

**Metropolitan Region Scheme
proposed major amendment no 948/33
North West corridor (East Wanneroo)**

**A submission by the Environmental Protection Authority on the
amendment released for review by the State Planning
Commission**

**Environmental Protection Authority
Perth, Western Australia
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THE PURPOSE OF THIS REPORT

This report contains the Environmental Protection Authority's submission to the review of the Metropolitan Region Scheme Major Amendment No. 927/33 - Canning Vale - Southern River area.

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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Summary and recommendations

The State Planning Commission has released a major amendment (amendment no 948/33 -East Wanneroo) to the Metropolitan Region Scheme for the North West corridor for a three month public submission period. The amendment proposes to zone land for urban and industrial development and roads and reserve land for parks and recreation.

The Environmental Protection Authority has determined that this major amendment should be assessed at the level of informal review with public advice. This report is the Environmental Protection Authority's informal advice and submission on the amendment.

The area covered by this amendment is the subject of a number of environmental issues, including:

- System Six Recommendation Area M8 — Wanneroo Wetlands, Eastern Chain;
- lakes protected by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992;
- protection of urban bushland and declared rare flora and fauna;
- management of existing and proposed industrial development;
- managing conflicting land uses;
- management of potential groundwater, wetland and marine pollution from urban drainage systems and potential impacts on water balance; and
- the East Wanneroo District Transport Study.

Urban conservation and wetland protection

Some of this land is subject to System Six Recommendation M8 — Wanneroo Wetlands, Eastern chain (EPA 1983). Some of the land also is also affected by lakes and wetlands, including those nominated in the Environmental Protection (Swan Coastal Plain Lakes) Policy (EPA December 1992). In addition, the State Planning Commission has commissioned a study into the conservation value of both wetland and upland remnant vegetation in eastern chain wetland area (Bowman Bishaw and Gorham 1994). The study has shown that both areas of dry land and wetland vegetation in the area have high conservation significance.

The Environmental Protection Authority is keen to ensure that vegetation systems and individual species (fauna and flora) which are of high conservation value are protected.

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 and, in this regard, the System Six Report (EPA 1983) and the Environmental Protection Authority's strategy for the protection of the lakes and wetlands (EPA 1993) have formed the principal focus for the Authority's conservation efforts on the Swan Coastal plain.

It is recognised that there may be vegetation systems or individual species of high regional conservation value outside of these areas and proposals which may impact on such significant values require careful review.

With regard to the East Wanneroo amendment, the State Planning Commission has proposed to place 1750 hectares of land into the 'Parks and Recreation' reserve to protect its conservation value. Some of these areas are to form part of the Gnangara Regional Park. The Commission has also indicated that it will be considering the addition of further areas to the 'Parks and Recreation' reserve in the future following more detailed study.

Many System Six and wetland areas, including lakes nominated in the Environmental Protection (Swan Coastal Plain Lakes) Policy, however, are not protected by this amendment and do not appear likely to be included in future amendments to the Metropolitan Region Scheme. These areas will need to be addressed through the local planning system.

The Environmental Protection Authority supports the concept of the Gnangara Region Park and the reservation of 1750 hectares for 'Parks and Recreation' and the commitment to add more

areas to this reserve by future amendment following further consideration of the Natural Resource Mapping Study.

The study provides a sound basis for making decisions on the conservation value of remnant vegetation and wetlands in the area.

The implementation of many of the key findings of this study through this amendment by placing most of the major wetlands in this suite into the 'Parks and Recreation' reserve is also supported.

The study has shown that the remnant vegetation in Lake Pinjar is of very high conservation significance and the Environmental Protection Authority is concerned that the conservation values of this area are protected. Recently (EPA December 1993), the Environmental Protection Authority published a position statement for Lake Pinjar which identifies the conservation values for Lake Pinjar and recommends they be accounted for in the planning process. This position statement is reiterated and is included in Appendix 1 of this report.

Any development proposed around the balance of the System Six areas should also be protected.

In considering future areas to add to the 'Parks and Recreation' reserve, the Environmental Protection Authority recommends that areas of high regional conservation value be given high priority. Core areas recommended by the study, both within and outside System Six areas, should be given careful consideration.

Developments which may impact on lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy or other wetlands outside the System Six areas should be protected.

Managing the interface between industry and other land uses

A number of rural industries (mainly piggeries and chicken farms) exist in areas which are proposed for urban and urban deferred zoning. Each of these land uses has the potential to cause significant impact on nearby residential areas should they be located too close to residential development.

The Environmental Protection also notes the loss of agricultural land suitable for specialist agricultural uses such as horticulture, orchards and intensive rural industries around the Perth metropolitan area.

It is noted, however, that although these land uses are often not directly compatible with residential development, they are compatible with other urban land uses such as industry and recreation areas.

Accordingly, the Environmental Protection Authority suggests that these land uses be planned for and adequate areas set aside and protected for these industries and their buffers.

The amendment proposes to zone two areas to industrial. The amendment does not address the issues associated with introducing strategic industrial areas into the corridor and comments that outstanding issues and constraints will need to be addressed prior to local town planning scheme re-zoning and subdivision in these areas (SPC 1994).

Protection of groundwater quality and balance

There is growing concern regarding the impact of development on waterbodies throughout the State. (EPA Nov 1991; May 1992; Aug 1992; December 1992; 1993; December 1993; March 1994; March 1994). Development can impact on both water levels and water quality. Of particular concern with this amendment are the potential impacts on the groundwater (Priority 2 and 3 Source Protection Areas of the Gnangara Underground Water Pollution Control Area) and wetlands.

The Environmental Protection Authority recognises that detailed drainage issues are often addressed at a later stage in the planning process. It is considered that the likely impacts of drainage associated with urban development could be minimised through the adoption of "water sensitive urban design principles" (Whelans; Thompson Palmer April 1993).

In particular, drainage should be planned and managed to ensure that water levels in wetlands on or near the site are not significantly modified and that wetlands, the groundwater and the marine environment are not subject to pollution or nutrient enrichment.

East Wanneroo District Transport Study

The State Planning Commission has commissioned a study for the district road network in East Wanneroo (SPC January 1994). This study was published with this Major Amendment for East Wanneroo so that the traffic study and the amendment could be assessed together by the public and other government agencies.

After careful consideration, because the preferred option could be made environmentally acceptable, the Environmental Protection Authority determined that this traffic study for East Wanneroo should be assessed at the level of informal review with public advice.

The advice was provided to the State Planning Commission in a letter on 11 April, 1994. A copy of this letter is included at Appendix One.

Conclusion and recommendations

The Environmental Protection Authority has concluded that at both the metropolitan region and local planning scheme levels, the environmental issues identified in this advice can be incorporated through the planning process. In order to give effect to them, the Environmental Protection Authority makes the following recommendations.

Urban conservation and wetland protection

Recommendation 1

The Environmental Protection Authority recommends that:

- any development proposed around the balance of the System Six areas should also account for the following requirements:
 - the System Six area, any lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy or other wetland should be protected; or
 - the development proposal should be referred to the Environmental Protection Authority for environmental impact assessment as required by the Environmental Protection (Swan Coastal Plain Lakes) Policy and the policy on protection of System Six areas; and
- representative areas of high conservation value should be protected with the Natural Resource Mapping Study for the East Wanneroo Wetlands providing a sound basis for making decisions on the conservation value of remnant vegetation in the area.

Recommendation 2

The Environmental Protection Authority recommends that:

- developments which may impact on lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy or other wetlands outside the System Six areas should accommodate the management objectives for the relevant category of lake or wetland identified in the Environmental Protection Authority's Swan Coastal Plain Lakes Policy and Bulletin 686 '*A Guide to Wetland Management in the Perth and near Perth Swan Coastal Plain Area*'; and
- developments should ensure that the water body, the wetland vegetation and dry land buffer are protected and that water levels and water quality are improved or maintained through management of drainage, effluent disposal and land management.

Managing the interface between industry and other land uses

Recommendation 3

The Environmental Protection Authority recommends that residents should be protected from the impacts from existing rural industries. Accordingly, either:

- an adequate buffer should be provided between the residential development and the industry based on recommended distances; or
- the industry should be re-located or closed.

Recommendation 4

The Environmental Protection Authority recommends that more detailed planning at the local planning scheme stage, including any structure plans or local authority zoning for the proposed industrial areas, should be referred to the Environmental Protection Authority to ensure that these detailed plans accommodate site constraints and provide for adequate services.

Protection of groundwater quality and balance

Recommendation 5

The Environmental Protection Authority recommends that the Water Authority of Western Australia, the local authority and the Department of Planning and Urban Development should prepare and implement a regional management plan for maintaining water quality and water balance for the area to meet the following objectives:

- minimisation of potential impacts from nutrients and other pollutants on the groundwater, associated wetlands and coastal environment; and
- minimisation of potential impacts from changes in water balance on groundwater, vegetation and associated wetlands.

Any proposal for a marine outfall for drainage waters should be referred to the Environmental Protection Authority for assessment.

East Wanneroo District Transport Study

Recommendation 6

The Environmental Protection Authority recommends that:

- the preferred scenario for major road networks is environmentally acceptable subject to environmental management to ensure that wetlands and System Six areas are protected; and
- should any of the alternative scenarios that are associated with significant environmental impacts be proposed, the proposal should be referred to the Environmental Protection Authority for assessment.

1. Introduction

The State Planning Commission has initiated a major amendment (amendment No 948/33 — East Wanneroo) to the Metropolitan Region Scheme for the North West Corridor. The State Planning Commission released the amendment for a three month public submission period which ends on 22 April 1993. The amendment is wholly within the boundaries of the City of Wanneroo and can be seen in Figure 1.

After careful consideration, the Environmental Protection Authority determined that this major amendment for East Wanneroo should be assessed at the level of informal review with public advice. This level of assessment was advertised in the West Australian newspaper on 22 January 1994.

This report is the Environmental Protection Authority's informal advice and submission on that amendment.

There were two appeals against this level of assessment. These appeals are currently being determined by the Minister for the Environment but, to meet the submission deadline outlined by the State Planning Commission, this advice is being offered. If the Minister for the Environment upholds either of the two appeals then the issues raised in this report will need to be assessed at a higher, formal level of assessment.

2. Environmental assessment of planning proposals in the North West corridor

The Environmental Protection Authority adopts a staged approach in assessing planning proposals such as this to reflect the various planning stages at which the Authority is asked to provide advice.

The first stage applies to the Corridor Structure Plans being prepared by the State Planning Commission and in August 1993 the Environmental Protection Authority provided written informal advice to the Department of Planning and Urban Development on the North West Corridor Structure Plan.

The second stage will apply during the various amendments to the Metropolitan Region Scheme which will be necessary to implement the North West Corridor Structure Plan. This report represents the second stage of the environmental assessment for the proposals contained in the East Wanneroo amendment.

The final stage will apply to specific developments likely to have significant environmental impacts. If necessary, detailed consideration of the environmental issues associated with specific proposals will be made at the development stage. This may involve formal assessment if the environmental impacts require such consideration.

3. Environmental issues and their management

3.1 Overview

The area covered by this amendment is the subject of a number of environmental issues, including:

- System Six Recommendation Area M8 — Wanneroo Wetlands, Eastern Chain;
- lakes protected by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992;
- protection of urban bushland and declared rare flora and fauna;

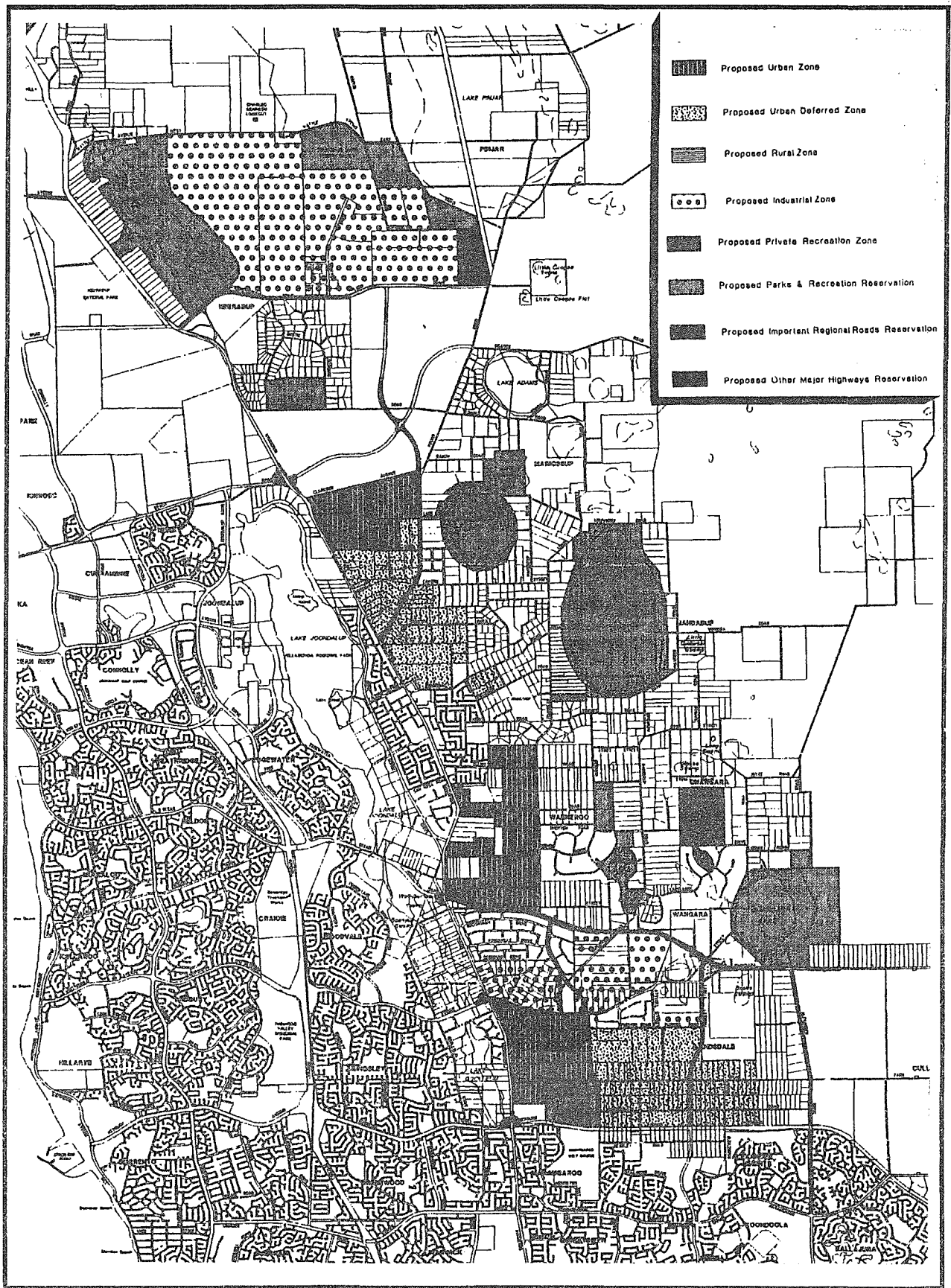


Figure 1. North West corridor (East Wanneroo) Metropolitan Region Scheme proposed major amendment

- management of existing rural industries and proposed industrial development;
- management of potential groundwater, wetland and marine pollution from urban drainage systems and potential impacts on water balance; and
- protection of land environmentally suitable for intensive agricultural uses.

While these issues are important and pose constraints to development, the Environmental Protection Authority has concluded that the land could be developed for the purposes proposed subject to the recommendations contained in this report.

3.2 Urban conservation and wetland protection

3.2.1 Background information: urban conservation

The Environmental Protection Authority's strategy for urban conservation is outlined below. This strategy has been established through the Conservation Through Reserves Study undertaken by the Conservation Through Reserves Committee (EPA 1975, 1976, 1980 and 1983) which are endorsed by government and three environmental impact assessments of proposed developments over land with high conservation value which had not been recommended for conservation by the study (Ellenbrook, EPA August, 1992 and Brixton Street, EPA Sept, 1991 and July 1992). The Conservation Through Reserves Study divided the State into 12 regions or systems. System Six or the Darling System covers the highly populated areas in and around Perth and the south-west of the State and is subject to most pressure.

The Environmental Protection Authority's strategy includes the following elements:

- 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 which recognises their conservation value;
- the integrity of such reserves should be maintained;
- the System Six Report (endorsed by Government in 1983 (EPA 1983)) established through the Conservation Through Reserves studies has formed a principle focus for the Environmental Protection Authority's conservation efforts on the Swan Coastal Plain;
- decisions to look at areas outside the systems' areas are the exception but any proposal which may impact on areas of high conservation value outside the systems' areas should be looked at carefully and referred to the Environmental Protection Authority to be considered for environmental impact assessment. Areas with regionally significant vegetative systems which are endangered may be recommended for protection. Examples of areas which have been assessed by the Environmental Protection Authority and have been found to have regionally significant conservation value which should be protected include Ellenbrook (EPA August 1992) and Brixton Street (EPA Sept 1991 and July 1992). General criteria for determining regionally significant conservation value include:
 - the regional vegetation complex is endangered (in general less than 10% of the vegetation complex remains and less than 10% is secured for conservation);
 - the area should have a unique attribute or special feature such as diversity of plant and animal communities, habitat for species that are scarce or otherwise threatened and in need of protection, contain elements that have scientific and educational value and have a high degree of naturalness;

- the area should have a high degree of representativeness; and
- the area should be managed to ensure viability;
- decisions on managing impacts on individual species which are endangered have generally been the responsibility of the Department of Conservation and Land Management under the *Wildlife Protection Act*. and the advice of that department should be sought if species gazetted under the *Wildlife Protection Act* may be present. The Department of Conservation and Land Management may refer proposals to the Environmental Protection Authority for assessment; and
- decisions on protecting areas of remnant vegetation outside the above framework for local conservation, linkages, buffers or local community use should be the responsibility of the planning agencies which have the framework to accommodate community interests in protecting the land for local conservation and recreation and to take into account the costs associated with this such as acquisition and loss of land for housing and other development.

In providing this advice, it is not intended to diminish the importance of the issues associated with local areas which do not have high conservation value or to discourage community concerns, but rather to indicate the role of the planning process in making decisions regarding the use of the land.

3.2.2 Background information: wetland protection

Since 1971, the Environmental Protection Authority has consistently recognised the need to conserve lakes and wetlands and has developed a strategy for wetland protection on the Swan Coastal Plain (Environmental Protection Authority 1993, Bulletin 685).

The Environmental Protection Authority discourages proposals which would affect significantly functional lakes and wetlands, that is:

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

Any proposals affecting wetlands which do not fall into the above categories are expected to be managed by the proponent within the management objectives for the relevant category of wetland identified in the Environmental Protection Authority's Bulletin 686 '*A Guide to Wetland Management in the Perth and near Perth Swan Coastal Plain Area*'.

The main factors to take into account in protecting these wetlands include:

- assessment and management of the wetlands having regard to the Environmental Protection Authority's guidance contained in bulletin 686; and
- protection of water levels and water quality through management of drainage.

3.2.3 System Six Area M8 (Wanneroo Wetlands — Eastern Chain)

Environmental issue

A significant portion of the land in this amendment is subject to System Six recommendation M8 — Wanneroo Wetlands, Eastern Chain (EPA 1983). The recommended area for M8 is

made up of a number of separate wetlands in a chain about 24km long, each wetland in the chain being separately identified and not linked to another. The recommendation generally supports the creation of a park for the wetlands as follows:

- the general recommendation on planning and management of regional parks be applied;
- those areas not already reserved for 'Parks and Recreation' under the Metropolitan Region Scheme be reserved according to the listed priorities; and
- the Wanneroo Council's Circular Lakes Landscape Enhancement Area Plan is endorsed.

As all of the System Six areas for M8 include wetlands, they are subject to the wetland strategy outlined in 3.2.2 above.

In December 1990, the Government released its metropolitan strategy, Metroplan (DPUD Dec 1990), for guiding and managing growth in the Perth metropolitan region over the next 30 years. Metroplan promotes an integrated regional open space system based around a regional park structure. It also recognises the establishment of the Gnangara Regional Park based around the M8 wetlands.

Following Metroplan, the North West Corridor Structure Plan (DPUD March 1992) was released which indicated that a detailed study was in progress to determine whether any or all of the land considered for the proposed regional park should be reserved for 'Parks and Recreation' under the Metropolitan Region Scheme.

As part of the study, the Department of Planning and Urban Development required a Natural Resource Mapping Study (Bowman Bishaw and Gorham 1994) and analysis of the study area to be undertaken to provide base line information and to assist in determining future boundaries for 'Parks and Recreation' reservation proposals. This study examines the vegetation and flora, wildlife and habitats, hydrology, landform and soils, landscape features, landuse components and the social environment and identifies the conservation issues for the region and recommends a number of priority conservation zones and core areas for both flora and vegetation and fauna and wildlife. Some of the System Six areas fall into the proposed conservation zones but others are not given any conservation significance or are given a lower rating.

The East Wanneroo amendment puts some of the study's recommendation into effect and includes at least a portion of a number of the M8 wetlands in 'Parks and Recreation' reserves. These include the following lakes.

Lake Gnangara and surrounds

The Lake Gnangara System Six area contains a lake nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy. The Natural Resource Mapping Study recommended that most of the System Six area be included in the core conservation area (Bowman Bishaw and Gorham 1994).

Most of the recommended conservation core area and most of the System Six area is included in the 'Parks and Recreation' reserve.

A small portion of the System Six area to the south west of the lake is excluded (lots 887 and 883). A development proposal for lot 887, however, was subject to formal environmental impact assessment by the Environmental Protection Authority in May 1992 which recommended the development be approved subject to some of the land being given up for public open space and a number of land management and development conditions be imposed through the planning system. A similar proposal for lot 883 has been referred to the Environmental Protection Authority and because the requirements recommended for lot 887 were incorporated into the proposal, it was informally assessed.

Thus, through these previous assessments and the 'Parks and Recreation' reserve proposed in this amendment, the significant conservation values of Lake Gnangara and the System Six area are to be protected.

Lake Jandabup and surrounds

The Lake Jandabup System Six area contains a lake nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy.

Most of the System Six area was recommended to be included in the core conservation area and all of the System Six area is included in the 'Parks and Recreation' reserve.

Thus, through the 'Parks and Recreation' reserve proposed in this amendment, the significant conservation values of this lake are to be protected.

Lakes Mariginiup and Little Mariginiup and surrounds

Lakes Mariginiup and Little Mariginiup System Six areas contains lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy.

All of the System Six area for Lake Mariginiup is included in the 'Parks and Recreation' reserve but a small portion of Little Mariginiup (including part of the lake) is excluded. However, a development proposal to the east of Little Mariginiup was the subject of an informal assessment in 1979 which places the excluded section of the System Six area and lake into public open space. Should this proposal not yet have been implemented, this issue will need to be addressed, with any other environmental issues, when a development proposal is put forward.

Thus, through these previous assessments and the 'Parks and Recreation' reserve proposed in this amendment, the significant conservation values of the lakes and the System Six area are or will be protected.

Lakes Badgerup and Little Badgerup and surrounds.

Lakes Badgerup and Little Badgerup System Six areas contain lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy. All of the System Six area and a significant area surrounding the System Six boundary is recommended to be included in the core conservation area.

The 'Parks and Recreation' reserve only covers a portion of the System Six area. As with the previous examples, however, a development proposal on the eastern borders of the lake was formally assessed by the Environmental Protection Authority in 1991 (EPA November 1991) which recommended the development be approved subject to some of the land being given up for public open space and a number of land management and development conditions be imposed through the planning system.

Thus, through this previous assessment and the 'Parks and Recreation' reserve proposed in this amendment, the significant conservation values of the lakes and the System Six area are to be protected.

A number of other M8 wetlands are not included in the amendment and are to be retained in the existing rural or urban zones for the present. Some of these are lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy but others are seasonal wetlands. Some have significant conservation value but others have been seriously degraded through clearing and grazing.

The amendment report indicates that, following further more detailed evaluation of the Resource Mapping Study, it is likely that additional areas will be recommended for reservation by later amendment. It is also anticipated that other wetlands will be dealt with through the local planning system.

Snake Swamp is one such System Six area which is currently the subject of a formal assessment associated with decisions on allocation of reserves and development zones under the local authority planning scheme (EPA March 1994)). Wetland management and impacts on the System Six area are the key environmental issues discussed.

The Environmental Protection Authority's conclusion

The Environmental Protection Authority supports the concept of the Gnangara Region Park and commends the Department of Planning and Urban Development for commissioning the Natural Resource Mapping Study for the East Wanneroo Wetlands. The study provides a sound basis for making decisions on the conservation value of remnant vegetation and wetlands in the area.

The implementation of many of the key findings of this study through this amendment by placing most of the major wetlands in this suite into the 'Parks and Recreation' reserve is also supported.

However, it is noted that Lake Pinjar and Lake Adams and many of the smaller wetlands affected by the System Six recommendation are not included in the amendment.

The study has shown that the remnant vegetation in Lake Pinjar is of very high conservation significance and the Environmental Protection Authority is concerned that the conservation values of this area are protected. Recently (EPA December 1993), the Environmental Protection Authority published a position statement for Lake Pinjar which identifies the conservation values for Lake Pinjar and recommends they be accounted for in the planning process. This position statement is re-iterated and is included in Appendix 1 of this report.

Any development proposed around the balance of the System Six areas should also be protected.

Recommendation 1

The Environmental Protection Authority recommends that:

- **any development proposed around the balance of the System Six areas should also account for the following requirements:**
 - **the System Six area, any lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy or other wetland should be protected; or**
 - **the development proposal should be referred to the Environmental Protection Authority for environmental impact assessment as required by the Environmental Protection (Swan Coastal Plain Lakes) Policy and the policy on protection of System Six areas; and**
- **representative areas of high conservation value should be protected with the Natural Resource Mapping Study for the East Wanneroo Wetlands providing a sound basis for making decisions on the conservation value of remnant vegetation in the area.**

3.2.4 Other wetlands and remnant vegetation

Environmental issue

There are other lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy, other wetlands and areas of remnant vegetation which may be affected by the development proposed in the amendment.

Two lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy in this area are outside the System Six area and fall within land proposed for the urban zone or for a proposed Important Regional Road. Impacts on these lakes can be managed through the detailed planning stages. Alternatively the specific proposals will need to be referred to the Environmental Protection Authority for further assessment under the requirements of the Policy.

Altogether, this amendment proposes to reserve 1750 hectare of land for 'Parks and Recreation', most of which will be retained in its natural state and the amendment report indicates that more areas will be added at a future date (SPC 1994). Some of the remnant

vegetation not included in this amendment has been recommended in the Natural Resources Mapping Study as needing protection as core conservation areas because of its high conservation value.

While individual species gazetted under the *Wildlife Protection Act* may be present, given the significant areas nominated for protection through existing reserves, under the System Six report and through this amendment and the State Planning Commission's commitment to add more areas to the 'Parks and Recreation' reserve following more detailed work on the Natural Resource Mapping Study for the East Wanneroo Wetland chain, areas of high regional conservation value are being protected.

The Environmental Protection Authority's conclusion

The Environmental Protection Authority supports the reservation of 1750 hectares for 'Parks and Recreation' and the commitment to add more areas to this reserve by future amendment following further consideration of the Natural Resource Mapping Study.

In considering future areas to add to the 'Parks and Recreation' reserve, the Environmental Protection Authority recommends that areas of high regional conservation value be given high priority. Core areas recommended by the study, both within and outside System Six areas, should be given careful consideration.

Lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy or other wetlands outside the System Six areas should be protected.

Recommendation 2

The Environmental Protection Authority recommends that:

- developments which may impact on lakes nominated for protection in the Environmental Protection (Swan Coastal Plain Lakes) Policy or other wetlands outside the System Six areas should accommodate the management objectives for the relevant category of lake or wetland identified in the Environmental Protection Authority's Swan Coastal Plain Lakes Policy and Bulletin 686 '*A Guide to Wetland Management in the Perth and near Perth Swan Coastal Plain Area*'; and
- developments should ensure that the water body, the wetland vegetation and dry land buffer are protected and that water levels and water quality are improved or maintained through management of drainage, effluent disposal and land management.

3.3 Managing the interface between industry and other land uses

The Environmental Protection Authority has established a number of principles for the protection of amenity in residential areas as outlined below (EPA March 1994).

- residences throughout Western Australia should be guaranteed a minimum level of amenity;
- the provision of adequate buffers separating residential areas from industry is important in maintaining residential 'amenity';
- buffers should not be seen as sterile tracts of land. Land within the buffer can be used for activities compatible with residential areas but which are not as sensitive to off-site impacts;
- the pollution control provisions of the Environmental Protection Act (Part V) will be used to protect amenity of nearby residences where the following conditions apply:
 - an industry is not operating to industry standards or in compliance with licence conditions; and
 - the residential area is located outside the recommended buffer.

Part V (pollution control provisions) does not provide the most appropriate mechanism to protect amenity of nearby residences where the following conditions apply:

- the industry is operating to industry standards and in compliance with licence conditions; and
- the residential area has been located within its recommended buffer after the industry has been established;
- the Authority, either through Parts IV (environmental impact assessment) or V (pollution control provisions) will assess most major proposals involving land uses which cause off-site impacts. Part of that assessment is to ensure that the off-site impacts do not adversely affect amenity in nearby residential areas;
- the Authority has produced a draft list of recommended buffer distances which should be applied to separate residential areas from industrial land uses; and
- some smaller industries which can cause off-site impacts can be approved without referral to the Authority provided they have an appropriate buffer.

3.3.1 Proposed encroachment on existing rural industries

Environmental issue

A number of intensive rural industries (mainly horticulture, piggeries and chicken farms) exist in areas which are proposed for urban and urban deferred zoning. Each of these land uses has the potential to cause significant impact on nearby residential areas should they be located too close. Poultry farms and piggeries have the potential to produce significant odour, noise and dust.

As noted above, it is generally accepted that residential areas should be located well away from these land uses. Planning measures should ensure that residential areas are not subjected to unacceptable impacts from land uses which cause off-site impacts. If these rural industries remain, therefore, an adequate buffer should be provided between the industry and the residential areas to ensure that impacts experienced by residents as a result of emissions from these land uses will not be significant. Alternatively the industries should be re-located or closed.

The Environmental Protection Authority has developed an Environmental Code of Practice for the poultry industry, published in January 1991, which recommends that proposals for residential development should not be approved within 500 metres of existing poultry sheds, unless it can be demonstrated that the poultry shed will not have an adverse impact on the amenity or enjoyment of the occupiers of the residential development as a result of any emissions.

The Environmental Protection Authority has also developed an Environmental Code of Practice for piggeries, published in January 1991, which recommends that buffers for piggeries should be determined by the Department of Agriculture. Unless it can be demonstrated that the piggery will not have an adverse impact on the amenity or enjoyment of the occupiers of the residential development as a result of any emissions, the buffer distance recommended by the Department of Agriculture should not be reduced.

Any modification to the recommended buffer zone should be determined on the basis of proper air dispersion modelling, using data consisting of emission rates, meteorological conditions, and appropriate ambient standards (values of source emission rates and ambient standards being expressed in odour units, as ascertained using dynamic olfactometry techniques).

The Environmental Protection Authority's conclusion

The Environmental Protection Authority strongly endorses the principle that existing rural industries should be considered through the planning process so that both the future residents and the existing industries are protected.

Recommendation 3

The Environmental Protection Authority recommends that residents should be protected from the impacts from existing rural industries. Accordingly, either:

- **an adequate buffer should be provided between the residential development and the industry based on recommended distances; or**
- **the industry should be re-located or closed.**

3.3.2 Protection of areas for specialist agricultural activities

Environmental issue

The Environmental Protection Authority notes the loss of agricultural land suitable for specialist agricultural uses such as horticulture, orchards and intensive rural industries around the Perth metropolitan area. Associated with this is the concern that these land uses are not directly compatible with residential development. Some industries have a need for buffers associated with noise, dust and odour as discussed in section 3.3.1 above. Others need buffers to protect residents from agricultural sprays, odour, dust and visual pollution. Agricultural land uses are, therefore, being forced to re-locate from the metropolitan region.

It is noted, however, that although these land uses are often not directly compatible with residential development, they are compatible with other urban land uses such as industry and recreation areas.

The Environmental Protection Authority is also concerned because such industries and land uses provide an essential service for the metropolitan region and that they cannot easily be accommodated elsewhere because factors such as the soils, climate, availability of water and closeness to markets cannot be replicated in other areas. Accordingly, it has been suggested that these land uses be planned for and adequate areas set aside and protected for these industries and their buffers.

3.3.3 Proposed zoning for new industrial areas

Environmental issue

The amendment proposes to zone two areas to industrial. One involves the addition of about 300 hectares of land adjacent to the existing Wangara mixed business area and the Gnangara general industrial area. The other involves the creation of a new industrial area of 1000 hectares north of Flynn Drive largely for manufacturing and distribution industries. The amendment does not address the issues associated with introducing strategic industrial areas into the corridor and comments that it is important to recognise that subdivision and development will not be immediate and the rezoning of these large areas of land to industrial is to ensure a long term supply of industrial land and local employment opportunities for the growing North West Corridor and that outstanding issues and constraints will need to be addressed prior to local town planning scheme re-zoning and subdivision in these areas (SPC 1994).

Environmental issues which need to be addressed include the management of emissions from the industries proposed and the acceptability of the site for the industries proposed. Disposal for solid and liquid waste will need to be adequate for the range of industries anticipated and significant buffers will need to be in place to ensure that issues such as dust noise and odour can be addressed.

As identified in the principles listed in section 3.3 above, the Environmental Protection Authority will assess all major industry through Part IV (environmental impact assessment) or Part V (pollution control works approval and licence). However, the nature of the buffers provided and the solid and liquid waste disposal facilities available and constraints of the site will limit the type of industry which can be located in these areas in the future.

In the Metropolitan Region, buffers for areas such as these are normally managed by development control provisions included in the local scheme text which ensure that service,

industrial and commercial activities are accommodated on the periphery to act as a buffer between the larger industries and other land uses. Development control provisions are also often imposed which require individual industries to limit their emissions to the outer edge of the industrial area or other buffer. Such techniques ensure that major industries are located at the core of the area. It is noted that the amendment report acknowledges this (SPC 1994). It is also noted that significant 'Parks and Recreation' areas are proposed to be located to the east and west of the Flynn Drive industrial area and that these will provide a substantial buffer.

The Environmental Protection Authority's conclusion

The Environmental Protection Authority acknowledges that strategic industrial areas are required in the North West Corridor. It is also acknowledged that detailed investigation cannot take place at this stage in planning. However, the use of major industrial sites such as these are constrained by the site conditions, the liquid and solid waste disposal facilities available and the buffers provided.

The Environmental Protection Authority advises that it will:

- assess, either through Part IV (environmental impact assessment) or Part V (works approval and licence) the major industries proposing to locate in the area; and
- ensure emission controls and buffers will be required of the individual industries.

Detailed planning for the area should also ensure that the industrial area are appropriate.

Recommendation 4

The Environmental Protection Authority recommends that more detailed planning at the local planning scheme stage, including any structure plans or local authority zoning for the proposed industrial areas, should be referred to the Environmental Protection Authority to ensure that these detailed plans accommodate site constraints and provide for adequate services.

3.4 Protection of groundwater quality and balance

Environmental issue

There is growing concern regarding the impact of development on waterbodies throughout the State. (EPA Nov 1991; May 1992; Aug 1992; December 1992; 1993; December 1993; March 1994; March 1994). Development can impact on both water levels and water quality. Of particular concern with this amendment are the potential impacts on the groundwater (Priority 2 and 3 Source Protection Areas of the Gngangara Underground Water Pollution Control Area) and wetlands.

Development can result in a rise in the water table as a result of clearing vegetation and provision of more impervious surfaces. It can also result in a lowering of the water table where naturally high water tables need to be lowered to enable development to proceed and drainage is introduced. Changes in water levels can have a significant impact on wetland ecology. Accordingly drainage management is required to ensure that such impacts on wetlands in the area do not occur or are minimised.

Development also usually increases pollutants in the form of fertilisers and oils from drainage run-off and nutrients from effluent disposal. Such pollutants can badly affect both wetlands and underground water areas. Management of drainage and effluent disposal to limit pollutants is also required.

This amendment does not discuss effluent disposal and drainage management as this is usually an issue which is associated with the later, more detailed stages of planning. However, as the potential impacts on the environment in this area could be significant, it would be preferable for the principles of drainage and effluent disposal management to protect water quality to be incorporated into the amendment report and for a regional management plan for maintaining water quality and water balance for the area to be prepared.

Development in the North West corridor has been associated with proposals for an ocean outfall to manage drainage waters. As the marine environment is also susceptible to pollution from urban development and any such proposal will need to be carefully considered before it can proceed.

The Environmental Protection Authority's conclusion

The Environmental Protection Authority recognises that detailed drainage issues are often addressed at a later stage in the planning process. It is considered that the likely impacts of drainage associated with urban development could be minimised through the adoption of "water sensitive urban design principles" (Whelans; Thompson Palmer April 1993).

In particular, drainage should be planned and managed to ensure that water levels in wetlands on or near the site are not significantly modified and that wetlands, the groundwater and the marine environment are not subject to pollution or nutrient enrichment.

Recommendation 5

The Environmental Protection Authority recommends that the Water Authority of Western Australia, the local authority and the Department of Planning and Urban Development should prepare and implement a regional management plan for maintaining water quality and water balance for the area to meet the following objectives:

- **minimisation of potential impacts from nutrients and other pollutants on the groundwater, associated wetlands and coastal environment; and**
- **minimisation of potential impacts from changes in water balance on groundwater, vegetation and associated wetlands.**

Any proposal for a marine outfall for drainage waters should be referred to the Environmental Protection Authority for assessment.

3.5 East Wanneroo District Transport Study

The State Planning Commission has commissioned a study for the district road network in East Wanneroo (SPC January 1994). This study was published with this Major Amendment for East Wanneroo so that the traffic study and the amendment could be assessed together by the public and other government agencies.

The traffic study proposes a number of alternative alignments for major roads and puts forward a preferred scenario. Some of the scenarios proposed could be made environmentally acceptable but others are not acceptable. The preferred scenario would require some environmental management to ensure that wetlands and System Six areas are protected but it could be made environmentally acceptable.

After careful consideration, because the preferred option could be made environmentally acceptable, the Environmental Protection Authority determined that this traffic study for East Wanneroo should be assessed at the level of informal review with public advice.

The public advice was provided to the State Planning Commission in a letter on 11 April, 1994. A copy of this letter is included in Appendix One.

Recommendation 6

The Environmental Protection Authority recommends that:

- **the preferred scenario for major road networks is environmentally acceptable subject to environmental management to ensure that wetlands and System Six areas are protected; and**

- **should any of the alternative scenarios that are associated with significant environmental impacts be proposed, the proposal should be referred to the Environmental Protection Authority for assessment.**

4. Conclusions

The Environmental Protection Authority considers that the proposals within Amendment 948/33 — Eastern Wanneroo, which constitutes a major amendment to the Metropolitan Region Scheme can be implemented without causing unacceptable environmental impacts provided the recommendations in this report are implemented.

The State Planning Commission's Eastern Wanneroo Amendment does not fully address the environmental issues associated with each proposal nor does it seek to address the management of the issues. However, it is the Environmental Protection Authority's view that the nature of the environmental impacts associated with the proposals are not so significant as to prevent their effective management and should be addressed in greater detail by the planning agencies at subsequent stages in the planning process, within the context of environmental policy and the advice offered in this submission.

The comments offered in this submission are offered as public advice and not a report under Part IV of the Environmental protection Act.

5 References

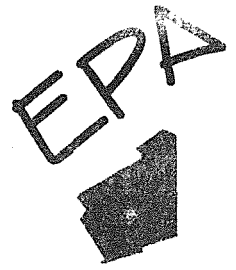
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Appendix 1

**Advice to the Department of Planning and Urban Development on the East
Wanneroo District Transport Study**

Department of Environmental Protection



AN ENVIRONMENT
WORTH PROTECTION

Secretary
State Planning Commission
469-489 Wellington St
PERTH WA 6000

Your ref:
Our ref:
Enquiries: 801-2-30-12 Pt 3 Vol 3
23/94 72592
Mr Ron Van Delft

PROPOSAL: District transport study
LOCATION: East Wanneroo

Thank you for your correspondence of 14 January 1994 which enclosed a copy of the above report for comment.

The Department of Environmental Protection has a number of comments regarding environmental issues associated with the transport study, ranging from matters of significance to suggested changes that would be desirable.

Comments on the preferred option; Scenario 2

The Department of Environmental Protection considers Scenario 2 would be environmentally acceptable, provided that a satisfactory road alignment can be found in the vicinity of the Gnangara Road/Sydney Road intersection for the Gnangarra/Ocean Reef Road link. The alignment in this area needs to consider the System 6 recommended area around Gnangara Lake, the wetland on the corner of Sydney Road and Gnangara Road (identified in System 6 with indicative boundaries only) and the small wetland to just north of the intersection of Priest Road and Gnangara Road. The information provided to the Department of Environmental Protection has insufficient detail for the Department to decide if the proposed alignment would be environmentally acceptable.

Significant issues

Scenario 3: The proposed alignment of Roussett Road between Townsend Road and Neaves Road would directly affect two wetlands. One of these is a lake protected by the Environmental Protection (Swan Coastal Plain Lakes) Policy Approval Order 1992 (the Lakes EPP) and is part of System 6 Recommendation M8. Construction of Roussett Road along the proposed alignment would require filling of the lake covered by the Lakes EPP. As you would be aware, there is a general presumption against filling of lakes protected by the Lakes EPP.

Accordingly the currently proposed alignment would require referral to the Environmental Protection Authority and would most likely be considered environmentally unacceptable. The Department of Environmental Protection recommends the alignment of Roussett Road between Townsend Road and Neaves Road be reviewed.

Scenario 4; As indicated in the study, the proposed Tonkin Highway extension crosses a Priority 1 Groundwater Protection Area. The importance of protecting the Priority 1 groundwater area is highlighted by the Environmental Protection (Gnangara Mound Crown Land) Policy Approval Order 1992 and the Statement of Planning Policy No 3 Gnangara Mound Crown Land.

The proposed alignment of Elliott Road between Badgerup Road and Sydney Road would directly affect a wetland (Long Swamp) which was identified by System 6 Recommendation M8. Aerial photography indicates that Long Swamp is currently degraded.

Accordingly the Tonkin Highway alignment and Elliott Road extension would require referral to the Environmental Protection Authority and would most likely be considered environmentally unacceptable.

Desirable changes

Proximity of roads to wetlands; As you would be aware, the Department of Environmental Protection recommends a buffer around wetlands of 50 m of dryland vegetation or 1 m AHD higher than the furthest extent of wetland vegetation, whichever is the greater. As you would also be aware, the boundaries for wetlands shown in System 6 Recommendation M8 are indicative only and should not be taken as management boundaries.

Several existing or proposed roads may be closer to wetlands than is desirable. The study has provided insufficient detail to determine whether or not there is adequate buffer where roads appear to be close to wetlands. The Department of Environmental Protection considers that the road sections in Table 1 be investigated and changes made to alignments wherever possible if roads are within the recommended buffer zones. Please note that the following list is based on a cursory examination of 1:20 000 aerial photography.

Road section	Comments
Coogee Road, near Lake Adams	Scenarios 1 and 4 predict 14 000 and 6 000 vehicles per day respectively. Scenario 1 requires intersection re-design.
Road B near Snake Swamp (Sector C)	Investigate; probably acceptable.
Badgerup Road at Little Badgerup Swamp (Sector G)	Existing road in place; 3 500 vehicles per day predicted.
Wirrega Road (Sector J)	Existing road in place; negligible traffic; appears to cut buffer of Little Dundobar Swamp.
Coogee Road/Rousett Road link (Sector P)	Investigate vegetation in road reserve and re-aligning the road with a better curve if this protects existing vegetation.
Dempster Road (Sector S)	Existing road in place over area that looks like wet/waterlogged on aerial photo. Adams Road should be connector to Neaves Road.

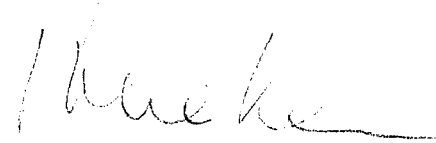
The re-alignment of Clarkson Rd at its intersection with Pinjar Road to provide a buffer around a wetland adjacent to that intersection is commended.

Sectors A to U

Subject to the above comments the road alignments in each of the sectors are environmentally acceptable.

Please feel welcome to contact Mr Ron Van Delft of the Department to further discuss this proposal or the advice provided above. He can be reached on the telephone on (09) 222 7079.

Yours faithfully



for
R A D Sippe
DIRECTOR
EVALUATION DIVISION

11 April 1994

cc: City of Wanneroo

East Wanneroo Transport 110494 RVD