

SHIRE OF MUNDARING

**ENVIRONMENTAL
MANAGEMENT STRATEGY**

JUNE 1996

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SHIRE OF MUNDARING ENVIRONMENTAL MANAGEMENT STRATEGY

Overview

The Shire of Mundaring's Environmental Management Strategy (EMS) provides the primary focus for the protection and management of the Shire's unique environment. The EMS is a major initiative of Council's Environmental Advisory Committee (EAC) and has been developed in liaison with the community through a range of forums.

The origins of the EMS date back to early 1990 where, following the endorsement of the EMS concept by Council, consultants AGC Woodward Clyde were engaged to conduct a series of community workshops during March and April 1991. These initial workshops identified 13 EMS issue categories and numerous sub-categories associated with the environment. From this framework, over 100 actions were identified and prioritised during internal EAC workshops conducted in April 1995. This information has been entered into a database to provide a record of EMS information to date and assist in determining the most appropriate mechanisms for the EMS to be implemented. The EMS is a significant environmental resource for the Shire and represents hours of voluntary work undertaken by some very committed and forward thinking people.

Due to the extent of linkages and the complex nature of the 100 or so actions, it was considered necessary to condense the actions into easily understood strategies with priorities for their implementation. The implementation strategies have been arranged into a task format for each strategy and are presented in Part A - *Implementation Strategies and Timetable*. The Implementation Strategies provide a structured approach aimed at achieving EMS actions and objectives and were formally endorsed by Council in its present form in February 1996.

The Implementation Strategies incorporate all the actions identified in the EMS and includes other actions (or tasks) to ensure a logical progression of work for each strategy. Each task which corresponds to an EMS Action is coded according to its Issue Category and referenced to Part B titled *Issue Categories and Actions Report*. This part of the report sets the context of the EMS and provides important background information about each issue category.

There were also a number of actions that were not included as a specific EMS Implementation Strategy due to one or more of the following reasons:

- actions already completed;
- actions no longer relevant; and
- actions successfully being implemented during day to day activities of the Shire.

These actions have been allocated a miscellaneous category (see Part B) and will be addressed on an ongoing basis as necessary.

A priority rating for each Implementation Strategy has been determined to provide an indication of their relative importance and timeframes for completion. The priorities for each Implementation Strategy needed to consider the priorities of individual EMS Actions to ensure they were incorporated within desirable timeframes. Many of the “immediate” priority strategies are already underway and may extend over a long period of time. Examples include the Erosion and Sedimentation Control Policy and the Integrated Catchment Management Plan. Each Implementation Strategy has been allocated a primary responsibility to facilitate the identification of the key strategy coordinator.

In most cases the Implementation Strategies do not require additional budget allocations to complete and have been programmed within the Shire’s existing service delivery arrangements. Some of the strategies are also likely to be undertaken by the EAC and therefore have negligible budget implications.

PART A

IMPLEMENTATION

STRATEGIES

AND

TIMETABLE

Summary

The summary of EMS Implementation Strategies is provided below and listed in order of importance. The implementation timeframe spans over 3 years and will require an ongoing commitment by Council and Officers to ensure strategies are completed in a manner consistent with identified priorities.

IMPLEMENTATION STRATEGY	PRIORITY	PRIMARY RESPONSIBILITY	TIMEFRAME
Integrated Catchment Management Plan	Immediate	Environmental Officer	May 95 - Feb 98
Erosion and Sedimentation Control Policy	Immediate	Environmental Officer	Sept 95 - Mar 96
Recycling Strategy	Immediate	Environmental Officer	Mar 95 - Dec 96
Community Education Strategy	Immediate	Environmental Advisory Committee	Jan 95 - Apr 97
Urban Drainage Strategy	Immediate	Manager Engineering Services	Feb 96 - June 98
Landcare Strategy	Short to Mid Term	Environmental Officer	Oct 95 - Jul 96
Friends Group Strategy	Short to Mid Term	Environmental Officer	Jan 96 - Jul 96
Reserves Management Strategy	Short to Mid Term	Environmental Officer	Jan 96 - Dec 96
Tree Preservation and Revegetation Strategy	Short to Mid Term	Environmental Officer	Feb 96 - Dec 96
Ribbons of Blue Project	Short to Mid Term	Principal Environmental Health Officer	Dec 95 - Dec 96
TPS 3 Compliance Audit	Short to Mid Term	Manager Planning and Development	Jul 96 - Jun 97
Environmental Position Paper - Services	Short to Mid Term	Environmental Officer	Jul 96 - Jun 97
Wildlife Corridor Strategy	Short to Mid Term	Environmental Officer	Jul 96 - Jun 97
EMS Data Review	Long Term	Environmental Officer	Jan 97 - May 97
Integrated Pest and Weed Control Program	Long Term	Environmental Officer	Jul 97 - Mar 98
Domestic and Feral Animal Control Program	Long Term	Environmental Officer	Jul 97 - Mar 98

PART B

ISSUE CATEGORIES

AND

ACTIONS

SHIRE OF MUNDARING ENVIRONMENTAL MANAGEMENT STRATEGY

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Shire of Mundaring

Environmental Management Strategy Issues Categories and Actions

INTRODUCTION

The Shire of Mundaring's Environmental Management Strategy (EMS) provides the primary focus for the protection and management of the Shire's unique environment. The EMS is a major initiative of the Environmental Advisory Committee (EAC) and has been developed with the community through a range of consultation forums.

The origins of the EMS date back to early 1990 where, following the endorsement of the EMS concept by Council, consultants AGC Woodward Clyde were engaged to conduct a series of community workshops during March and April 1991. These initial workshops identified 13 EMS issue categories and numerous sub-categories associated with the environment. This information essentially comprises Part B of this report, being the Issue Categories and Actions Report. From this framework, over 100 actions were identified and prioritised during internal EAC workshops conducted in April 1995. This information has been entered into a database to provide a record of EMS information to date and assist in determining the most appropriate mechanisms for the EMS to be implemented. The EMS is a significant environmental resource for the Shire and represents hours of voluntary work undertaken by some very committed and forward thinking people.

Due to the extent of linkages and the complex nature of the 100 or so actions, it was considered necessary to condense the actions into easily understood strategies with priorities for their implementation.

The *EMS Implementation Strategies and Timetable Report* (Part A of this report) has identified 16 separate strategies and provides a structured timeframe to implement EMS actions over the next few years based on strategy priorities.

1.0 FIRE MANAGEMENT

ISSUE 1.1 - ALTERNATIVE FIRE BREAK STRATEGIES

DESCRIPTION

Within practical constraints imposed by the Shires' fire control responsibilities, a community education programme to promote the concept of overall fire management strategies should be initiated. Specific attention to alternatives to conventional boundary firebreaks and environmentally sensitive controlled burning practices is required.

Some aspects of conventional firebreak construction and burning practices can cause significant environmental drainage. For example, mechanical construction of firebreaks can lead to severe erosion in unsuitable terrain.

Current requirements for firebreaks under the Bush Fires Act necessitate firebreaks around individual properties. This can result in the loss of significant areas of vegetation. In addition to this, unsuitable controlled burning practices by landowners can lead to permanent damage to vegetation communities such as loss of species and weed invasion as well as removal of habitat for fauna communities.

New technologies however, such as the use of herbicides for maintaining firebreaks and the use of firebreaks as tracks can substantially limit erosion damage. Similarly, on larger bush lots, the use of slashed breaks which regenerate following controlled burns rather than permanent breaks can limit vegetation loss.

The loss of vegetation through individual property firebreaks can be overcome to some extent by the use of strategic fire breaks, eg: on a whole subdivision basis.

Finally, the careful management of the timing, interval between burns, pattern of burning and intensity of fires in controlled burning practices can substantially limit the damage that occurs to vegetation and fauna communities.

ACTION TAKEN

The Shire's Rangers are involved in continuing education of landowners with regard to alternative firebreak construction and environmentally sensitive controlled burning practices. In addition to this, Councillor Allan Pilgrim has recently taken up a position on the Fire Safety Public Education Committee of the Swan Region Fire Protection Committee, which involves a review of needs for bushfire management education in the region.

The Shire also incorporates new firebreak technologies such as the use of herbicides to limit erosion and the use of slashed breaks on bushland areas under its management.

The issue of strategic fire breaks within subdivisions in preference to individual property breaks is included in TPS3. Unfortunately, at present, the Bush Fires Act does not allow the requirement for individual property breaks to be relaxed.

OPPORTUNITIES

- The opportunity exists to continue to promote alternative firebreak strategies and sensitive controlled burning practices through various forms, e.g. newspaper articles, production of leaflets, displays, volunteer bushfire brigades etc.
- Co-operation with the Bushfires Board and its Fire Safety Public Education Committee will enhance this.
- The Bush Fires Act is to be reviewed in the near future. Submissions on alternative firebreak strategies, particularly strategic firebreaks can be made.
- Pursue grant monies for education programs.

CONSTRAINTS

- Legislative constraints - Bushfire Act.
- Resources - public education programs limited to Shire Rangers Department resources.
- Costs - publication of materials etc, will limit the extent of any education program.

COMMENTS

Action should be coordinated with the Swan Region of the Bush Fires Board. A good coordinated effort could achieve excellent results through raising community awareness.

ACTIONS IDENTIFIED

- 1.1.1 Action: Slashing and the use of herbicides for firebreaks.
Status: Shire rangers continue to undertake slashing strategies. Herbicide use currently being reviewed.
- 1.1.2 Action: Educating landowners on alternative fire break strategies.
Status: (i) Councillor representation on Fire Safety Public Education Committee
(ii) Field day hosted in October 1994
(iii) Issue discussed in Hills Gazette "Environmental Page"
- 1.1.3 Action: Shire to host field day during Fire Awareness Week.
Status: Completed

IMPLEMENTATION STRATEGY

- 1.1.1 Integrated Pest and Weed Control Program
1.1.2 Community Education Strategy

ISSUE 1.2 - UNDERGROUND POWER LINES

DESCRIPTION

Interaction with SECWA concerning alternative forms of power reticulation should continue, to reduce the risk of bushfire ignition from power lines and to lessen the need for ongoing pruning of road verge vegetation.

Alternative forms of power reticulation relate to the provision of underground services and the use of bundled overhead conductors or insulated cables which can reduce fire risks and vegetation loss.

These forms of reticulation are best suited to new developments and upgrading of existing services which occur due to road construction etc. Wide scale retrofitting can be expensive and impractical, although the State Government recently announced that this could occur, although the cost would need to be met by local authorities.

ACTION TAKEN

The Shire has continued to lobby SECWA for the installation of underground power or other alternative forms of reticulation where appropriate. This has included requesting alternative forms when upgrading of services has occurred, and in new subdivisions.

OPPORTUNITIES

- Continue to push for the installation of underground services where appropriate within the Shire.
- Require underground services or other alternative forms of reticulation in new subdivisions.
- Push for the provision of underground services when upgrading of existing services occurs.

CONSTRAINTS

- Practical constraints due to terrain and costs in many areas.
- Costs of retrofitting existing services prohibitive unless it is part of an upgrading program.
- State government has final say.

ACTIONS IDENTIFIED

- 1.2.1 Action: Lobby Western Power to install ABC or in underground conduit
Status: Quite extensive lobbying in 1994, continued in 1995.
- 1.2.2 Action: Require ABC or underground power in new subdivisions
Status: Being implemented through Planning Services (TPS3)

IMPLEMENTATION STRATEGY

1.2.1 & 1.2.2 Environmental Position Paper - Service

ISSUE 1.3 - CONTROLLED BURNING PRESCRIPTIONS SENSITIVE TO NATIVE VEGETATION

DESCRIPTION

Controlled burning prescriptions designed to be native vegetation sensitive (e.g. in terms of the timing of burning, intensity of the fire, and mosaic burning) should be developed for all Shire controlled bushlands within the municipal district. Interaction with the community and with any agencies managing public bushlands within the municipal district, to encourage adoption of vegetation sensitive controlled burning practices, should be undertaken as an adjunct of this initiative.

ACTION TAKEN

The area of ecologically sensitive prescribed burning is controversial and currently subject to a great deal of research. Knowledge in the area is continually changing.

A forthcoming report by John Day (MLA) will provide significant local input to the debate and is likely to be of much importance in terms of prescribed burning policies adopted by local authorities.

The Shire is currently responsible for bushfire control on approximately 800 reserves. The Shire's Rangers and Volunteer Bushfire Brigades have kept abreast of advances in vegetation sensitive controlled burning management and have incorporated these into their activities, with advice from CALM sought for the management of larger reserves.

Of note is the use of an ongoing computer register of the status of each of the bushland areas in terms of fuel loadings, fire occurrence and burning regime which is updated with annual inspections.

OPPORTUNITIES

Continue to keep abreast of developments in ecologically sensitive burning techniques and strategies and incorporate these into Shire practices.

Interact with any community groups, government agencies and private landowners to encourage ecologically sensitive prescribed burning practices.

CONSTRAINTS

- Resources for managing bushfire control in bushland areas limited to Shire Rangers and Volunteer Bushfire Brigades. More funding may be necessary to continue to incorporate new developments into ongoing practices.
- Uncertainty (to an extent) of knowledge in the area.

The need to protect public safety may at times conflict with environmental objectives.

COMMENTS

EAC Members may wish to consider the findings of the Day Report prior to making further decisions.

ACTIONS IDENTIFIED

1.3.1 Action: Incorporation of vegetation sensitive controlled burns by Shire and Volunteer Bushfire Brigade.

Status: Being undertaken, although lack of monitoring to support success.

IMPLEMENTATION STRATEGY

1.3.1 Miscellaneous

2.0 WEED CONTROL

ISSUE 2.1 - ENCOURAGING COMMUNITY EFFORTS

DESCRIPTION

The Shire's support for community based weed control programs should be continued and expanded in response to identified needs.

ACTION TAKEN

The Shire currently supports and assists several local community based weed control programs. Of note is the work of the Darlington Ratepayers Association in controlling Watsonia in the Darlington area. Recently, work has been undertaken by community members in Mundaring. Weed eradication at the Hudman Reserve has also been undertaken recently by the Friends of Hudman Reserve group.

Assistance from the Shire to these groups includes supply of herbicide and technical advice where needed.

OPPORTUNITIES

Encourage further community efforts in weed eradication in the Shire, using the efforts of the groups already active as examples.

CONSTRAINTS

- Ability to find and motivate community members and groups into action.

COMMENTS

The EAC has probably already begun action on this issue through the first set of articles for the Hills Gazette environmental page.

ACTIONS IDENTIFIED

- 2.1.1 Action: Shire support for community based weed control programs.
Status: (i) Assistance and supply of herbicide is provided to community groups upon request.
(ii) Recognition of efforts through Hills Gazette "Environmental Page".
- 2.1.2 Action: Committee looks at promoting "Friends of Reserves" groups.
Status: (i) Support and encouragement is ongoing
(ii) reserves Study (Stage 2) is expected to enhance progress.

IMPLEMENTATION STRATEGY

2.1.1 & 2.1.2 Friends Group Strategy

ISSUE 2.2 - WATSONIA CONTROL

DESCRIPTION

Control Watsonia within the Shire.

Watsonia infestation is widespread not only within the Shire but throughout South-Western Australia. It grows vigorously in moist soils and is most commonly found along water courses, drains and roadside verges.

Control on a broad scale is difficult, however smaller infestations can be controlled over time by hand pulling, cutting stalks and grubbing bulbs, or the use of herbicide in conjunction with these mechanical methods.

ACTION TAKEN

The Shire's Parks Department have managed to control smaller isolated areas within reserves, however the widespread control of Watsonia within the Shire is well beyond their resources. Community efforts, such as those of the Darlington Ratepayers Association have been particularly successful on localised infestations.

OPPORTUNITIES

- Expand the Shire's current control program, with emphasis on identified priority areas.
- Encourage further community efforts using the sources of others as an example.
- Encourage landowners to carry out control on their properties through public education programs.

CONSTRAINTS

- Resources of the Shire's Parks Department.
- Ability to motivate community groups to action.

COMMENTS

Perhaps the most effective long term strategy would be to prioritise areas needing control and concentrate Shire and community efforts on these. Public education may also be effective at a relatively low cost in controlling spread of Watsonia from private properties.

ACTIONS IDENTIFIED

- 2.2.1 Action: Identify priority areas for control
Status:

IMPLEMENTATION STRATEGY

2.2.1 Integrated Pest and Weed Control Program.

ISSUE 2.3 - IDENTIFY NON-CHEMICAL METHODS OF CONTROL

DESCRIPTION

Identify and implement where possible, non chemical methods of weed control.

A number of non chemical methods of weed control do exist such as mowing, hand pulling, cutting and grubbing, the use of native species to out compete weeds, mulches and possibly, biological control.

These methods generally do not impact on active flora and fauna as chemical methods can if used inappropriately. They are however much more labour intensive and subsequently require significant resourcing.

ACTION TAKEN

The Shire's Parks Department incorporate non chemical methods such as intensive mowing of Watsonia as a control technique and hand pulling noxious weeds such as cotton bush where possible. Unfortunately, limited resources restrict the widespread use of these techniques.

OPPORTUNITIES

- Continue to incorporate non-chemical methods of control into weed eradication programs where practicable.
- Continue to keep abreast of new findings and technologies in non-chemical controls.
- Encourage community efforts such that labour costs for non-chemical methods can be reduced.

CONSTRAINTS

- Non-chemical methods are labour intensive and subsequently expensive, time consuming and heavy on resources.
- Resources of Parks Department limited.
- Non-chemical methods not well suited to contracting out.

ACTIONS IDENTIFIED

2.3.1 Action: Shire's Parks Services staff incorporate non-chemical methods where possible.
Status: Intensive mowing undertaken, but restricted due to limited resources.

2.3.2 Trial on a reserve (integrated weed management) study to be undertaken.

IMPLEMENTATION STRATEGY

2.3.1 & 2.3.2 Integrated Pest and Weed Control Program.

ISSUE 2.4 - WEED CONTROL ON PRIVATE LAND

DESCRIPTION

Give attention to weed control on private property, including absentee landowners.

The growth of weeds on private property can allow considerable spread of nuisance and noxious weeds to natural areas and hinder eradication programs. Ongoing efforts by private landowners to control weeds on their properties could be particularly effective in limiting the spread of weeds.

ACTION TAKEN

The Shire's Parks Department provides advice to private landowners on weed control upon request.

OPPORTUNITIES

Promote weed control on private landholdings through public education programs and dissemination of information.

CONSTRAINTS

- Efforts limited by resources of Shire's Parks Department.
- Unable to force private landowners to control weeds (although APB can for certain weeds).

COMMENTS

Public education is seen as the key to this issue.

ACTIONS IDENTIFIED

2.4.1 Action: Promote through education and information dissemination
Status: Examples highlighted in "Environmental Page" issue

IMPLEMENTATION STRATEGY

2.4.1 Community Education Strategy

ISSUE 2.5 - ENFORCEMENT NOXIOUS WEED LAWS

DESCRIPTION

The Agriculture Protection Board can declare certain weeds to be noxious and require that these species are eradicated or prevented from spreading in certain areas. An example is cotton bush.

The Shire does not have the legislative power to enforce noxious weed laws but can report the incidence of noxious weeds to the APB for action.

ACTION TAKEN

Where noxious weeds are identified by staff of the Shire's Parks Department their location is reported to the APB. Similarly, where declared weeds are sighted on Shire controlled land, they are immediately removed.

OPPORTUNITIES

- Ensure that relevant Shire staff are trained in the identification and control of noxious weeds.
- Expand current activities in terms of investigating the presence of noxious weeds within the Shire.
- Promote community awareness of noxious weeds and requirements for control etc.
- Ensure that noxious weeds are appropriately controlled on Shire managed land.

CONSTRAINTS

- Shire does not have the legislative power to enforce various weed laws.
- Resources of Shire's Parks Department.

COMMENTS

Any action on this issue should be carried out in conjunction with the APB. Raising community awareness could be particularly effective.

ACTIONS IDENTIFIED

- 2.5.1 Action: Noxious weeds removed on Council land and reported to APB as identified by the Shire's Parks Services staff.
Status: On-going
- 2.5.2 Action: Raise community awareness on noxious weeds.
Status: No specific action undertaken.
- 2.5.3 Action: The committee investigate the possibility of declaring pest plants and the Environmental Officer provide report.

Status: Investigations and report undertaken, but inconclusive.

IMPLEMENTATION STRATEGY

2.5.1 & 2.5.3 Integrated Pest and Weed Control Program

2.5.2 Community Education Strategy

ISSUE 2.6 - ESTABLISHING LAWS FOR WEED CONTROL

DESCRIPTION

Look at establishing laws for weed control.

The Shire of Kalamunda has a Pest Plant By-Law (1979) which allows species of weeds to be declared plants, with subsequent requirements for control of these declared plants on private (and public) property. This by-law was created under the Local Government Act and presently relates to the control of blackberry, African feather grass and Watsonia.

The existence of such by-laws provides a legal framework for the control of certain weeds on private land.

ACTION TAKEN

None at this stage.

OPPORTUNITIES

- Investigate the possibility of introducing similar by-laws for the Shire of Mundaring.
- Use such by-laws in conjunction with community education to control certain weeds on private land.

CONSTRAINTS

- Resources in terms of staff to administer and follow up the by-laws.
- Need to ensure that the Shire is able to control weeds declared under such by-laws on land under its control.

ACTIONS IDENTIFIED

2.6.1 Action: Investigate introducing by-laws or local laws.

Status: Report prepared by Environmental Officer outlining legislative requirements/ constraints.

IMPLEMENTATION STRATEGY

2.6.1 Integrated Pest and Weed Control Program

ISSUE 2.7 - EXPANSION OF CURRENT WEED CONTROL PROGRAM

DESCRIPTION

The Shire's present weed control programs should be continued and expanded in response to identified needs.

ACTION TAKEN

The Shire's Parks Department currently carries out weed control in response to requests from residents and assists community groups such as the Darlington Ratepayers Association in control programs. Unfortunately, resource constraints prevent major expansion of this program.

OPPORTUNITIES

- Expand the current program based on priority areas or specific problem weeds.
- Stimulate more community programs.

CONSTRAINTS

- Resources of Shire's Parks Department - currently only 13 staff members who are responsible for a wide range of related duties throughout the Shire.
- Costs - a significant expansion of activities would require significant increases in funding.
- Size of the Shire and scale of the problem.
- Need to control weeds on private land as well as public land.

COMMENT

It may be more effective and practical to concentrate on certain weeds e.g. watsonia, or on priority areas such as waterways or relatively good bushland areas initially; or to concentrate on preventing the spread of weeds.

ACTIONS IMPLEMENTED

2.7.1 Action: Shire's Parks Services staff undertake weed control within resource constraints

Status: Council allocates funds toward weed control each financial year.

2.7.2 EAC investigate fund allocations for weed control.

Status: Yet to be undertaken

IMPLEMENTATION STRATEGY

2.7.1 & 2.7.2 Integrated Pest & Weed Control Program

ISSUE 2.8 - DEVELOPMENT OF A WEED INFESTATION INVENTORY

DESCRIPTION

An inventory of severe weed infestation within the municipal district should be developed as a basis for the continued and expanded control programs.

This could be carried on its own, or as part of a broader vegetation inventory within the Shire. Such an inventory would be particularly useful in setting priorities for action and measuring changes in weed infestation over time. An important aspects would be gathering data on weed infestation on private property.

ACTION TAKEN

Information on weed infestation within the Shire has been compiled through a survey of parks conducted by the Shire's Parks Department and through the Reserves Study undertaken on behalf of the Shire. In addition to this, senior Parks Department staff have a good working knowledge of problem areas within the Shire.

OPPORTUNITIES

- Formalise this available information into a single inventory.
- Set priorities for action based on this information.
- Continue to update this information over time.

CONSTRAINTS

- Would need to engage a Project Officer or dedicate a staff member to the task.
- Resources of Parks Department to expand control program.

COMMENT

This issue is seen as being particularly important. Given the resource constraints of the Shire's Parks Department, the setting of priorities for control is seen as essential, with the development of an inventory being an integral part of this exercise.

ACTIONS IDENTIFIED

2.8.1 Action: Weed infestation inventory needs to be undertaken.

Status: Information on weed infestation provided in Reserves Study (Stage 1), but needs to be expanded.

IMPLEMENTATION STRATEGY

2.8.1 Integrated Pest and Weed Control Program

3.0 RESERVES

ISSUE 3.1 - DEVELOPING A RESERVE INVENTORY

DESCRIPTION

Develop an inventory of reserves vested in Council or which consist of unvested Crown land within the Shire.

ACTION TAKEN

A significant amount of work has been undertaken by the Shire on this issue. A complete inventory of all Shire vested and unvested Crown reserves was undertaken by two university students on behalf of Council during the past financial year. A total of 695 reserves were assessed, with information relating to ownership and reservation, zoning, land characteristics, historical and cultural features, presence of creeks, feral animals, fauna, vegetation communities, weed infestation and threats collected. This information has been collated onto the Shire's computer data base. An example of the information format is attached for information.

This work is to be extended in the 1994/95 financial year to provide more detailed information on the reserves, beginning with priority areas. The outcomes of this work will be used by Council as a basis for future decisions in terms of reserve rationalisation, usage and management.

OPPORTUNITIES

Complete the current program and use the outcomes for future decision making. Depending on the outcome of budget deliberations, the study may be completed by the end of 1994.

CONSTRAINTS

- Adequacy of inventory information for comprehensive prioritisation of reserves.

COMMENT

This action is well advanced and will allow decision making on reserves to be solidly based upon completion of the second stage of the project.

ACTIONS IDENTIFIED

- 3.1.1 Action: Reserve inventory included in Reserves Study (Stage 1).
Status: Completed in October 1993.
- 3.1.2 Action: Prioritise reserves according to conservation values.
Status: Part of recently commissioned Reserves Study (Stage 2).

IMPLEMENTATION STRATEGY

3.1.2 Reserves Management Strategy

ISSUE 3.2 - UPGRADING THE STATUS OF RESERVES

ACTIONS IDENTIFIED

- 3.2.1 Action: No actions specifically identified for 3.2.
Status: Likely to be addressed during and after Reserves Study (Stage 2).

IMPLEMENTATION STRATEGY

3.2.1 Reserves Management Strategy

ISSUE 3.3 - RESERVE REPLACEMENT

- 3.3.1 Action: No actions specifically identified for 3.3.
Status: Likely to be addressed during and after Reserves Study (Stage 2).

IMPLEMENTATION STRATEGY

3.3.1 Reserves Management Strategy

ISSUE 3.4 - RESERVE USAGE AND PURPOSE

- 3.4.1 Action: No actions specifically identified for 3.4.
Status: Likely to be addressed during and after Reserves Study (Stage 2).

IMPLEMENTATION STRATEGY

3.4.1 Reserves Management Strategy

ISSUE 3.5 - COMMUNITY GROUP PARTICIPATION

These actions are reliant on the completion of the Reserves Study, although comments from EAC and the general community would be of value to making definite decisions on the outcomes of the Reserves Study. It is intended that public input on the Reserves Study will be sought when a Draft Report has been completed.

OPPORTUNITIES

Gain public input prior to making final decisions on reserves rationalisation.

CONSTRAINTS

- Timing of completion of Reserves Study.

ACTIONS IDENTIFIED

- 3.5.1 Action: Prepare a list and maps of reserves in need of “Friends of” groups.
Status: Preliminary list prepared, to be expanded in Reserves Study (Stage 2).

IMPLEMENTATION STRATEGY

3.5.1 Reserves Management Strategy

ISSUE 3.6 - MORATORIUM ON DEVELOPMENT OF ALL RESERVES

DESCRIPTION

A number of reserves within the Shire are outside of the Shire’s control and may be vested and reserved for purposes other than conservation or parks and recreation e.g. Public Education Endorsement Trust land - M22. Reserves owned by the State (or Federal) Government which are reserved for other purposes can be developed in accordance with the designated purpose, or rezoned or revested for other purposes. Council may have input to decisions on these developments, however the State Government is not always obliged to take Council’s views into account.

The Shire too has reserves vested in its control with purposes other than conservation or parks and recreation, such as rubbish disposal or other public utilities, which can be developed.

ACTION TAKEN

Council has taken the view that development of reserves within the Shire should not occur until the Reserves Rationalisation Study is complete.

This view has been consistent in terms of reserves vested in the Shire and for State Government vested reserves.

OPPORTUNITIES

- Continue this stance until the Reserves Rationalisation Study has been completed.
- Review Councils position upon the completion of the report.
- Continue to lobby the State Government to ensure that development of reserves does not occur until the report is completed and that development prior to this is in keeping with Council’s recommendations.
- Foster and promote community views in relation to particular reserves or issues.

CONSTRAINTS

- State Government has the final say in many situations.

ACTIONS IDENTIFIED

- 3.6.1 Action: Development of reserves should not occur until Reserve Study (Stage 2) complete.
Status: Completed

ISSUE 3.7 - DEVELOPMENT OF MANAGEMENT STRATEGIES/PLANS FOR RESERVES

ACTIONS IDENTIFIED

- 3.7.1 Action: Prepare management plans for reserves in need.
Status: List of reserves requiring management plans part of Stage 2 brief.
- 3.7.2 Action: Seek funding opportunities through grant monies.
Status: On-going with some community groups currently benefiting.

IMPLEMENTATION STRATEGY

3.7.1 & 3.7.2 3.2.1 Reserves Management Strategy

ISSUE 3.8 - IMPROVE MANAGEMENT/MAINTENANCE OF RESERVES

As previously mentioned the Shire manages in excess of 600 reserves. Only a few of these reserves have any kind of a formalised Management Plan developed for them e.g. Lake Leschenaultia.

Whilst the preparation of management plans is seen as being particularly important for the long term management of the natural values of the reserves, the development of management plans is often a costly and time consuming exercise.

Current resources do not allow a great deal of progress with this action. Similarly, available resources only allow regular maintenance such as mowing, supplementary tree planting and weed control on the Shires main reserves, most of which are recreational reserves. Other management activities do occur on an as needs basis however these activities are not extensive. Assistance and funding from the State Government is essential to expand activities substantially.

The work of community groups has been of much value in relation to the management of particular reserves such as the Strettle Road reserve managed by the Wildflower Society and the Hudman Road Reserve at which the Friends of Hudman Reserve are active.

ACTION TAKEN

As previously detailed, extensive progress has been limited by the resources available to the Shire. The information gathered in the Reserves Study will be of value in setting priorities and determining management issues, some of which can be transferred into management actions.

The Shire has also lobbied the State Government for funding and assistance with Reserve management, for example in its comments on the Darling Range Regional Park and Landscape Study.

OPPORTUNITIES

- Use the outcomes of the Reserve Rationalisation Study to set priorities for the development of management plans and actions.
- Prepare management plans and carry out management actions where resources allow.
- Lobby the State and Federal governments for assistance and funding.
- Seek to gain grant monies for the preparation of management plans.
- Encourage more community groups to become active in the management of reserves.
- Encourage the preparation of management plans for reserves not vested in the Shire.

CONSTRAINTS

- Current resources and funding do not allow for a great deal of expansion.
- Very little assistance from State Government.
- Grant monies available are limited.
- Number of community groups able to become involved.

COMMENTS

This issue is seen as being particularly important in terms of maintaining the values of reserves in the long term. Assistance is required from outside sources in terms of funding and resources. Priority setting in terms of reserves and issues of importance will become much easier upon the completion of the Reserves Study.

ACTIONS IDENTIFIED

- 3.8.1 Action: Identify methods for improved reserve management and maintenance.
Status: To be addressed to a limited degree in Stage 2 study. Further work will be required.

IMPLEMENTATION STRATEGY

- 3.8.1 3.2.1 Reserves Management Strategy

ISSUE 3.9 - MANAGEMENT OF RESERVES BY LOCAL INTEREST GROUPS

DESCRIPTION

The management of reserves by local interest groups is an excellent means of both achieving active management at little cost and promoting community action.

In order to be successful, a motivated and stable interest group is essential in conjunction with the support and assistance of the Shire. This support and assistance from the Shire relates to allowing the group to assume responsibility for the reserve, the provision of technical assistance and resources where required.

ACTION TAKEN

Several local groups are currently involved in the active management of reserves within the Shire, such as the Eastern Hills branch of the Wildflower Society, the Friends of Hudman Reserve and Hovea Ratepayers Association.

The Shire has provided the necessary support and assistance to these groups in managing their particular reserves.

OPPORTUNITIES

- Encourage more community groups to become involved in reserve management.
- Use the success of the groups already active as examples to motivate others.

CONSTRAINTS

- Ability to attract and motivate community groups to action.

Staff resources limited in terms of providing assistance to groups is limited.

ACTIONS IDENTIFIED

- 3.9.1 Action: Encourage local interest groups to actively manage reserves.
Status: On-going Shire support and assistance to groups upon request.
- 3.9.2 Prepare Terms of Condition for Friends of Reserve Groups.

IMPLEMENTATION STRATEGY

3.9.1 & 3.9.2 Friends Group Strategy

ISSUE 3.10 - DEVELOPMENT OF MANAGEMENT PLANS FOR WATER COURSE RESERVES

DESCRIPTION

As with bushland reserves watercourse reserves such as streams, creeks and drainage lines need the development of management plans and ongoing active management in order to maintain their natural values in the long term. Catchment management is an important additional issue to be addressed.

At present, few of the water course reserves or actual water courses are vested in the Shire. Again, the issues of funding and resourcing are important here.

ACTION TAKEN

Whilst few of the water courses within the Shire are vested in the Shire, active steps have been taken to protect water courses. TPS3 contains detailed requirements relating to the protection of water courses and catchment management which can be imposed upon developments in rural landscape living, residential and general rural zones. In addition to this, a creek system strategy through which the Shire can begin to gain ownership of water course reserves in subdivisions is being developed.

OPPORTUNITIES

- Continue and expand the creek system strategy to enable reservation of water courses related to subdivisions.
- Lobby the State and Federal governments for funding and assistance.
- Encourage community groups to become involved in watercourse management.
- Seek grant monies for the preparation of management plans.
- Set priorities for management.
- Prepare management plans where resources allow.
- Encourage the preparation of management plans for watercourse reserves vested in other agencies.
- Continue to encourage the development of integrated catchment management.

CONSTRAINTS

- Ability to attract and motivate community groups to action.
- Staff resources limited in terms of providing assistance to groups is limited.
- Ownership issues may need to be resolved.
- Willingness of State Government agencies to prepare management plans.

ACTIONS IDENTIFIED

3.10.1 Action: Prepare Waterway Strategy for reserves adjacent to creeklines.
Status: To be undertaken by the Environmental Officer this year.

3.10.2 Action: Recommend protection/management conditions upon subdivisions.
Status: Development controls included in TPS3 provisions.

IMPLEMENTATION STRATEGY

3.10.1 Reserves Management Strategy

3.10.2 TPS Compliance Audit

4.0 PROTECTION OF FLORA AND FAUNA

ISSUE 4.1 - RESTORATION AND RETENTION INCENTIVES

DESCRIPTION

Consideration should be given to the introduction of rating incentives (e.g. through the differential rating mechanisms available to the Shire) for the retention and restoration of remnant native vegetation.

The use of rating incentives has been considered by a number of local authorities in the eastern states to encourage the retention and restoration of remnant native vegetation.

Such incentives can be particularly successful in encouraging retention and restoration of remnant vegetation on private properties.

Perhaps the major constraints to these initiatives is the need to be able to properly assess applications for rating concessions. This would require annual site inspections of properties and maintenance of a database so that qualification for rating concessions can be properly assessed. Clear criteria for qualification would also need to be developed.

ACTION TAKEN

No action has occurred as yet in terms of rating incentives. TPS3 however does provide for requiring vegetation protection and revegetation in relation to developments.

OPPORTUNITIES

- Assess in more detail the concept of rating incentives for remnant vegetation protection and restoration.
- Extend this to encompass other relevant issues e.g. land degradation.

CONSTRAINTS

- Resourcing to develop, implement and manage a rating incentive system.
- Reduction in rate income - may not be politically or practically attractive.

COMMENT

It is considered that further investigation of this issue, particularly to look at what has been used elsewhere, in terms of success and logistics would be the most prudent step at this stage.

ACTIONS IDENTIFIED

- 4.1.1 Action: Investigate financial incentives for remnant vegetation required.
Status: Investigations indicate some schemes may be appropriate although difficult to successfully implement.

IMPLEMENTATION STRATEGY

- 4.1.1 Tree Preservation and Revegetation Strategy

ISSUE 4.2 - LIMITS ON LAND CLEARING

4.2.1 Modification of Tree Preservation Provisions of TPS3

DESCRIPTION

The tree preservation provisions of TPS3 should be modified to provide for the retention of areas of remnant native vegetation rather than the protection of individual trees for larger than a nominal size.

ACTION TAKEN

Part V of the final and gazetted form of TPS3 contains provisions in relation to tree preservation which provides for the protection of trees of a certain size and the protection of substantial natural vegetation within the Shire. The removal of such trees and vegetation is prohibited unless Council approval is granted or the tree or vegetation is exempted under the Scheme.

A copy of the relevant Division of TPS3 is attached for information.

OPPORTUNITIES

- Ensure that these provisions are administered.

CONSTRAINTS

- Staff resources to be able to fully implement these provisions.
- Penalties for breaches currently limited to a maximum fine of \$2000.

ACTIONS IDENTIFIED

- 4.2.1 Action: Mechanisms for tree preservation and the retention of areas of remnant vegetation is required.
Status: TPS3 contains provisions for the protection of significant trees and remnant vegetation.
- 4.2.1.1 Action: The provision of tree preservation needs to be covered by statutory provisions.
Status: Covered under TPS3.

4.2.1.2 Action: Shire to develop replanting policy with species list.
Status: Addressed to a limited extent by EAC, but requires greater input.

IMPLEMENTATION STRATEGY

4.2.1; 4.2.1.1 & 4.2.1.2 Tree Preservation and Revegetation Strategy

4.2.2 TPS3 and Retention of Native Vegetation

DESCRIPTION

The provisions of TPS3 which address the retention of remnant native vegetation should be received as a basis for their extension in the following directions:

- **in terms of landuse zones to which they apply; and**
- **in the sense of encouraging development of already cleared lands and utilising proposed development as a means of achieving site revegetation.**

ACTION TAKEN

The final TPS3 contains a number of provisions through which the retention of native vegetation and revegetation can be incorporated into development and subdivision applications. Of note is the requirement for the preparation of Local Subdivision and Infrastructure Plans (LSIP) for subdivisions which must contain a survey of vegetation (and other environmental features). The Scheme provides Council with a number of opportunities to require vegetation protection and revegetation in relation to developments and to utilise development as a means of achieving site vegetation on land which has been cleared.

The retention of remnant native vegetation is also related to landuse zones in the Scheme, in particular for rural landscape living and general rural zones, whereby the objectives for these zones include the protection of vegetation and other environmental values.

OPPORTUNITIES

- Ensure that these provisions are administered.
- Increase community awareness of these provisions.

CONSTRAINTS

- Staff resources to be able to carry out compliance checks.
- Penalties for breaches limited to a maximum of \$2000.

ACTIONS IDENTIFIED

4.2.2 Action: Retention of Native Vegetation through Planning Mechanisms.
Status: Being Undertaken

IMPLEMENTATION STRATEGY

4.2.2 Tree Preservation and Revegetation Strategy & TPS 3 Compliance Audit

ISSUE 4.3 - HABITAT PROTECTION, ESPECIALLY FOR RARE SPECIES

DESCRIPTION

The protection of wildlife habitat areas, particularly for rare species is essential to enable the long term existence of these species. Actions which are directed toward the protection of remnant native vegetation are of particular value to maintaining habitat.

Ideally, the surveying of faunal habitat and the location of rare and endangered species within the Shire would be carried out to provide base information for the protection of these species. Unfortunately this task is well beyond the resources of the Shire.

ACTION TAKEN

TPS3 requires that as part of Local Subdivision and Infrastructure Plans (LSIP) that data on the presence of rare and endangered fauna (and flora) is gained and presented in the LSIP report. This enables Council to ensure protection of any species present through development approval conditions.

This also provides the Shire with baseline information on the location of rare species and associated habitat.

OPPORTUNITIES

- Continue to expand database on the location of rare species and valuable habitat.
- Prevent loss of species and habitat through the planning process.
- Enhance public education in the area of fauna and habitat protection.
- Encourage programs to protect rare species and their habitats.

CONSTRAINTS

- Staff resources for development of data base.
- Reliability of information provided in LSIP.
- Constraints highlighted earlier in terms of administering vegetation protection provisions of TPS3.

ACTIONS IDENTIFIED

- 4.3.1 Action: Presence of rare fauna (and flora) requires documentation under TPS3.
Status: Included as part of Local Subdivision and Infrastructure Plans (LSIP).

IMPLEMENTATION STRATEGY

4.3.1 TPS3 Compliance Audit

ISSUE 4.4 - IMPROVE EFFECTIVENESS OF CURRENT CONTROLS

DESCRIPTION

TPS3 contains substantial controls in relation to the protection of flora and fauna. In order for these controls to be effective, it is important that developers and landowners comply with conditions and requirements specified through planning approvals. This requires regular compliance inspections, suitable penalties or financial disincentives for non compliance and education.

Unfortunately, the statutory penalties relating to breaches of approval conditions are currently a maximum of \$2000. Even with higher penalties, legal proceedings can be complicated, lengthy and costly. Other means of ensuring compliance are worthwhile considering.

ACTION TAKEN

The Shire's Planning Department is proposing to conduct compliance inspections of developments approved under TPS3 in the next financial year. Public information pamphlets relating to the environmental provisions of TPS3 have been produced.

Investigation into the use of performance bands to ensure compliance is also being carried out.

OPPORTUNITIES

- Carry out regular compliance auditing of developments approved.
- Initiate action against breaches of conditions.
- Investigate further the use of performance bands and other means to ensure compliance.
- Lobby for increased penalties.

CONSTRAINTS

- Staff resources limited.
- Penalties for non compliance low.

ACTIONS IDENTIFIED

- 4.4.1 Action: Greater involvement in compliance inspection required.

Status: The Shire's Planning Services undertakes periodic inspections, but needs to be ongoing.

4.4.2 Action: Education of landowners and general public.

Status: Pamphlet on environmental provisions of TPS3 has been produced.

IMPLEMENTATION STRATEGY

4.4.1 TPS3 Compliance Audit

4.4.2 Community Education Strategy

ISSUE 4.5 - CARRY OUT FLORA AND FAUNA SURVEY FOR SHIRE

DESCRIPTION

The development of a flora and fauna inventory for the Shire would be particularly useful in providing a sound technical basis for protection and enhancement initiatives.

Such an inventory would need to include both private and publicly owned land and detail information on flora and fauna communities present, qualities, threats and management issues.

The development of such an inventory would focus initially on compiling information currently available through relevant government agencies and interest groups. This would then be followed with field work to gather further information not already available. This would require specialist expertise and substantial resourcing.

A computer data base system such as GIS would be required to store and manipulate the data gathered.

ACTION TAKEN

Whilst the development of an overall inventory has not commenced, data collection relevant to the task has occurred through the Reserves Study and through the requirements for developers to provide information in Local Subdivision and Infrastructure Plans.

Unfortunately, the substantial resourcing requirements of this action will limit substantial progress.

OPPORTUNITIES

- Continue to expand the current database into the form of an inventory.
- Pursue grants and other sources of funding to expand the current data base.
- Consider the use of students to carry out some of the work.

CONSTRAINTS

- Resourcing and cost constraints make progress difficult.

ACTIONS IDENTIFIED

4.5.1 Action: Develop flora and fauna inventories.

Status: Some relevant information regarding reserve flora and fauna has been collected.

Private land survey information may be forthcoming with development through LSIP.

4.5.2 Action: Encourage private landowners to submit flora/fauna information about their property.

Status: Yet to be acted upon.

IMPLEMENTATION STRATEGY

4.5.1 Miscellaneous

4.5.2 Community Education Strategy

ISSUE 4.6 - ENCOURAGE REVEGETATION PROGRAM

DESCRIPTION

The Shire's support for rehabilitating disturbed areas and its support for community based revegetation initiatives should be continued.

ACTION TAKEN

The Shire's Parks Department has for many years been actively involved in the revegetation of gravel pits, road verges and denuded areas of bushland under Shire control. In addition to this, the Shire has assisted community groups, most notably the Eastern Hills Branch of the Wildflower Society in carrying out revegetation projects within the Shire.

It is intended that these initiatives will continue.

OPPORTUNITIES

- Expand current program.
- Involve more community groups.
- Seek funding from outside sources e.g. Greening WA.

CONSTRAINTS

- Funding and resources for expansion of program.
- Availability of community groups.

ACTIONS IDENTIFIED

- 4.6.1 Action: Revegetate degraded areas.
Status: Shire actively involved in revegetating programs (e.g. gravel pits, road verges).
- 4.6.2 Action: Assist community groups in revegetation projects.
Status: Shire assisted Eastern Hills Branch of Wildflower Society and existing “Friends of Reserves” groups.

IMPLEMENTATION STRATEGY

4.6.1 Tree Preservation and Revegetation Strategy

4.6.2 Friends Group Strategy

ISSUE 4.7 - UNDERGROUND POWER

4.7.1 Refer to Issue 1.2.

ISSUE 4.8 - USE NATIVE SPECIES FOR SHIRE TREE PLANTING PROGRAMS

ACTIONS IDENTIFIED

- 4.8.1 Action: Program needs reviewing to include native overstorey and understorey species.
Status: (i) EAC prepared species list.
(ii) Environmental Officer to convene a meeting between EAC members and Shire’s Parks Services staff.

IMPLEMENTATION STRATEGY

4.8.1 Tree Preservation and Revegetation Strategy

ISSUE 4.9 - SUBSIDISE SEEDLING PRODUCTION AND DISTRIBUTION

DESCRIPTION

The Shire is involved in a range of tree planting programs. These include the provision of trees to residents through the Shire’s Tree Canopy Program, street tree program and through tree and shrub planting undertaken in parks and reserves.

ACTION TAKEN

The Shire has given out over 200,000 trees to residents in the past four years through the Tree Canopy Program. These trees are distributed to the public through local nurseries and the Eastern Hills Branch of the Wildflower Society. Species given out are locally endemic and include wandoo, marri, jarrah and blackbutt. The public response and survival rate of trees has been good.

Trees for street planting are also given to residents at a rate of up to two per year. These are to be planted on verges and whilst Australian natives are used, some species which are not locally endemic such as mallees are distributed.

Trees and shrubs are also planted in the Shires parks and reserves. These are a mixture of endemic and non-endemic natives. Planting of these is not part of the staged program.

OPPORTUNITIES

- Continue and expand current program.
- Use only endemic species.
- Attempt to match planting programs for parks and reserves with the use of species endemic to that particular area.
- Promote the distribution and planting of shrub and understorey species.

CONSTRAINTS

- Costs of seedling production and distribution.
- Availability of endemic species.
- Suitability of some endemic species for use as street trees or park trees.

ACTIONS IDENTIFIED

- 4.9.1 Action: Shire involvement in tree planting programs.
Status: Programs include Tree Canopy Program, street tree program and tree/shrub planting in parks/reserves.
- 4.9.2 Action: Distribute seedlings to residents.
Status: Shire given out over 200,000 trees over last 4 years.
- 4.9.3 Action: Community group involvement in seedling production and distribution.
Status: Eastern Hills Branch of the Wildflower Society very active.

IMPLEMENTATION STRATEGY

- 4.9.1 & 4.9.2 Tree Preservation and Revegetation Strategy
4.9.3 Friends Group Strategy

ISSUE 4.10 - ESTABLISHMENT OF CORRIDORS

DESCRIPTION

Corridors are linkages or pathways of native vegetation which connect elements of the natural landscape such as bushland areas or watercourses. These are of great value for the provision of wildlife habitat and movement, providing continuity of natural areas. Corridors are also valuable in terms of landscape value and visual resource.

Corridors can be created by protecting existing linkages from clearing or ensuring that some linkages remain in subdivisions or other developments, and by revegetation of areas to serve as linkages e.g. road verges, open space areas etc.

The landuse planning process can be of significant value in protecting existing corridors and create others. A concerted approach from both local government and state government planning agencies is necessary. Opportunities exist to protect and create corridors through individual subdivisions and on a local level, although the creation of an overall concept plan for broader areas is a useful way of integrating the concept in an overall concept.

ACTION TAKEN

TPS3 contains specific provisions relating to the preservation of tree and vegetation corridors along a number of main roads within the Shire. In addition to this, the tree preservation and enhancement of the Scheme provides a mechanism to protect corridors in other areas. Further opportunities to protect and enhance corridors occur through the subdivisional process, as a particular result of the requirements for developers to produce Local Subdivision and Infrastructure Plans and Technical Guidelines.

The Shire has also requested the State Planning Commission to develop a policy relating to the protection of corridors as part of the Darling Range Regional Park Landscape Study.

OPPORTUNITIES

- Continue to ensure maintenance and provision of corridors in subdivisional planning.
- Use Shire revegetation programs to create corridors.
- Carry out an overall corridor protection and enhancement study for the Shire.
- Continue to lobby state government planning agencies to have relevant policies and actions incorporated into regional planning strategies.

CONSTRAINTS

- Extra staff resources required to carry out corridor study.
- Need state government support to ensure corridor protection and enhancement occurs at a broad level.

ACTIONS IDENTIFIED

- 4.10.1 Action: Encourage and enforce the establishment of wildlife corridors.
Status: TPS3 contains provisions for tree/vegetation preservation within the Shire.
Further opportunities available during subdivision or development (LSIP).
- 4.10.2 Action: Educate landowners on benefits of establishing wildlife corridors.
Status: Topics covered in “Environmental Page” issue. Greater community awareness is required.
- 4.10.3 Action: Identify and promote wildlife corridor linkages.
Status: To be addressed in Reserves Study (Stage 2).

IMPLEMENTATION STRATEGY

- 4.10.1 & 4.10.3 Wildlife Corridor Strategy
4.10.2 Community Education Strategy

5.0 PROTECTION OF WATERWAYS & WATER RESOURCES

ISSUE 5.1 - ESTABLISH WATER COURSE RESERVES

ACTIONS IDENTIFIED

- 5.1.1 Action: Council consider developing the establishment of a voluntary Conservation Corp.
Status: Not known.

IMPLEMENTATION STRATEGY

- 5.1.1 Friends Group Strategy

ISSUE 5.2 - DEVELOPMENT OF WATER COURSE MANAGEMENT STRATEGIES (Refer also to issue 3.10)

DESCRIPTION

The Shire should review its policy/position in relation to the creation of water course reserves, taking account of existing reserves, opportunities for the creation of additional reserves, potential management costs and the requirements and advice of external agencies. Depending on the outcome of this review, further action such as modification of the Shire's town planning scheme provisions and the development of management strategies for water course reserves may be required.

ACTION TAKEN

Whilst a few of the water courses within the Shire are vested in the Shire, active steps have been taken to protect water courses. TPS3 contains detailed requirements relating to the protection of water courses and catchment management which can be imposed upon developments in rural landscape living, residential and general rural zones. In addition to this, a creek system strategy through which the Shire can begin to gain ownership of water course reserves in subdivisions is being developed.

OPPORTUNITIES

- Continue and expand the creek system strategy to enable reservation of water courses related to subdivisions.
- Lobby the State and Federal governments for funding and assistance.
- Encourage community groups to become involved in watercourse management.
- Seek grant monies for the preparation of management plans.

- Set priorities for management.
- Prepare management plans where resources allow.
- Encourage the preparation of management plans for watercourse reserves vested in other agencies.
- Continue to encourage the development of integrated catchment management.

CONSTRAINTS

- Ability to attract and motivate community groups to action.
- Staff resources limited in terms of providing assistance to groups is limited.
- Ownership issues may need to be resolved.
- Willingness of State Government agencies to prepare management plans.

COMMENTS

Programs such as Ribbons of Blue could be used to promote the management of water courses by the community and raise community awareness.

As with bushland areas, the establishment of “Friends” groups for water course reserves could be promoted.

ACTIONS IDENTIFIED

5.2.1 Refer to actions outlined in 3.10.

ISSUE 5.3 - LIVESTOCK CONTROL NEAR WATER COURSES

DESCRIPTION

Grazing livestock such as sheep, cattle and horses can cause significant damage to water courses by damaging fringing vegetation, introducing weeds, causing erosion of banks and creating turbidity through disturbing the stream bed.

Exclusion of livestock from water courses by fencing can significantly improve streamlines and prevent these impacts.

ACTION TAKEN

TPS3 contains a specific clause relating to the keeping of animals which requires that persons who keep animals in Rural Landscape Living, Residential and General Rural Zones, must ensure that they do not cause damage to trees or cause soil erosion. Measures such as

containing animals in yards or other management systems can be required by Council to prevent vegetation damage and soil erosion if necessary.

OPPORTUNITIES

- Encourage/require landowners with water courses on their properties to fence streamlines to exclude stock.

CONSTRAINTS

- Limited resources to follow up and administer requirements.
- Legal process may be difficult/costly if people do not comply - public education may be a more effective method of achieving compliance.

COMMENTS

Education of landowners is likely to be the most practical and cost effective way of encouraging landowners to fence streamlines to exclude stock.

ACTIONS IDENTIFIED

- 5.3.1 Action: Ensure animals do not cause damage to trees or erosion along watercourses.
Status: Provisions included in TPS3.

IMPLEMENTATION STRATEGY

- 5.3.1 TPS3 Compliance Audit

ISSUE 5.4 - ENCOURAGE THE RESTORATION OF RIPARIAN VEGETATION

DESCRIPTION

Riparian vegetation refers to the native fringing vegetation along water courses. This vegetation plays an extremely important role in the overall functioning of waterways, through providing stabilisation, preventing erosion, filtering pollutants and sediment and providing important protection and habitat for fauna.

Unfortunately clearing and grazing by farm animals has resulted in the loss of this vegetation from many water courses, greatly reducing their natural values.

Fortunately, rehabilitation of streamlines by replanting of native vegetation, controlling weeds and excluding stock by fencing can result in significant improvements in the natural values of degraded streamlines and greatly improve water quality.

ACTION TAKEN

TPS3 contain specific provisions requiring that all developments along river valleys, creeks and water courses must result in the retention of existing vegetation and if, in the opinion of the Council, any land within 100 metres from the nearest bank of a river, creek or water course is denuded of vegetation and contains disturbed surfaces, the Council may serve notice on the registered proprietor who shall, within the period specified in such notice, cause the land to be revegetated and the disturbed surfaces stabilised to minimise stormwater run-off and erosion.

The July Environmental Page featured an article on streamlining and protecting riparian vegetation which will hopefully begin to stimulate awareness among residents.

OPPORTUNITIES

- Ensure that the specific provisions of TPS relating to streamline protection and revegetation are vigorously enforced.
- Carry out further public education programs to raise awareness - targeting landowners with water courses on their properties could be an effective way of doing this.

CONSTRAINTS

- Limited staff resources.

COMMENTS

The EAC could play a major role in promoting community awareness and education.

ACTIONS IDENTIFIED

- 5.4.1 Action: Encourage retention and restoration of riparian vegetation.
Status: See actions regarding 3.9, 4.1 and 4.2.
- 5.4.2 Action: Educate landowners on the importance of riparian vegetation.
Status: Feature article on “Environmental Page” on this topic (July 1994).

IMPLEMENTATION STRATEGY

5.4.2 Community Education Strategy

ISSUE 5.5 - REGULATING DAMMING AND BORES

DESCRIPTION

Damming of water courses by private landowners if not controlled, can have major impacts on the flow and quality of water within water courses. Downstream landowners and residents can be significantly disadvantaged by uncontrolled damming. Ecological values of water courses too can be severely effected.

Groundwater abstraction from bores can also have negative effects on water courses and vegetation if not controlled. Over extraction can result in water table decline which can result in vegetation deaths and effect natural water bodies such as wetlands. Fortunately, this issue is largely confined to the Swan Coastal Plain, with bore water extraction not occurring on a large scale in the hills.

ACTION TAKEN

TPS3 contains specific provisions which prevent the construction of dams or the artificial retardation of water flow within water courses unless the approval of the Shire and the Water Authority has been granted. This provides a mechanism for the detailed assessment of proposals to ensure that adverse impacts as a result of such activities do not occur.

Council is in fact currently considering action against a landowner who has carried out such activities without approval.

TPS3 does not have any provisions relating to the control of groundwater abstraction, however this issue is not considered to be a problem at this point in time.

OPPORTUNITIES

- Continue to vigorously enforce the provisions of TPS3 relating to damming and altering the flow of water courses.
- Raise community awareness of the TPS3 requirements.
- Monitor the effects of groundwater extraction to determine whether action is warranted.

CONSTRAINTS

- Staff resources.

ACTION IDENTIFIED

5.5.1 Action: Develop and enforce provisions aimed at preventing dams impeding upon natural water flows.

Status: Vigorously enforced by Council through TPS3.

IMPLEMENTATION STRATEGY

5.5.1 TPS3 Compliance Audit

ISSUE 5.6 - ENCOURAGING THE USE OF WATER TANKS

DESCRIPTION

The use of water tanks to provide some or all of household water supply can substantially reduce water usage from the mains scheme, resulting in reductions in the environmental impacts relating to water resource development.

In areas which are not supplied by scheme water, the use of water tanks over bores for water supply is generally more environmentally “friendly”.

ACTION TAKEN

TPS3 allows Council to require that for dwellings constructed in areas where scheme water is not available, the water supply must be provided by either an underground bore or a 120,000 litre rainwater tank.

Planning practice generally requires that 120,000 litre tanks are required on lots which are in excess of 2 hectares within Rural Landscape Living Zones.

OPPORTUNITIES

- Continue to require the installation of rainwater tanks for Rural Landscape Living Zones.
- Encourage greater use of rainwater tanks in residential zones and other areas with scheme supply.

ACTIONS IDENTIFIED

5.6.1 Action: Encourage self sufficient water supply.

Status: Areas unable to be serviced by scheme water supply or greater than 2 hectares require water tanks (TPS3).

IMPLEMENTATION STRATEGY

5.6.1 Community Education Strategy

ISSUE 5.7 - WATSONIA CONTROL IN WATERWAYS

Refer to issue 2.2.

ISSUE 5.8 - CLEARING CONTROLS AND BUFFER ZONES

DESCRIPTION

The control of clearing of remnant vegetation surrounding water courses and the provision of buffer zones in which development is restricted or controlled can result in substantial protection of waterways and their natural values within the Shire.

ACTION

As well as the general vegetation protection provisions of TPS3, the Scheme requires that all developments shall comply with specific requirements relating to the protection of water courses. In relation to river valleys, creeks and water courses, these requirements are as follows:

- a) the status quo of the stream flow shall be maintained to ensure the protection of the biota and the aesthetic quality of the stream system;
- b) all existing vegetation along water courses shall be retained;
- c) sensitive development practices shall be employed to minimise run-off and erosion as follows:
 - i) provision of contour banks to intercept stormwater run-off; and
 - ii) planting of indigenous vegetation parallel to the stream to act as a barrier to seepage and run-off;
- d) no buildings or earthworks shall be permitted within 100 metres from the bank of any river, creek or water course and no landfill shall be undertaken within such area or its associated flood plain area;
- e) no dam shall be constructed or the flow of water artificially retarded without the approval of the Water Authority of Western Australia (WAWA) and Council; and
- f) if, in the opinion of Council, any land within 100 metres from the nearest bank of a river, creek or water course is denuded of vegetation and contains disturbed surfaces, the Council may serve notice on the registered proprietor who shall, within the period specified in such notice, cause the land to be revegetated and the disturbed surfaces stabilised to minimise stormwater run-off and erosion.

In addition to these requirements, TPS3 requires that for new subdivisions a separation of at least 100 metres exists between effluent disposal systems and the nearest open waterbody, water course or major road drainage unless the EPA and Council are satisfied that a variation to this requirement will not result in pollution of the water course.

These provisions provide very strong tools to protect water courses from clearing and the impacts of inappropriate development.

OPPORTUNITIES

- Ensure that these provisions are vigorously enforced.
- Improve community awareness and understanding of these requirements.

CONSTRAINTS

- Staff resources.

ACTIONS IDENTIFIED

5.8.1 Action: Limit clearing and establish buffer zones along waterways.

Status: Addressed during subdivision and/or development through TPS3.

IMPLEMENTATION STRATEGY

5.8.1 Integrated Catchment Management Strategy &
TPS3 Compliance Audit

ISSUE 5.9 - DEVELOPING WATER USE REDUCTION AND RECYCLING STRATEGIES

DESCRIPTION

The development of water use reduction and recycling strategies can result in an overall reduction in water demand with resultant benefits in terms of reducing the environmental impacts of water resource development.

Water reduction strategies need to be addressed by government as a whole, with changes in practices from consumers being very important. It is considered that such strategies are largely out of the control of local government, although local authorities can play a role in promoting wise water use, particularly in relation to its effect on effluent disposal systems and waterways.

Local authorities, being consumers of water should ensure that their usage is minimised and as efficient as possible. Strategies such as Water Sensitive Urban Design can be incorporated into planning policy as part of overall water use reduction strategies.

Similarly, wastewater recycling strategies are also largely the domain of state government agencies and industry, although local authorities can actively promote actions such as the use of alternative treatment units (ATU's) for domestic effluent disposal which recycle wastewater and the reuse of treated wastewater for irrigating recreational areas etc. Health and environmental constraints do however apply.

ACTION TAKEN

The Shire actively promotes the use of ATU's for effluent disposal and has had approximately 100 of these units installed within the Shire. Reuse of treated waste water from the proposed sewerage treatment plant for watering the golf course and other recreational areas is also being considered by the Shire and the Water Authority.

Water use minimisation has also been recently promoted through articles in the July edition of the Environmental Page.

OPPORTUNITIES

- Continue to support the use of ATU's within the Shire.
- Pursue the reuse of treated wastewater from the proposed sewerage scheme within the Shire to irrigate grassed recreational areas.
- Ensure that water usage by the Shire is as efficient as possible.

- Consider the appropriateness of incorporating principles of water sensitive urban design into Shire planning policies.
- Promote wise water use within the Shire.

CONSTRAINTS

- State government is the major stakeholder in relation to many of the possible strategies.
- Health, environmental and economic considerations need to be addressed for wastewater re-use strategies.

ACTIONS IDENTIFIED

- 5.9.1 Action: Continue to support the use of alternative on-site effluent disposal systems.
Status: On-going through advice and conditions attached to LSIP.
- 5.9.2 Action: Re-use of treated wastewater from proposed sewerage treatment plant for recreational ovals.
Status: Dependant upon progress of sewerage treatment plant.
- 5.9.3 Action: Ensure efficient water usage by Shire.
Status: Shire currently investigating improved reticulation systems.
- 5.9.4 Action: Incorporate water sensitive urban design principles where appropriate.
Status: Being applied where appropriate.
- 5.9.5 Action: Promote and educate benefits of wise water use.
Status: Appeared in July 1994 issue of “Environmental Page”. More work required.
- 5.9.6 Action: Encourage the use of water tanks.
Status: Provisions applicable during subdivision/development in TPS3.

IMPLEMENTATION STRATEGY

- 5.9.1; 5.9.2 & 5.9.3 Miscellaneous
5.9.4 TPS3 Compliance Audit
5.9.5 & 5.9.6 Community Education Strategy

6.0 PREVENTION OF LAND DEGRADATION

ISSUE 6.1 - INCENTIVES TO RESTORE VEGETATION

DESCRIPTION

Options for the provision of incentives to promote revegetation initiatives should be investigated.

ACTION TAKEN

TPS3 contains provisions whereby Council may require revegetation in relation to subdivisions and developments. Refer to issues 4.1 and 4.2 for further detail.

In addition to this, Council provides residents with trees for revegetation through its tree canopy program.

The use of rating incentives for vegetation protection and enhancement is currently being investigated.

OPPORTUNITIES

- Encourage landowners in areas where vegetation has been cleared to revegetate using locally native species, particularly where land degradation is present.
- Ensure that revegetation is required as part of subdivision and development approval where appropriate.
- Continue to investigate rating incentives for vegetation restoration.
- Form partnerships with LCDC groups to encourage revegetation within local zones.

CONSTRAINTS

- TPS3 provisions are triggered by development applications and are thus only applicable to new developments.
- Ability to motivate landowners into action.

ACTIONS IDENTIFIED

- 6.1.1 Action: Investigate ways of encouraging LCDC's.
Status: Unknown.

IMPLEMENTATION STRATEGY

- 6.1.1 Landcare Strategy

ISSUE 6.2 - CLEARING RESTRICTIONS

Refer to issue 4.2.

ISSUE 6.3 - CONTROL STOCKING RATES

DESCRIPTION

Severe land degradation can occur when stocking rates of animals exceed the capability of what a particular area of land can sustain. Additionally, pollution of waterways can occur as a result of run-off of animal wastes. It is therefore important that stocking rates are appropriately managed within rural and rural landscape living zones to prevent these impacts.

ACTION TAKEN

TPS3 contains provisions through which stocking rates can be controlled in residential and rural landscape living zones.

These provisions do not apply to general rural zones.

OPPORTUNITIES

- Actively enforce the provisions of TPS3 to control stocking rates within residential and rural landscape living zones.
- Encourage landowners in rural zones to ensure that stocking rates are compatible with land capability. Interaction with the Department of Agriculture and LCDC's is a vital component of this.

CONSTRAINTS

- Staff resources.
- Ability to motivate landowners in rural zones to properly manage stocking rates - although the Landcare movement is making significant advances in encouraging good land management generally.

COMMENTS

The formation of partnerships between the Shire, EAC and LCDC groups is considered to be very relevant to this issue.

ACTIONS IDENTIFIED

6.3.1 Action: Encourage landowners in rural zones to adopt appropriate stocking rate controls

Status: Ongoing through Department of Agriculture and Wooroloo LCDC.

- 6.3.2 Action: From partnership between Shire, EAC and LCDC to foster land management practices.
Status: No formal arrangement established.

IMPLEMENTATION STRATEGY

- 6.3.1 Community Education Strategy
6.3.2 Landcare Strategy & Friends Group Strategy

ISSUE 6.4 - SUBDIVISION PLANNING

ACTIONS IDENTIFIED

- 6.4.1 Action: Incorporate land degradation prevention measures in TPS3.
Status: Provisions included in TPS3, implementation success not known.

IMPLEMENTATION STRATEGY

- 6.4.1 TPS3 Compliance Audit

ISSUE 6.5 - IMPROVED USE OF CLEARED LAND

DESCRIPTION

Subdivision planning can be used to improve the use of already cleared land and protect and enhance remnant vegetation present.

ACTION TAKEN

TPS3 contains a number of provisions through which subdivision planning can be used to achieve improvement in the use of land which has already been cleared and to protect and enhance existing native vegetation.

Through the application of the objectives of land use and environmental sustainability to subdivision planning and design this can be readily achieved. This is carried out throughout the assessment of subdivisions based on the Local Subdivision and Infrastructure Plans and Technical Guidelines which are required by TPS3 for new subdivisions. This has allowed Council to require cleared land to be used for example for building envelopes, or for the keeping of animals etc, whilst preventing further clearing of remnant vegetation.

OPPORTUNITIES

- Continue to use the provisions of TPS3 to improve the use of already cleared land and protect vegetation or sensitive areas in relation to new subdivisions.
- Carry out compliance auditing of completed subdivisions.
- Educate the community, developers and consultant planners in relation to these subdivision design requirements.

CONSTRAINTS

This approach is relatively new and will therefore require additional staff input during initial years.

ACTIONS IDENTIFIED

- 6.5.1 Action: Carry out compliance auditing.
Status: Yet to be done, but could be included as part of TPS3 implementation review.
- 6.5.2 Action: Educate landowners, developers and consultant planners.
Status: May need education program although on-going advice provided through LSIP.

IMPLEMENTATION STRATEGY

- 6.5.1 TPS3 Compliance Audit
6.5.2 Community Education Strategy

ISSUE 6.6 - COUNCIL LIAISON WITH COMMUNITY GROUPS AND FARMERS

DESCRIPTION

Through liaison with community groups and farmers, particularly through LCDC's, the Shire can raise awareness and foster action in relation to the prevention of land degradation and improved land management.

ACTION TAKEN

The Shire is particularly active in promoting the participation of community groups in environmental management issues in general. The EAC is an excellent example of this.

Unfortunately, only one LCDC, Wooroloo, has become established in the Shire at this point in time.

OPPORTUNITIES

- Encourage and foster the establishment of more LCDC's within the Shire.
- Continue to encourage and support the Wooroloo LCDC in its activities.

CONSTRAINTS

The ability to motivate landowners and residents to become involved.

ACTIONS IDENTIFIED

6.6.1 Action: Foster the establishment of community landcare groups within Shire.
Status: Unknown.

IMPLEMENTATION STRATEGY

6.6.1 Landcare Strategy

7.0 POLLUTION CONTROL

ISSUE 7.1 - CONTROL OF DOMESTIC AIRBORNE EMISSIONS

DESCRIPTION

Liaison should occur with the EPA to determine what initiatives can be implemented to introduce controls over aerial emissions from domestic stoves and heaters and from the burning of refuse. Liaison should also occur with the Department of Local Government to establish whether the Shire can introduce by-laws to address aerial emissions.

ACTION TAKEN

Extensive liaison with the EPA, Department of Local Government and other agencies has occurred in relation to this issue. Unfortunately, as other local authorities have found, major legislative constraints occur in controlling domestic emissions.

At present, public education is seen as being the most effective means of preventing adverse impacts from domestic burning practices.

The Shire's Principal Environmental Health Officer advises that few complaints are actually received and in most cases, issues can be resolved through negotiation, although in difficult situations current legislative constraints do pose problems.

OPPORTUNITIES

- Improve community awareness of the issue and provide information on how to reduce impacts from domestic burning eg: proper chimney flues etc.
- Discourage residents to burn refuse where possible.
- Request the Department of Local Government to include the provision of domestic burning by-laws in the revised Local Government Act.

CONSTRAINTS

- Legislative difficulties.
- Community may view domestic burning as part of hills lifestyle.

ACTIONS IDENTIFIED

7.1.1 Action: Improve community education and awareness.
Status: Progress unknown.

7.1.2 Action: Request the Department of Local Government to include domestic burning by-laws in revised Local Government Act.
Status: Unknown.

IMPLEMENTATION STRATEGY

- 7.1.1 Community Education Strategy
- 7.1.2 Miscellaneous

ISSUE 7.2 - EXAMINING ALTERNATIVES TO THE USE OF HAZARDOUS CHEMICALS FOR PEST CONTROL

DESCRIPTION

Traditionally termite control in relation to buildings has been achieved through the use of organochlorine and organophosphate pesticides. These pesticides, whilst effective against termites are very toxic and persistent in the environment. More recently, all but the pesticides heptachlor and chlorphyriphos have been de-registered for termite control.

More recently, advances have been made in the use of mesh barriers for termite control in new homes. Control in established homes can also be achieved through regular inspection and the use of less toxic chemicals.

ACTION TAKEN

The Shire's Building Section advises that several installations of mesh barriers in preference to pesticides has occurred for new dwellings within the Shire. Officers of this section keep informed of new developments in alternatives for termite control.

OPPORTUNITIES

- Continue to remain aware of advances in non chemical control methods and allow these to be incorporated into building approvals where possible.
- Provide the community with information on alternatives to chemicals for termite control.

CONSTRAINTS

- Alternative methods are sometimes more costly than conventional pesticides.
- Legal standards limit the type of alternatives that can actually be approved for new buildings.

ACTIONS IDENTIFIED

- 7.2.1 Action: Shire officers to keep well informed of new developments in pest control.
Status: Ongoing.

IMPLEMENTATION STRATEGY

- 7.2.1 Domestic and Feral Animal Control Program

ISSUE 7.3 - MONITORING AND MANAGEMENT OF WASTE DISPOSAL

DESCRIPTION

The Shire's waste disposal activities are now focussed on waste transfer stations and recycling programs.

ACTION TAKEN

In October 1993, the Shire completed a detailed Waste Management and Disposal Plan which reviewed the management of the Shire's tip sites (now transfer stations) in relation to the Criteria for Landfill Management which were developed by the Health Department of Western Australia (HDWA). This Plan was endorsed by the HDWA and subsequently the Shire is managing its sites in accordance with this Plan. The Plan will be reviewed in October 1995. The Shire is also preparing an issues and options paper as part of a detailed Waste Management and Recycling Review which will provide Council with long term options and directions in terms of waste management and collection, recycling and greenwaste recycling. This review and other matters relating to waste management are dealt with by Council's Waste Management Review and Recycling Committee.

OPPORTUNITIES

EAC will be invited to comment on the issues and options paper for the Waste Management and Recycling Review prior to its completion.

ACTIONS IDENTIFIED

- 7.3.1 Develop policy for on-site detention of sediment and run off from building sites.
Action: Prepare Waste Management and Recycling Review report.
Status: Completed; public submissions assessed.
- 7.3.2 Action: Review and monitor waste management issues.
Status: On-going assessment by Waste Management and Recycling Committee.

IMPLEMENTATION STRATEGY

- 7.3.1 Erosion and Sedimentation Control Policy
- 7.3.2 Miscellaneous

ISSUE 7.4 - CONTROL OF ILLEGAL DUMPING

DESCRIPTION

Illegal dumping of refuse occurs throughout the Shire and is a particular problem in bushland areas. Such practices not only degrade bushland visually, but can lead to pollution of waterways and the introduction of weeds. Windblown litter from building sites is also of concern within the Shire.

ACTION TAKEN

The Shire's Rangers and Environmental Health Officers regularly follow up complaints relating to illegal dumping and serve infringements under the Litter Act where possible. Unfortunately current penalties are low and are often not a sufficient deterrent.

Increased penalties and greater community awareness of illegal dumping are seen as being important in reducing its incidence. The formation of "Friends" groups is one way in which community vigilance can be increased.

OPPORTUNITIES

- Push for increased penalties for illegal dumping.
- Promote community vigilance in relation to dumping through "Friends" groups etc.
- Assess ways in which litter from building sites can be better controlled.

CONSTRAINTS

- Isolated nature of many parts of the Shire make observation of illegal dumping difficult.
- Legal difficulties exist in terms of proving cases of illegal dumping, particularly in relation to building sites.

ACTIONS IDENTIFIED

7.4.1 Action: Shire Rangers and Environmental Health Officers to follow up complaints.
Status: Ongoing, but recognition of lack in deterrents (e.g. fines).

7.4.2 Action: Council to introduce by-law requiring on-site bins for building sites.
Status: Environmental Officer to follow up with Principal Building Surveyor.

IMPLEMENTATION STRATEGY

7.4.1 & 7.4.2 Miscellaneous

ISSUE 7.5 - MONITORING IMPACTS OF EFFLUENT DISPOSAL

DESCRIPTION

The Shire is largely dependant on the disposal of effluent via on site disposal systems such as septic tanks. Failure of these systems or illegal construction can result in the pollution of local waterways.

ACTION TAKEN

The Shire's Environmental Health Officers closely monitor the installation of on site effluent disposal systems to ensure that they do not pose a pollution risk. They also respond

frequently to complaints relating to faulty systems and monitor waterways in response to these complaints.

Community involvement through programs such as the Ribbons of Blue has assisted in the monitoring of some water courses although this has been limited to the involvement of 2 or 3 weeks.

OPPORTUNITIES

Increase monitoring of local waterways, particularly through encouraging community involvement.

CONSTRAINTS

Limited staff resources.

Ability to motivate schools and community members into action.

ACTIONS IDENTIFIED

7.5.1 Action: Shire Environmental Health Officer oversee system installation and respond to complaints.

Status: Ongoing.

7.5.2 Action: Community involvement in monitoring water quality of waterways.

Status: Past involvement through Ribbons of Blue; no future involvement determined to date.

IMPLEMENTATION STRATEGY

7.5.1 Miscellaneous

7.5.2 Ribbons of Blue Project

8.0 CONTROL OF FERAL & DOMESTIC ANIMALS

ISSUE 8.1 - TRAPPING/ERADICATION PROGRAMS FOR FERAL ANIMALS

DESCRIPTION

Feral animals would be likely to be present on Shire controlled land as well as private properties. The control of feral animals within the Shire is largely the domain of CALM, particularly for fox control.

ACTION TAKEN

The opportunity does exist for active involvement in feral animal control on Shire managed land, although major constraints do exist. Any activities would need to be carried out in close liaison with CALM.

A service which could be provided by the Shire is the provision of cat traps for hire to landowners for feral cat control. Other local authorities have provided such a service in the past.

OPPORTUNITIES

- Assess needs for active involvement in relation to known problem reserves/areas.
- Assess the feasibility of a trap hire service for residents in relation to feral cats.
- Liaise closely with CALM on control programs being carried out within the Shire.

CONSTRAINTS

- Baiting and trapping programs are resource intensive.
- Safety issues in relation to the use of baits.
- Any program developed needs to be carefully planned and implemented - time and resource consuming.

ACTIONS IDENTIFIED

- 8.1.1 Action: Identify high risk feral animal areas.
Status: Unknown.
- 8.1.2 Action: Assess feasibility of cat trap hire for residents.
Status: Unknown
- 8.1.3 Action: Continue liaison with CALM.
Status: Ongoing

8.1.4 Action: The Environmental Officer investigate an integrated feral animal control program
Status: Yet to be undertaken.

IMPLEMENTATION STRATEGY

8.1.1; 8.1.2; 8.1.3 & 8.1.4 Domestic and Feral Animal Control Program

ISSUE 8.2 - ENCOURAGING THE STERILISATION OF DOMESTIC ANIMALS

DESCRIPTION

Sterilisation of domestic cats and dogs reduces the incidence of unwanted litters which lead to stray and feral animals. Encouragement of pet owners to sterilise their animals is seen as an effective means of reducing the incidence of stray and feral animals.

ACTION TAKEN

The Shire actively encourages the sterilisation of domestic animals through publicity campaigns and the provision of discounted registration fees for sterilised dogs.

OPPORTUNITIES

Expand publicity campaign to encourage more Shire residents to sterilise their animals.

CONSTRAINTS

Time and resources required.

ACTIONS IDENTIFIED

- 8.2.1 Action: Encourage and develop incentives to sterilise domestic animals.
Status: Ongoing through publicity campaigns and the provisions of discounted registration fees for sterilised dogs
- 8.2.2 Action: Council to consider producing a pamphlet regarding cats and wildlife.
Status: To be undertaken by Environmental Officer.
- 8.2.3 Action: Council to investigate other agencies pamphlets.
Status: To be undertaken by Environmental Officer.

IMPLEMENTATION STRATEGY

8.2.1 & 8.2.2 Community Education Strategy
8.2.3 Domestic and Feral Animal Control Program

ISSUE 8.3 - INTRODUCE CAT REGISTRATION

DESCRIPTION

Cat registration is seen as one possible means of controlling stray animals and reducing the predation of native animals by domestic cats.

ACTION TAKEN

At present, no legislation exists in WA to register or control cats although the Department of Local Government is currently preparing a report for the Minister for Local Government on the matter. This report, which will be referred to Cabinet by the Minister, follows a lengthy period of research and preparation which included the receipt of many public submissions. Councillor Allan Pilgrim is involved in the development of this report through his membership on a Committee advising the Department of Local Government on the matter.

It is likely that a draft report will be circulated to local authorities for comment in the near future.

OPPORTUNITIES

EAC could have input to the matter through commenting on the report when released to local authorities, or via Cr Pilgrim.

ACTIONS IDENTIFIED

- 8.3.1 Action: Council to comment on draft Cat Registration report.
Status: Environmental Officer to comment on draft report.

IMPLEMENTATION STRATEGY

- 8.3.1 Domestic and Feral Animal Control Program

9.0 WASTE MANAGEMENT

ISSUE 9.1 - DEVELOP AND INTRODUCE RECYCLING PROGRAM

ACTIONS IDENTIFIED

- 9.1.1 Action: Council develop a Waste Management and Recycling Review.
Status: Completed; currently responding to public submissions on report.
- 9.1.2 Action: Encourage community involvement in recycling.
Status: Assisting in school recycling projects (Greenmount Primary School); provision recycling centres.

IMPLEMENTATION STRATEGY

- 9.1.1 Miscellaneous
9.1.2 Community Education Strategy

ISSUE 9.2 - DEVELOP SHREDDING/MULCHING OF GREENWASTE

ACTION TAKEN

The Shire is developing an issues and options paper as part of a detailed Waste Management & Recycling Review. This will provide Council with long term options and directions in terms of recycling and greenwaste recycling.

OPPORTUNITIES

EAC will be invited to comment on the issues and options paper for the Waste Management and Recycling Review prior to its completion.

ACTIONS IDENTIFIED

- 9.2.1 Action: Develop strategies as part of Waste Management and Recycling Review.
Status: Strategies included in report to be finalised shortly following consideration of public submissions.

IMPLEMENTATION STRATEGY

- 9.2.1 Miscellaneous

ISSUE 9.3 - CONTROL EFFLUENT DISPOSAL THROUGH SUBDIVISION/PLANNING CONTROL

Refer Issues 5.8, 5.9 & 7.5.

ISSUE 9.4 - INVESTIGATE & PROMOTE ALTERNATIVE TECHNOLOGIES FOR EFFLUENT DISPOSAL

Refer Issue 5.9.

ISSUE CATEGORY 10 - ENERGY

ISSUE 10.1 - HOME CONSTRUCTION FOR ENERGY EFFICIENCY

DESCRIPTION

A range of practical initiatives can be incorporated into home design and construction for energy efficiency. Many of these are difficult to enforce through statutory requirements and are often incorporated through personal choice and are subject to economic constraints.

OPPORTUNITIES

The opportunity exists to produce a brochure or another form of publicity material to educate landowners on energy efficiency in home construction.

ACTIONS IDENTIFIED

10.1.1 Action: Shire Building Service to produce brochure regarding energy efficient home construction.

Status: Yet to be produced.

IMPLEMENTATION STRATEGY

10.1.1 Community Education Strategy

ISSUE 10.2 - STREET PLANS TO COMPLEMENT ENERGY EFFICIENT HOUSING

DESCRIPTION

Energy efficiency can be encouraged in subdivision design through orientation of lots in relation to solar patterns, wind direction etc. This is relatively easily achieved on large lot size subdivisions but is difficult in smaller lot subdivisions.

ACTION TAKEN

Where possible, developers are encouraged to utilise solar orientation in subdivision layout when planning applications are received. This is not always possible though, particularly on small lot subdivisions.

OPPORTUNITIES

Encourage more energy efficiency planning in subdivision layout.

CONSTRAINTS

Economic and practical constraints limit the extent to which this can be achieved.

ACTIONS IDENTIFIED

10.2.1 Action: Encourage developers to utilise solar orientation in subdivision layout.
Status: Ongoing and addressed in advice on LSIP's

IMPLEMENTATION STRATEGY

10.2.1 Community Education Strategy

11.0 SERVICE PROVISION

ISSUE 11.1 - DEVELOPING ENVIRONMENTALLY SENSITIVE STANDARDS FOR SERVICE INSTALLATION

DESCRIPTION

The use of environmentally sensitive techniques for service installation can limit disturbance to natural areas and effects such as erosion and sedimentation. Techniques such as the use of a single trench for services in subdivisions can greatly reduce environmental impacts.

ACTION TAKEN

This has been implemented on a small scale in subdivision planning and approvals, although more detailed assessment and development of standards needs to be carried out. TPS3 requires installation to be considered as part of LSIP requirements.

OPPORTUNITIES

Use Shire Environmental Officer to develop standards for subdivision service installation and work with developers at early stages of subdivision design.

ACTIONS IDENTIFIED

- 11.1.1 Action: Oversee servicing works undertaken by Service Providers.
Status: Shire's Parks Supervisors oversee known works, but requires on-going liaison with state servicing authorities and their contractors to successfully achieve
- 11.1.2 Action: Prepare Report on Shire's position and development standards for servicing authorities
Status: To be undertaken.
- 11.1.3 Action: Further involvement of Environmental Officer in environmentally sensitive service provision.
Status: On-going through DPU meetings.

IMPLEMENTATION STRATEGY

11.1.1; 11.1.2 & 11.1.3 Environmental Position Paper - Services

ISSUE 11.2 - SHIRE CO-ORDINATION OF SERVICES PROVIDED BY STATE AUTHORITIES

ACTIONS IDENTIFIED

- 11.2.1 Action: Encourage communication and information exchange between the Shire and State Service authorities.
Status: Ongoing attendance to meetings (eg WAMA - Vegetation control near powerlines).

IMPLEMENTATION STRATEGY

- 11.2.1 Environmental Position Paper - Services

ISSUE 11.3 - NEGOTIATE AGREEMENTS BETWEEN SHIRE & SERVICING AGENCIES ON ENVIRONMENTAL STANDARDS TO BE ACHIEVED IN SERVICE INSTALLATION

DESCRIPTION

The majority of services provided by servicing authorities such as SECWA, Telecom, WAWA etc. are installed in accordance with the standards of these agencies. Conflict may occur at times between the standards employed by these agencies and those which are more environmentally sensitive.

The Shire may be able to influence the manner in which these services are installed through negotiation/discussion with the various agencies and to a limited extent through subdivision control.

OPPORTUNITIES

- Use Environmental Officer to develop environmentally sensitive installation guidelines for the Shire with servicing agencies.
- Use TPS3 to promote environmentally sound service installation where possible.

CONSTRAINTS

- Servicing agencies not bound by Shire.
- Economic constraints.
- Final subdivision approval is granted by State Government, limiting the extent to which the Shire can influence servicing agencies.

ACTIONS IDENTIFIED

11.3.1 Action: WAMA to encourage environmentally sensitive installation guidelines for the Shire with Servicing Authorities

Status: Yet to be addressed.

Refer also to issue 11.2

IMPLEMENTATION STRATEGY

11.3.1 Environmental Position Paper - Services

ISSUE 11.4 - SHIRE TO PRESS FOR EARLY DEVELOPMENT OF ORANGE ROUTE

DESCRIPTION

The Orange Route refers to the proposed modification of the Perth - Adelaide Highway which will hopefully result in the reduction of heavy traffic on Greenmount Hill and Great Eastern Highway in general. An amendment to the Metropolitan Region Scheme to reserve the proposed route was recently advertised.

ACTION TAKEN

The Shire has previously pressed the State Government for the early development of the Orange Route through a variety of submissions and forums.

ACTIONS IDENTIFIED

11.4.1 Action: Lobby State Government to implement Orange Route.

Status: Ongoing

IMPLEMENTATION STRATEGY

11.4.1 Miscellaneous

12.0 LANDUSE PLANNING

- ISSUE 12.1 - CLEARING GUIDELINES FOR SPECIFIC BLOCK SIZES**
- ISSUE 12.2 - STORMWATER CONTROL FOR WATERWAYS PROTECTION IN SUBDIVISIONS**
- ISSUE 12.3 - MAINTAIN RANGE OF LAND USES AND LOT SIZES**
- ISSUE 12.4 - CONTROL CLEARING WITHIN SUBDIVISIONS**
- ISSUE 12.5 - LANDFORM PRESERVATION**
- ISSUE 12.6 - BUILDING STYLES SYMPATHETIC TO ENVIRONMENT**
- ISSUE 12.7 - FINALISE AND IMPLEMENT TPS3**
- ISSUE 12.8 - DEMAND MORE SYMPATHETIC APPROACH TO DEVELOPMENT FROM DPUD**
- ISSUE 12.9 - COMMUNICATIONS FROM SHIRE TO COMMUNITY BEFORE PLANNING DECISIONS MADE**
- ISSUE 12.10 - EXTENSIVE CONSULTATION WITH COMMUNITY ON TOWN CENTRE DEVELOPMENT PROPOSALS**
- ISSUE 12.11 - FORMULATE POPULATION POLICY**
- ISSUE 12.12 - SCREENING OF INDUSTRIAL DEVELOPMENT PROPOSALS TO FIT SHIRE ENVIRONMENT**
- ISSUE 12.13 - INCREASE INTERACTION BETWEEN RURAL AND URBAN SECTORS IN PLANNING**
- ISSUE 12.14 - DEVELOPMENT OF DEGRADED LAND IN PREFERENCE TO NEW AREAS OR RESERVES**
- ISSUE 12.15 - GREEN BELTS BETWEEN GROWTH AREAS**
- ISSUE 12.16 - INCREASE PLANNING FLEXIBILITY WITHIN GUIDELINES**
- ISSUE 12.17 - PLANNING TO INCLUDE TIME SCALES**
- ISSUE 12.18 - MAINTAIN LIFESTYLES AND BUSINESS SYMPATHETIC TO ENVIRONMENT**
- ISSUE 12.19 - URBAN PLANNING TO FIT WITHIN AN ENVIRONMENTAL MANAGEMENT PLAN**
- ISSUE 12.20 - EIA OF DEVELOPMENTS**
- ISSUE 12.21 - PLANNING STRATEGIES FOR TOWN AESTHETICS**
- ISSUE 12.22 - LIMIT SUBDIVISION IN RURAL/SPECIAL RURAL AREAS**
- ISSUE 12.23 - INFILL OF EXISTING URBAN AREAS**
- ISSUE 12.24 - ESTABLISH PRINCIPLES FOR DEVELOPMENT**
- ISSUE 12.25 - CONTAIN POPULATION INCREASE WITHIN PLANNED TOWNSITES WITH BUFFER ZONES**
- ISSUE 12.26 - REVIEW PROVISIONS OF TPS3 RELATING TO RETENTION OF REMNANT NATIVE VEGETATION**
- ISSUE 12.27 - INTEGRATED CATCHMENT MANAGEMENT APPROACH TO PLANNING AND MANAGEMENT OF DEVELOPMENT**
- ISSUE 12.28 - MONITOR EFFECTIVENESS OF ENVIRONMENTAL PROTECTION PROVISIONS OF TPS3**
- ISSUE 12.29 - COMPLIANCE AUDITING OF DEVELOPMENTS IN TERMS OF ENVIRONMENTAL CONDITIONS**

ACTION TAKEN

All of these issues have been addressed through the development and revision of TPS3, which has been recently gazetted. This provides a framework and objectives for environmentally sound development within the Shire and was developed with considerable community input.

OPPORTUNITIES

Ensure that the provisions of TPS3 which relate to these issues are enforced.

Review the various provisions of TPS3 following experience with implementation of the various provisions and strategies.

ACTIONS IDENTIFIED

It is the view of the EAC that the issues in this section are adequately dealt with under TPS3. There were however some broad land use planning initiatives that were likely to assist in the environmental management of the Shire as detailed in the following actions.

ISSUE 12.30 - BROAD LANDUSE PLANNING

12.30.1 Action: Development of a drainage strategy to include stormwater management and nutrient stripping.

Status: Identified as a third priority list task for 1995.

12.30.2 Action: Prepare an integrated catchment management strategy including waterways.

Status: Identified as a second priority list task for 1995.

12.30.3 Action: Ensure the enforcement and compliance with TPS3 provisions relating to the environment.

Status: Review planned for 1995 as priority three task.

IMPLEMENTATION STRATEGY

12.30.1 Urban Drainage Strategy

12.30.2 Integrated Catchment Management Strategy

12.30.3 TPS3 Compliance Audit

13.0 COMMUNITY EDUCATION

ISSUE 13.1 - PROMOTING COMMUNITY EDUCATION

DESCRIPTION

Community education is capable of accruing environmental benefits in the following areas:

- prevention of pollution of waterways
- land degradation
- protection of flora and fauna
- water use
- alternatives to hazardous chemicals
- recycling, waste minimisation and composting
- provisions of TPS3
- pet ownership responsibilities
- progress of the EMS
- Shire run programs on local environment
- school contact

ACTION TAKEN

The promotion of community education on the matters listed as well as other matters has already been initiated through the production of pamphlets (TPS3) and the Environment Page in the Hills Gazette. The EAC has been instrumental in this.

OPPORTUNITIES

Continue to expand current activities, particularly through the EAC and future Environmental Officer.

CONSTRAINTS

Resources and staff time which can be allocated to these programs.

ACTIONS IDENTIFIED

- 13.1.1 Action: Shire to continue producing pamphlets relating to environmental matters.
Status: Numerous pamphlets produced to assist TPS3: additional pamphlets required.
- 13.1.2 Action: Shire to contribute funds to allow continuation of “Environmental Page” in Hills Gazette.
Status: Yet to be resolved.
- 13.1.3 Action: Conduct a special EAC meeting on Community Education.
Status: Completed

13.1.4 Action: Develop information strategy for residents covering wider environmental issues.

Status: Yet to be Undertaken

13.1.5. Action: Prepare strategy for bridle trails for Harness Drivers and Horse Riders.

Status: Yet to be Undertaken

13.1.6 Action: Ensure input Data from EMS is useable for Date Base.

Status: Completed

13.1.7 Action: Conduct yearly audit of performance of EMS.

Status: Being Undertaken

IMPLEMENTATION STRATEGY

13.1.1; 13.1.2; 13.1.3; 13.1.4; 13.1.5 Community Education strategy

13.1.7 EMS Date Review

ISSUE 13.2 - SHIRE CO-ORDINATION OF INTEREST GROUPS AND GOVERNMENT DEPARTMENT INTERACTION

DESCRIPTION

A range of environmental related activities are carried out by interest groups and government departments within the Shire.

The Shire is well positioned to co-ordinate some of these activities to prevent duplication of effort and to provide the maximum amount of assistance possible to community groups. The future employment, of an Environmental Officer by the Shire would assist greatly in this co-ordination.

ACTION TAKEN

Although this has not occurred formally, the formation and activities of the EAC has initiated the implementation of this strategy.

OPPORTUNITIES

Formalise this strategy into an action plan when Environmental Officer commences.

CONSTRAINTS

Staff time and resources required.

14.0 MISCELLANEOUS

ISSUE 14 - IDENTIFICATION OF SPECIFIC STRATEGIES

DESCRIPTION

Those actions identified that require additional investigation before allocation of specific implementation strategies.

ACTIONS IDENTIFIED

FIRE MANAGEMENT

- 1.3.1 Action: Incorporation of vegetation sensitive controlled burns by Shire and Volunteer Bushfire Brigade.
Status: Being undertaken, although lack of monitoring to support success.

PROTECTION OF FLORA AND FAUNA

- 4.5.1 Action: Develop flora and fauna inventories.
Status: Some relevant information regarding reserve flora and fauna has been collected.
Private land survey information may be forthcoming with development through LSIP.

PROTECTION OF WATERWAYS AND WATER RESOURCES

- 5.9.1 Action: Continue to support the use of alternative on-site effluent disposal systems.
Status: On-going through advice and conditions attached to LSIP.
- 5.9.2 Action: Re-use of treated wastewater from proposed sewerage treatment plant for recreational ovals.
Status: Dependant upon progress of sewerage treatment plant.
- 5.9.3 Action: Ensure efficient water usage by Shire.
Status: Shire currently investigating improved reticulation systems.

POLLUTION CONTROL

- 7.1.2 Action: Request the Department of Local Government to include domestic burning by-laws in revised Local Government Act.
Status: Unknown.
- 7.3.2 Action: Review and monitor waste management issues.
Status: On-going assessment by Waste Management and Recycling Committee.
- 7.4.1 Action: Shire Rangers and Environmental Health Officers to follow up complaints.
Status: Ongoing, but recognition of lack in deterrents (e.g. fines).

7.4.2 Action: Council to introduce by-law requiring on-site bins for building sites.
Status: Environmental Officer to follow up with Principal Building Surveyor.

7.5.1 Action: Shire Environmental Health Officer oversee system installation and respond to complaints.
Status: Ongoing.

WASTE MANAGEMENT

9.1.1 Action: Council develop a Waste Management and Recycling Review.
Status: Completed; currently responding to public submissions on report.

9.2.1 Action: Develop strategies as part of Waste Management and Recycling Review.
Status: Strategies included in report to be finalised shortly following consideration of public submissions.

SERVICE PROVISION

11.4.1 Action: Lobby State Government to implement Orange Route.
Status: Ongoing