 created the Goulburn Weir.
- *River transport.* Paddy McGuire rowed a punt across the river in 1853 and owned an inn on the other side. The township was originally called McGuire's Punt, and was changed to Shepparton in 1855. Paddle steamers from the Murray to Shepparton were common in the 1860s and 1870s.
- *Developing primary and secondary industries.* In the 1920s improved irrigation meant more productive land for fruit, vines, dairying and market gardens. Mills were replaced with butter factories and canneries. Before 1870 the export of

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dairy products was not feasible. With refrigeration and after WW1, there was an influx of dairy farmers. In the 1890s, Council financed the construction of Shepparton municipal saleyards and abattoirs to supply Campbell soups. The Shepparton Fruit Preserving (SPC) Co formed in 1918 and the Ardmona cannery in Mooroopna in the 1920s. In January 2002 they merged to become SPC-Ardmona. In 1875 land was reserved for an experimental farm, and Dookie Agricultural College opened in 1886.

The heritage study includes criteria for grading places and buildings of heritage significance. This grading system is used to justify the type of heritage planning controls over a site or building:

- Grade A places are places which are of state and national importance, and are irreplaceable parts of Australia's cultural heritage. The loss of these places, for example by demolition, removal or redevelopment, would have a fundamental adverse impact on the cultural heritage of the City of Greater Shepparton and the state of Victoria. Likewise their loss as a consequence of a disaster and catastrophe would have a similar impact. Grade A places are recommended for inclusion on the Victorian Heritage Register, the Register of the National Estate, and the Heritage Overlay schedule of the Greater Shepparton Planning Scheme.
- Grade B places provide evidence of the historical, agricultural and social development of the municipality, often on a regional level (the Goulburn Valley), because of geography and distance, rather than a local level, as defined by current municipal boundaries. Such places may make a considerable scientific (technological) or aesthetic contribution. The loss of these places would adversely impact on the cultural heritage of the region and the municipality. Grade B places are recommended for inclusion on the Register of the National Estate and individual Heritage Overlay controls in the Planning Scheme.
- Grade C places are of local significance, and are representative of the historical, scientific, aesthetic or social development of the City of Greater Shepparton. The loss of these places would have an undesirable impact upon the cultural heritage of the municipality.

The heritage study identified 135 places of significance, including log huts, and 2 residential precincts in Shepparton.

A number of additional places were nominated for further study.

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8.4 Achieving the Strategic Objectives

The key objectives for this subtopic are:

Objective 1: To identify, protect and enhance sites and areas of recognised historic significance.

Objective 2: To recognize efforts at restoration and re use of sites of identified heritage significance.

The following table provides the detailed strategies and an action plan

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Engineering	Surveying	Urban Design
Sustainability	Planning	Landscape Architecture
and Environment	Agribusiness	Project Management

Table 5: Built Heritage - Achieving the Strategic Objectives

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage Theme: Cultural heritage – post settlement					
Objectives	Strategies		Actions	Council Role	Priority
1. To identify, protect and enhance sites and areas of recognised historic significance	1.1 Promote the protection of heritage buildings and sites so that heritage significance is not diminished or irreversibly damaged through proposed use or development. 1.2 Encourage the retention, adaptation and appropriate renovation of significant historic buildings and works, gardens and other areas as a viable alternative to demolition. 1.3 Ensure that any alteration or addition to identified heritage buildings and areas, or redevelopment on adjacent land, is in keeping with identified streetscape or neighbourhood character and appearance (as appropriate). 1.4 Protect the heritage status of the Goulburn River through liaison with the Goulburn-Broken Catchment Management Authority and Department of Primary Industries.		<p>These strategies will be implemented by:</p> <p>Using Policy and the exercise of discretion</p> <ul style="list-style-type: none"> ▪ Consider the Heritage Study when assessing proposals for redevelopment of identified heritage sites or infill development in areas of identified heritage significance. <p>Applying Zones and Overlays</p> <ul style="list-style-type: none"> ▪ Apply the Heritage Overlay to identified sites and areas of cultural significance. <p>Undertaking further strategic work</p> <ul style="list-style-type: none"> ▪ Prepare heritage design guidelines for the assessment of development applications of significant buildings and sites. <p>Other actions</p> <ul style="list-style-type: none"> ▪ GSCC to continue the appointment of a Heritage advisor to assist in development proposals for heritage places. ▪ Continue further investigation of places identified in Heritage Study ▪ Work within the framework of Commonwealth and State legislation to ensure those heritage items identified as 	Provider Provider Provider Provider	H H M \$20,000 H M-H \$40,000 M

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage
Theme: Cultural heritage – post settlement

<i>Objectives</i>	<i>Strategies</i>	<i>Actions</i>	<i>Council Role</i>	<i>Priority</i>
		<p>significant can be conserved and managed appropriately with a Heritage Management Plan.</p> <ul style="list-style-type: none"> ▪ Increase community awareness of heritage assets by promoting the heritage aspects of tourism, including: <ul style="list-style-type: none"> – Informational signage – A heritage drive / walk – The acknowledgement of the historical contributions of various cultures in a multicultural festival 	Provider/ Facilitator/ Advocate	M-H

Topic: ENVIRONMENT: Conservation and enhancement of significant natural environments and cultural heritage
Theme: Cultural heritage – post settlement

Objectives	Strategies	Actions	Council Role	Priority
2. To recognize efforts at restoration and re use of sites of identified heritage significance.	2.2 Encourage sensitive restoration of heritage sites to retain their significance.	<p>These strategies will be implemented by:</p> <p>Other actions</p> <ul style="list-style-type: none"> ▪ Prepare a Heritage reward program, including access to a Heritage advisor and reduced application fees. ▪ Create an incentive / reward program for owners who protect and enhance items / buildings of identified heritage significance. ▪ Investigate the funding avenues available through the Australian Heritage Commission, Heritage Council Victoria and the National Trust for conservation and enhancement of significant historic and cultural buildings and areas. ▪ In conjunction with local historical societies, develop a detailed action plan for the promotion of the heritage attributes of Greater Shepparton through the avenues of tourism, retail and entertainment. 	Provider/ Facilitator/ Advocate Provider/ Facilitator/ Advocate Provider Provider/ Facilitator	L-M L-M L-M L-M

9 A SWOT Summary

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ▪ The river systems and the riparian environs. ▪ GSCC adopting and implementing the Roadside Management Plan to protect native vegetation. ▪ The Goulburn–Broken Catchment Management Authority has completed a Shepparton Irrigation Region Salinity Management Plan to address salinity. ▪ Properties and places of historical significance have been identified in the Heritage Study. ▪ Existing programs and projects including: <ul style="list-style-type: none"> – Cities for Climate Protection – Water Sensitive Urban Design – Water Conservation – 1 Million Trees 	<ul style="list-style-type: none"> ▪ A lack of regional surface drainage infrastructure. ▪ The degraded and modified natural landscape has resulted in reduced areas of natural vegetation. ▪ The large areas of river plains and the flat topography results in flooding and waterlogging. ▪ The current capacity of Eildon Reservoir is not delivering water requirements, and requires upgrading. ▪ Public and private landowners were not prepared for large reduction in water rights from 120% to 57% in 2003. ▪ The long time frame of 50–100 years to reverse damage by salinity. ▪ A detailed assessment of archaeological and cultural heritage assets has not been undertaken.

OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ▪ Programs for the regeneration and linking of riparian corridors. ▪ Regional biodiversity mapping can form the basis for a detailed local environmental strategy. ▪ Strict implementation of the Roadside Management Plan. ▪ Identify and recognise sites and areas of archaeological and cultural significance for the indigenous population. ▪ Increase awareness and education about Aboriginal culture. ▪ Allow innovative uses and development of identified heritage buildings to ensure ongoing viability and protection. ▪ Celebrate cultural diversity by recognising attributes of other cultures represented in the municipality. 	<ul style="list-style-type: none"> ▪ The uncertainty surrounding continued reduction in water rights in the immediate future. ▪ The State and national governments' commitment to the upgrading of Eildon Reservoir. ▪ Prolonged waterlogging of farmland, in the absence of appropriate drainage schemes will result in increased salinity and production problems. ▪ Inconsistency with private landowners' approach to revegetation and removal of remnant native vegetation. ▪ The possibility of introduced pests and toxins that may deplete native species of flora and fauna.

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Attachment 1 – Greater Shepparton 2030- topics, directions and themes

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GREATER SHEPPARTON 2030 STRATEGY FRAMEWORK

Topic: SETTLEMENT	
<p>Direction: Commitment to growth within a consolidated and sustainable development framework</p>	<p>Themes:</p> <ul style="list-style-type: none"> ▪ Growth ▪ Housing ▪ Sustainable Design
Topic: COMMUNITY LIFE	
<p>Direction: Enhance social connectedness, physical and mental health and well being, education and participatory opportunities in order to improve liveability and provide a greater range of community services</p>	<p>Themes:</p> <ul style="list-style-type: none"> ▪ Health and social services ▪ Education and learning ▪ Recreation and open space ▪ Safe and accessible environments
Topic: ENVIRONMENT	
<p>Direction: Conservation and enhancement of significant natural environments and cultural heritage</p>	<p>Themes:</p> <ul style="list-style-type: none"> ▪ The natural environment ▪ Floodplain management ▪ Sustainable / Best practice land management ▪ Cultural heritage ▪ Built heritage
Topic: ECONOMIC DEVELOPMENT	
<p>Direction: Further economic growth, business development and diversification, with a focus on strengthening the agricultural industry</p>	<p>Themes:</p> <ul style="list-style-type: none"> ▪ Agriculture and rural land ▪ Commercial activity centres ▪ Industry ▪ Tourism
Topic: INFRASTRUCTURE	
<p>Direction: The provision and restructure of urban and rural infrastructure to enhance the performance of the municipality and facilitate growth</p>	<p>Themes:</p> <ul style="list-style-type: none"> ▪ Traffic and transport systems ▪ Urban services

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Project Management