

**Development of part of System Six C70 south of
the Maidens. Bunbury endowment land Part of Lot
626, and Parts of Lots 301 - 4**

**City of Bunbury
Homeswest**

**Report and recommendations
of the Environmental Protection Authority**

**Environmental Protection Authority
Perth, Western Australia
Bulletin 789
September 1995**

THE PURPOSE OF THIS REPORT

This report contains the Environmental Protection Authority's environmental assessment and recommendations to the Minister for the Environment on the environmental acceptability of the proposal.

Immediately following the release of the report there is a 14-day period when anyone may appeal to the Minister against the Environmental Protection Authority's report.

After the appeal period, and determination of any appeals, the Minister consults with the other relevant ministers and agencies and then issues his decision about whether the proposal may or may not proceed. The Minister also announces the legally binding Environmental Conditions which might apply to any approval.

APPEALS

If you disagree with any of the contents of the assessment report or recommendations you may appeal in writing to the Minister for the Environment outlining the environmental reasons for your concern and enclosing the appeal fee of \$10.

It is important that you clearly indicate the part of the report you disagree with and the reasons for your concern so that the grounds of your appeal can be properly considered by the Minister for the Environment.

ADDRESS

Hon Minister for the Environment
12th Floor, Dumas House
2 Havelock Street
WEST PERTH WA 6005

CLOSING DATE

Your appeal (with the \$10 fee) must reach the Minister's office no later than 5.00 pm on 22 September 1995.

Environmental Impact Assessment (EIA) Process Timelines in weeks

Date	Timeline commences from receipt of full details of proposal by proponent	Time (weeks)
30/5/94	Proponent Document Released for Public Comment	5
4/7/94	Public Comment Period Closed	
9/9/94	Issues Raised During Public Comment Period Summarised by EPA and Forwarded to the Proponent	10
14/11/94	Proponent response to the issues raised received	10
8/9/95	EPA reported to the Minister for the Environment	42

Contents

	Page
Summary and recommendations.....	i
1. Introduction and background.....	1
1.1 Purpose of this report.....	1
1.2 Background.....	1
1.3 Structure of the report	5
2. The proposal.....	5
2.1 Proponents' original options.....	5
2.2 Technical Advisory Group alternative scenarios	6
2.3 Waste Water Treatment Plant No 2 expansion.....	6
3. Environmental impact assessment method.....	6
3.1 Steps in the method of assessment.....	6
3.2 Public submissions.....	9
3.2.1 Synopsis of public submissions	10
4. Evaluation of key environmental issues.....	13
4.1 Impacts of proposed residential development upon the conservation and landscape values of the System Six C70 recommendation area.....	13
4.1.1 Objective	13
4.1.2 Evaluation framework.....	13
4.1.3 Public submissions	17
4.1.4 Response from the proponent	17
4.1.5 Evaluation.....	17
4.2 Availability of alternative sites outside of the System Six recommended area for residential development.....	20
4.2.1 Objective	20
4.2.2 Evaluation framework.....	20
4.2.3 Public submissions	20
4.2.4 Response from the proponent	20
4.2.5 Evaluation.....	20
4.3 Visual impacts of the proposed water storage facility	21
4.3.1 Objective	21
4.3.2 Evaluation framework.....	22
4.3.3 Public submissions	22
4.3.4 Response from the proponent.....	22
4.3.5 Evaluation.....	22
4.4 Protection of residents from odours emanating from the Water Authority of Western Australia Waste Water Treatment Plant No 2.	23
4.4.1 Objective	23
4.4.2 Evaluation framework.....	23
4.4.3 Public submissions	24
4.4.4 Response from the proponent.....	25
4.4.5 Evaluation.....	25
5. Conclusions.....	25
6. Recommended Environmental Conditions.....	29
7. References	32

Contents (cont'd)

Page

Figures

1.	Location of study area.	2
2.	System Six recommendation C70 South Bunbury Coastal Land.	3
3.	Current zoning of land within the study area.	4
4.	Proponents' original options.	7
5.	Development scenarios overlain on vegetation of the study area.	8
6.	Conservation areas in the local region managed by the Department of Conservation and Land Management.	16
7.	Indicative 'green belt' around the south of Bunbury.	18

Tables

1.	Identification of issues requiring Environmental Protection Authority evaluation.	14
2.	Buffer distances for wastewater treatment works.	24
3.	Summary of Environmental Protection Authority recommendations.	27

Appendices

1.	Environmental impact assessment flow chart.	
2.	Summary of public submissions and the proponent's response.	
3.	List of submitters.	
4.	Consolidated list of proponents commitments.	
5.	Correspondence between the Department of Environmental Protection and the proponents regarding Technical Advisory Group considerations.	

Summary and recommendations

This report and recommendations provides the Environmental Protection Authority's advice to the Minister for the Environment on the environmental acceptability of the proposed residential development of part of System Six recommendation area C70 south of 'The Maidens' including Part of Lot 626, and Parts of Lots 301 - 4, City of Bunbury, Western Australia.

The City of Bunbury and Homeswest are joint proponents for development of a portion of the residential zoned land within Part of Lot 626, and Parts of Lots 301 - 4. The proposal also includes retention of some areas for conservation, management of the designated conservation areas and construction of a water supply storage area. The proposal is located within an area identified for consideration of its conservation value by the Environmental Protection Authority in its System Six report of 1983. System Six recommendation C70, South Bunbury Coastal Land, recommended that '*Areas of Public Open Space, containing attractive and important features such as "The Maidens" and important stands of Tuart, be set aside at the time of subdivision of the coastal land south of Bunbury*'. Immediately south of this location is the Water Authority of Western Australia's Waste Water Treatment Plant No 2.

The Environmental Protection Authority identified the main environmental issues requiring detailed consideration as:

- impacts of proposed residential development upon the conservation and landscape values of the System Six C70 recommendation area;
- availability of alternative sites outside of the System Six recommended area for residential development;
- visual impacts of the proposed water storage facility; and
- protection of potential residents from odours emanating from the Water Authority of Western Australia Waste Water Treatment Plant No 2.

The area affected by the proposed residential component of the development described as the Eastern Urban Area (Homeswest land), contains significant Tuart Forests and Woodlands which are located on a high dune of Quindalup Sands. This area has significant conservation value for its landscape character, vegetation community and fauna habitat. The Western Urban Areas are within Quindalup Dune vegetation which appear to be well represented within conservation reserves in this locality. However, the development of this portion of the System Six C70 recommended area would place residential land within a surrounding of bushland, thus making the maintenance of the bushland values considerably more difficult.

A Government Officers Technical Advisory Group was set up to consider the potential for sites outside of the System Six recommended area which could be made available as alternative development locations.

The proposed water storage facility is a flat pool shape design which would require levelling of the highest peak within the southern portion of the South Bunbury Coastal Land. No alternative designs or locations have been considered by the proponents.

The Bunbury Waste Water Treatment Plant No 2 is recognised to have the potential for problems with odour emissions if sensitive land uses such as residential dwellings, other accommodation, schools, hospitals or similar are built within 1,000 metres of the facility's inner Plant boundary.

Conclusion

The Environmental Protection Authority has concluded that the proposal is environmentally undesirable because of the adverse impacts on a substantial area of natural bushland, including Tuart Forests and Woodlands which have high value for conservation, the difficulties of managing the bushland areas which would surround the residential development, and because of the need to maintain a buffer of approximately 1,000 metres to protect sensitive land uses,

such as residential development, from odours emanating from the Waste Water Treatment Plant. The Environmental Protection Authority also concludes that the recommendations in this assessment report should be implemented in concert with the proponents' commitments to environmental management.

Recom- mendation Number	Summary of EPA recommendation
1	Residential development as proposed for Part Lot 301 (Homeswest land) is environmentally unacceptable because of adverse impacts upon Tuart Forests and Woodlands and it would be inconsistent with the recommendations of the System Six report.
2	The proponents should liaise with the Department of Environmental Protection to involve the local community in assisting with the preparation and implementation of an Environmental Management Programme for the System Six C70 recommendation area.
3	Residential development outside of the System Six C70 recommended area would be preferable and the proponents should consult with relevant Government authorities as to the availability of sites outside of the System Six recommended area which could be made available as alternative development locations. Should no alternative locations be available, then the development within a portion of the northern area (Reserve 670) of the System Six C70 recommended area would be environmentally preferable than the southern area (Lot 626). Should the local community consider that it is less desirable to develop a portion of the northern area (Reserve 670) than the southern area (Lot 626), then development should occur only after an Environmental Management Programme has been prepared and implementation of fencing and paths been completed.
4	The design and location of the proposed water storage facility is environmentally unacceptable and the Water Authority of Western Australia should be consulted regarding appropriate alternatives.
5	Until such time as it can be shown that the buffer area required for the Waste Water Treatment Plant No 2 south of Bunbury can be reduced, the area within 1,000 metres of the inner plant boundary of the Waste Water Treatment Plant should be precluded from consideration for development of sensitive land uses including residential development.

1. Introduction and background

1.1 Purpose of this report

This report and recommendations provides the Environmental Protection Authority's advice to the Minister for the Environment on the environmental acceptability of the proposed residential development of part of System Six recommendation area C70 south of 'The Maidens' including Part of Lot 626, and Parts of Lots 301 - 4, in the locality known as West Withers, City of Bunbury, Western Australia (see Figure 1).

1.2 Background

In 1983 the Environmental Protection Authority's System Six report recommended that '*Areas of Public Open Space, containing attractive and important features such as "The Maidens" and important stands of Tuart, be set aside at the time of subdivision of the coastal land south of Bunbury*' (Figure 2) (Environmental Protection Authority, 1983).

A portion of this land is currently reserved for Bunbury Endowment (Reserve 670) and vested in the City of Bunbury. Reserve 670 contains the two prominent sand dune peaks which are known as 'The Maidens'. Under the City of Bunbury Town Planning Scheme No 6, Reserve 670 is zoned for Parks, Recreation and Drainage.

Land to the south of Reserve 670 which is also subject of the System Six recommendation C70 is owned in freehold by the City of Bunbury (Lot 626) and Homeswest (Part Lots 301 - 4) (Figure 1). Portions of the land south of Reserve 670 are zoned for residential development under the City of Bunbury Town Planning Scheme (Figure 3).

Further south of the subject land, the Water Authority of Western Australia operate a Waste Water Treatment Plant, which is intended to service the requirements of the entire City of Bunbury area. Following expansion of the facilities, this Waste Water Treatment Plant is also intended to service the urban areas of Eaton and Australind which are north of the City of Bunbury.

In accordance with the provisions of the *Environmental Protection Act* 1986-1994, the City of Bunbury referred a proposal, to develop a portion of their endowment land (Part Lot 626), to the Environmental Protection Authority in August 1992. Because the area to be developed for residential purposes is within a location recommended for consideration of its conservation values as identified in the System Six report, the Environmental Protection Authority required the City of Bunbury to undertake a Consultative Environmental Review.

In September 1992, Homeswest advised that they wished to include their land (Part Lots 301 - 4) which is adjacent to the Bunbury endowment land, within the Consultative Environmental Review and sought to become joint proponents. In late September 1992, the Minister for the Environment confirmed the City of Bunbury and Homeswest as joint proponents for the proposed development of part of System Six C70 south of the Maidens including Part of Lot 626, and Parts of Lots 301 - 4.

Early in investigations for the Environmental Protection Authority by the Department of Environmental Protection, it became obvious that alternative development prospects should be considered to facilitate the best use of the land (eg. land swaps). The Ministry for Planning established a Technical Advisory Group to facilitate this process. The purpose of the Technical Advisory Group is to identify potential land which could provide alternative development sites in order to protect all of the land identified in the System Six recommended area C70. The Department of Environmental Protection is represented on this Technical Advisory Group.

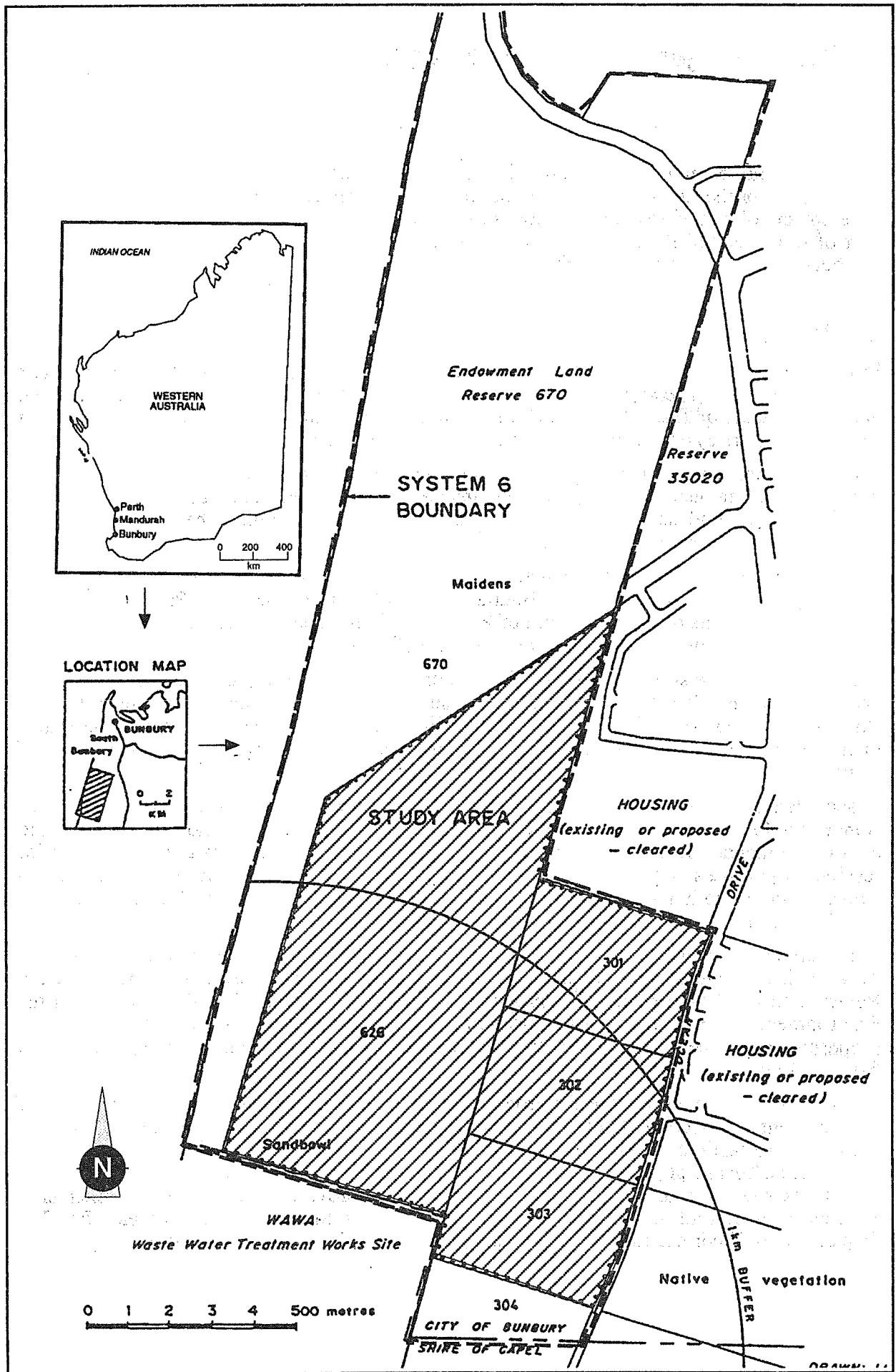


Figure 1. Location of study area (Source: Hart, Simpson and Associates, 1994).

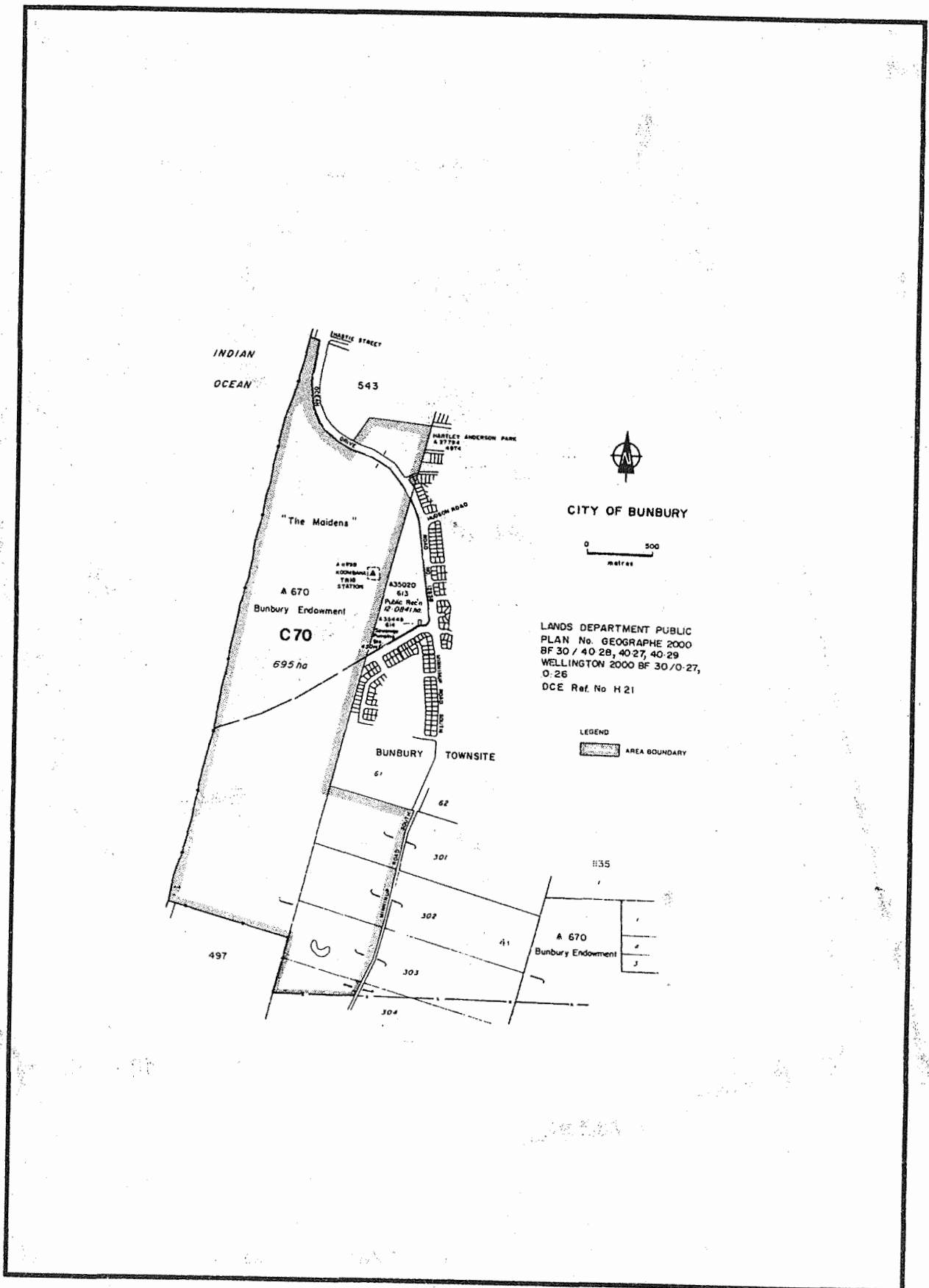


Figure 2. System Six recommendation C70 South Bunbury Coastal Land (source: Environmental Protection Authority, 1983).

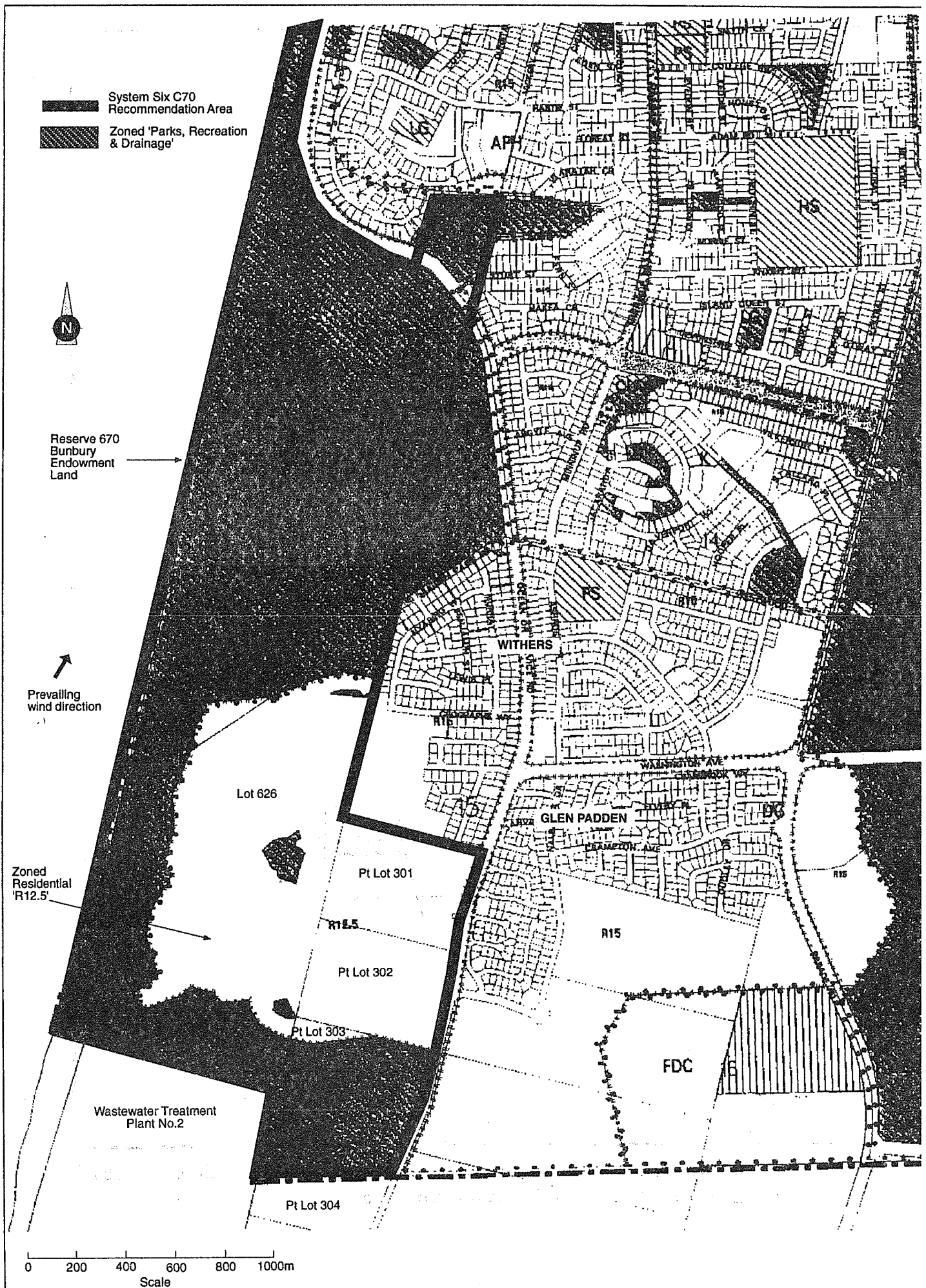


Figure 3. Current zoning of land within the study area (Source: City of Bunbury Town Planning Scheme No. 6)

1.3 Structure of the report

This document has been divided into 7 Sections.

Section 1 describes the historical background to the proposal and its assessment, and the structure of this report. Section 2 briefly describes the proposal (more detail is provided in the proponents' Consultative Environmental Review). Section 3 explains the method of assessment and provides an analysis of public submissions.

Section 4 sets out the evaluation of the key environmental issues associated with the proposal. In each sub section, the objectives of the assessment is defined, the likely effect of the proposal, the advice to Environmental Protection Authority from submissions, and the proponents' response to submissions. Then the adequacy of the response by the proponent is considered in terms of project modifications and environmental management commitments in achieving an acceptable outcome. The Environmental Protection Authority analysis and recommendations with respect to the identified issues are contained in this section. Where inadequacies are identified, recommendations are made to achieve the environmental assessment objective.

Section 5 summarises the conclusions and recommendations. Section 6 describes the recommended environmental conditions. References cited in this report are provided in Section 7.

2. The proposal

2.1 Proponents' original options

The proposal includes development of a portion of the residential zoned land, retention of some areas for conservation, management of the designated conservation areas and construction of a water supply storage area. For the residential component of the proposal (*i.e.* excluding the water storage facility), the proponents considered 4 alternative development options (see Figure 4):

- Option 1: Develop the majority of the land currently zoned urban (part of Lots 626, 301, 302 and 303) - approximately 70 ha residential, 154 ha conservation.
- Option 2: Develop part of the land outside of a 500 metre buffer to the Waste Water Treatment Plant (part of Lots 626, 301 and 302) - 40 ha residential, 184 ha conservation.
- Option 3: Develop part of the land outside of a 1,000 metre buffer to the Waste Water Treatment Plant (part of Lots 626, 301 and 302) - 21 ha residential, 203 ha conservation.
- Option 4: Conserve the entire C70 area - 224 ha conservation.

The proponents considered that Option 2 was the most appropriate, however, the proponents understood that this Option could not be implemented at this stage because of the Water Authority of Western Australia's requirement for a 1,000 metre buffer around the Waste Water Treatment Plant. Option 3 was the proponents' second choice as it could be implemented immediately without compromising Option 2. Options 2 and 3 are the basis of the proposed development, with Option 2 to proceed only if a reduced buffer around the Waste Water Treatment Plant can be agreed upon (Hart, Simpson and Associates, 1994).

In concert with the proposed development, the City of Bunbury has made commitments to prepare and implement management plans for natural bushland within the south west corner of the City of Bunbury.

The Bunbury Water Board proposes to build a water supply facility on a high point in the southern area of Lot 626 (see Figure 4). The site is 4.5 hectares with only the central 40 % being cleared of vegetation and the rest remaining as buffer. The outside walls are proposed to

be rehabilitated so that the final cleared area will be 30 - 35 % of the 4.5 hectares (Hart, Simpson and Associates, 1994). An access track will also require the clearing of an additional 1.5 hectares (Hart, Simpson and Associates, 1994).

The Consultative Environmental Review document also considered the need for ongoing management of the mobile dune area known as the 'Sandbowl' and other areas which would be retained as indigenous vegetation (see Figure 5). Vegetation of the study area is shown on Figure 5.

2.2 Technical Advisory Group alternative scenarios

Several alternative scenarios are currently being investigated by the Technical Advisory Group, whereby development potential could be moved from the subject land to alternative areas. Preliminary valuations for the subject and alternative land parcels involved were obtained from the Valuer General's Office to enable equal land exchange options to be assessed.

The Technical Advisory Group's report is not yet finalised.

2.3 Waste Water Treatment Plant No 2 expansion

The Water Authority of Western Australia are seeking to purchase a portion of the City of Bunbury owned C70 area to hold as a 500 metre buffer around the Waste Water Treatment Plant to provide a buffer for future residential area(s) should they be approved.

The Water Authority of Western Australia have been granted a Works Approval to expand the Waste Water Treatment Plant (April 1995) and this matter has been addressed outside this CER. The Works Approval application included an extension of land based disposal of the effluent liquor comprising of additional treatment ponds. One pond intrudes 50 metres into the System Six recommended area C70 and is proposed to be contained in the mobile dune system known as the Sandbowl. Approval was granted subject to conditions, including the preparation of an Environmental Management Programme that will include a dune stabilisation and rehabilitation programme for the Sandbowl area.

3. Environmental impact assessment method

3.1 Steps in the method of assessment

The purpose of the environmental impact assessment process is to determine whether a proposal is environmentally acceptable or under what conditions it could be environmentally acceptable.

A set of administrative procedures has been defined (refer to flow chart in Appendix 1) in order to implement this method of assessment.

The first step in the method is to identify the environmental issues to be considered. A list of topics (or possible issues) is identified by the Environmental Protection Authority through the preparation of guidelines which are referred to relevant agencies for comment prior to being finalised.

In the next main step these topics are considered by the proponent in the Consultative Environmental Review both in terms of identifying potential impacts as well as making project modifications or devising environmental management strategies.

The Consultative Environmental Review is checked to ensure that each topic has been discussed in sufficient detail by the proponent prior to release for government agency and public comment. The submissions received are summarised by the Department of Environmental Protection on behalf of the Environmental Protection Authority and this process can add

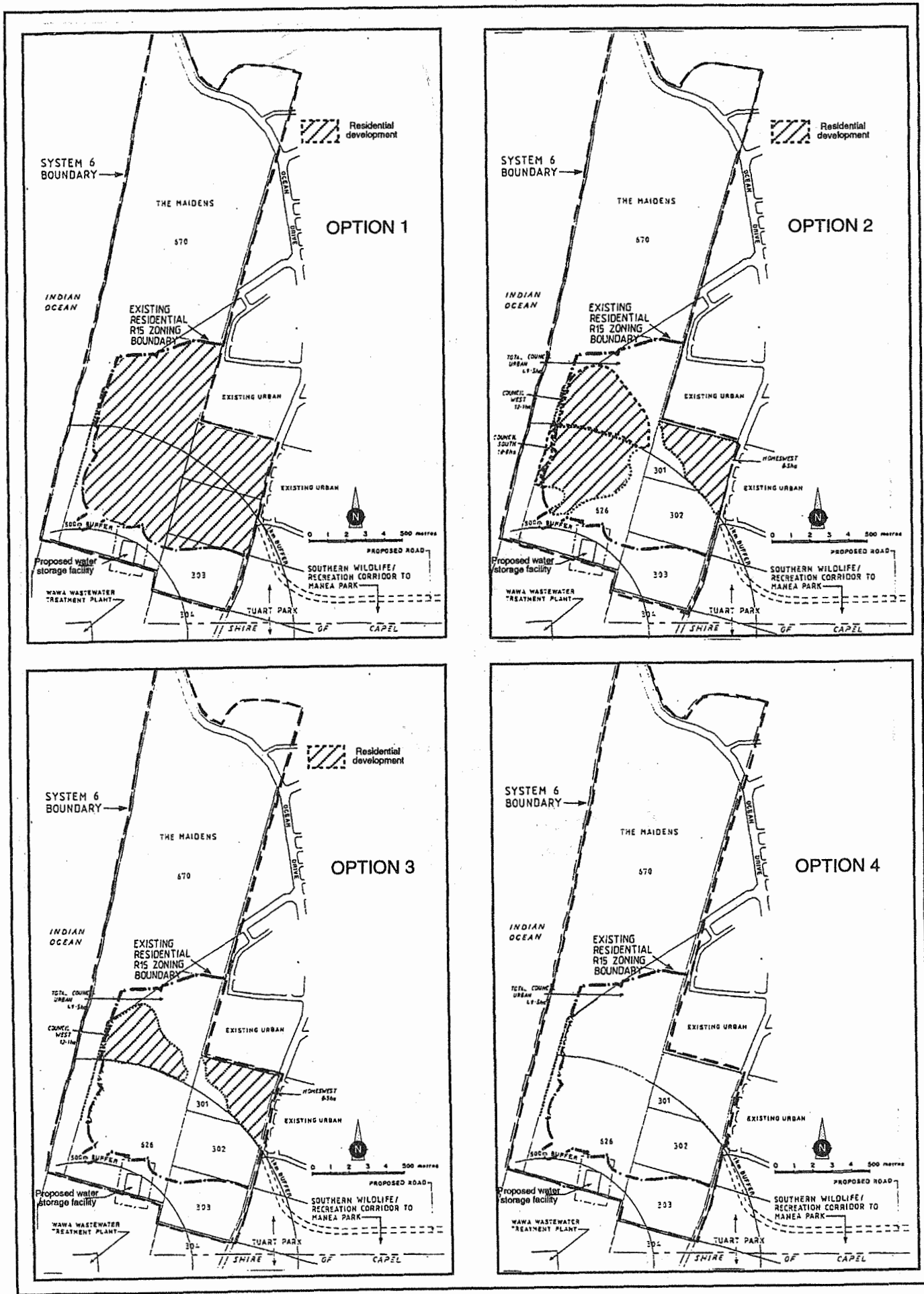


Figure 4. Proponents' original options (Source: Hart, Simpson and Associates, 1994).

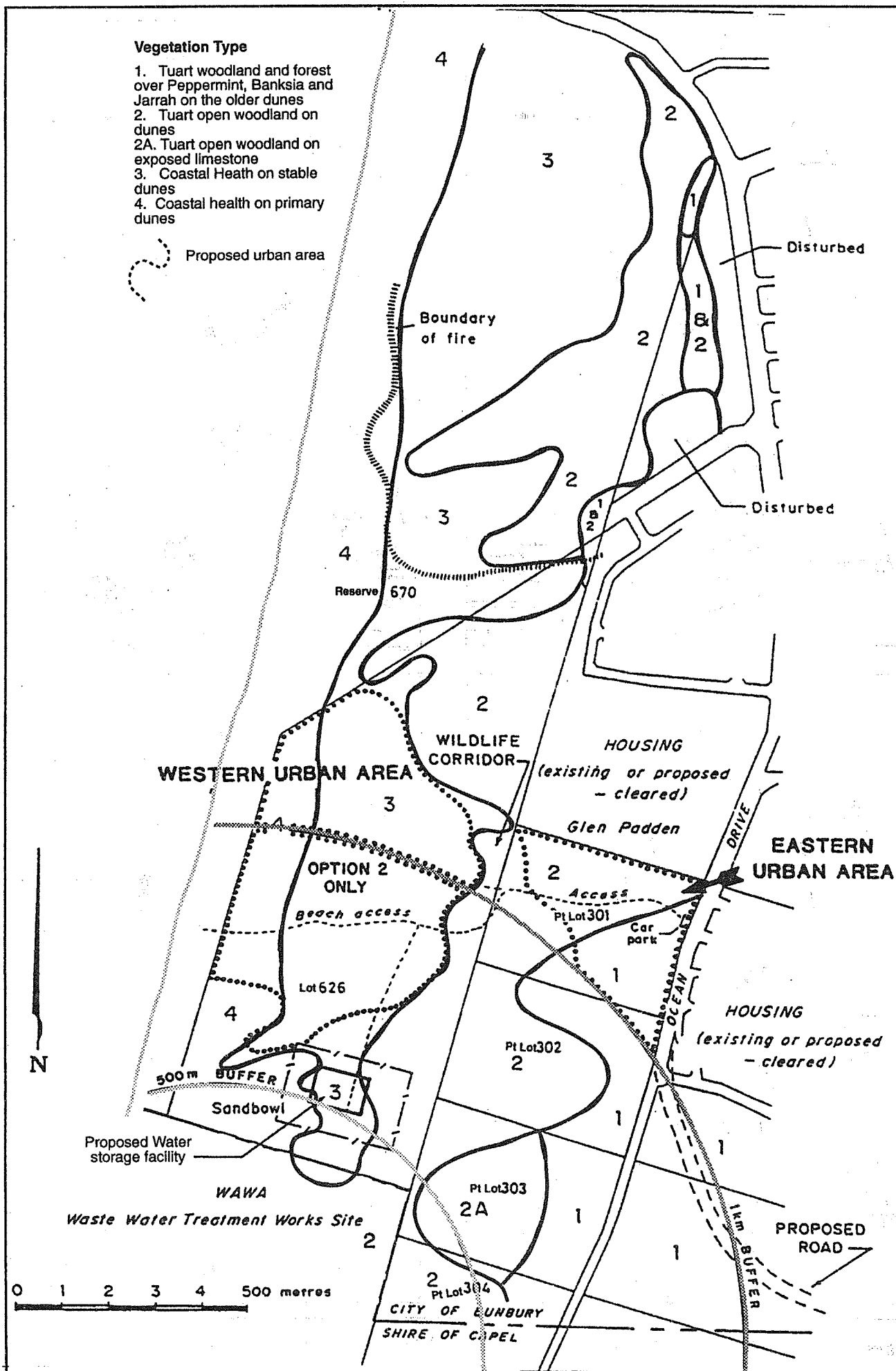


Figure 5. Development scenarios overlain on vegetation of the study area (Source: Hart, Simpson and Associates, 1994).

environmental issues which need to be evaluated in terms of the acceptability of potential environmental impact.

Proponents are invited to respond to the issues raised in submissions. Appendix 2 contains a summary of the issues raised in submissions and the proponents' response to those issues. A list of submitters appears as Appendix 3. Forty three (43) individual written submissions were received, of which five (5) were from community groups and four (4) were from State Government agencies. A further five (5) form submissions of two (2) types were received and a petition of 175 signatures.

This information, namely the Guidelines, the proponents' Consultative Environmental Review, the submissions and the proponents' response, is then subjected to analysis for environmental acceptability. For each environmental issue, an objective is defined and where appropriate an evaluation framework identified.

The expected impact of the proposal, with due consideration to the proponents' commitments to environmental management, is then evaluated against the assessment objective. The Environmental Protection Authority then determines the acceptability of the impact. Where the proposal, as defined by the proponent, has unacceptable environmental impacts, the Environmental Protection Authority can either advise the Minister for the Environment against the proposal proceeding or make recommendations to ensure the environmental acceptability of the proposal.

Limitation

This evaluation has been undertaken using information currently available. The information has been provided by the proponent through preparation of the Consultative Environmental Review document (in response to guidelines issued by the Environmental Protection Authority), by Department of Environmental Protection officers utilising their own expertise and reference material, by utilising expertise and information from other State Government agencies, information provided by members of the public, and by contributions from Environmental Protection Authority members.

The Environmental Protection Authority recognises that further studies and research may affect the conclusions. Accordingly, the Environmental Protection Authority considers that if the proposal has not been substantially commenced within five years of the date of this report, then such approval should lapse. After that time, further consideration of the proposal should occur only following a new referral to the Environmental Protection Authority.

3.2 Public submissions

Comments were sought on the proposal from the public, community groups, as well as local and State government agencies. The Consultative Environmental Review document was advertised for public comment for 5 weeks. During the public submission period of 30 May to 4 July 1994, forty three (43) individual written submissions, two (2) types of form submission and a petition of 175 signatures were received. A summary of these submissions was forwarded to the City of Bunbury and Homeswest for response.

Submissions received by the Environmental Protection Authority were within the following categories:

- 34 from individual members of the public;
- 5 from community groups and organisations;
- 4 from State Government agencies;
- 5 form submissions of two types; and
- 1 petition of 175 signatures.

The principal topics raised in public submissions included:

Biophysical impacts

- impacts of proposed residential development upon the conservation and landscape values of the System Six C70 recommendation area;
- impacts upon connections of open space areas around the southern boundary of Bunbury from the coast in the west to Manea Park in the east;
- visual impacts of the proposed water storage facility;
- management of the proposed open space areas;
- alternative sites for residential development;

Pollution

- protection of potential residents from odours emanating from the Water Authority of Western Australia Waste Water Treatment Plant No 2;

Social surrounds

- recreational use of the System Six C70 recommendation area;

Other topics

- requirements for set backs from the coast; and
- economic considerations.

The Environmental Protection Authority has considered the submissions received and the proponents' response as part of the assessment of the proposal.

3.2.1 Synopsis of public submissions

Submissions received by the Environmental Protection Authority were primarily concerned with the impact which the proposed residential development and water storage facility would have on the existing conservation, landscape and recreation values of the System Six C70 recommendation area. A further key topic was concern regarding the proximity of the Waste Water Treatment Plant to the proposed residential development.

Biophysical impacts

Impacts upon the values of the System Six C70 recommendation area

A range of issues were raised in public submissions. Submitters considered that the Consultative Environmental Review understated the conservation values of the study area and provided insufficient information to support the conclusion that there would not be significant impacts upon those conservation values. The area of Tuart vegetation in the shelter of the high dune and into the valley proposed for development by Homeswest (see Figure 5) was identified by submissions as an especially attractive landscape.

The impact of the proposed developments upon the conservation values of the area are considered by the Environmental Protection Authority in Section 4.1 including a discussion of the expansion to the Waste Water Treatment Plant.

Impacts on connections of open space areas around the southern boundary of Bunbury from the coast in the west to the Preston River in the east

The public submissions indicated a preference for maintaining a belt of natural vegetation around the southern areas of the City of Bunbury from the coast across to the Preston River. Regional planning for the area has considered the potential for linking these bushland areas (Department of Planning and Urban Development, 1993). In addition, about 40 hectares of reserved land south of the System Six C70 recommendation area (within the Shire of Capel) are expected to be incorporated into a Tuart Park (Department of Planning and Urban Development, 1993; p189).

The Environmental Protection Authority's focus for conservation and open space for the Bunbury area are the recommendations contained in the System Six report. The proposed open space 'green belt' has been endorsed by the Environmental Protection Authority in its comments on the Bunbury-Wellington Region Plan, because it is consistent with the concept of

connecting areas of open space of regional and local importance, as well as providing a cross section of the vegetation and landforms from the coast inland to the Preston River (Environmental Protection Authority, 1993).

The 'green belt' is not strictly a component of the current proposal being assessed by the Environmental Protection Authority, as it requires agreements between the City of Bunbury and the Shire of Capel and its implementation is dependent upon future planning decisions (Hart, Simpson and Associates, 1994). Nonetheless, the impact of the proposed developments upon future opportunities to achieve a functional 'green belt' are considered within the Environmental Protection Authority's evaluation of the impacts of the proposed residential development upon the conservation and landscape values of System Six C70 recommendation area in Section 4.1.

Visual impacts of the proposed water storage facility

Many submitters criticised the proposed location of the Water Storage Reservoir describing it as inappropriate because it would require destruction of the highest dune peaks in an area of proposed open space.

The System Six report recommendation for this area raised the issue of protecting attractive features. Therefore, the impact of the proposed water storage reservoir on such features of the System Six C70 recommended area are considered by the Environmental Protection Authority in Section 4.3.

Management of the proposed open space areas

A number of submissions from local residents expressed a willingness to participate in the ongoing management of the System Six C70 recommended area. The Department of Conservation and Land Management suggested that limestone pedestrian paths, fencing and signage of the area should precede the development of residential blocks if either development Option 2 or 3 of the proposal are chosen.

The environmental management of the study area is considered within the Environmental Protection Authority's evaluation of the impacts of the proposed residential development upon the conservation and landscape values of System Six C70 recommended area in Section 4.1.

Alternative sites for residential development

A number of submissions indicated that other sites should be considered to meet the residential requirements of the City of Bunbury. Submitters generically described 'other areas of degraded bushland within the City of Bunbury' which could be used as alternative development sites.

One submission commented that degraded rural farmland within the City of Bunbury or in neighbouring Shires should be considered for residential development, rather than areas of quality bushland. The area along the Bussell Highway from 'Bunbury Village', and the area opposite the existing urban development at Mindalong Heights within Reserve 670 were also considered by public submissions to be preferable sites rather than the southern portion of the System Six C70 recommended area.

Potential land is currently being identified by the Technical Advisory Group to provide alternative development sites in order to protect all of the land identified in the System Six recommended area C70.

The availability of alternative sites outside of the System Six recommended area for residential development is considered by the Environmental Protection Authority in Section 4.2.

Pollution

Protection of residents from odours emanating from the Water Authority of Western Australia Waste Water Treatment Plant No 2

A number of nearby residents commented that, in summer, residents of the locality of Glen Padden (see Figure 3) can already detect odours from the Waste Water Treatment Plant. Submitters also questioned the quality of life for people who may reside within 500 metres of the Waste Water Treatment Plant should Option 3 be developed. Several submissions expressed the opinion that removing vegetation to within 500 metres of the Treatment Plant would lead to odours being carried further into existing residential areas.

The Environmental Protection Authority has evaluated the need for a buffer to separate the potentially conflicting land uses, including the new effluent disposal pond for the Waste Water Treatment Plant, within Section 4.4 of this report.

Social surrounds

Recreational use of the System Six recommended C70 area

Submitters commented that the Consultative Environmental Review document understates the existing recreational use of the bushland area. Members of the public commented that they regularly use the area for bird watching, wildlife nature walks, seclusion, scenic beauty and the landscape amenity of the varied terrain. Submissions considered that these uses would be lost if the area was even partially developed for residential land uses.

The Sandbowl area (see Figure 5) was seen to provide a further element of recreational use. Submissions commented that this area should be retained as a recreational area for four wheel drive use, provided that clear and distinct roads are outlined to access the area and protect existing vegetation.

From the Environmental Protection Authority's perspective, recreational use of the System Six C70 recommended area is a management issue and is considered within that context in Section 4.1 of this report.

Other topics

Requirements for set backs from the coast

The Department of Planning and Urban Development (now the Ministry for Planning) commented that the Bunbury Coastal Plan indicates that setbacks from mean high-water mark of 150 to approximately 200 metres are desired in the locality affected by this development proposal. As indicated by the Department of Planning and Urban Development submission, this issue will require resolution during detailed planning for rezoning or subdivision, should development of the area be pursued.

The Environmental Protection Authority recognises the role of the Ministry for Planning as the primary agency responsible for the delineation of coastal setbacks for developments. The Ministry for Planning have coastal planning expertise and have been partners with the City of Bunbury in the preparation of the Bunbury Coastal Plan (Department of Planning and Urban Development and City of Bunbury, 1993). The Environmental Protection Authority may become involved in development proposing alterations to the coastal form. However, coastal setback requirements are best managed through the planning process and are therefore not further explored in this report.

Economic considerations

The submissions focused on the following points:

- Homes in the locality were purchased on the understanding that the area west of Ocean Drive (*i.e.* the System Six C70 recommended area) would remain as bushland;
- Long term growth of the Bunbury region will depend upon quality of life and bushland areas such as this would contribute positively to that quality of life; and
- The Western Urban area is quite small (about 100 residences), isolated and the development costs compared with the financial benefits are small. It would have an impact out of proportion to its size.

The proponents responded that the land subject of the Consultative Environmental Review is zoned 'Residential'. In response to issues of quality of life, the proponents commented that there is a need to offer a balance between housing and conservation objectives. The cost benefit issue raised in the submissions was considered to be value based and a contrary case could easily be put.

Issues such as economic values of residential premises and the attractiveness of the City of Bunbury as a residential and tourism focus relative to other areas, is more appropriately dealt with by the local authority through the planning processes. These issues are therefore not explored any further in this report.

4. Evaluation of key environmental issues

The Environmental Protection Authority has considered the issues raised during the environmental impact assessment process including matters identified in public submissions. Table 1 summarises the topics raised, the characteristics of the proposal and the comments received in order to identify issues warranting evaluation. The Environmental Protection Authority has evaluated the key environmental issues arising from this proposal, based on existing information and advice from other Government agencies, viz:

- impacts of proposed residential development upon the conservation and landscape values of the System Six C70 recommendation area;
- availability of alternative sites outside of the System Six recommended area for residential development ;
- visual impacts of the proposed water storage facility; and
- protection of potential residents from odours emanating from the Water Authority of Western Australia Waste Water Treatment Plant No 2.

Other topics raised during the environmental impact assessment process can either be appropriately managed by the proponent in accordance with their environmental management commitments (Appendix 4), or are issues which should be dealt with by the proponent in concert with other agencies.

4.1 Impacts of proposed residential development upon the conservation and landscape values of the System Six C70 recommendation area

4.1.1 Objective

The Environmental Protection Authority's objective is to ensure implementation of the recommendations of the System Six report to ensure the protection of significant vegetation communities, fauna and their habitats and the protection of attractive landscape features.

4.1.2 Evaluation framework

Existing policy framework

System Six recommendation C70 'South Bunbury Coastal Land'.

In 1983 the Environmental Protection Authority's System Six report recommended that '*Areas of Public Open Space, containing attractive and important features such as "The Maidens" and important stands of Tuart, be set aside at the time of subdivision of the coastal land south of Bunbury*' (see Figure 2) (Environmental Protection Authority, 1983).

The recommendations contained in the System Six report represent the Environmental Protection Authority's main focus for conserving a comprehensive set of reserves representing the major communities of natural wildlife and flora types in the hinterland area surrounding Perth, which represents the most intensively used part of the State (Environmental Protection Authority, 1983a; Environmental Protection Authority, 1983b). State Cabinet accepted in principle the general recommendations contained in Part I of the System Six Report and approved of the progressive implementation, as far as possible, of the detailed area recommendations contained in Part II.

Technical information

Four vegetation units were mapped in the Consultative Environmental Review document:

1. Tuart woodland and forest over Peppermint, Banksia and Jarrah on the older dunes;

TOPICS	PROPOSAL CHARACTERISTICS	GOVERNMENT AGENCY'S COMMENTS	PUBLIC COMMENTS	IDENTIFICATION OF ISSUES
Biophysical impacts				
Impacts of residential development on conservation and landscape values.	Clearance of Quindalup Dune vegetation and Tuart Woodlands and Forests in good condition. Modification of landscape.	Acknowledgment of the 'open space' and fauna habitat values of the Tuart Forest and Woodlands.	Residential development not supported at this location.	Effect on conservation and landscape values detailed in the System Six report requires EPA evaluation.
Impacts upon connections of open space areas.	Protection of the 'green belt' around Bunbury identified in the Bunbury-Wellington Region Plan.	Support for the link between the coast and Manea Park.	Public desire to maintain the 'green belt'	'Green belt' would need to be implemented through planning processes and is not part of this proposal. This issue is addressed in relation to impacts on conservation values and availability of alternative sites.
Visual impacts of the proposed water storage facility.	Levelling of 63 metre high dune and clearing of heath vegetation.		Consider the water storage facility to be the worst aspect of the proposal.	Effect on landscape values requires EPA evaluation.
Management of the proposed open space areas.	Proposal for environmental management of areas retained for conservation and recreation.	Management needs to be in place prior to the sale of lots.	Public offers of assistance with management planning and implementation.	Requires EPA evaluation within the context of the ongoing maintenance of the conservation values of the area.
Availability of alternative sites.	If an alternative site was selected, the existing C70 area could be conserved without loss of significant vegetation.	TAG report will contain suggested alternative development sites.	Alternative areas are preferred by the public. TAG report on alternative sites not yet finalised.	EPA could endorse land swap provided that development of the alternative area(s) were environmentally acceptable.
Pollution issues				
Odour buffer to the Bunbury Waste Water Treatment Plant No 2 (WWTP).	First phase residential dwellings outside 1,000 metres from WWTP. Later phase to be outside of 500 metres of the WWTP.	A 1,000 metre buffer from the inner plant boundary is required.	Residents in existing urban areas can detect odours in summer. A 500 metre buffer is too small.	Buffer to protect residences from odours requires EPA evaluation.
Social surroundings				
Recreational use of the System Six C70 recommendation area.	Loss of recreational opportunities. Management of Four Wheel Drive recreation.		Concern that recreational use understated in CER. Development will curtail recreational use.	Proponent to manage in context of overall management for the area.
Requirements for set backs from the coast.	Set backs proposed to be 130 metres.	Setbacks to be defined at detailed zoning and subdivision stages.		Appropriately managed by Ministry for Planning processes.
Economic considerations.	Development affects values of local houses and tourism potential of Bunbury.		Residents claim to have been misled about the area being retained as conservation.	Appropriately managed by Ministry for Planning and local authority processes.

Table 1: Identification of issues requiring Environmental Protection Authority evaluation.

2. Tuart open woodland on dunes;
- 2A. Tuart open woodland on exposed limestone;
3. Coastal heath on stable dunes; and
4. Coastal heath on primary dunes.

Figure 5 displays this vegetation community mapping.

Conservation of Tuart vegetation communities (vegetation units 1, 2 and 2A)

The nearest land which is reserved by the State Government for conservation is the area known as 'Minninup Block' to the south which is managed by the Department of Conservation and Land Management (see Figure 6). Minninup Block has considerable Tuart over Banksia understorey and is essentially intact native vegetation. However, the areas of Tuart over Peppermint understorey have little natural understorey and tend to be dominated by weeds (Hart, Simpson and Associates, 1994). The Ludlow Tuart forest, which is also Department of Conservation and Land Management managed conservation land, has lost almost the entire understorey due in part to past land use practices (Hart, Simpson and Associates, 1994).

Other areas of Tuart forest include the Leschenault Peninsula to the north of Bunbury (see Figure 6) (a Conservation Park vested in the National Parks and Nature Conservation Authority and managed by the Department of Conservation and Land Management). This area has a very limited understorey and must be regarded as partly degraded (Hart, Simpson and Associates, 1994), whereas the considerable areas of Tuart vegetation in the Yalgorup National Park (see Figure 6) are considered to be in good condition (Hart, Simpson and Associates, 1994).

"The vegetation, habitats and communities represented by the Tuart woodlands and forests in the present study area (System Six C70) must all be given a high conservation value because of their good condition and because of the general scarcity of this unit in good condition, particularly in conservation reserves. It must be emphasised that the Tuart itself is widespread and is well represented in Reserves, but that Tuart - dominated vegetation in good condition is not" (Hart, Simpson and Associates, 1994; p.28).

Quindalup Dune Heaths (vegetation units 3 and 4)

The Consultative Environmental Review document states that there is adequate representation of the Dune Heath vegetation units (Hart, Simpson and Associates, 1994). The conservation status of the Quindalup Dunes vegetation has been discussed by Semenuik, Cresswell and Wurm (1989), Portlock *et. al.* (1993) and Trudgen (1994). Within the immediate region, and from a geomorphological perspective, the conservation priorities for Quindalup Dunes are for the 'shoreline ribbon of the Geographe Bay sector' and the 'barrier dune of the Leschenault - Preston Sector' (Semenuik, *et. al.*, 1989) (which are now protected within the Leschenault Peninsula Conservation Park) (see Figure 6).

Trudgen (1994) reviews the work of Portlock *et. al.* (1993) and indicates that 64 % of the reservation of the Quindalup Complex occurs within the Yalgorup National Park (Figure 6). It is known from other studies that the vegetation and flora of the Quindalup Complex, varies significantly in response to changes in climatic variables (Griffen, 1993). The recent work of Gibson *et. al.* (1994) has not highlighted this community as requiring additional reservation. The Dune Heaths in the study area are considered by the consultants to be well reserved, although the discussion within the Consultative Environmental Review document is quite brief.

Comments from key Government agencies

The Department of Conservation and Land Management consider that the environmental values are not exclusive to this area, nor is the area required for representative reservation, although preservation of old growth Tuart and Peppermint habitat for species such as ringtail possums is also recognised as worthwhile. The Department of Conservation and Land Management also state that the values of the area can 'be of great local significance to residents and to the character of Bunbury in general'.

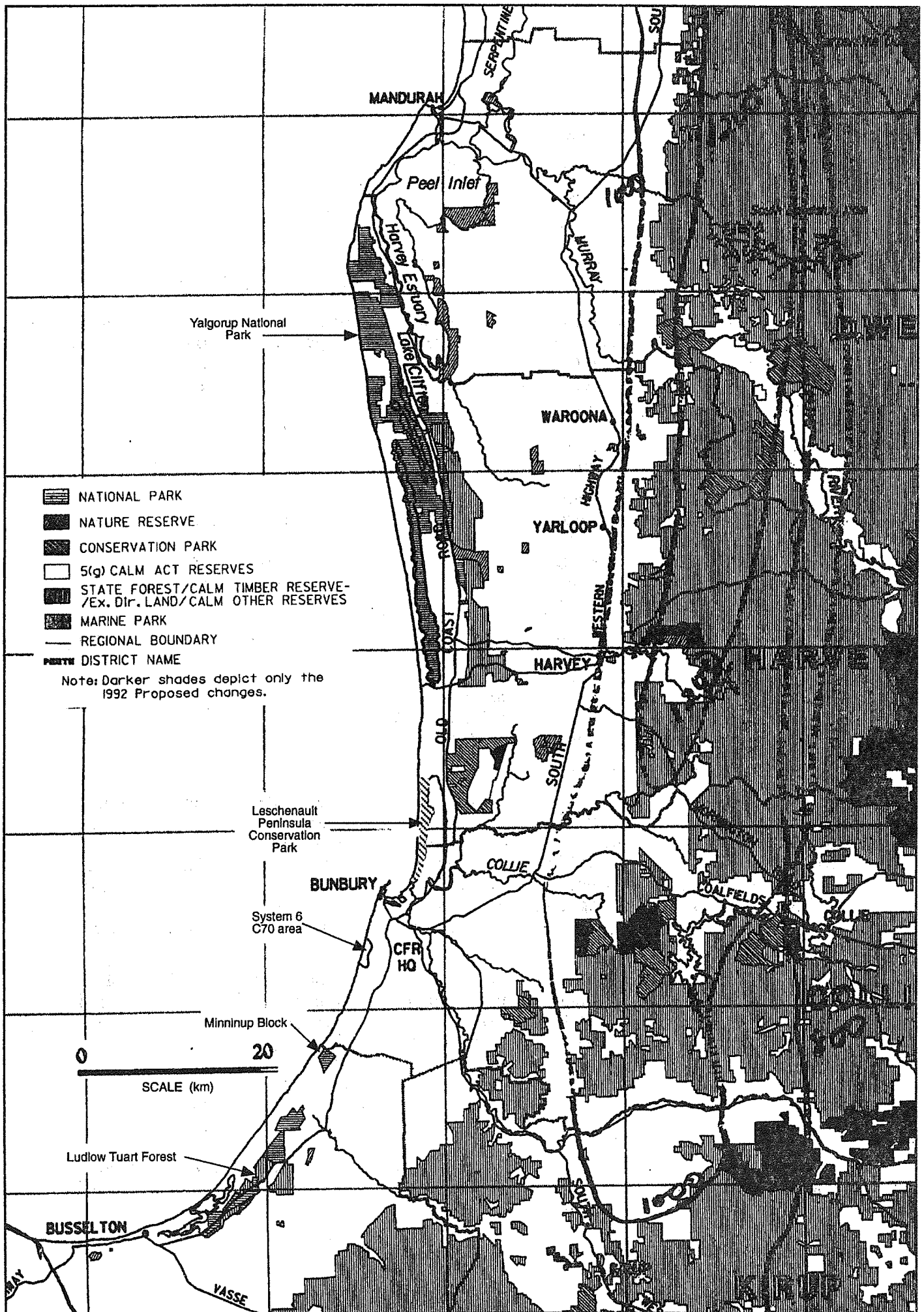


Figure 6. Conservation areas in the local region managed by the Department of Conservation and Land Management (Source: Department of Conservation and Land Management, 1992).

The Department of Conservation and Land Management are very supportive of the corridor connections between 'The Maidens', the Tuart Park and Manea Park proposed in the Bunbury-Wellington Region Plan (see indicative 'green belt' marked on Figure 7). The Department of Conservation and Land Management suggested that appropriate environmental management measures such as limestone pedestrian paths, fencing and signage of the area should precede the sale of residential blocks to ensure that conservation areas are protected prior to people pressures being put upon them if either Option 2 or 3 of the proposal are chosen.

The Water Authority of Western Australia indicated that the area which includes the unstable and mobile dune known as the 'Sandbowl' and land to the north, should be made available to the Water Authority of Western Australia to consolidate their ownership of the Sandbowl (the majority of which is already owned by the Water Authority of Western Australia) and provide a buffer for future residential area(s) should they be approved.

As mentioned in Section 2.3, the Water Authority of Western Australia are extending Waste Water Treatment Plant No 2 and intend to use the degraded area known as the Sandbowl to dispose of treated effluent. The Water Authority of Western Australia intend to prepare an Environmental Management Programme that will include a dune stabilisation and rehabilitation programme for the Sandbowl area.

4.1.3 Public submissions

A number of submissions from local residents expressed a willingness to participate in the ongoing management of the System Six C70 recommended area.

The Sandbowl area (see Figure 5) was seen to provide a further element of recreational use. Submissions commented that this area should be retained as a recreational area for four wheel drive use, provided that clear and distinct roads are outlined to access the area and protect existing vegetation.

4.1.4 Response from the proponent

Both of the proponents indicated that they are aware of the community concern to protect this area of natural bushland and landscape features. However, the proponents consider that their proposals to retain bushland which is currently zoned urban provides for a balance between conservation and development. The proponents have indicated that should their proposal be curtailed, they seek adequate compensation.

The proponents recognised '*the need for a coordinated approach involving the local community and utilising techniques such as fencing, signage and pathing which enhance the protection of the environment*'.

4.1.5 Evaluation

System Six recommendation C70 seeks to conserve elements of landscape amenity, coastal landforms and Tuart woodland. It is evident that this System Six recommendation seeks to retain significant elements of public open space, rather than purely representative nature conservation. Open space, including indigenous bushland within an urban context, is generally an issue dealt with through the planning processes. Nonetheless, within a regional context, the C70 area has similar values to Kings Park and Bold Park, which are large areas of natural bushland within close proximity to the central city area of the Perth Metropolitan Region. Each of these locations are relatively large in area, are close to large population areas, contain a mosaic of landforms and vegetation communities and retain significant values for recreation and education. The Department of Conservation and Land Management made the point in its submission, that the values of this area '*can be of great local significance to residents and to the character of Bunbury in general*'.

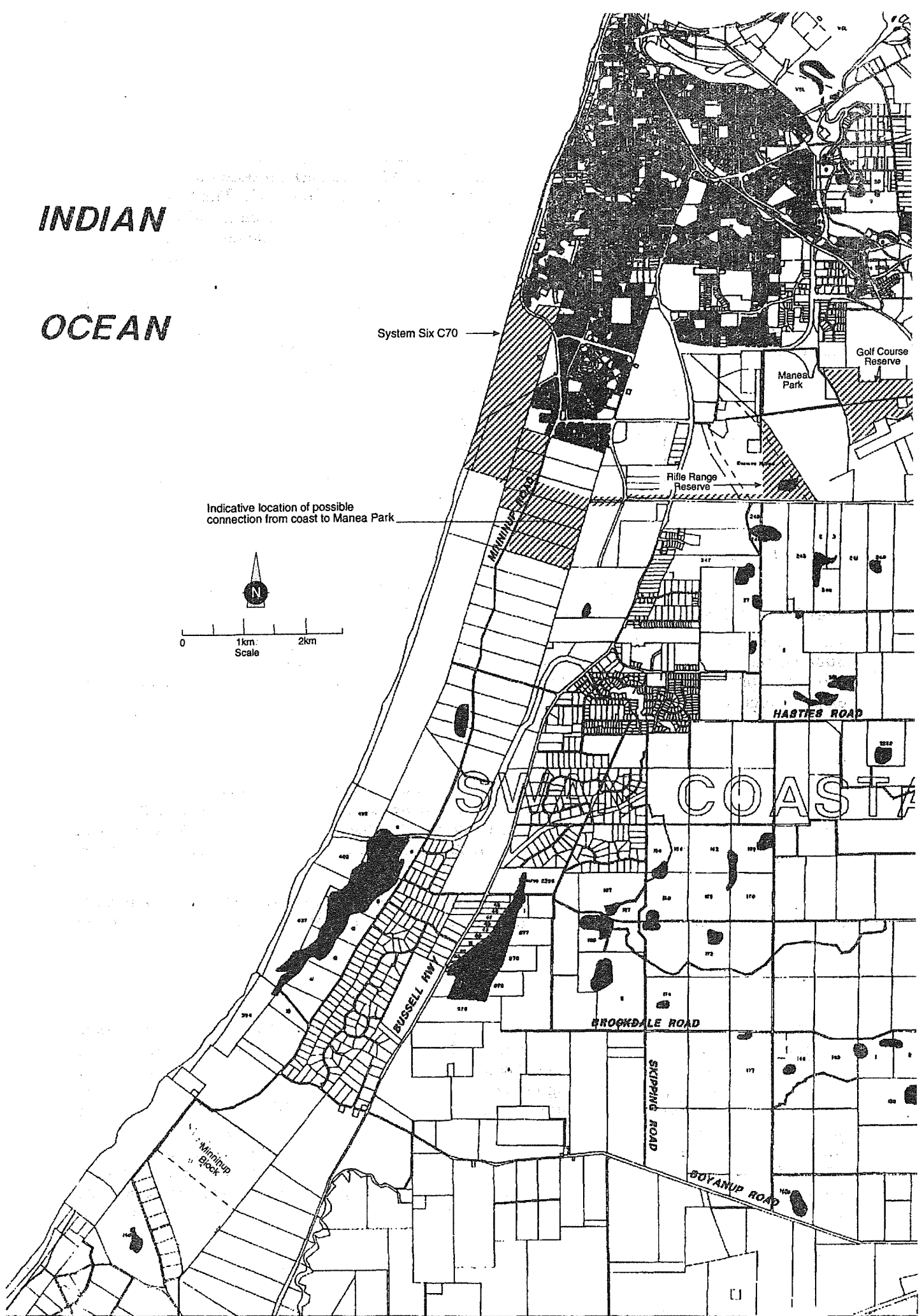


Figure 7. Indicative 'green belt' around the south of Bunbury (Source: adapted from Department of Planning and Urban Development, 1993).

The Department of Conservation and Land Management also acknowledges that the preservation of old growth Tuart and Peppermint habitat for species such as ringtail possums is recognised as worthwhile.

The conclusions drawn in the Consultative Environmental Review document establish the high conservation value of the Tuart Woodlands and Forests. Nonetheless, the proponents have sought to develop (within Homeswest land) a portion of this community on the lee side of a high and steep dune (contiguous with existing urban development) (see Figure 5). The conservation of Tuart Woodlands and Forests in good condition, such as those within the study area, would make a worthwhile addition to the representative conservation estate and would provide a significant connection to other existing or potential conservation areas. The Quindalup Dune Heath vegetation does not appear to have the same value for conservation. However the coastal heath in the Western Urban area would be needed for regional open space connection to the coast if the 'green belt' around Bunbury is to be established.

The Environmental Protection Authority has concluded that the Tuart Woodland and Forest vegetation units appear to have significant conservation values, structurally, floristically, as fauna habitat and because of the position of the Tuarts on the lee-side of a high dune ridge of Quindalup soils. The Environmental Protection Authority therefore recommends that urban development of the 'Eastern Urban Area', Lot 301, within System Six C70 recommendation area, is environmentally unacceptable and should not proceed (Recommendation 1).

Environmental management of the bushland areas of System Six recommendation C70

Whether or not urban development occurs within the System Six C70 recommendation area, there is a need for environmental management to conserve the environmental values of the bushland and landscape, to manage access for recreational purposes, and to manage the interface between urban development and the bushland. The Department of Conservation and Land Management has noted that ongoing management is required to conserve the values of the area. Simple management techniques such as fencing and formation of paths are key items in this process.

The Environmental Protection Authority considers appropriate environmental management to be essential in order to maintain the environmental values of the study area which are described in recommendation C70 of the System Six report. There is substantial expertise in the community to assist with the preparation and implementation of environmental management programmes and the implementation of System 6 recommendations. The Department of Environmental Protection has a program known as 'Ecoplan', where volunteers are provided with training in the appropriate methods for implementation and management of areas recommended in the System 6 report for conservation. At present the Ecoplan program is only conducted within the Perth Metropolitan area, however, the opportunity exists to expand the program to other populous urban areas such as Bunbury.

The Environmental Protection Authority concludes that ongoing environmental management of the bushland area is critical to conserving its natural and human use values. The Environmental Protection Authority therefore recommends that prior to any development within the bushland areas, or within 12 months of a decision to conserve the area, the City of Bunbury should liaise with the Department of Environmental Protection to involve the local community in assisting with the preparation and implementation of an Environmental Management Programme. The programme should aim to conserve the natural bushland and landscape features contained in the area recommended for conservation by the System Six report recommendation C70, and to manage the interface with any urban development (Recommendation 2).

Connections to other conservation areas

The issue of providing a regional open space connection between the coast and Manea Park (refer Figure 7) is influenced by the decisions made for the study area. As noted above the open space 'green belt' has been endorsed by the Environmental Protection Authority in its comments on the Bunbury-Wellington Region Plan. Retaining the opportunity for the coastal connection would involve the retention of Lot 302 and at least part of Lot 626 as open space. This is discussed further in relation to the availability of alternative sites for residential development.

4.2 Availability of alternative sites outside of the System Six recommended area for residential development

4.2.1 Objective

The Environmental Protection Authority's objective is to ensure implementation of the recommendations of the System Six report to ensure the protection of significant vegetation communities, fauna and their habitats and the protection of attractive landscape features.

4.2.2 Evaluation framework

Section 4.2 is very closely tied to Section 4.1, as both have the common objective of ensuring the implementation of the recommendations of the System Six report. Thus the evaluation framework is common to both sections and is discussed in detail in Section 4.1.2.

4.2.3 Public submissions

Submissions from the general public indicated a desire to conserve the whole area. One public submission suggested that development of the area north of the proposed site would be better, because it would enable a more coherent and more easily managed conservation reserve and would provide a better and more secure buffer to the Waste Water Treatment Plant. Urban development in the northern portion of the System Six area would also be contiguous with existing urban development.

4.2.4 Response from the proponent

The Bunbury City Council are not in favour of using the northern portion of System Six C70 recommendation area because it is a reserve under the Land Act for Bunbury Endowment and is zoned Parks, Recreation and Drainage under their Town Planning Scheme.

4.2.5 Evaluation

The Environmental Protection Authority is aware that Government Departments have been giving consideration to assisting the proponents in finding alternative development locations. Because of public concern the Ministry for Planning initiated a Technical Advisory Group to consider alternative development prospects. The purpose of the Technical Advisory Group is to identify potential land which could provide alternative development sites in order to protect all of the land identified in recommendation C70 of the System Six report. The Department of Environmental Protection is represented on this Technical Advisory Group.

The Department of Environmental Protection wrote to the proponents requesting their agreement with suspending the proposal until the recommendations of the Technical Advisory Group were available (Appendix 5). In summary, Homeswest supported suspending the environmental assessment, whereas, the City of Bunbury requested that the Environmental Protection Authority report on the proposal.

A number of areas have been identified by the Technical Advisory Group as possible alternative residential development sites. Sites identified to date include; the portion of System Six C70 north of Ocean Drive (this is a parkland cleared area, but it does contain Tuarts and Peppermints), the Rifle Range Reserve and the Golf Course Reserve (refer to Figure 7). The Technical Advisory Group will be reporting to the South West Regional Planning Committee and the City of Bunbury and Homeswest.

The study area of this Consultative Environmental Review is located within a large contiguous area of indigenous vegetation (see Figure 5). Urban development within the southern portion of the System Six C70 recommended area would therefore be surrounded by indigenous vegetation. From an environmental perspective, it is preferable to retain bushland areas in a

manageable form. It is easier to manage bushland that has a relatively smaller boundary to area ratio; *i.e.* less edge areas where weed distribution, access, fragmentation effects (increased light, wind) occur (Saunders, Hobbs and Margules, 1991). As noted by the Department of Conservation and Land Management in their comment on the Consultative Environmental Review, management of bushland which has a large interface with urban development is notoriously difficult.

The comparative environmental values of the northern (Reserve 670) and southern portions (Lot 626 and Part Lot 301 - 4) of the Systems Six area C70 were not discussed in the Consultative Environmental Review document. The consultants considered that because the northern portion is already well used as a recreational area with developed paths, it should not be considered as being available for urban development. Furthermore, the southern portion of the System Six area is already zoned urban (zoning to urban occurred at the time of preparing Town Planning Scheme No 6, April 1984).

The major features of the northern portion from an environmental perspective are 'The Maidens' - a pair of prominent conical dunes. These features rise well above the surrounding dune systems and provide a landscape vantage point. The northern area has been subject to a number of fires recently. It appears possible that some urban development could be contained within the area to the north as a trade off for conserving the land in the south. This would provide a more manageable conservation reserve with less 'edge' and more core area. From an environmental management perspective, it would be preferable to conserve the southern portion of the C70 recommended area, and enable residential development in the northern portion. Notionally, the development would be below the 30 metre contour line as this land is less diverse in landform than the area to the south. Retention of the southern portion also retains the option of a regional connection from the coast to Manea Park. In addition, placing the development in the northern area would enable a better protected buffer to the Waste Water Treatment Plant (see Section 4.3 below).

The Environmental Protection Authority concludes that the residential development within Lot 626 (owned by the City of Bunbury) is environmentally undesirable and recommends that the proponents negotiate with relevant Government authorities and agencies to determine whether alternative development sites are available which do not contain areas of significant conservation value.

Furthermore, the Environmental Protection Authority recommends that should no alternative development solutions be available, then the City of Bunbury and Homeswest should consult with local residents regarding the potential for the residential development to be located in the northern area (Reserve 670) to the satisfaction of the Minister for the Environment on advice from the Department of Environmental Protection and the Ministry for Planning.

If the proponents are unable to agree to development in the northern portion of the System Six recommended area, or the community (after appropriate consultation) considers that it is even less acceptable than the current proposal, then, residential development should be confined to those areas of Lot 626 described in the proponents documentation which are outside of the 1 kilometre buffer to the Waste Water Treatment Plant. The buffer should be retained at 1 kilometre until such time as a quantitative buffer is defined and secured to the requirements of the Minister for the Environment on advice from the Department of Environmental Protection and the Water Authority of Western Australia (Recommendation 3).

4.3 Visual impacts of the proposed water storage facility

4.3.1 Objective

The Environmental Protection Authority's objective is to reduce visual impacts on areas of scenic quality and to provide for the human use values associated with such areas.

4.3.2 Evaluation framework

Existing policy framework

System Six recommendation C70 'South Bunbury Coastal Land'.

In 1983 the Environmental Protection Authority's System Six report recommended that '*Areas of Public Open Space, containing attractive and important features such as "The Maidens" and important stands of Tuart, be set aside at the time of subdivision of the coastal land south of Bunbury*' (see Figure 2) (Environmental Protection Authority, 1983).

Technical information

Quindalup Dunes are the most recently formed of the Swan Coastal Plain dune systems. Much of this dune system is under pressure for development of housing near the coast. A diverse array of vegetation formations are associated with varied geomorphology and geological features within the Quindalup Dunes. The Quindalup Dune system is poorly represented in conservation reserves (Semenuik, Cresswell and Wurm, 1989). The nearest secured 'regional' reserves incorporating Quindalup Dunes are at Leschenault Conservation Park, north of Bunbury, and Yalgour National Park south of Mandurah.

The Quindalup Dunes within the System Six C70 recommendation area consist of high sand dunes, many being over 40 metres in elevation and offering extensive views. The southern portion of the study area displays a more sharply varied topography than the northern portion which is contained in Reserve 670. The southern area is dominated by a peak of 63 metres high, as well as an area of unstable and mobile dune known as the 'Sandbowl' (see Figure 5).

In concert with the residential development proposal, the Bunbury Water Board proposes to construct a water storage facility south of the urban zoned land within the System Six C70 recommendation area (see Figure 5). The storage facility would require modification of the landform by levelling the 63 metre high point across a saddle to a nearby peak to the west. Storage would be in a flat pool designed structure which would have its water level at R L 48.5 metres AHD. Approximately 4.5 hectares of land would be enclosed within the facility, 40 % of which would be cleared, though about 5 % around the perimeter would later be rehabilitated as screening. An access track would also be constructed, requiring a further 1.5 hectares of clearing.

4.3.3 Public submissions

Numerous submissions commented that the proposal for a water storage facility on the two highest points in the landscape to be a highly significant visual impact. Comments from the public suggested that the water storage facility should be located elsewhere.

4.3.4 Response from the proponent

The City of Bunbury responded that the water storage facility can be placed within the landscape and visual impacts would be minimal following planting of appropriate trees on the site. The proponents noted that '*the (Bunbury Water) Board relies on elevated storage facilities to maintain pressure and more importantly supply during periods of power failure as pumping is the only other method of maintaining supply. There is a health consideration in this regard.*'

4.3.5 Evaluation

Whilst the water storage facility is proposed for an area of dune heath vegetation, it will require destruction of the tallest peaks within the southern portion of the System Six recommended area. Furthermore, the facility will fragment the area of undisturbed connection between the coastal landform, the Tuart Woodlands and Forests and the corridor to Manea Park.

Given the locality of the proposed facility, with its exposure to coastal winds, it is likely to be difficult to rehabilitate the landform with indigenous vegetation to form a screen (*c.f.* the adjacent mobile dune known as 'the Sandbowl'). Furthermore, the facility and access track

will fragment the bushland, leading to additional degradation of the conservation values of the area. If urban residential development is restricted to north of the 1 kilometre buffer, the water storage facility would be very isolated within the landscape.

Alternative structures for water storage facilities are commonly used within the Perth Metropolitan area. Whilst generally situated at high points in the landscape, some compromise can be gained by using tank structures placed on stands. Whilst these may have some visual impact, the effect on land form is reduced. The site for the facility can also be more flexible and moved away from the visual lines towards the coast. The Bunbury Water Board has not considered any alternative sites for this facility. It would be preferable for the water storage facility to be co-located with the Waste Water Treatment Plant, or located within the urban zoned area.

The Environmental Protection Authority concludes that the location and design of the proposed water storage reservoir are inconsistent with the System Six recommendation for retaining attractive and important features of the area and is inconsistent with good environmental management of reducing fragmentation. Use of areas of indigenous vegetation for non-conservation oriented uses is also not supported. The Environmental Protection Authority recommends that the proponent should consult with both the Bunbury Water Board and the Water Authority of Western Australia to consider alternative locations and design options for expansion of existing water storage facilities (Recommendation 4).

4.4 Protection of residents from odours emanating from the Water Authority of Western Australia Waste Water Treatment Plant No 2.

4.4.1 Objective

The Environmental Protection Authority's objective is to ensure that an appropriate buffer zone is maintained around the Waste Water Treatment Plant facility to help protect residential land uses from receiving odour impacts from this source.

4.4.2 Evaluation framework

Existing policy framework

The Water Authority of Western Australia is currently working on developing guidelines for determining appropriate separation distances between Waste Water Treatment Plants and land use types which are sensitive to the odours generated by these facilities. However, in the interim, the buffer distance for wastewater treatment or effluent disposal works is determined by the Water Authority of Western Australia in consultation with the Environmental Protection Authority. Wind regimes, topography, waste loading, treatment / disposal methods and design capacity should be taken into account. The following Table may be used as a guide when considering proposals for residential developments in the vicinity of existing wastewater treatment works (Table 2).

Technical information

The Water Authority of Western Australia have a Waste Water Treatment Plant at the southern boundary of the System Six area (see Figure 1). It is anticipated that this plant will be upgraded to accept the total sewage discharge from the City of Bunbury, future residential developments in the northern part of the Shire of Capel and possibly flows from existing treatment plants at Eaton and Australind (Water Authority of Western Australia, 1994; submission on Consultative Environmental Review). It is anticipated that the plant will be upgraded to cater for a population of about 150,000; current capacity for the purposes of its licence under the *Environmental Protection Act* 1986 is 38,000.

Type of Installation	Installation treatment capacity (equivalent population)				
	<1 000	<5 000	<20 000	<50 000	>100 000
Mechanical/Biological wastewater plants	100	200	300	400	1 000
Aerobic pondage systems	150	350	700	1 000	
Facultative ponds	300	700	1 400	2 200	
Disposal areas for secondary treated effluent:					
(a) by spray irrigation	200	200	200	200	
(b) by flood irrigation	50	50	50	50	

Table 2: Buffer distances for wastewater treatment works (in metres)

As part of the upgrade of the Waste Water Treatment Plant, the Water Authority of Western Australia has recently been granted works approval (April 1995) for extension of land based disposal of the effluent liquor. One pond intrudes 50 metres into the System Six recommended area C70 and is proposed to be contained in the mobile dune system known as the Sandbowl. The pond is used to dispose of treated effluent and has little, if any, odour.

Comments from key Government agencies

At present the Water Authority of Western Australia requests that a notional buffer zone of 1,000 metres be protected. However, it is anticipated that a reduction of the buffer zone may be appropriate if the plant is upgraded and technologically improved. The Water Authority of Western Australia are also currently undertaking work to improve their modelling of the dispersion and human detection of odours emanating from their Waste Water Treatment Plants. This work will ultimately enable the Water Authority of Western Australia to define a buffer using more quantitative measures. The Water Authority of Western Australia also note that the Waste Water Treatment Plant has been located at this site since the late 1970's; prior to the Crown Grant to the City of Bunbury of Lot 626, which occurred in May 1980 (Water Authority of Western Australia, 1994; submission on Consultative Environmental Review).

According to the Water Authority of Western Australia (1994; submission on Consultative Environmental Review), the buffer lines described in the Consultative Environmental Review (see Figure 5) are drawn from a radius using the middle of the plant as its centre. It is usual that buffers are drawn from the edge of the inner plant boundary fence. This would align the 500 metre buffer with the western projection of the boundary between lots 302 and 303. A similar adjustment is required to the 1 kilometre buffer.

4.4.3 Public submissions

A number of submissions from members of the public indicated that during summer there are numerous occasions when offensive odours are detected by residents of existing subdivisions at Glen Padden.

4.4.4 Response from the proponent

The proponents responded that, under Option 3, trees will be retained for a distance of 1,000 metres from the Waste Water Treatment Plant.

4.4.5 Evaluation

The Environmental Protection Authority seeks to ensure that conflicting land uses are separated by buffer areas. Existing operations with appropriate environmental management arrangements which cause no pollution to current adjacent land uses should not be penalised by changes to surrounding land uses. These situations can be avoided by mechanisms available through the planning processes which control land use allocation to ensure that potentially conflicting land uses are separated by appropriate buffer areas. To ensure that the operations of the Water Authority of Western Australia's Waste Water Treatment Plant No 2 remain environmentally acceptable with respect to odour emissions, the Environmental Protection Authority recommends that land uses which are sensitive to odour emissions such as residential accommodation, commercial facilities, schools and hospitals should not be permitted in areas which would be affected by the known odour emissions. The Environmental Protection Authority recommends that until such time as it can be satisfied by the Water Authority of Western Australia that the buffer area required for the Waste Water Treatment Plant No 2 south of Bunbury can be reduced, the area within 1,000 metres from the inner plant boundary should be precluded from consideration for development of sensitive land uses (recommendation 5).

5. Conclusions

The Environmental Protection Authority concludes that the City of Bunbury and Homeswest's proposal to develop part of System Six C70 South of the Maidens, including Bunbury Endowment Land Part of Lot 626, and Parts of Lots 301 - 4 is environmentally undesirable.

In reaching this conclusion the Environmental Protection Authority identified the main environmental issues requiring consideration as:

- impacts of proposed residential development upon the conservation and landscape values of the System Six C70 recommendation area;
- availability of alternative sites outside of the System Six recommended area for residential development;
- visual impacts of the proposed water storage facility; and
- protection of potential residents from odours emanating from the Water Authority of Western Australia Waste Water Treatment Plant No 2.

More specifically, the Environmental Protection Authority has reached the following conclusions regarding the key environmental issues:

- residential development as proposed for Part Lot 301 (Homeswest land) is environmentally unacceptable;
- residential development outside of the System Six C70 recommended area would be preferable and the proponents should consult with relevant Government authorities regarding this matter. Should no alternative locations be available, then the development within a portion of the northern area (Reserve 670) of the System Six C70 recommended area would be environmentally preferable than the southern area (Lot 626). Should the local community consider that it is less desirable to develop a portion of the northern area (Reserve 670) than the southern area (Lot 626), then development should occur only after an Environmental Management Programme has been prepared and implementation of fencing and paths been completed;
- bushland areas which are retained, within the System Six C70 recommended area, will require ongoing environmental management to maintain the natural and human use values associated with the area. The proponents should liaise with the Department of

Environmental Protection to involve the local community in assisting with the preparation and implementation of an Environmental Management Programme for the area;

- the design and location of the proposed water storage facility is environmentally unacceptable; and
- until such time as it can be shown that the buffer area required for the Waste Water Treatment Plant No 2 south of Bunbury can be reduced, the area within 1,000 metres of the inner plant boundary of the Waste Water Treatment Plant should be precluded from consideration for development of odour-sensitive land uses.

A summary of the Environmental Protection Authority's views are set out in Table 3.

The Environmental Protection Authority is satisfied that, using information currently available, the following recommendation may be made to the Minister for the Environment.

Recommendation 1

The Environmental Protection Authority recommends that urban development of the 'Eastern Urban Area', Part Lots 301 and 302 (Homeswest land) within System Six C70 recommendation area, is environmentally unacceptable and should not proceed, as it is within an area containing an environmentally significant and high quality indigenous vegetation community dominated by Tuart (*Eucalyptus gomphocephala*) Forests and Woodlands on high dunes of Quindalup Soils.

See Recommended Environmental Condition 3.

Recommendation 2

The Environmental Protection Authority therefore recommends that prior to any development within the bushland areas, or within 12 months of a decision to conserve the area, the City of Bunbury with the benefit of public input, should prepare and implement an Environmental Management Programme to conserve the natural bushland and landscape features contained in the area recommended for conservation by the System Six report recommendation C70 and to manage the interface with any urban development to the requirements of the Minister for the Environment on advice of the Department of Environmental Protection. The Environmental Management Programme shall provide details of, but not be limited to:

- **management of recreational use of the bushland, including rationalisation of paths and tracks within the bushland;**
- **control of rubbish dumping and other impacts from any adjacent development;**
- **fire and weed management (including removal of non-local native species) and disease control;**
- **ecological restoration, such as bush regeneration and habitat reconstruction;**
- **public involvement in the Environmental Management Programme; and**
- **monitoring programmes.**

See Recommended Environmental Condition 4.

ISSUES	OBJECTIVE	EVALUATION FRAMEWORK	PROponents' COMMITMENT	EPA RECOMMENDATION
Impacts of proposed residential development upon the conservation and landscape values of the System Six C70 recommendation area.	Implementation of System Six recommendations to ensure the protection of significant vegetation types, fauna and their habitats and attractive landscape features.	Need for representative conservation and open space. Ongoing management of retained bushland areas. Shape of bushland area retained. Regional connections with other open space.	Environmental management to be in place to protect flora and fauna habitat and connections of open space.	Residential development as proposed for Part Lot 301 is environmentally unacceptable. Residential development within Lot 626 is undesirable. Development within any portion of Reserve 670 or Lot 626 should occur only after an Environmental Management Programme has been prepared and implementation of fencing and paths been completed. Proponents should liaise with the DEP to engage the local community in assisting with preparation and implementation of an EMP.
Availability of alternative sites outside of the System Six recommended area for residential development.	Implementation of System Six recommendations to ensure the protection of significant vegetation types, fauna and their habitats and attractive landscape features.	Technical Advisory Group have commenced some preliminary investigations of other areas for possible alternative development sites.		Residential development within Lot 626 is undesirable. Proponents should consult relevant Government authorities and the public regarding alternative locations, preferably outside of the System Six C70 recommendation area.
Visual impacts of the proposed water storage facility.	Conserve regionally significant areas of geological and geomorphic variety.	Land form alteration identified. No design or location alternatives assessed.	Planting of appropriate trees.	Design and location of water storage facility is unacceptable. Water Authority of Western Australia should be consulted regarding appropriate alternatives.
Protection of potential residents from odours emanating from the Water Authority of Western Australia Waste Water Treatment Plant No 2.	Maintain appropriate buffer around the WWTP for odour dispersal.	Based on plant capacity and agreement between EPA and WAWA.	Development outside 1,000 metres initially. Development to 500 metres following plant upgrade.	Buffer area needs to be 1,000 metres from the inner plant boundary of the Waste Water Treatment Plant.

Table 3: Summary of Environmental Protection Authority recommendations.

Recommendation 3

The Environmental Protection Authority recommends that residential development within Lot 626 (owned by the City of Bunbury) is environmentally undesirable. The Environmental Protection Authority recommends that prior to any development within Lot 626 of the System Six C70 recommendation area, the proponents should liaise with relevant Government authorities and the community to determine whether alternative development sites are available which do not contain areas of significant conservation value to the requirements of the Minister for Environment on advice of the Department of Environmental Protection, the Ministry for Planning and the Department of Land Administration. The Environmental Protection Authority further recommends that residential development would be preferable in the northern portion of the System Six C70 recommendation area (Reserve 670) rather than the southern portion of this area (Lot 626). The Environmental Protection Authority recommends that, following this procedure has been completed to the requirements of the Minister for the Environment, if no alternative areas of development are available, residential development of Lot 626 in System Six C70 recommended area should be confined to those areas of Lot 626 described in the proponents documentation, which are outside of the 1 kilometre buffer to the Waste Water Treatment Plant until such time as a quantitative buffer is defined and secured to the requirements of the Minister for the Environment on advice from the Department of Environmental Protection and the Water Authority of Western Australia.

See Recommended Environmental Condition 5.

Recommendation 4

The Environmental Protection Authority recommends that the proponent liaise with both the Bunbury Water Board and the Water Authority of Western Australia regarding alternative styles of water storage facility which require less land alienation and a location for the water storage facility which has less impacts on the significant landscape values of the coastal land south of Bunbury to the satisfaction of the Minister for the Environment on advice from the Department of Environmental Protection and the Water Authority of Western Australia.

See Recommended Environmental Condition 6.

Recommendation 5

The Environmental Protection Authority recommends that until such time as it can be satisfied by the Water Authority of Western Australia that the buffer area required for the Waste Water Treatment Plant No 2, south of Bunbury, can be reduced, the area within 1,000 metres from the inner plant boundary should be precluded from development of sensitive land uses to the requirements of the Minister for the Environment on advice from the Department of Environmental Protection and the Water Authority of Western Australia.

See Recommended Environmental Condition 7.

6. Recommended Environmental Conditions

Based on the assessment of this proposal and recommendations in this report, the Environmental Protection Authority considers that the following Recommended Environmental Conditions are appropriate.

PROPOSAL: DEVELOPMENT OF PART OF SYSTEM SIX C70 SOUTH OF THE MAIDENS. BUNBURY ENDOWMENT LAND PART OF LOT 626, AND PARTS OF LOTS 301 - 4 (748).

CURRENT PROPONENT: CITY OF BUNBURY AND HOMESWEST

This proposal to develop part of System Six C70 South of the Maidens, including Bunbury Endowment Land Part of Lot 626, and Parts of Lots 301 - 4 may be implemented subject to the following conditions:

1 Proponent Commitments

The proponent has made a number of environmental management commitments in order to protect the environment.

- 1-1 In implementing the proposal, the proponent shall fulfil the commitments made in the Consultative Environmental Review and in response to public submissions, provided that the commitments and environmental management measures are not inconsistent with the conditions or procedures contained in this statement.

A schedule of environmental management commitments to be audited by the Department of Environmental Protection was published in Environmental Protection Authority Bulletin 789 and a copy is attached.

2 Implementation

Changes to the proposal which are not substantial may be carried out with the approval of the Minister for the Environment.

- 2-1 Subject to these conditions, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal.
- 2-2 Where, in the course of the detailed implementation referred to in condition 2-1, the proponent seeks to change the designs, specifications, plans or other technical material submitted to the Environmental Protection Authority in any way that the Minister for the Environment determines, on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

3 Eastern Urban Area

- 3-1 To protect the flora, fauna, conservation and landscape values of the South Bunbury Coastal Land (System Six recommendation C70), the proponent shall not permit residential development in the area described as the 'Eastern Urban Area', Part Lot 301, as indicated in Figure 5 of EPA Bulletin 789 (copy attached).

4 Environmental Management

- 4-1 The proponent shall protect the flora, fauna, conservation and landscape values of the South Bunbury Coastal Land (System Six recommendation C70).
- 4-2 To achieve the objectives of condition 4-1, prior to the finalisation of any subdivision of the location known as South Bunbury Coastal Land (System Six recommendation C70), which is identified in Figure 2 of EPA Bulletin 789 (copy attached), or within 12 months of a decision to conserve the area, the proponent, with the benefit of public input, shall prepare an Environmental Management Programme to conserve the natural bushland and landscape features and manage the interface with any urban development, to the requirements of the Minister for the Environment on advice of the Department of Environmental Protection. The Environmental Management Programme shall provide details of, but not be limited to:
- (1) management of recreational use of the bushland, including rationalisation of paths and tracks within the bushland;
 - (2) control of rubbish dumping and other impacts from any adjacent development;
 - (3) fire and weed management (including removal of non-local native species) and disease control;
 - (4) ecological restoration, such as bush regeneration and habitat reconstruction;
 - (5) public involvement in the Environmental Management Programme; and
 - (6) monitoring programmes.
- 4-3 The proponent shall implement the Environmental Management Programme required by condition 4-2.

5 Western Urban Area

- 5-1 To protect the flora, fauna, conservation and landscape values of the South Bunbury Coastal Land (System Six recommendation C70), the proponent shall seek alternative development sites.
- 5-2 Prior to any development within Lot 626 of the System Six C70 recommendation area, the proponent shall liaise with relevant Government authorities and the community to determine whether alternative development sites are available, which do not contain areas of significant conservation value, to the requirements of the Minister for the Environment on advice of the Department of Environmental Protection, the Ministry for Planning and the Department of Land Administration.

Note: See procedure 3.

6 Water Storage Facility

- 6-1 To protect the flora, fauna, conservation and landscape values of the South Bunbury Coastal Land (System Six recommendation C70), the proponent shall seek alternative development scenarios.
- 6-2 Prior to the commencement of any construction activities for a water storage facility within the South Bunbury Coastal Land (System Six recommendation C70), the proponent shall liaise with the Bunbury Water Board and the Water Authority of Western Australia regarding alternative styles of water storage facility which require less land alienation and a location for the water storage facility which has less impacts on the significant landscape values of the coastal land south of Bunbury to the requirements of the Minister for the Environment on advice of the Department of Environmental Protection and the Water Authority of Western Australia.

6-3 Following the liaison required by condition 6-2, if the Bunbury Water Board decide to place the water storage facility in the original location, shown in Map 4 of the Consultative Environmental Review (copy attached), then the proponent shall refer the development application for these proposed works to the Environmental Protection Authority.

7 Waste Water Treatment Plant

7-1 The proponent shall ensure that no development of the South Bunbury Coastal Land (System Six recommendation C70) which will bring people into conflict with the odours emanating from the Waste Water Treatment Plant No 2, South of Bunbury, occurs within a buffer zone to this facility.

7-2 The proponent shall ensure that no development of the South Bunbury Coastal Land (System Six recommendation C70), for human habitation, occurs within 1,000 metres of the inner plant boundary of the Waste Water Treatment Plant No 2, south of Bunbury, until such time as this limit can be reduced, to the requirements of the Minister for the Environment on advice from the Department of Environmental Protection and the Water Authority of Western Australia.

8 Proponent

These conditions legally apply to the nominated proponent.

8-1 No transfer of ownership, control or management of the project which would give rise to a need for the replacement of the proponent shall take place until the Minister for the Environment has advised the proponent that approval has been given for the nomination of a replacement proponent. Any request for the exercise of that power of the Minister shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the project in accordance with the conditions and procedures set out in the statement.

9 Time Limit on Approval

The environmental approval for the proposal is limited.

9-1 If the proponent has not substantially commenced the project within five years of the date of this statement, then the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment shall determine any question as to whether the project has been substantially commenced.

Any application to extend the period of five years referred to in this condition shall be made before the expiration of that period to the Minister for the Environment.

Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Department of Environmental Protection that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding five years.

10 Compliance Auditing

To help determine environmental performance, periodic reports on progress in implementation of the proposal are required.

- 10-1 The proponent shall submit periodic Progress and Compliance Reports, in accordance with an audit programme prepared by the Department of Environmental Protection in consultation with the proponent.

Procedure

- 1 Unless otherwise specified, the Department of Environmental Protection is responsible for assessing compliance with the conditions contained in this statement and for issuing formal clearance of conditions.
- 2 Where compliance with any condition is in dispute, the matter will be determined by the Minister for the Environment.
- 3 Within twelve (12) months of the formal authority issued to decision making authorities under Section 45(7) of the *Environmental Protection Act* 1986-1994, the proponent will initiate procedures to ensure that alternative development scenarios are given consideration and public comment to determine the most appropriate site for the proposed development.

An appropriate mechanism to achieve the above would be through liaison with relevant Government authorities, and with the benefit of public comment, to determine whether alternative development sites are available, which do not contain areas of significant conservation value, to the requirements of the Minister for the Environment on advice of the Department of Environmental Protection, the Ministry for Planning and the Department of Land Administration. Areas which should be considered include land within the City of Bunbury or nearby Local Government Authority areas and the northern portion of the South Bunbury Coastal Land (System Six C70 recommendation area) (Reserve 670), rather than the southern portion of this area (Lot 626) as shown in Figure 1 of EPA Bulletin 789 (copy attached).

7. References

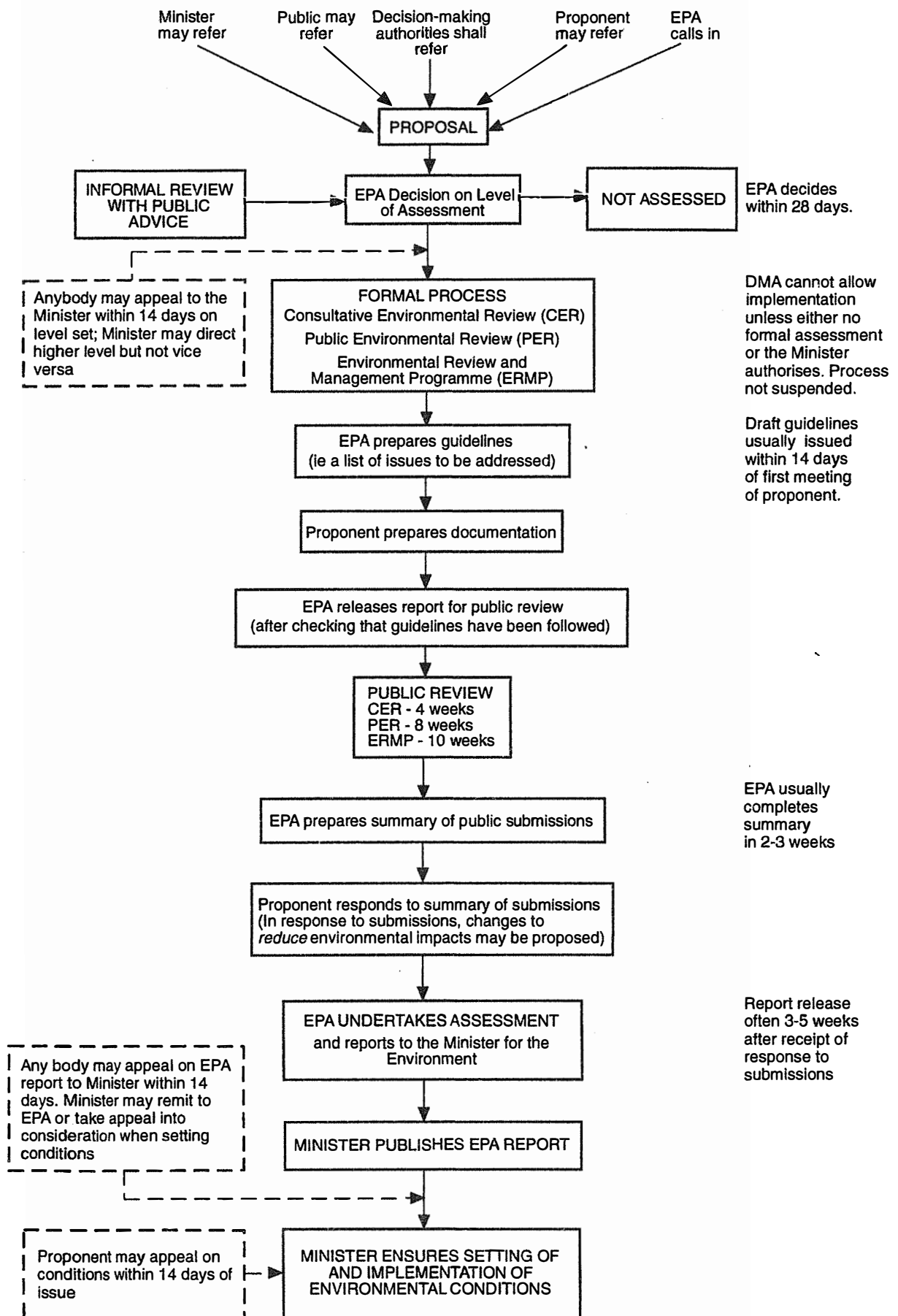
- Department of Conservation and Land Management (1992). Management strategies for the South-West Forests of Western Australia. Department of Conservation and Land Management, Perth, Western Australia.
- Department of Conservation and Land Management (1994). 'Comments on the Consultative Environmental Review: Proposals for Changes to Land Use for Bunbury Endowment Land (Pt Lot 670, Lot 626, Pt Lots 301 - 303, South Bunbury)'.
- Department of Planning and Urban Development (1993). Bunbury - Wellington Region Plan. For Public Comment. Department of Planning and Urban Development. Bunbury, Western Australia.
- Environmental Protection Authority (1983). Conservation Reserves for Western Australia as recommended by the Environmental Protection Authority - 1983. The Darling System - System 6. Part I: General Principles and Recommendations. Report 13. Department of Conservation and Environment, Perth, Western Australia.
- Environmental Protection Authority (1983). Conservation Reserves for Western Australia as recommended by the Environmental Protection Authority - 1983. The Darling System - System 6. Part II: Recommendations for Specific Localities. Report 13. Department of Conservation and Environment, Perth, Western Australia.
- Gibson, N., Keighery, B., Keighery, G., Burbidge, A. and Lyons, M. (1994). A floristic survey of the southern Swan Coastal Plain. Unpublished report prepared for the Australian Heritage Commission by the Department of Conservation and Land Management and the Western Australian Conservation Council.

- Griffin, E.A. (1993). Flora of the Quindalup Dunes between Swan and Irwin Rivers, Western Australia. Unpublished Report to Coastal Planning Branch, Department of Planning and Urban Development and the Heritage Council of W.A.
- Hart, Simpson and Associates Pty Ltd & BK Masters and Associates (1994). Development of Part of System 6 C70 south of The Maidens. Bunbury Endowment Land Part of Lot 670, and Parts of Lots 301 - 4. Consultative Environmental Review. City of Bunbury and Homeswest. p. 27
- Portlock, C., et al. (1993). Yalgorup National Park. Draft management plan. Department of Conservation and Land Management for the National Parks and Nature Conservation Authority Western Australia.
- Saunders, D.A., Hobbs, R.J. & Margules, C.R. (1991). Biological consequences of ecosystem fragmentation: A review. *Conservation Biology* 5: (1), 18 - 32.
- Semenuik, V., Cresswell, I.D. & Wurm, P.A.S. (1989). The Quindalup Dunes: The regional system, physical framework and vegetation habitats. *Journal of the Royal Society of Western Australia* 71: (2 & 3), 23 - 47.
- Trudgen, M. (1994). A botanical survey of areas affected by the proposed south-west corridor amendment with comment on conservation values. Bowman Bishaw and Gorham for the Department of Planning and Urban Development.
- Water Authority of Western Australia (1994). 'Comments on the Consultative Environmental Review: Proposals for Changes to Land Use for Bunbury Endowment Land (Pt Lot 670, Lot 626, Pt Lots 301 - 303, South Bunbury'.

Appendix 1

Environmental impact assessment flow chart

EIA PROCESS FLOW CHART



Appendix 2

Summary of public submissions and the proponent's response

Alternative development sites

- 1.1 It would be valuable to have information on individual land forms as well as on tree groves, weed distribution, and percentage projected foliage cover of naturalised plants (weeds) over the whole of the C70 area. The northern area of the C70 area has not been considered adequately. This area, north of the forest opposite Mindalong Heights, is a C Class reserve, and could in principle offer alternative development sites with less environmental impact. This may create more public debate which would be beneficial to all.
- 1.2 Housing should be developed along Bussell Highway from Bunbury Village, and at the beach north of 'The Maidens'.
- 1.3 The proposed City of Bunbury residential development should not progress and alternative sites for this development should be examined with full community involvement.
- 1.4 There are several pieces of degraded bushland scattered throughout the City of Bunbury, which are of little use, are difficult to maintain and of little conservation value. These areas should be developed rather than degrading a high conservation value area.
- 1.5 Bunbury City Council often claims that it has a small rate base and thus needs the endowment land as a source of income. It should be possible to gain further income from developing degraded rural land, even if this necessitates the excision from another shire. The arbitrary drawing of local government boundaries should not over-ride conservation considerations. In addition, the State Government has recently made much publicity of the need to preserve urban bushland. Funds from such a source may become a reality in the future.

Conservation values

- 2.1 There appears to be some discrepancy between mammal species listed in the Appendix 3 of the Consultative Environmental Review document and the discussion regarding rare species on page 20. It is unclear whether both the Southern Brown Bandicoot and the Western Ringtail Possum are likely to occur on this site.
- 2.2 The conservation value of the Tuarts in close proximity to the sea sheltered in the valleys of the massive dunes and so close to the City centre is understated by the Consultative Environmental Review.
- 2.3 The completion of the report without a detailed survey of flora and fauna is a flaw. The flora and fauna values in the areas to the south of the Maidens is more diverse than in the Maidens reserve - apart from the size of the Maidens. The conclusion that '*no significant conservation values will be destroyed by the proposed development*' (p.55) is erroneous. The land is of high value in terms of vegetation and landform, is a large intact area and is close to the City.
- 2.4 The report proposes compensating for the loss of this coastal area by conserving other high value conservation areas. Surely, if something is worthy of preservation in its own right, then it should be preserved.
- 2.5 There is insufficient evidence to suggest that the residential development will not impact greatly on the conservation value of this important area.
- 2.6 Perth has the magnificent King's Park, the C70 area should be Bunbury's equivalent. It is a large area of beach and coastline, wildflowers and trees, within fast access of any residents in the City.
- 2.7 The proposed areas for development in Option 3, contain very steep hills and are very sandy. This means that they will take away the tops of the hills, and open the way for soil erosion. It will be difficult for home owners to establish gardens on these steep, very sandy sites.

- 2.8 Option 3 has development in the area which the Consultative Environmental Review says is the highest value Tuart bushland in the whole area considered. Surely the Council is not so short of developable land that they need to spoil this beautiful area, which is so important to local birds. It supports a diverse animal and bird life including kangaroos, lizards, snakes, galahs, cockatoos. Some of these bird species require old growth trees to breed.
- 2.9 Stating that Option 3 of the Consultative Environmental Review represents less than 9 % of the C70 area is misleading in terms of its relative size. The fact remains it is a great percentage of good healthy *Eucalyptus* and Tuart type bush containing young and vibrant trees, of which only a small percentage currently exists in the C70 area.
- 2.10 The proposal for the 8 hectare development owned by Homeswest (Lots 301 and 302) appears reasonable, but should be looked at in terms of its effects in the very dense vegetation in the depression west of Ocean Drive, which is also the lower end of a beautiful valley, arguably the most beautiful forested landscape in Bunbury.
- 2.11 A brief survey of the southern Bunbury bushland corridor which stretches from the ocean to the Preston River was conducted in the Spring of 1993 as a part of the 'Ecological Significance of On-Farm Bush remnants in South West Western Australia' for the Department of Agriculture. This assessment rated the area as being of 'Extremely High Ecological Significance', the highest possible category.
- 2.12 The Sand Bowl area is an important natural feature and should be preserved, though it could be contained within its present boundaries.
- 2.13 The land which is designated for conservation should be zoned for conservation and not simply 'Parks, Recreation and Drainage' in the City of Bunbury Town Planning Scheme.
- 2.14 There are doubts as to the conservation value of small pockets of isolated bushland and the best means of allowing conservation and continued recreation is through maintaining as large an areas as possible.

Corridor connections

- 3.1 Fauna underpass design is not well developed, but does seem worthwhile for some elements of fauna. Perhaps this could be combined with speed restrictions, traffic calming and wildlife warning signs.
- 3.2 The recreation corridor linking the C70 area with the proposed Tuart Park and Manea Park is a brilliant concept, with huge potential for tourism, given sensitive management.
- 3.3 The Consultative Environmental Review implies that the bush corridor linking the 'Maidens' with Manea Park will only progress if the proposed residential developments are approved by the Environmental Protection Authority even though the corridor is not dependent on the proposed residential developments.
- 3.4 The City of Bunbury residential development may effectively separate the 'Maidens' reserve from bushland to the south and south east and hence degrade the conservation and aesthetic value of the area.
- 3.5 The corridors to link separate areas are too narrow and the vastly increased length of perimeter of the bushland compared to the smaller areas, will make further degradation unstoppable.

Recreational use

- 4.1 The Consultative Environmental Review understates the level of recreational use of this area. The number of users is considerable and the reasons for use are varied. Bird watching, wildlife nature walks, seclusion, scenic beauty and varied terrain make it particularly attractive. Most of these uses will be lost with even partial development.

- 4.2 The Sand bowl area should be retained to provide a recreational area for four wheel drive use, providing clear and distinct roads are outlined to access the area and protect existing vegetation.
- 4.3 The Glen Padden area already contains large unbroken stretches of dense urban development with a low ration of public open space. Shearwater Stage II has just been released on the market for development, another large stretch of housing blocks with no provision for parks for children or public open space.

Management

- 5.1 One of the most significant points the Consultative Environmental Review makes is the funding and management of the park. Urban parks suffer severe people and domestic pet pressures which inexorably depauperate the natural values if not actively managed with the support of neighbours. Limestone pedestrian paths, fencing and signage of the park should precede the development of residential blocks if option 2 or 3 is chosen. Fencing is particularly important as it signals to residents that the area is protected and not just an open common. It is evident that even low permepine and wire mesh fences in coastal areas are effective.
- 5.2 A management plan is essential and should be prepared at the same time as the subdivision planning. It will be necessary to identify the management facilities such as location of paths, fences and signs.
- 5.3 There should be no further clearing west of Oceanic Drive. The beach access should be improved with limited facilities placed amongst the regenerated / revegetated Sand Bowl. Voluntary rangers should be used to assist management and to lower costs. A Maidens Protection Committee could assist Council with erecting fences and signs, to put in place material for revegetation, and study the area to augment existing information about flora, fauna and ecosystems.
- 5.4 The sand track to the beach should be retained, but barriers should be erected to have prevent further incursion into the bush.
- 5.5 The City of Bunbury commitments to manage the bushland within the boundaries of the City are a positive step, which is long overdue, however, the commitments lack the details to ensure effective management.

Water reservoir

- 6.1 The proposed position for the water tanks would effectively destroy the visual quality of the area (visual pollution). The proposed location is approximately 62 metres high and gives wonderful views over the city and surrounding areas. An alternative site should be considered. That site is a smaller hill on the North East corner of the Sand Bowl approx 250 metres South of the current proposed location. The small hill lies between the proposed location and the sewerage treatment plant.
- 6.2 A single aspect of the development I protest about most strongly is the sighting of a water storage tank at the highest point of the forest. This would desecrate the visual impact of the area. These are the only other two sand dunes in the area that can compare with the "Maidens" in size and form which would degrade the conservation value of "...attractive and important features such as the 'Maidens'..." which the System Six Red Book recommended for protection. Alternative sites for this development should be examined and discussed with full community involvement so as to arrive at an amicable solution.
- 6.3 To propose a conservation area and then a water storage facility on the two highest points of that area does not make sense. The visual amenity of the conservation area would be greatly degraded by a concrete cylinder or flat reservoir, especially in an area of heath vegetation, as is the case on this extensive dune field. No matter how considerate the engineering and landscaping would be, there is no way of hiding such a monstrosity, visually as well as in respect of other impacts.

Economic considerations

- 7.1 The long term economic growth of Bunbury will depend upon the quality of life it can offer to residents and tourists. Urban bushland will become increasingly valuable from an economic viewpoint as the population increases.
- 7.2 A number of submitters expressed the view that they had bought homes in the locality on the understanding that the area west of Oceanic Drive would remain as bushland. Potential purchasers were even shown maps which indicated the residential areas and that C70 was not one of them. This was a major point for purchasing land in this area.
- 7.3 Whether future rates revenue is lost is not an argument for failing to preserve this one area of 'bush' as a positive contribution to the quality of life for all the residents of Bunbury now and in the future.
- 7.4 The Western Urban subdivision is not acceptable because it is small (about 100 residences), isolated and the development costs compared with the financial benefits are small; it would also have an impact out of proportion to its size.

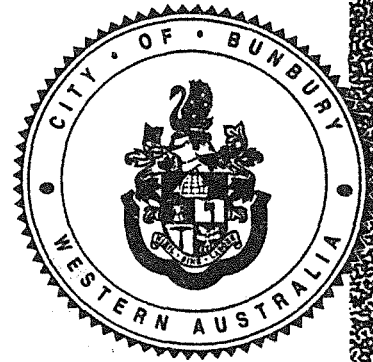
Waste Water Treatment Plant

- 8.1 In the summer residents of Glen Padden can already smell the Waste Water Treatment Plant. With increasing population and subsequent use of the Waste Water Treatment Plant the smell will probably become greater, and with the trees gone, less buffering will be afforded to the people who live in this area.
- 8.2 The buffer to the Waste Water Treatment Plant should remain at 1000 metres. This area is an important part of the green belt around Bunbury.
- 8.3 The benefits equated to Options 2 and 3 are not factual. The quality of life for people living within 500 metres of the Waste Water Treatment Plant cannot be recorded as 'high'.
- 8.4 Residents at the furthest edge of Shearwater Stage 1 are already affected by the odour of the Waste Water Treatment Plant. Removing trees right back to 500 meters will surely increase that problem for the whole of Shearwater Estate, not to mention the situation for any new residents located right on top of it.

Other comments

- 9.1 If the bushland is lost, then there will be less wind breaks. There are already strong winds in the area, neighbours have lost sheds. During winter, mini tornadoes rush through the valley, lifting roofs, and flattening fences.
- 9.2 The Bunbury City Council's plans to develop the C70 area were not well advertised and the Bunbury public has not had an adequate opportunity to express their opinions about this proposal.
- 9.3 The impact of the beach access road and car park has not been examined and are not shown on any of the maps supplied.
- 9.4 The Bunbury Coastal Plan, Sector 6, indicate setbacks from 150 metres to approximately 200 metres. It is suggested that when the detailed rezoning and subdivision plans are produced, the proponent liaise with the Department of Planning and Urban Development to delineate the setbacks on the site.
- 9.5 It is gratifying to see Homeswest's preparedness to contribute a sizeable area of mainly high quality tuart forest and woodland to the proposed West East Wildlife Corridor.

Our Ref: PK:LE A405-02
 Your Ref: TP92.51
 Enquiries: Mr Paul Kotsoglo (Ph: 097 808 260)



11 November 1994

The Director
 Department of Environmental Protection
 Westralian Square
 141 St Georges Terrace
 PERTH WA 6000

Attention: Mr S Smalley

T 9251 501 6

Dear Sir

QUESTIONS AND ISSUES - CONSULTATIVE ENVIRONMENTAL REVIEW (CER), BUNBURY ENDOWMENT LAND (PART LOT 670) AND HOMESWEST LAND (PART LOTS 301 - 303), SOUTH BUNBURY

Further to our correspondence dated 9 September, 1994 and a subsequent meeting with representatives from your organisation, Homeswest, and the City of Bunbury (the City) on 6 October 1994, I advise as follows:

1. The matter was considered by Council at its Special Meeting of 26 October 1994 where it was resolved to respond as follows to the Questions and Issues raised during the Public Submission period.
2. This response is on behalf of both Homeswest and the City, as proponents.

Where it is considered necessary by an agency, positions where differing views are held have been attributed accordingly.

PROPONENTS RESPONSE TO QUESTIONS AND ISSUES RAISED IN SUBMISSION IN RESPONSE TO THE CER

Introduction: Homeswest Position:

Preparation of the CER relative to Homeswest's land ie lots 301, 302 was based upon utilising an area of 8.5ha for residential development and relinquishing approximately 18.4ha for the protection of tuart woodland. In the period since the release of the CER Homeswest has become aware of community concerns regarding the development of the 8.5ha. Following representations made by Mr Ian Osborne, MLA, the Minister for Housing has advised of his support in principle to the land being relinquished for conservation purposes to the satisfactory resolution of a series of issues (see attached letter). The principle matter to be resolved is that of Homeswest being suitably compensated either in the form of alternative land for development or financially.

STEPHEN STREET
 PO BOX 21
 BUNBURY WA 6230
 PHONE (097) 808 222

81101 INFO

Inherent to both the original proposal as expressed in the CER and the Minister for Housing's support for relinquishment of the land for conservation subject to compensation, is the objective of achieving a balance between housing and conservation requirements. It follows that Homeswest recognises the need to consider the environmental values of the land in planning for future housing and to the extent of trading off land in alternative locations which may be suitable for housing in order to protect land which is regarded as being of high value for conservation.

It is this context that Homeswest now responds to the issues and questions which have emerged from public submissions on the CER.

Introduction: City of Bunbury Position:

The City's landholdings the subject of the CER are as follows:

- Total Council land zoned urban: 49.5ha
- Total Council land proposed for development under Option 2: 30.9ha
- Total Council land proposed for development under Option 3: 12.1ha

The City therefore was proposing not to develop the following areas of land zoned urban under each option:-
Option 2 - 18.6ha
Option 3 - 37.4ha.

As with Homeswest, the City is aware of community concerns associated with the development of the land in question. The City is obviously aware of the concerns. This awareness is demonstrated through only two options considered as worthy of further consideration, ie Options 2 and 3. Both propose not to develop significant areas, retaining these for the future, and providing substantial management undertakings.

Should the proposal be curtailed it would be considered only fair to adequately compensate the City.

ITEM RESPONSE

ALTERNATIVE DEVELOPMENT SITES

- 1.1 The proponents consider that the CER provides a comprehensive coverage of the vegetation quality of the whole of the C70 area. Section 3.3 of the report indicates that additional detailed mapping was undertaken and that the condition of the vegetation was assessed in terms of a series of criteria

resulting in a matrix (p15) which clearly conveys the vegetation values relative to the type of landform. The report points out that the assessment criteria could not be applied fully to the 'Maidens' (northern portion of C70) because a recent fire has removed much of the vegetation.

Homeswest recognises that the 8.5ha of its holding prescribed for development under the CER is regarded as being relatively high conservation value. In keeping with its introductory statement Homeswest is willing to consider land tradeoffs in lieu of developing this land. The proposition of utilising the northern portion of the 'Maidens' reserve, covering land which purportedly would have a lesser environmental impact, is a matter which Homeswest considers warrants further investigation and would clearly involve further public debate.

The City accepts that from purely an environmental perspective, the movement of proposed development north may have a lesser environmental impact.

- 1.2 In the context of its property covered by the CER, Homeswest supports the principle of utilising alternative land elsewhere within the greater Bunbury region as is deemed suitable for housing, as a tradeoff for relinquishing land which is considered of higher environmental value. The nominated alternatives warrant suitable consideration.

The City generally agrees with the comments made by Homeswest on this issue, with the exception of alternative options within the Maidens area and College Grove or other areas in the City of Bunbury and reserves the right to reject alternatives considered for proposals that may impact upon Council's landholdings.

- 1.3 The land the subject of this proposal has been zoned Residential since 1984. It is inappropriate to prohibit development in such circumstances.

- 1.4 Refer 1.2 above.

- 1.5 Refer 1.2 above.

CONSERVATION VALUES

- 2.1 The discussion on pages 19 and 20 appear to clearly explain the position in relation to the existence of the species referred to. The CER has essentially advised these have not been recorded as part of this review.
- 2.2 The report provides a detailed assessment of the value of the Tuarts (refer pgs 18, 26-8). This clearly states the value of the Tuarts in both local and regional contexts.
- 2.3 The proponents consider that the report provides a detailed survey of flora and fauna (sections 3.3 and 3.4) consistent with the level of assessment required by the EPA. The report acknowledges the greater diversity of flora and fauna values to the south of the 'Maidens' given the limitations imposed because of a recent fire. In terms of overall conservation values it is entirely reasonable to conclude the, "no significant conservation values will be destroyed by the proposed development" given that this is based on the fact the there will be no nett loss of conservation values due to the replacement of the land to be developed by land with the same or higher values. It is the case that there will be no loss in the environmental 'representative' of the land to be developed. A large intact area close to the city which is of high value in terms of vegetation and landform is proposed to be set aside in the form of a Tuart Regional Park as identified under the draft Bunbury Wellington Region Plan. This will incorporate an area of 100ha and be interconnected with conservation areas to the east and west including the 'Maidens'.
- 2.4 The proponent's introductory statement indicates their predisposition towards protecting areas of high conservation value through land tradeoffs and how this also needs to be viewed in the context of attaining a balance between conservation and housing objectives. The conservation of areas of high value is a desirable aim however it should be recognised that in some instances, these areas may need to be developed to meet the needs and expectations of an expanding population.
- 2.5 The report identifies the conservation values of the land (section 6.5) and addresses the cumulative impacts (section 6.7) emphasising the need for an active managements approach. The commitments made by the proponents (section 7) are a clear demonstration of the importance attached to putting proper management of the conservation areas in place.

- 2.6 Refer item 2.3
- 2.7 Development under Option 3 will involve some recontouring of the landform to provide suitable housing sites and to properly control surface drainage. In addition, there is a recognition that recontouring works would need to be undertaken with due care. The proponents have committed to meet the prescribed environmental standards associated with noise, dust etc during the construction phase (p65).
- 2.8 The proponents acknowledge that the land within its holding which is proposed for development is regarded as having a relatively high conservation value. In keeping with the introductory statements they are prepared to relinquish this land for conservation purposes providing they are suitably compensated.
- 2.9 The proportion of area C70 which is being relinquished for conservation purposes is very substantial. Under the CER proposal 68% of Homeswest's land is designated for conservation, however if pursuant to the Minister for Housing's commitment, suitable compensation is obtained, 100% of Homeswest's land will be set aside for conservation. As stated previously, the City will require adequate compensation for any land relinquished.
- 2.10 Homeswest concurs that its proposal to develop 8.5ha is entirely reasonable in an overall development context. The further commitment to relinquish this land for conservation use subject to suitable compensation reflects Homeswest's recognition of the conservation values of the land. The City concurs with Homeswest's comments.
- 2.11 Refer 2.1 and 2.3 above.
- 2.12 Refer Pg 5 "Sandbowl" and Commitment 13.
- 2.13 This matter could be considered by the City, however reference is required for the introductory comments and points 2.4 and 2.9 above.
- 2.14 The proponents acknowledge that there is merit in conserving as large an area as possible, however it is contended that in this instance extensive areas including adequate connecting corridors have been set aside with firm commitments to ensure that suitable management occurs (refer section 6.8).

CORRIDOR CONNECTIONS

- 3.1 These issues may be addressed during the preparation of managements plans, refer Commitments 6,7 and 8.
- 3.2 The proponents concur with the conservation/recreation corridor concept as proposed under the draft Bunbury-Wellington Region Plan. The CER proposal is consistent with that concept.
- 3.3 As the owner of much of the land which forms the proposed bush corridor west of Parade Road, Homeswest will be seeking to ensure that suitable tradeoffs are achieved consistent with its position as expressed in the introductory statement. In this context the formal allocation of land for a corridor is dependent upon attaining a suitable balance between residential development and conservation.
- The City assumes a similar position as Homeswest on this issue.
- 3.4 The matter of separation is one that the proponents may address at subdivision stage.
- 3.5 This point is acknowledged, however the development of management plans outlined in the commitments 6, 7 and 8.

RECREATIONAL USE

- 4.1 The proponents maintain that if the area is developed consistent with the CER proposal, the overall recreation values would not be lost because of the proposals for the nearby replacement of land with the same or higher values for conservation and recreation purposes (refer section 6.5). Section 6.6 identifies the enhanced recreation facilities to be implemented as part of a management plan.
- 4.2 Refer Commitment 13.
- 4.3 Homeswest has developed the Shearwater subdivision in accordance with a structure plan which provides for a number of small local parks integrated within the subdivision while the main component of public open space is allocated for the protection of the tuart woodland to the south. The Shearwater area is well served by a balanced distribution of both localised and more extensive areas of public open space.

MANAGEMENT

- 5.1 Noted and shall be considered as Management plan is developed.

The proponents recognise the need for a coordinated management approach involving the local community and utilising techniques such as fencing, signage and pathing which enhance protection of the environment. This is addressed under section 6.8 in the report and in the proponent's commitments, particularly commitment 7.

- 5.2 Refer 5.1 above.

- 5.3 The development proposal contained in the CER is based upon balancing housing and conservation requirements and as such seeks to minimise and carefully implement the clearing of land. The management issues are addressed by the proponents under sections 6.8 and 7 of the report.

- 5.4 Refer to Commitments 10 and 11.

- 5.5 It is envisaged the commitments are adequate, as detail relating to management plans can only be provided once the details have been developed.

WATER RESERVOIR

- 6.1 The proposal for the water reservoir on this site is that it is a concrete lined trapezoidal pond set into the ground. It would have a roof on it that could be colour treated to reduce its impact. During the site inspection it was very difficult to see a similar structure at the rear of Edith Cowan University. It is necessary for the water level in the reservoir to be at R.L. 48.5m AHD. If it were located on the site suggested then an above ground structure would need to be constructed, that would have a far greater visual impact in the area.

- 6.2 It is emphasized that it is not a above ground tank (see 6.1 above). With planting of appropriate trees on the site it is considered that the visual impact would be minimal. The matter has been discussed on site with the community that were present and has gone through a thorough community consultation process. It is considered the word "desecrate" to be highly emotive and not necessarily supported in fact.

- 6.3 See 6.1 and 6.2 comments regarding the proposals. The Board and other water authorities throughout Australia have a large number of similar facilities on similar sites. The Board relies on elevated storage facilities to maintain pressure and more importantly supply during periods of power failure as pumping is the only other method of maintaining supply. There is a health consideration in this regard. The last sentence seems emotive and makes very sweeping statements that are not necessarily supplied by fact.

ECONOMIC CONSIDERATIONS

- 7.1 The proponents acknowledge that it is important for Bunbury to offer a high quality of life for residents and tourists and that the protection of bushland is a significant element of this. The proponents commitments to the protection of bushland is espoused in its introductory statement. These are underpinned by the need to attain a balance between housing and conservation objectives.
- 7.2 The land the subject of the CER has been zoned Residential since gazettal of the Town Planning Scheme No 6 in 1984.
- The land proposed to be developed is zoned Residential and has been so zoned since 1980, under the current scheme, not to mentioned the previous scheme.
- 7.3 Refer 2.4 above.
- 7.4 This comment is a value judgement with the determination of the cost/benefit dependent upon an individual's values. It may be conversely put that the management plans proposed are worthwhile and the project worthwhile accordingly.

WASTEWATER TREATMENT PLANT

- 8.1 Option 3 proposes development in excess of 1km radius from the Waste Water Treatment Plant (WWTP). This will contribute to retention of the trees within this buffer zone.
- 8.2 Refer 8.1 above.

8.3 Refer 8.1 above.

8.4 Refer 8.1 above.

OTHER COMMENTS

9.1 No evidence beyond that presented in the Questions and Issues notice can be established. It would appear the comment has little if any foundation.

9.2 All requirements were met, in fact the CER on the proposal was extended beyond the normal requirements.

An appeal period exists should people be aggrieved.

9.3 This would be the subject of future management plans and also considered at the time of subdivision. Also refer to commitments 11 and 13.

9.4 Noted.

9.5 Homeswest concurs that its allocation of area for bushland protection under the CER proposal is sizeable, ie 68% of its holding east of Ocean Drive. In the context of the Minister for Housing's commitment, it is clear that if suitable compensation is obtained, 100% of Homeswest's land will be set aside for conservation.

The City's position is also established in the introduction to this paper and responses to the first section.

RESPONSE TO WATER AUTHORITY OF WESTERN AUSTRALIA

SUBMISSION

1. WASTE WATER TREATMENT PLANT (WWTP) BUFFER ZONE

It would appear that the comment related to ultimate capacity is a typographical error and should read 157000.

The comments in regard to the WWTP buffer zone are noted. Option No. 3 provides for this to be taken into account.

2. ASSESSMENT OF ALTERNATIVE LAND-USE PROPOSALS

Dot point 1.- noted.

Dot point 2.- noted. It is worth noting that solid demand exists for lots in similar locations with such proximity to the coast.

Dot point 3. - noted.

Consideration of Options

Option 1 is not considered as a preferred option in the CER.

Comments on Option 2, 3 and 4 are noted.

The revision of the benefits matrix to include a "whole of community" component is essentially superfluous, given that the issue of odours is addressed in the discussion of Option 2. This position is assured given that the Option 1 is not considered as a preferred option and only Option 2 is relevant to the concerns with odours.

Proposed Development

The relocation of the boundary line, associated with the buffer around the WWTP will result in the amendment of areas essentially quarantined.

This will impact upon the development proposed, reducing areas available for development with implications for the points made in this response to Questions and Issues raised in the submission period of the CER.

Comments related to Part Lots 303 and 304 are noted.

Hydrology

Comments related to ground water licences are noted.

Recreation - the 'Sandbowl'

The proponents preferences are for Options 3 and 4.

Option 5 is considered to have those advantages as outlined on page 59-60.

The position stated by the Water Authority of Western Australia in regard to Option 5 will require further negotiation with that Authority and the City.

Commitments

Comments Noted.

Page 12

The points detailed above provide the proponents response to the correspondence dated 9 September 1994 from the DEP detailing "Questions and Issues" raised during the public submission period raised in the CER.

Should you have any queries do not hesitate to contact the City of Bunbury Manager, Planning, Paul Kotsoglo.

Yours faithfully

Gary P Brennan
CITY MANAGER

per



Raymond P Gartrell
DIRECTOR PLANNING AND DEVELOPMENT

Enc. Letter from Kevin Prince
cc - Homeswest Attn: Richard Elliot

Appendix 3

List of submitters

Individual written submissions

Members of the public

D Alberti	R Jarman
T Alberti	K Jones
C Atkins	D Kwasha
P Biggs	L & M Lange
C Bignell	B McLaren and R Francis
B Bischoff	A McPherson
A Carruthers	L Parker
C J Clarke	K Roberts
L Clarke	C Scantlebury
J Curwood	Rev G Scantlebury
A J Dean	A Scott
T Earl	B Sheils
C Ellis	V L Smith
N B Guerling	T C Spencer
K T Harris	W Tichbon
J Hawksley	R Van Velzen
N H Heeroma	I W H Williams

Community groups

Australian Labor Party, Mitchell Branch
Bunbury Joint Heritage Group
Bunbury Naturalists' Club Inc.
Bunbury Tourist Bureau Inc.
South West Environment Centre

Government departments

Department of Conservation and Land Management
State Planning Commission
Water Authority of Western Australia

Form Submissions

Type 1

J Elderfield
D & V Mason
Ms J Wall
Mr J Wall

Type 2

C & T Bignell

Petitions

175 signature 'People Opposed to Development of System Six C70 Area

Appendix 4

Consolidated list of proponents commitments

7. COMMITMENTS.

The commitments made in this CER are listed here and numbered, along with the agency responsible for carrying out the work and the regulatory authority.

1. Commitment: The subdivisions will be deep sewered.
Responsibility for action: Proponents.
Regulatory authority: WAWA.
2. Commitment: A wildlife corridor of 100 metres will be included to provide a continuous habitat with Tuart trees between the Maidens and the Tuart park.
Responsibility for action: Proponents.
Regulatory authority: EPA.
3. Commitment: The areas to be cleared will be compensated for by preserving other areas of native vegetation.
Responsibility for action: Proponents.
Regulatory authority: DPUD.
4. Commitment: The access road to the western urban area will be fenced and have wildlife underpasses.
Responsibility for action: Proponents.
Regulatory authority: EPA.
5. Commitment: The Maidens area will be protected from all development.
Responsibility for action: Proponents.
Regulatory authority: DPUD.
6. Commitment: The areas of native vegetation which will be preserved will form a continuous corridor between the Maidens and Manea Park.
Responsibility for action: Proponents.
Regulatory authority: DPUD.

7. Commitment: All natural lands will be managed for the protection of conservation and open space values by:

- the establishment of adequately resourced, community-based management committees where appropriate,
- controlling access through the proper design of the subdivision and the sensible siting of roads, tracks and fencing,
- the control of exotic plants including weed species by appropriate methods,
- the implementation of rehabilitation programs using appropriate erosion control methods and revegetation,
- the formulation of a fire management program, incorporating strategic firebreaks, controlled burning and other methods consistent with protecting natural and other values of the area,
- the continued use of Council Rangers to assist in law enforcement and education of public use of bush areas, and
- the implementation of public consultation programs to assist in educating the public in the correct use, enjoyment and understanding of conservation and public open space land.

Responsibility for action: Proponents.

Regulatory authority: EPA.

8. Commitment: The management of all areas of native vegetation will be integrated and will be achieved by the adoption of formal management plans. The Bunbury City Council will accept responsibility for these lands. In particular a comprehensive management plan listing the management required and priorities in implementation will be prepared for the Maidens area and the east west corridor to Manea Park.

Responsibility for action: Proponents.

Regulatory authority: EPA.

9. Commitment: There will be rehabilitation of some areas, particularly the disturbed areas within the Maidens and two areas on either end of Lot 632 north of Centenary Avenue. This rehabilitation would be seen as an integral part of the management plan.

Responsibility for action: Proponents.

Regulatory authority: EPA.

10. Commitment: Access to native vegetation areas will be controlled by designing the subdivisions so that house lots back onto areas of native vegetation.

Responsibility for action: Proponents.

Regulatory authority: Proponents.

11. Commitment: Public access to the beach will be upgraded and suitable facilities will be constructed to allow appropriate use of the area.

Responsibility for action: Proponents.

Regulatory authority: DPUD.

12. Commitment: Appropriate recreational use of the areas of native vegetation will be promoted and suitable facilities will be developed.

Responsibility for action: Proponents.

Regulatory authority: Proponents.

13. Commitment: The existing appropriate recreational use of the Sandbowl area will be encouraged if users become involved in management of the site and a suitable agreement can be reached with the Shire of Capel.

Responsibility for action: Proponents.

Regulatory authority: Proponents.

14. Commitment: Native trees will be retained within the urban areas as far as possible, except for Tuarts because of the safety risk.

Responsibility for action: Proponents.

Regulatory authority: Proponents.

15. Commitment: There will be a coastal setback of 130 metres.

Responsibility for action: Proponents.

Regulatory authority: DPUD.

16. Commitment: The proponents will control any environmental impacts during construction by using standard techniques. Possible impacts are noise, lights, dust and sand spill.

Responsibility for action: Proponents.

Regulatory authority: Proponents.

Appendix 5

**Correspondence between the Department of Environmental
Protection and the proponents regarding
Technical Advisory Group considerations.**



Department of Environmental Protection

City Manager
City of Bunbury
PO Box 21
BUNBURY WA 6320

Your Ref PK:LE A405-02
Our Ref TP:92.51
Enquiries Simon Smalley

ATTENTION: MR PAUL KOTSOGLO

**CONSULTATIVE ENVIRONMENTAL REVIEW FOR BUNBURY
ENDOWMENT LAND (PART LOT 670) AND PART LOTS 301 - 303,
SOUTH BUNBURY (748)**

I write further to the meeting of 13 December 1994 between officers from the Department of Planning and Urban Development, Department of Land Administration, City of Bunbury, Homeswest and the Department of Environmental Protection.

I understand that subsequent to the public review of the Consultative Environmental Review for this proposal, a technical advisory group comprising officers of the above agencies has been requested to investigate the availability of State owned land which may be made available to the joint proponents should they agree to managing the above freehold land for conservation of its natural and recreation values. I note also in the responses to public submission from the joint proponents (City of Bunbury and Homeswest), that managing the above land for conservation would be considered if suitable arrangements could be made. I understand that outcomes from this technical advisory group process will be finalised by March 1995.

Since the proponents are amenable to the possibility of alternative development opportunities the Department of Environmental Protection considers that it is appropriate to await the technical advisory group report, prior to finalising the Consultative Environmental Review process, as this could influence the Environmental Protection Authority's assessment of the environmental acceptability of the proposal. In this way alternative solutions which avoid significant environmental effects may be found and hence a suitable solution meeting the objectives of all parties may be reached. It is anticipated that following the completion of the consideration of potential alternatives, the Environmental Protection Authority could report to Government within a matter of weeks.

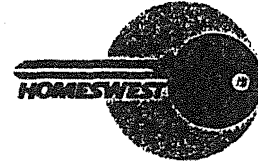
Could you please indicate your agreement to suspending the Consultative Environmental Review process to facilitate the considerations of the Technical Advisory Group. Should you have any enquiries regarding this matter please contact Simon Smalley ((09) 222 7143 direct line) Senior Environmental Officer in this Division in the first instance.

Colin Murray
A/DIRECTOR
EVALUATION DIVISION

for

9 January 1995
cc: Mr Richard Elliott, Homeswest, Bag 22, EAST PERTH WA 6004
Mr Larry Guise, Coordinator South West Region, DPUD Bunbury
Alternative development areas 090195 SSm

Enquiries: R Elliot
Direct Line: 222 4850
Our Ref:
Your Ref:



99 PLAIN ST
EAST PERTH
WESTERN
AUSTRALIA
6004

HOMESWEST
CENTRE

TELEPHONE:
222 4666
221 3985 (TTY)
FACSIMILE:
221 1388

DIRECTOR
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTRALIA SQUARE, ST GEORGE'S TERRACE
PERTH WA 6000

DEPARTMENT
ENVIRONMENTAL PROTECTION

ATTENTION: MR S SMALLEY

31 JAN 1995

Date: 7/1/92.51 SSM

Dear Sir

CONSULTATIVE ENVIRONMENTAL REVIEW - PT LOTS 670, 301-303
SOUTH BUNBURY

I refer to your letter dated 9 January, 1995 and advise that Homeswest agrees to
suspending the C.E.R. process to facilitate the considerations of the Technical
Advisory Group.

Yours faithfully

R R ELLIOT
PLANNER
LAND DEVELOPMENT

24 January, 1995

83142

Our Ref: PY:PK1FB15 : A405/02
Your Ref: TP92.51
Enquiries: Paul Kotsoglo (Ph: 808 260)



15 February 1995

The Director
Dept of Environmental Protection
Westralia Square
141 St Georges Terrace
PERTH WA 6000

23 FEB 1995

Attention: Mr Simon Smalley

7/10/92.51 SSJM

Dear Sir

**CONSULTATIVE ENVIRONMENTAL REVIEW FOR BUNBURY
ENDOWMENT LAND (PT LOT 670) AND PT LOTS 301 - 303 SOUTH
BUNBURY**

Thank you for your correspondence received 17 January 1995 in regard to the above.

I advise that the matter was considered by Council at its meeting of 13 February 1995 where it resolved as follows;

"(15) a) Council not support the suspension of the Consultative Environmental Review process for Bunbury Endowment Land (Part Lot 670) South Bunbury."

In accordance with Council's resolution, I request that you continue the Consultative Environmental Review Process as anticipated by the City of Bunbury.

Please find enclosed correspondence to the State Planning Commission in relation to the establishment of the State Planning Commission's Technical Advisory Group for your information.

Should you have any queries or require any clarification in regard to the matters raised please do not hesitate to contact Council's Acting Director of Planning and Development, Paul Kotsoglo on telephone (097) 808 260.

Yours faithfully

Gary P Brennan
CITY MANAGER

Noted

83755

INFO

per 
Paul B Kotsoglo

ACTING DIRECTOR PLANNING AND DEVELOPMENT

Enc: TAG correspondence to State Planning Commission

STEPHEN STREET
PO BOX 21
BUNBURY WA 6231
PHONE (097) 808 222