

Bunbury - Wellington Region Plan

A submission by the Environmental Protection Authority on the document released for public comment by the Department of Planning and Urban Development

**Environmental Protection Authority
Perth, Western Australia
Bulletin 681
May 1993**

THE PURPOSE OF THIS REPORT

This report is the Environmental Protection Authority's submission to the review of the document released by the Department of Planning and Urban Development entitled "Bunbury-Wellington Region Plan".

This submission is not a report under Part IV of the Environmental Protection Act, and there are no provisions for appeals against the Authority's views expressed in the submission.

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Appendices

1. Recommendations from the EPA Red Book reports requiring further consideration in the Bunbury-Wellington Region Plan

1. Introduction

The Department of Planning and Urban Development (DPUD) has prepared the "Bunbury - Wellington Region Plan" and released it for public comment. The plan provides a framework for land use planning and development covering the City of Bunbury and the Shires of Harvey, Collie, Dardanup, Capel and Donnybrook - Balingup. The Region Plan is a strategic level document which will rely upon the legal mechanisms of statutory town planning schemes and the planning approvals process for its implementation. The plan contains a Land Use Strategy to assist planning in the region over the next 20 years, more detailed structure plans for the Greater Bunbury Area and the Collie Basin and Planning Guidelines to guide future requests to alter land use in the region.

The Environmental Protection Authority's advice contained in this Bulletin represents a submission to the review of the Bunbury - Wellington Region Plan. This advice is not a report under Part IV of the Environmental Protection Act, therefore, there is no provision for appeals against the Authority's views. However, a number of individual proposals described in the Region Plan may require formal environmental impact assessment and setting of Environmental Conditions under the Environmental Protection Act through later planning stages.

Whilst the comments in this submission point to areas of deficiency in the document, they should not be seen as detracting from the positive contribution of the draft Region Plan. Rather, this submission should be seen as offering suggestions for its improvement.

The preparation of the draft Bunbury - Wellington Region Plan by the Department of Planning and Urban Development is a major achievement and the Environmental Protection Authority commends the Department on its initiative and extensive public consultation which was part of the preparation of the document.

2. Separation of conflicting land uses

Section 3 of the Region Plan identifies five broad principles to provide a foundation for the Region Plan and the land use strategy. These are: ecologically sustainable development; conservation of the natural environment; an identity for the region; economic development; and social development. The Environmental Protection Authority supports these general guiding principles being used for the development of sound regional plans.

2.1 Principles of the Plan

The Environmental Protection Authority considers that a further fundamental principle of land use planning at a regional level is to ensure the adequate separation of conflicting land uses. Separation of conflicting land uses does not require the sterilisation of large tracts of land. Rather it requires the planning processes to ensure that each land use is compatible with other surrounding uses. For instance, 'heavy' industrial uses can be separated from other land uses by an appropriate buffer of lighter industrial land use. Similarly, abattoirs, fellmongers and wool scouring works can be placed together and should be located near other rural industries, rather than near residential areas. For the most part the Region Plan conforms to this principle. However, the principle itself is not identified.

The Environmental Protection Authority concludes that separation of conflicting land uses is a fundamental principle of planning to avoid environmental impacts. The Authority recommends that the Region Plan should include the additional fundamental principle of providing adequate separation between conflicting land use types.

2.2 Specific plans with potential for land use conflicts

The land use strategy and the structure plans for the Collie Basin and the Greater Bunbury Area establish the physical framework for planning in the Bunbury - Wellington Region. However, there are a number of items which are of concern to the Environmental Protection Authority.

2.2.1 Preston Industrial Park

The Greater Bunbury Structure Plan proposes a large area to be set aside for industrial use to be known as the Preston Industrial Park (refer to Figure 19, page 155). Current land use includes rural pursuits and mixed industrial uses. However, this site has difficulties with both potential conflict between existing and planned development and some serious constraints imposed by the natural environment. These include:

- potential air/gas, odorous and dust emissions and their impact on the expanding residential population of Bunbury and implications on future residential and recreational developments;
- noise from industry and the associated transport corridor;
- potential risks from the transport of hazardous materials in the service corridor;
- source and disposal of process and coolant water;
- solid waste disposal; and
- direct or indirect discharges to groundwater, the Preston and Ferguson rivers, adjacent wetlands and ultimately to the Leschenault Inlet.

The Environmental Protection Authority believes that this area will need extensive management of off-site impacts and the structure plan should be formally referred to the Authority to enable consideration of the above issues. A number of similar proposals for 'greenfield' industrial parks have required formal environmental impact assessment by the Authority (eg. Environmental Protection Authority Bulletins 606, 607 and 645).

The Environmental Protection Authority concludes that the structure plan for the proposed Preston Industrial Area may require formal environmental impact assessment. The Authority recommends that should a firm proposal be developed, the Department of Planning and Urban Development refer the proposal to the Authority.

2.2.2 Heavy industry in Preston Industrial Park

The Region Plan also advocates one major 'heavy' industrial use within the Preston Industrial area with a surrounding mixed use buffer. A dedicated service corridor is intended to link the 'heavy' industrial site with the Bunbury Port facilities.

It is very difficult to assess the placement of 'heavy' industry in a regional context with little specific information about the industries which are likely to be involved. Notwithstanding that, issues such as buffers, corridor access, transport, liquid and solid waste disposal, effluent discharges to river, estuarine or marine systems, groundwater pollution, air emissions (dust/particulates, gas and noise) and odour, and risks and hazards are all relevant issues. The Environmental Protection Authority has issued policies on air emissions (dust, sulphur dioxide and noise). The buffer requirements for 'heavy' industry are nominally 1000 metres, but may change with regard to detailed investigations depending upon topography, meteorology and type of industry under consideration. Types of industries with fewer potential off-site impacts may be more appropriate.

The site identified for the 'heavy' industrial use is located south-east of the confluence of the Preston and Ferguson rivers approximately six kilometres from the Port of Bunbury, but adjacent to areas of residential and rural residential development. During winter, groundwater breaks the surface in many places and there are wetlands in the area. The area has a mix of sandy and clayey soils. The sandy Bassendean Sands have potential for leakage to

groundwater, the Preston and Ferguson rivers and the wetlands. Consequently the site is vulnerable to pollution without proper management.

In addition, restrictions on access to the Port of Bunbury may be a significant constraint for bulk transport. The Region Plan recognises this by providing for a special purpose service corridor, but even this may cause unacceptable noise impacts upon residential areas and introduce risks from the cargo (see Section 2.2.3 below).

By contrast, the Kemerton Industrial Park has been set aside for the specific objective of accommodating 'heavy' industry. It has a buffer around it and has public acceptance as an industrial site. The Kemerton site is generally well serviced, although corridor access to the Bunbury Port could be improved.

As a longer term strategy for the placement of 'heavy' industry in the Bunbury - Wellington region, it is recognised that the Preston Industrial Park may have some benefits, such as proximity to the Port and the potential for a dedicated service corridor. Nonetheless, the site may be suitable only for a limited range of 'heavy' industry uses. The siting of any 'heavy' industrial development in this area is likely to require formal environmental impact assessment. Industries with fewer off-site impacts may be more appropriate.

The Environmental Protection Authority concludes that the Preston Industrial site may be suitable only for a limited range of heavy industrial uses with lighter industry and mixed commercial uses forming a buffer to existing and proposed residential land uses. The Authority advises that proposed 'heavy' industrial developments will require extensive environmental management of off-site impacts such as noise, air quality and preferably a secured service corridor to the Bunbury Port for bulk import and export.

2.2.3 Glen Iris residential area

To the north of the Preston Industrial Area is the residential development at Glen Iris, which is proposed for further expansion. This site faces a number of potential impacts. In order to provide for acceptable levels of amenity and public safety, formal environmental impact assessment is likely to be required for future development proposals and may recommend limitations upon industrial developments surrounding the Glen Iris residential area.

There is an established abattoir and holding paddock within 750 metres to the east, the Bunbury Port and Harbour facilities to the north are proposed for expansion, and the Preston Industrial Park is being planned to the south.

Notional buffers for abattoirs, to adjacent sensitive land uses is 500 metres. It is likely that the current location of the abattoir will limit the use of the adjacent mixed use buffer zone, particularly in relation to commercial uses. Moreover, it is possible that residents of the proposed Glen Iris subdivision will have occasion to complain of odours. It could be anticipated that a 500 metre buffer may be insufficient during the summer easterly breezes, therefore, any expansion of the abattoir or holding facilities may prove to be unacceptable in the context of the adjacent land uses identified in the Greater Bunbury Structure Plan.

Other land use conflicts likely to be experienced by the residents of the Glen Iris subdivision include:

- noise impacts from the Preston Industrial Area, an expanded Bunbury Port and the dedicated service corridor, and
- risks and hazards from the transport of hazardous materials along the dedicated service corridor.

The Environmental Protection Authority concludes that there is the potential for land use conflicts in the Glen Iris area arising from planned activities which surround it. The Authority advises that land use activities surrounding this expanding residential development may have to be limited and will require close evaluation during the approvals process.

2.2.4 Bunbury Harbour City development

The Region Plan advocates implementation of the Bunbury Harbour City Development Plan (page 172). However, the Environmental Protection Authority has recommended (Environmental Protection Authority Bulletin 660) that rezoning not proceed yet and that further investigation and additional formal environmental assessment is required on:

- the location of noise-sensitive land uses in areas which may (depending on the outcome of the Mineral Sands Task Force) be affected by high noise levels from trucks servicing the Outer Harbour;
- hazard analysis, particularly with respect to assessment of alternative sites for the importation of hazardous materials, such as ammonium nitrate;
- potential site contamination on each existing lot from historical and current operations such as fuel storage tanks and engineering works;
- relocation of the existing waste water treatment plant so the odours do not preclude development; and
- stormwater drainage design criteria.

The Minister for the Environment has recently published the environmental statement for this proposal which reflects the Authority's recommendations.

2.2.5 Collie Basin Structure Plan

The Collie Basin Structure Plan is included in the Region Plan. This structure plan was the summary of the report prepared by the Collie Basin Management and Planning Group which was appointed by Cabinet. This structure plan has not been referred to the Environmental Protection Authority for environmental impact assessment.

There are a number of environmental issues in the Collie Basin area. The key issues for the area are: availability of water resources; disposal of saline process water; rehabilitation of open cut mines; the provision of adequate physical separation between mining and residential areas; cumulative air pollution impacts (particularly sulphur dioxide emissions); disposal of flyash from the power station; consolidation of powerlines and the location of the proposed aerodrome with reference to the rural residential areas north of the Collie town site. Many of these issues cannot be adequately managed through the regional planning process. However, the Collie Basin Management and Planning Group should endeavour to assist in resolving these issues through later planning and development stages.

The major environmental feature of the Collie Basin Structure Plan which should be managed through the Bunbury - Wellington Region Plan is to ensure that there is adequate separation between conflicting land uses. The Environmental Protection Authority's primary concern in this regard is that adequate separation is provided between residential development and open cut mining. Separation of these land uses is required to limit impacts upon residents arising from the noise and dust of mining operations. In addition, the access roads into the open cut mines and the associated surface operations of the mines should be positioned to reduce noise impacts upon residents.

The land use which follows mining sets the objective for the standard of rehabilitation. These land uses should generally be defined during the environmental assessment of mining proposals. If these are to be land uses other than forest, they should be defined in the structure planning for the Collie Basin.

2.3 Industrial waste disposal

During the preparation of the background working papers for the Bunbury - Wellington Region Plan, the Advisory Committee on Industrial Sites in the South-West was also convened to identify suitable sites for industrial parks.

Neither the Region Plan nor the *Industrial Sites in the South-West* report have identified a coordinated industrial waste disposal strategy for the South-West region. The Authority considers that the preparation of such a strategy should be an urgent priority (Environmental Protection Authority Bulletin 589). The lack of such a coordinated strategy is perhaps a greater imposition to industrial development in the region than the lack of suitable sites, especially since Kemerton Industrial Park could still accommodate more industries.

The Environmental Protection Authority recommends that responsible Government agencies prepare and implement a coordinated strategy for disposal of industrial wastes in the South-West as an urgent priority.

2.4 Specific comments on the text

In addition to the specific objectives which are identified in the table on page 60 (rural-agriculture objectives and actions), a further objective of separating conflicting land use should be included. A new specific objective should note that legitimate agricultural practises should be separated from encroachment by sensitive land uses such as residential or rural residential development in its various forms. Similarly, the table on page 64 (rural-residential objectives and actions) should include a specific objective which recognises the need to provide adequate separation between rural residential uses and conflicting land uses such as industry and intensive agricultural pursuits.

The Region Plan states that a 1000 metre odour buffer is required for each of the waste water treatment plants at Bunbury Outer Harbour, South Bunbury, Eaton and East Australind (see page 169). A 1000 metre buffer is a nominal requirement which may be found to be either too large or too small, following more detailed investigations. The appropriate buffer requirements for waste water treatment plants are determined by factors such as the size of the plant, the technology employed, the risks from on-site chlorine storage and the prevailing climatic and topographic conditions. The Environmental Protection Authority understands that the Water Authority of Western Australia is currently undertaking modelling studies to determine the appropriate buffer distance to reduce off-site impacts from odours at the South Bunbury Waste Water Treatment Plant. The Region Plan should not indicate a definitive 1000 metre buffer, given that these modelling studies are not as yet complete, particularly as the Region Plan shows future urban development next to the South Bunbury waste water treatment plant buffer areas. This may not be appropriate, and the buffer area may need to be increased downwind from prevailing winds.

3. Conservation of the natural environment

3.1 The Environmental Protection Authority's position

The Environmental Protection Authority considers that an adequate and representative system of reserves should be set aside for the conservation of flora, fauna and landscape. Such reserves should be properly managed and given security of tenure commensurate with their conservation value. The integrity of such reserves should be maintained. Activities, both within reserves and beside reserves, that adversely impact upon the conservation values of the reserve should not be allowed or should be carefully managed.

In order to establish a system of reserves of regional conservation significance and/or regional representation of biological and physical values, the Environmental Protection Authority commissioned the Conservation Through Reserves studies in 1972. These studies divided the State into twelve systems and made recommendations on areas which should be reserved for conservation or recreation within each system and made recommendations for their management. This work led to the 'Red Books' on conservation reserves in Western Australia. The Bunbury - Wellington Region falls partially within the area covered by the System 6 'Red Book' and partially within the area of System 1.

The Environmental Protection Authority considers that all recommendations in the 'Red Books' for potentially significant conservation areas should be implemented. The Authority believes that the integrity of Systems recommendation areas should not be further compromised and therefore carefully scrutinises any development which threatens the values identified by the 'Red Book' reports.

The Environmental Protection Authority also recognises that the requirements of conservation extend beyond reserve boundaries. In fact a fully representative reserve system in terms of species is unlikely to be an achievable aim, especially in the species rich south-west of the State (Environmental Protection Authority Bulletin 634). There are some instances where areas that have potentially very high conservation values have not been included in Systems recommendations, and have consequently been the subject of development proposals. One example of this was a development proposal for an area of land at Brixton Street, Kenwick, in 1991, where the Authority recommended that a substantial area of land be set aside for conservation (Environmental Protection Authority Bulletin 577).

This does not necessarily mean that all areas outside 'Red Book' recommendation areas and areas of very high conservation value are not environmentally significant. Rather, it means that decisions on the use of these areas should normally be made through the planning process, both at the State and local level.

Whilst land use decisions related to areas outside 'Red Book' recommendation areas and areas of very high conservation value are normally made through the planning process, both at the State and local level, the Authority provides assistance to ensure that environmental principles are incorporated into major planning documents and policies, such as the Bunbury - Wellington Region Plan.

3.1.1 Policy framework in the Region Plan

The established principle of reserving representative areas for conservation is not adequately addressed in the Region Plan. The Region Plan recognises two components to the protection of the natural environment:

- (i) the **conservation** of natural ecosystems and areas with high value, because they are unique or rare, by protection and careful use, and
- (ii) the **use and development of land and water**, in locations that do not necessarily have high conservation value, which takes into consideration the impact on the natural systems of the earth.

The Environmental Protection Authority considers that the principle of representativeness should be included in the policy framework for conservation of the natural environment in the Region Plan.

The Region Plan should also promote the principle of a tiered approach to the protection of State, regional and local level conservation values and resources by developing a hierarchical system of conservation reserves using landscape protection areas and specific corridors to link conservation reserves. Local government authorities should be involved by identifying areas of local conservation importance and protecting these reserves through appropriate Town Planning Scheme zonings and provisions.

The Environmental Protection Authority concludes that protection of representative areas of vegetation types for their particular value for plants, animals, landscape and geology is a fundamental principle in the conservation of the natural environment. The Authority recommends that the Region Plan should acknowledge the following principles:

- (i) **The provision of an adequate and representative system of reserves set aside for the conservation of flora, fauna and landscape, which are properly managed and given security of tenure commensurate with their conservation value. These reserves should be based upon existing conservation areas and those proposed in the Systems 'Red Books' and by**

the Department of Conservation and Land Management in their Management Strategies for Forests of the South-West.

- (ii) Special high value areas should also be set aside after appropriate evaluation.

In addition, the Authority advises that the Region Plan should promote the concept of a hierarchical system of conservation reserves and management responsibilities, including the development of local conservation strategies to provide links between conservation areas which are managed at a State and Regional level.

3.2 Specific proposals for conservation, open space and recreation

As previously mentioned, the Region Plan sets out a framework for areas of regional conservation or recreational value to be set aside. Specifically, the regional open space areas are composed of:

- areas proposed by the Department of Conservation and Land Management in the Central Forest Management Plan number 10, 1987;
- rural landscape amenity areas, held in current ownership but managed with the assistance of State and local government (predominantly escarpment areas, river valleys and tourist drive areas); and
- parks and recreation areas, owned and managed predominantly by local government.

In addition, the text of the Region Plan states that the 'Conservation Through Reserves' proposals for Systems 1 and 6 (as shown in their figure 8) are incorporated into the Open Space System. A number of specific issues raised by the Regional Open Space plan are discussed below.

3.2.1 Regional open space improvement fund

The Authority notes the suggestion that a regional fund be introduced to assist in the purchase and improvement of regional open space and wishes to commend the Department of Planning and Urban Development for this initiative. The Authority recommended to Government in the System 6 Report of 1983 (Recommendation 13 of Part I) that statutory mechanisms for setting aside land as open space at a regional level beyond the Perth Metropolitan Region should be investigated. The establishment of a regional fund could assist in the implementation of recommendations for conservation and recreation as detailed in the 'Red Book' reports.

3.2.2 Conservation areas identified by CALM

The Department of Conservation and Land Management proposals for conservation areas which were described in the Central Forest Management Plan number 10 are now superseded. During 1992 the Environmental Protection Authority, through its formal environmental impact assessment processes, assessed the Department of Conservation and Land Management's review of forest management strategies for the South-West of Western Australia. Subsequent to the Authority's assessment and report and recommendations (Environmental Protection Authority Bulletin 652), the Minister for the Environment issued legally binding conditions which require the Department of Conservation and Land Management to implement the reserve system identified in the Management Strategies for the South-West Forests of Western Australia.

The reserve system, which is identified in the Management Strategies for the South-West Forests of Western Australia, represents a closer approximation to the reserve system identified in the Environmental Protection Authority's System 6 'Red Book' recommendations. Therefore, the Regional Open Space plan (figure 7 of the Region Plan) should be revised to include the proposed conservation reserve system which the Department of Conservation and

Land Management are required to implement in accord with the Environmental Conditions for the South-West Forests Management Strategies.

The Environmental Protection Authority recommends that the Regional Open Space plan should incorporate modifications to the reserves system identified by the Department of Conservation and Land Management in the proposals to amend the 1987 Forest Management Plans and Timber Strategy and proposals to meet Environmental Conditions on the Regional Plans and the WACAP ERMP, as approved by the Minister for the Environment.

3.2.3 EPA recommendations for conservation reserves

Outside of the areas administered by the Department of Conservation and Land Management, there are a number of System 6 proposals which have not been identified on figure 7 of the Region Plan; 'Regional Open Space'. In addition, Figure 8 of the Region Plan (System 1 and System 6 areas) omits the System 1 recommendation (Recommendation 1.1.2 Ludlow - Tuart Forest) which is relevant to the Bunbury - Wellington Region.

Appendix 1 of this Bulletin details other recommendations from the System 1 and System 6 reports which should be recognised in various sections of the Bunbury - Wellington Region Plan.

The Environmental Protection Authority recommends that the Regional Open Space plan should include the Systems 1 and 6 site specific recommendations which are not within areas administered by the Department of Conservation and Land Management as a separate category on figure 7 of the Region Plan. Appendix 1 details these omissions of 'Red Book' recommendations from the Regional Open Space plan.

3.2.4 Westralia Management Priority Area

A key issue which the Authority is concerned with in the Collie Basin Structure Plan is the implementation of the System 6 recommendation for the Westralia Management Priority Area.

The Authority acknowledges that, for the most part the 'beneficial land use' in the Collie Basin is the extraction of coal. However, the Westralia Management Priority Area represents an area of regional significance as identified in the System 6 report (recommendation C88 as modified and shown in the Management Strategies for the South-West Forests of Western Australia (CALM, 1992)). In this regard it is possible to realise both the major land use objective in the Basin and protection of the natural environmental resources of the Westralia Management Priority Area through the use of underground mining techniques. The Environmental Protection Authority considers that the vesting order should include only the provision of underground mining. The Authority believes that this position is appropriate and valid under Section 38 of the Collie Coal (Griffin) Agreement Act.

The Environmental Protection Authority concludes that the System 6 recommendations for the Westralia Management Priority Area (C88) can be implemented. The Authority recommends that access to the coal resource should occur only through underground mining.

3.2.5 Urban development north of the Leschenault Estuary

The Greater Bunbury Structure Plan shows the area north of the Leschenault Estuary as future urban development. This area is to be the southern most extension of the Binningup settlement. The portion of the area which is categorised as 'Future Urban B' is within an area recommended by the System 6 report (recommendation C66) for management as a regional park.

The area north of the Leschenault Estuary also contains substantial areas of samphire wetlands. Samphire wetlands are a highly valued ecosystem type which is not well represented in conservation reserves with secure tenure. The Environmental Protection Authority seeks to

protect this ecosystem type and has previously identified the samphire wetlands north of the Leschenault Estuary as having significant regional value (Environmental Protection Authority Bulletin 616). Given that the area is also subject to a specific recommendation from the System 6 report it is unlikely that urban development of any of this land would be considered to be environmentally acceptable. It is therefore inappropriate to display this area as having potential for future urban development, even with the acknowledgment of the necessity for formal environmental impact assessment.

The Environmental Protection Authority recommends that the area north of Leschenault Estuary which is defined as 'Future Urban (Category B) on Figure 19 of the Bunbury - Wellington Region Plan, should be identified as an area recommended by the System 6 report for planning and management as a regional park.

3.2.6 Recognition of 'Red Book' recommendations in the Planning Guidelines

The Rural Catchment Planning Guidelines make mention of each of the site specific recommendations for conservation or recreation which were made in the System 1 and System 6 'Red Book' reports. However, in the Greater Bunbury Area the Catchment Planning Guidelines fail to acknowledge all of the relevant recommendations from the 'Red Books' as environmental constraints on the suitability of land for alternative uses. These omissions appear to be an oversight, but should be corrected. The Authority expects the 'Red Book' recommendations to be implemented and requires formal environmental impact assessment for proposals which are contrary to the site specific recommendations of the 'Red Book' reports.

Appendix 1 of this Bulletin details recommendations from the System 1 and System 6 reports which require some additional consideration in the Bunbury - Wellington Region Plan.

The Environmental Protection Authority recommends that the relevant site specific recommendations from the 'Red Book' reports should be included in each of the Region Plans Catchment Planning Guidelines as items requiring consideration for any changes to land use. Those 'Red Book' recommendations which have been omitted from the Catchment Planning Guidelines are detailed in Appendix 1 of this report.

3.2.7 Rural landscape amenity areas

During the System 6 study the Environmental Protection Authority made a number of recommendations regarding setting aside areas of landscape amenity along the Darling Scarp and the scenic valleys emerging from it. The rural landscape amenity areas nominated in the Bunbury - Wellington Region Plan are essentially equivalent to the potential regional parks areas identified in Part I of the System 6 report (Chapter 4 and figure 1, Environmental Protection Authority, 1983). However, the Authority notes that the Collie River and Harvey River valleys have not been identified in the Region Plan for landscape protection.

In the particular case of the Collie River from Wellington Dam to the South-Western Highway, the area has substantial recreational and tourist value and is well used. In addition, the Leschenault Inlet Management Authority is responsible for managing this area. Similarly, the Harvey River valley below the Stirling Dam contains a slalom kayak course and is used for recreational and competitive kayaking during the summer months when water is released for irrigation purposes.

The Environmental Protection Authority concludes that the Collie River and Harvey River gorge areas should be included within the Regional Open Space plan for combined management as Rural Landscape Amenity Areas and, protection as conservation and recreation reserves as was indicated by the System 6 report.

4. Management of lakes and wetlands on the Swan Coastal Plain

Lakes and wetlands are valuable ecological and social resources in Western Australia because they support a wide range of water and land animals and plants. Lakes and wetlands have cultural and heritage values, provide for recreation, tourism and education, are an intrinsic part of the natural as well as the modified surface drainage pattern and they are indexes of environmental quality. The Environmental Protection Authority has for a long time known of and sought to counter pressures on lakes and wetlands as 80 per cent of these ecosystems on the Swan Coastal Plain have had their functions significantly changed since European settlement.

The Authority has worked to provide legal protection for the remaining lakes on the Swan Coastal Plain through the preparation of the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992. These lakes are essentially those with water bodies greater than one hectare at the start of December. Any activity which may result in mining, excavating, filling in, polluting or changing the drainage of lakes is prohibited. Management of land use around lakes is also expected to protect the environmental values of these lakes.

In addition, the Environmental Protection Authority will assess proposals affecting significantly functional lakes and wetlands in the Bunbury - Wellington Region these include:

- lakes nominated for protection in the Environmental Protection Policy;
- representative wetlands recommended for protection in the Authority's 'Red Book' reports;
- wetlands with rare vegetation communities not adequately represented in reserves, or rare flora and fauna (and their habitats); and
- wetlands recognised by international agreement because of their importance primarily for waterbirds and their habitats.

Generally proposals affecting lakes and wetlands in categories other than those listed above are not subject to the Environmental Protection Authority assessment process. The Authority works in the knowledge that planning agencies and proponents will recognise that all wetlands have special value and they should be appropriately managed to maintain their human use and natural values when assessing possible uses.

The Authority appreciates that agencies with planning and management responsibilities will be involved in the application of lake and wetland policies and guidelines. Those most concerned are the departments of Planning and Urban Development, Conservation and Land Management and the Water Authority of Western Australia. Local authorities and the community are also involved in reaching decisions about the best use of the remaining wetlands.

The main factors in lake and wetland protection include:

- assessment and management of wetlands having regard to the Authority's guidance contained in Bulletin 374;
- protection for wetlands and associated vegetation buffers through planning controls or reservation consistent with management requirements; and
- protection of water levels and water quality through management of drainage (water balance) and land use in the catchments of wetlands.

The Authority expects that the Region Plan would adopt the above principles and methods for considering any development or re-zoning proposals. Therefore, the Planning Guidelines should identify the broader Swan Coastal Plain lakes and wetlands as a resource which require protection and proper environmental management having regard to the Authority's Bulletin 374. There are wetland ecosystems in each of the catchment planning areas of the Bunbury - Wellington Region.

The Environmental Protection Authority concludes that the Region Plan should address the need for protecting and managing the special values of lakes and wetlands. The Authority recommends that the Catchment Planning Guidelines should reflect the expectation that planners and the planning process at State and local levels should have regard to the Environmental Protection Authority's Bulletin 374 as a guide to resolving wetland management issues.

5. Catchment management

The Environmental Protection Authority supports the Department of Planning and Urban Development's use of surface water catchment boundaries as an essential part of land use planning. A major benefit to be gained from using boundaries derived from the natural environment is the potential for greater integration of the management of land use by private land holders and advisory and regulatory governmental institutions to ensure that land use is sustainable.

In the Bunbury - Wellington Region a major focus of concern is the health of the Leschenault Estuary. Appropriate land use planning and management will assist in ensuring that the problems experienced in the Peel - Harvey Estuary system are not repeated in this Region as population pressures grow. A particular concern in this area is the potential for unsewered residential and rural residential development to add significant nutrient loads to the Estuary. The Authority has stated its position in regard to the management of residential developments which are next to the Leschenault Estuary, both in the System 6 'Red Book' recommendation for the area (recommendation C66) and through formal environmental impact assessment of one such rural residential development of Part Wellington Location 1, on Cathedral Avenue (Environmental Protection Authority Bulletin 600).

5.1. Specific comments on the text

In general terms, the Authority considers that retention of stormwater should occur on-site rather than being conveyed off-site and into wetlands or other waterways. The concepts detailed through the practice of water sensitive urban design facilitate the principle of reducing the conveyance of stormwater and the pollutant loads which it carries. Where on-site retention of stormwater drainage is not feasible, the Authority usually recommends that a one in 10 year storm volume be held in retention basins near to the source of drainage waters for a period of three to four days to remove nutrients, solids and hydrocarbons. The Region Plan on page 169 incorrectly interprets the Authority's position.

Similarly, the action statements which support reduction of pollutant levels in ground and surface water and minimisation of the impact of stormwater drainage on wetlands and recharge rates of aquifers (see page 91), should include reference to the use of the evolving principles of water sensitive urban design.

6. Conclusion

The Environmental Protection Authority commends the Department of Planning and Urban Development on the preparation and the content of the Bunbury - Wellington Region Plan. The Regional Plan and the strategies defined within are likely to make substantial progress towards providing a framework for planning in the Region covering the City of Bunbury, and the Shires of Harvey, Collie, Dardanup, Donnybrook - Balingup and Capel. The suggestions made by the Authority in this submission are intended to assist the Plan's effectiveness in achieving its objectives.

The comments offered in this submission are offered as public advice and not a report under Part IV of the Environmental Protection Act. The Authority may require some proposals to undertake formal environmental impact assessment at some later stage in the planning process.

7. References

- Department of Conservation and Land Management (1992). Management Strategies for the South-West Forests of Western Australia: A Review — Draft for Public Comment. Department of Conservation and Land Management, Perth, Western Australia.
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Appendix 1

Recommendations from the EPA 'Red Book' reports requiring further consideration in the Bunbury - Wellington Region Plan.

This appendix details the specific System 1 and System 6 'Red Book' recommendations which further consideration in the Region Plan.

The Environmental Protection Authority recommends in Recommendation 6 above that the reserve system identified by the Department of Conservation and Land Management in their South-West Forest Management Strategy should be used in place of the outdated Central Forests Management Plan No 10 of 1987. Therefore, this appendix does not include consideration of the substantial differences between the Regional Open Space map and the System 6 recommendations for the reserves on the Darling Plateau where the land is administered by the Department of Conservation and Land Management .

Omissions from the Regional Open Space plan (figure 7 of the Region Plan) of other recommendations as identified in Section 3.2.2 of this report are detailed below. The absence of various 'Red Book' recommendations from the Catchment Planning Guidelines, as suggested in Section 3.2.5 of this report, are also detailed.

RECOMMENDATION	COMMENTS
SYSTEM 1 The South West	
1.1.2 Ludlow Tuart Forest	This area is not identified on figure 8 of the Region Plan (System 1 and 6 areas). This recommendation needs to be identified in the Issues, Opportunities and Constraints section of the rural catchment planning guidelines for the Capel River Catchment.
SYSTEM 6 The Darling System	
C61 Reserve C24472, Lake Preston	Not shown on figure 8 (Systems 1 and 6 areas) of the Region Plan. Needs to be acknowledged in the catchment planning guidelines for the Harvey River Catchment.
C62 Reserve C2547, Harvey	Should be shown as a Nature Reserve on the Regional Open Space plan (figure 7 of the Region Plan).
C63 Myalup Swamp and Mialla Lagoon	Needs to be identified in the Issues, Opportunities and Constraints section of the Binningup Planning Unit (CO1) in the Greater Bunbury Structure Plan.
C64 Reserve 2517, Harvey	This area needs to be shown as a Nature Reserve on the Regional Open Space plan (figure 7 of the Region Plan).
C66 Leschenault Inlet	The Leschenault peninsula is proposed as a Conservation Park. The Regional Open Space plan (figure 7 of the Region Plan) should reflect this intended reservation. The area north of the Estuary should not be shown on the Greater Bunbury Structure Plan as 'Future Urban (Category B)' as this is in conflict with the System 6 recommendations for this area. The System 6 recommendation should be included in the Issues, Opportunities and Constraints section of the Binningup Planning Unit (CO1) and the Leschenault Estuary Planning Unit (CO2) of the Greater Bunbury Structure Plan.

RECOMMENDATION	COMMENTS
C67 Brunswick, Collie and Wellesley Rivers	The System 6 recommendation should be included in the Issues, Opportunities and Constraints section of the following Planning Units of the Greater Bunbury Structure Plan: Kemerton (CO3), Leschenault (CO4), Treendale (CO5), Australind East (CO6), Australind (CO7) and Eaton (CO8).
C68 Anglesea Island	<p>This area is proposed for conservation for the protection of salt marsh and mangrove ecosystems. The Regional Open Space plan, figure 7 does not adequately describe this intention.</p> <p>This System 6 recommendation should be included in the Issues, Opportunities and Constraints section of the Leschenault Inlet Planning Unit (BU2) of the Greater Bunbury Structure Plan.</p>
C69 Big Swamp, South Bunbury	This System 6 recommendation should be included in the Issues, Opportunities and Constraints section of the Bunbury South Planning Unit (BU5) of the Greater Bunbury Structure Plan.
C70 South Bunbury Coastal Land	<p>This area is not adequately identified by a 'Rural Landscape Amenity Area' categorisation of the Regional Open Space plan (figure 7 of the Region Plan), given that the area is recommended to provide for reservation of the important stands of Tuart at the time of subdivision.</p> <p>This System 6 recommendation should be included in the Issues, Opportunities and Constraints section of the Usher, Gelorup, Dalyellup Planning Unit (BU6) of the Greater Bunbury Structure Plan.</p>
C71 Reserves near Dalyellup	This System 6 recommendation should be included in the Issues, Opportunities and Constraints section of the Usher, Gelorup, Dalyellup Planning Unit (BU 6) of the Greater Bunbury Structure Plan.
C77 Bell MPA	This area is not identified in the Issues, Opportunities and Constraints section of the rural catchment planning guidelines for the Murray River Catchment.
C78 Reserve C22977, Harvey	This area is not portrayed on the Regional Open Space plan (figure 7 of the Region Plan). The 'Red Book' recommendation is for reservation as a Nature Reserve.
C79 Reserve 15515, Harvey	<p>This area is not portrayed on the Regional Open Space plan (figure 7 of the Region Plan).</p> <p>The Rural Catchment Planning Guidelines for the Yalgorup Catchment incorrectly identify this area in the Issues, Opportunities and Constraints section. The area referred to by this recommendation is within the Stirling Dam and Harvey Dam Catchment areas.</p>

RECOMMENDATION	COMMENTS
C80 Reserves east of Harvey	The smaller south-east area associated with this recommendation is not identified on the Regional Open Space plan (figure 7 of the Region Plan). The recommendation in the System 6 report is for Conservation of Flora and Fauna. The area could therefore be shown as a proposed Nature Reserve or as a System 6 recommended reserve.
C81 Reserve C25727, Harvey	This area is not adequately defined on the Regional Open Space plan (figure 7) of the Regional Plan. Inclusion of a separate category for the System 6 recommendations which are not otherwise described would overcome this omission.
C83 Nalyerin MPA	This area should be identified in the Issues, Opportunities and Constraints section of the rural catchment planning guidelines for the Murray River Catchment.
C86 Dardanup MPA	This area should be identified in the Issues, Opportunities and Constraints section of the rural catchment planning guidelines for the Preston River Catchment.
C88 Westralia MPA	This area should be identified in the Issues, Opportunities and Constraints section of the rural catchment planning guidelines for the Wellington Dam and Harris Dam Catchment. This area is incorrectly listed in the Issues, Opportunities and Constraints section of the rural catchment planning guidelines for the Preston River Catchment area.
C92 Goonac MPA	This area should be identified in the Issues, Opportunities and Constraints section of the rural catchment planning guidelines for the Wellington Dam and Harris Dam Catchment.
C95 Mullalyup MPA	This area should be identified in the Issues, Opportunities and Constraints section of the rural catchment planning guidelines for the Blackwood River Catchment.