

Metropolitan Region Scheme Major Amendment No 927/33 - Canning Vale - Southern River area

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

**Environmental Protection Authority
Perth, Western Australia
Bulletin 717
November 1993**

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 Authorities views expressed in the submission.

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1. Introduction and description of Amendment

The State Planning Commission has initiated a Major Amendment to the Metropolitan Region Scheme (Amendment No. 927/33) covering the land shown in Figure 1, known as the Canning Vale-Southern River area.

The Amendment was referred to the Authority in August this year, and the level of assessment set at Informal Review with Public Advice.

This Bulletin is the Authority's advice to the State Planning Commission on the environmental issues associated with this proposed Amendment.

2. Planning context

In November 1987, the Corridor Review Report (called *Planning for the Future of the Perth Metropolitan Region*), identified, among other areas, the Canning Vale-Southern River area for urban development. This was re-enforced through Metroplan (1990) and the Urban Expansion Policy (1990). The Southern River land was identified as Category A land - land most likely to be urbanised in the normal course of development in the next 30 years.

The State Planning Commission released the Amendment for a three month public submission period which began on Monday 9 August and ends on Friday 12 November 1993.

3. Environmental issues and their management

3.1 Overview

The site is subject to a number of environmental constraints, including:

- soil and groundwater contamination from a disused liquid effluent disposal site;
- the site contains four lakes protected by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992, most notably, Lake Balannup;
- there are a number of other significant wetlands, in particular, a Category H (high conservation) wetland near the corner of Holmes and Balfour Streets;
- drainage management and potential for nutrient and sediment pollution of the Swan and Canning Estuary, given that much of the site has groundwater at or near the surface;
- System Six Recommendation Area M75 (Southern River), forms part of the eastern boundary of the property; and
- some existing land uses (poultry farms and a kennel zone) are likely to cause complaints from residents should houses be located too close to those land uses.

Following consideration of these issues, the Authority has concluded that, while these issues are important and pose constraints to development, the land could be developed for residential purposes subject to certain modifications to the proposed Amendment.

Recommendation 1

The Environmental Protection Authority has concluded that the proposed Amendment to the Metropolitan Region Scheme for the Canning Vale-Southern River area is environmentally acceptable subject to certain modifications. In reaching this conclusion, the Environmental Protection Authority has identified the main issues as:

- soil and groundwater contamination from a disused liquid effluent disposal site;
- protection of four Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 lakes, most notably, Lake Balannup;
- protection of other significant wetlands, in particular, the wetland near the corner of Holmes and Balfour Streets;
- drainage management and potential for nutrient and sediment pollution of the Swan and Canning Estuary;
- protection of System Six Recommendation Area M75 (Southern River); and
- avoiding conflicts between some existing land uses (poultry farms and a kennel zone) and future residential areas.

Accordingly the Environmental Protection Authority recommends that the proposal could proceed subject to the Authority's recommendations.

3.2 Soil and groundwater contamination from a disused liquid effluent disposal site

3.2.1 Details of the environmental issue

A property on the corner of Southern River Road and Furley Street (refer to Figure 2), owned by the City of Gosnells, was used as a liquid waste disposal site between 1969 and December 1981. In 1992 the City of Gosnells commissioned a study of the site to give a preliminary estimate of the nature and extent of the contamination. This study was completed in December 1992. The main conclusions from that study were:

- there was no inventory of the types or volumes of liquid waste disposed of at the site;
- known wastes disposed of at the site include brewery effluent, septic sludge and night oil, oils and other industrial wastes;
- there appeared to be little control over the disposal of liquid waste during the 1970's;
- soil contamination is evident both within the site and on some of the surrounding land;
- soil from lagoons used to dispose of the liquid waste shows significant levels of some heavy metals and petroleum hydrocarbons;
- groundwater taken from the periphery of the site show significant contamination from ammonia-nitrogen, oily substances and substances (probably of an organic nature) emitting odourous gases; and
- sites 170m to the east and 270m to the south-east of the site show contaminants in the groundwater originating from the liquid disposal site.

Based on the results of that study, the City of Gosnells has commissioned a stage 2 study. The aim of this study is to determine the nature and extent of the contamination so that an appropriate strategy can be developed which minimises environmental and public health impacts on current and future land uses. The stage 2 study is due to be completed by July 1994.

The Authority has two concerns regarding this site:

- management and disposal of contaminated soil; and
- the level of contamination of the groundwater down stream of the site and the suitability of land over this contaminated groundwater for future residential purposes.

The latter concern is the most difficult to deal with. Contaminated groundwater has the potential to cause health problems should future residents install private bores for domestic purposes. Further, the contaminated groundwater could ultimately enter the surface water network and contaminate the Southern River and the Swan-Canning Estuary. The Estuary is already showing signs of stress related to elevated nutrient levels, and should be protected from other sources of pollution.

3.2.2 Management of the issue as proposed in the Amendment

In response to the concerns about the contamination, the State Planning Commission has proposed that the liquid disposal site and all land likely to be downstream of the site be zoned Urban Deferred rather than Urban. The Urban Deferred zone would be changed to Urban following a satisfactory resolution of the contamination issue.

3.2.3 The Authority's conclusions

The Authority has concluded that a precautionary approach is required in this case, and that it is premature to initiate a rezoning of the affected land to Urban Deferred until the contamination issue has been resolved. Rezoning presumes, and creates the expectation, that the level of contamination is sufficiently low as to allow residential development in the near future. It is not possible to put a time frame for the safe development of this land until the final report has been completed and reviewed.

Recommendation 2

The Environmental Protection Authority recommends that land likely to be over contaminated groundwater (the land proposed to be zoned Urban Deferred east of the Amendment area) not be rezoned from Rural. When the results of the stage 2 study of the liquid disposal site are available, the nature and extent of contamination is determined, and an acceptable strategy for management by remediation is in place, then rezoning could be considered.

The State Planning Commission could either postpone finalising the Amendment until the results of that study have been reviewed, or delete that affected land from the final Amendment.

3.3 Protection of lakes - in particular, Lake Balannup

3.3.1 Details of the environmental issue

Four lakes protected by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 - or "policy lakes" - are located on the subject land, the most notably being Lake Balannup (Figure 3).

Lake Balannup is part of a larger wetland that extends both north and south of Ranford Road (Figure 4). Some filling, excavation and clearing of vegetation has occurred in the southern section and a smaller section to the north of Ranford Road. The only part of the lake protected by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 is the section which straddles Ranford Road.

Balannup Lake has been categorised as being a mixture of Categories C, O and R* using the Environmental Protection Authority's wetland evaluation method (Bulletin 686). The other wetlands have been categorised at Category R and M*.

* For a full description of these management categories refer to Appendix 1

3.3.2 Management of the issue as proposed in the Amendment

The Amendment proposes to reserve as Parks and Recreation a section of Balannup Lake either side of Ranford Road, and includes most of the policy lake. The remainder of the lake to the south of Ranford Road, including some of the policy lake section, will remain rural (Figure 5).

The other policy lakes are within the urban deferred zone.

Ranford Road, which currently passes through the policy lake area, is to remain a regional road on its current alignment, and is likely to be widened to a dual carriageway in the future, requiring more fill. The City of Gosnells is investigating the re-routing of Ranford Road around the Lake.

3.3.3 The Authority's conclusions

The Authority supports the proposed zoning to Parks and Recreation for the northern section of Lake Balannup. The proposed Reserve should be extended further south to include the remainder of the policy lake and any other significant sections of Lake Balannup.

The Authority also supports the re-routing of Ranford Road around the final Parks and Recreation reserve.

The remaining policy lakes should be protected through public open space provisions.

Recommendation 3

The Environmental Protection Authority recommends that Parks and Recreation Reserve proposed for Lake Balannup be extended further south to include the remaining portion of the policy lake area and any other environmentally significant section of the Lake.

Recommendation 4

The Environmental Protection Authority recommends that Ranford Road be re-routed around the amended Parks and Recreation Reserve area proposed in Recommendation 3.

Recommendation 5

The Environmental Protection Authority recommends that the remaining policy lakes be protected through appropriate management and public open space provision.

3.4 Protection of other significant wetlands

3.4.1 Details of the environmental issue

As Figure 6 shows, much of the site has been classified as wetland according to the Water Authority's wetland mapping. Much of the wetland area is degraded Category M and R* dampland. Some of the dampland area to the west has been categorised as Category C* (uncleared *Melaleuca preissiana* heathland), and the wetland near the corner of Holmes and Balfour Streets has been categorised as Category H*.

* For a full description of these management categories refer to Appendix 1

The wetland of most interest to the Authority is the wetland near the corner of Holmes and Balfour Streets. This wetland has been identified as being significant in a study of waterbird usage on the Swan Coastal Plain south of Moore River and north of Bunbury (Storey et al., 1993) for the following reasons:

- it is one of only three sites where the Freckled Duck is known to breed; and
- it is a significant waterbird habitat being (a) the most important wetland in terms of number of breeding species (12 species) and (b) ranks 14 out of the 255 surveyed wetlands in the number of clutches and broods of waterbirds present.

3.4.2 Management of the issue as proposed in the Amendment

Only a small portion of this wetland area has been proposed for protection as Parks and Recreation reserves - a small section of a Category C wetland to the east of Lake Balannup. The remaining wetland area is proposed Urban and Urban Deferred.

3.4.3 The Authority's conclusions - Holmes-Balfour wetland

The Authority has concluded that this wetland is so environmentally significant as to require protection in a secure conservation reserve. Its proposed zoning of Urban under the Amendment would not achieve this.

Recommendation 6

The Environmental Protection Authority recommends that the wetland known as the Holmes-Balfour wetland and an adequate buffer, located near the corner of Holmes and Balfour Streets, should be excluded from the Urban zone and included within a secure conservation reserve.

3.4.4 The Authority's conclusions - the remaining wetlands

The Authority acknowledges that should development of the subject land for residential purposes proceed, there will inevitably be a loss of wetland area. Where Category R and M wetlands are affected, development should proceed provided that where wetland area is lost, wetland function is retained and enhanced within the development. This can be implemented through planning at the local level by the City of Gosnells. One option is to integrate wetlands into the stormwater drainage system.

Category C wetland areas could be protected through public open space provision, and as part of the conservation reserve for the Holmes-Balfour wetland.

Recommendation 7

The Environmental Protection Authority recommends that where wetlands categorised as Category R or M other than those subject of other Recommendations using the Authority's wetland evaluation method, are to be lost or have their area reduced in size, their wetland functions should be retained and enhanced within the development.

Provision should be made to protect some of the Category C wetlands within areas of public open space and within the conservation reserve for the Holmes-Balfour wetland.

3.5 Drainage management and potential for nutrient and sediment pollution of the Swan and Canning Estuary

3.5.1 Details of the environmental issue

As discussed previously, much of the site has the watertable at or near the surface. Development of the land for residential purposes will require either a lowering of the watertable through draining, or the elevation of the building surface through filling. Draining the land is likely to have a number of significant environmental impacts, including:

- The water levels in important wetlands will be lowered, in particular, Lake Balannup, the other policy lakes and the Holmes-Balfour wetland;
- The artificial drainage system would intercept groundwater that would otherwise be discharged to the existing surface water system or the ocean. The additional surface water is likely to carry substantial quantities of nutrients and other pollutants which would normally be absorbed by the soil profile within the unconfined aquifer. This water represents a significant threat to the water quality of the Swan-Canning Estuary; and
- As surface water moves it collects and transports sediment through erosion. This sediment carries particulate phosphorus. Any increase in the volume of surface water will inevitably lead to an increase in the amount of phosphorus being carried to down stream water bodies, in particular, the Swan-Canning Estuary. This also represents a significant threat to the water quality of the Swan-Canning Estuary.

3.5.2 Management of the issue as proposed in the Amendment

The Amendment notes that high watertable is a problem, and an overall drainage management plan is required.

3.5.3 The Authority's conclusions - draining vs filling

The Environmental Protection Authority considers that proposals to drain the site which could have adverse environmental impacts on important wetlands and the Swan-Canning Estuary are unacceptable. The Authority concludes that filling should be carried out to accommodate development.

Recommendation 8

The Environmental Protection Authority recommends that the likely environmental impacts of draining the site for development are so significant as to be unacceptable. The Authority recommends that filling should be carried out to accommodate development.

3.5.4 The Authority's conclusions - stormwater management

Even with fill being used, additional drainage will still be required to manage stormwater from the hard surfaces. The use of water sensitive urban design techniques, which enhance localised on-site disposal at the individual house and street levels, will minimise the the volume of water carried by the drainage system.

The Water Authority has produced a preliminary regional drainage plan for the area, which has been referred to the Authority for early advice. It is envisaged that a final, more detailed, plan will be developed and subject to a full assessment by the Authority. The key objective of this plan should be no additional nutrient input to the Estuary.

Recommendation 9

The Environmental Protection Authority recommends that the Water Authority prepare a detailed regional water balance management plan for the area to achieve these objectives:

- **No increase in nutrient input into the Estuary, and**
 - **On-site disposal of stormwater to be maximised,**
- and the plan should be submitted to the Environmental Protection Authority.**

3.6 Protection of Southern River, System Six Recommendation Area M75

3.6.1 Details of the environmental issue

Those sections of the Southern and Wungong Rivers within the City of Gosnells are the subject of a System Six recommendation. The recommendation is for the river and a suitable buffer to be managed as a regional park. Regional parks are generally large areas of land with conservation, landscape and recreational value, and can include land with a mix of ownership including land reserved for Parks and Recreation.

3.6.2 Management of the issue as proposed in the Amendment

The Amendment proposes a Parks and Recreation reserve covering a large portion of Southern River within, and adjacent to, the proposed Urban and Urban Deferred land. The proposed reservation is largely in-line with System 6 recommendations.

The Swan River Trust has expressed some concern that the reserve is too narrow in some places. Officers from the Swan River Trust, the Department of Planning and Urban Development and the Authority have met to resolve the Trust's concerns.

3.6.3 The Authority's conclusions

The Environmental Protection Authority has concluded that considerable progress has been made in defining an appropriate Parks and Recreation boundary for the Southern River, and it is expected that the final boundary will meet the requirements of the Swan River Trust.

Recommendation 10

The Environmental Protection Authority recommends that the proposed Parks and Recreation reserve for the Southern River is largely acceptable, and that the final boundary be determined in consultation the Swan River Trust.

3.7 Avoiding conflicts between some existing land uses (poultry farms and a kennel zone) and future residential areas

3.7.1 Details of the environmental issue

There are at least five poultry farms and a kennel zone within the Amendment area or adjacent to it (Figure 6).

Each of these land uses has the potential to cause significant impacts to nearby residential areas should they be located too close. Poultry farms produce significant odour, noise and dust, and

the kennel zone produces significant levels of noise. Where these land uses are to remain, an adequate buffer should be provided between that land use and residential areas. This will ensure that environmental impacts experienced by residents as a result of emissions from these land uses will not be significant.

There have been some recent examples where inappropriate location of residential areas near industries have caused concern from both the new residents and the industries involved (for example, a poultry farm at Gosnells to the north of the land the subject of this Amendment). This is despite the fact that in many cases the industries involved are operating to industry standards and within their licence conditions.

This could lead to the undesirable situation where Part V of the Environmental Protection Act (which deals with controlling pollution) is applied to these industries to control emissions and which may ultimately threaten their livelihoods, despite the fact that they predated the residential development.

The Environmental Protection Authority has advised on previous occasions that the recommended buffer distances for poultry farms is 500m and for a kennel zone 1km.

The Environmental Protection Authority position regarding such land uses and the location of residential areas nearby is that where residential development is proposed within the recommended generic buffer distances, and the industry is operating to industry standards and/or licence conditions, the onus should be on the developer of the residential land to show that impacts on potential residents would be acceptable. Where this can't be shown, the development should either be refused, or the impacts from the industry/land use should be reduced to comply with the reduced buffer.

This can be achieved either through the use of better technology or through re-location of the industry/land use.

3.7.2 Management of the issue as proposed in the Amendment

Under the proposed Amendment, three of the poultry farms have been zoned Urban Deferred. The implication of this zoning is that the ultimate land use for the poultry farms will be urban.

Under the proposed Amendment, the kennel zone remains zoned as Rural. The implication of this zoning is that the kennel zone is to stay in the long term.

In all cases, land zoned Urban or Urban Deferred is proposed up to the edge of each poultry farm property and to the edge of the kennel zone. There is no provision for adequate buffers zones as part of this Amendment.

3.7.3 The Authority's conclusions

The Authority has concluded that it is the intention of the planning agencies to ultimately facilitate the re-location of the poultry farms affected by this Amendment, and acknowledges that the issue of buffers can be managed through detailed planning at the local Town Planning Scheme level.

The Authority also concludes that it is the intention of the planning agencies to retain the kennel zone in the long term. Consequently, the issue of an adequate buffer zone needs to be addressed through the MRS Amendment process through either appropriate zoning or through a commitment to provide a buffer as part of detailed structure planning.

The Authority believes that the potential for conflict between new residents and the existing kennel zone is so great that a statutory buffer is required for as long as the kennel zone is to remain.

Recommendation 11

The Environmental Protection Authority recommends that the proposal to rezone the poultry farms and the land within the generic buffer to Urban and Urban Deferred is acceptable provided that planning at the local level (through amendments to the Town Planning Scheme) addresses the need to provide an adequate buffer for as long as the poultry farms remain.

Where a poultry farm operates in accordance with current acceptable standards as set out in the Code of Practice, residential development within the recommended generic 500 metre buffer should be refused by the planning agencies unless

- the proponent of the new residential development has established that the specific conditions are such that impacts, such as odour, dust and noise, on new residents will be acceptable; or
- an alternative strategy is devised by the planning agencies that avoids potential land use conflicts.

Recommendation 12

The Environmental Protection Authority recommends that the issue of providing an adequate buffer zone to protect future residents from the noise impacts of the kennel zone should be addressed as part of this Amendment through either an appropriate zone or through a commitment to provide a secure buffer as part of detailed planning through the local Town Planning Scheme.

4. References

- Department of Planning and Urban Development, 1990. *Metroplan: A planning strategy for the Perth Metropolitan Region*. Perth, Western Australia.
- Department of Planning and Urban Development, 1990. *Urban Expansion: A statement for the Perth Metropolitan Region*. Perth, Western Australia.
- Golder Associates Pty Ltd, 1992. *Stage 1 Contamination Investigation Liquid Waste Disposal Site Lot 1768 Southern River Road Southern River*. Report to the City of Gosnells. Perth, Western Australia.
- State Planning Commission, 1987. *Planning for the Future of the Perth Metropolitan Region*). Perth, Western Australia.
- State Planning Commission, 1993. *Metropolitan Region Scheme: Amendment No. 927/93, South-East Corridor (Canning Vale - Southern River)*. Perth, Western Australia.
- Storey, A. W., Vervest, R. M., Pearson, G. B. and Halse, S. A. 1993. *Wetlands of the Swan Coastal Plain, Volume 7: Waterbird Usage of Wetlands on the Swan Coastal Plain*. Water Authority of Western Australia and Environmental Protection Authority, Perth, Western Australia.

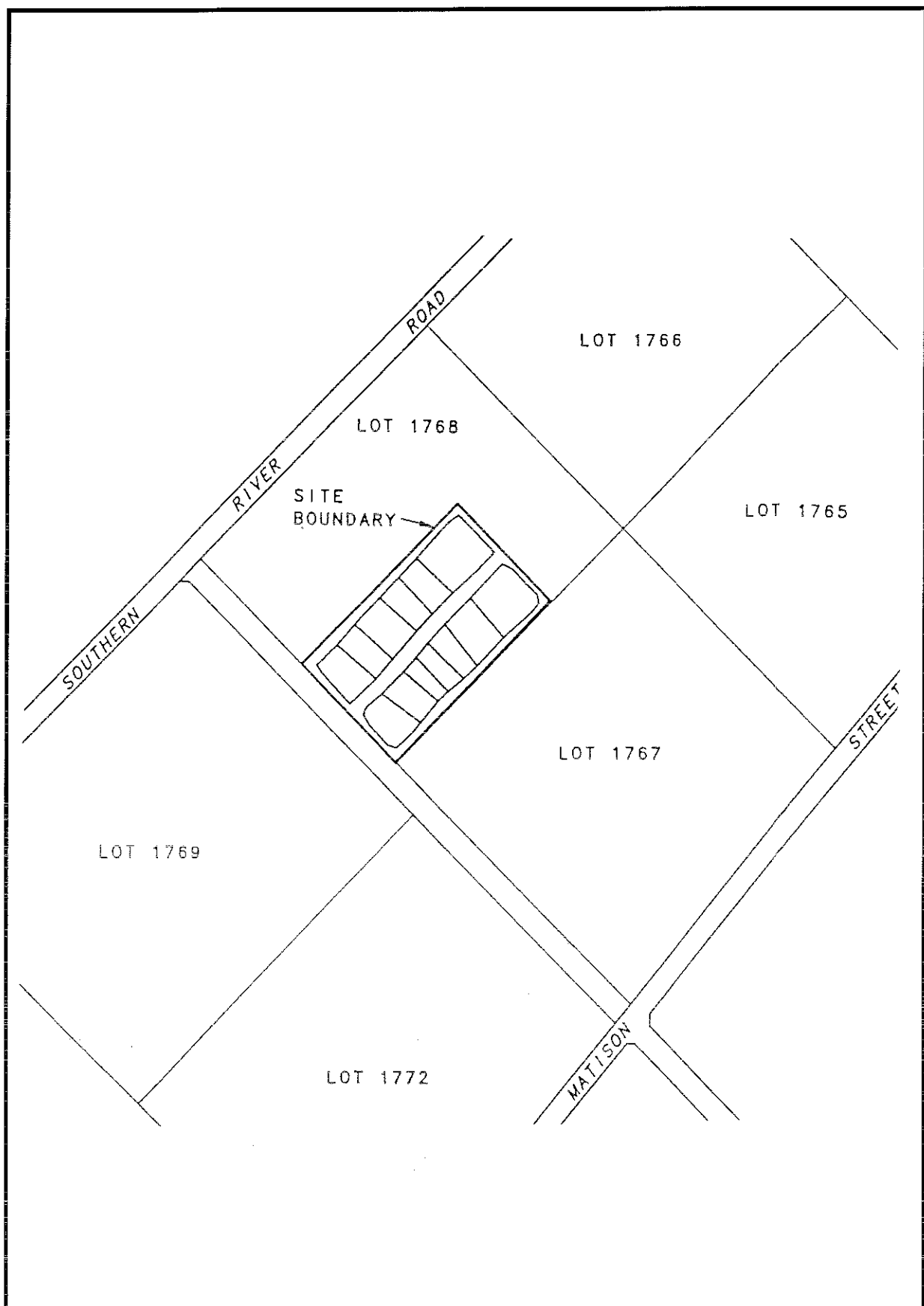


Figure 2: Location of the disused liquid waste disposal site

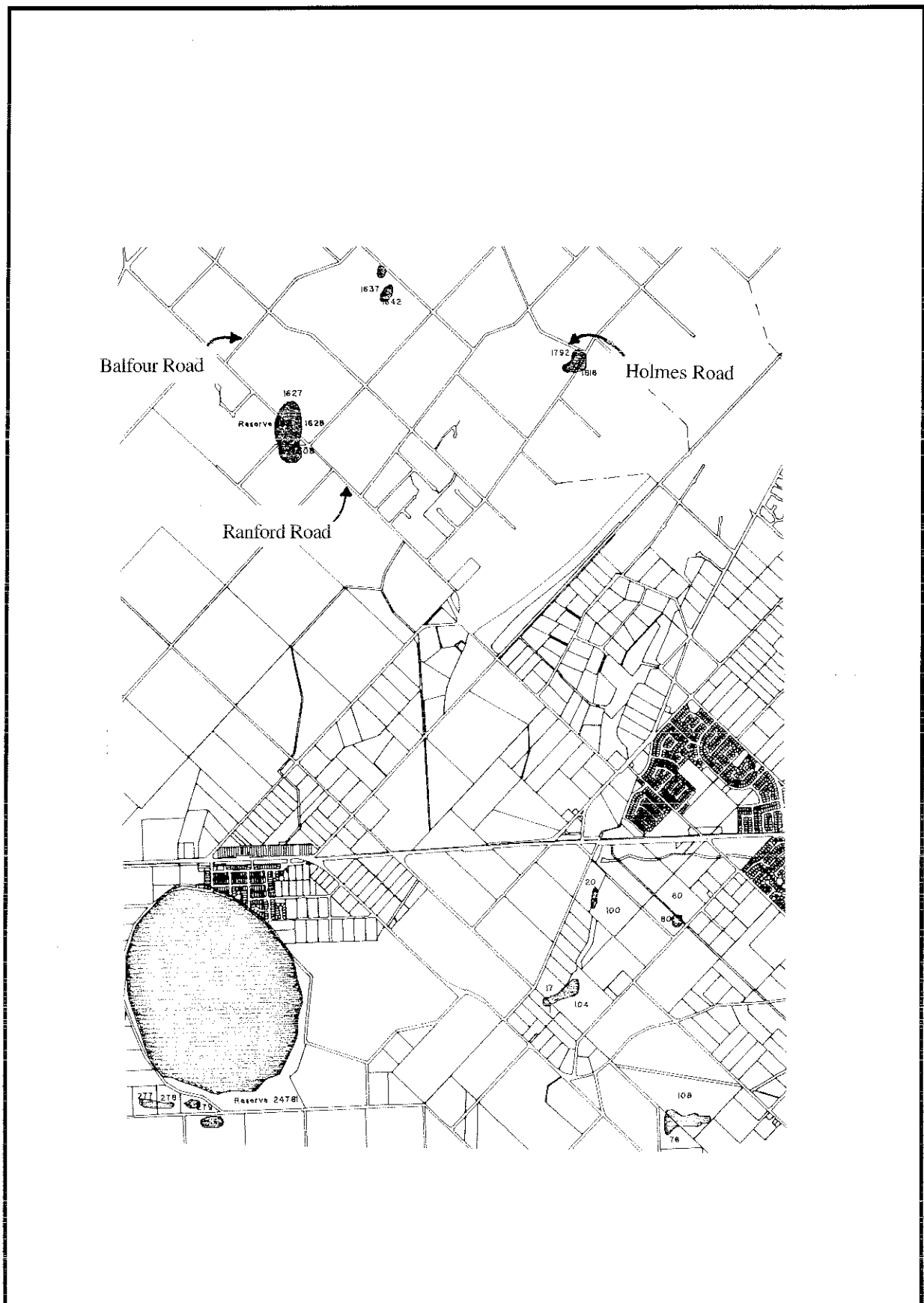


Figure 3: Location of lakes protected by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992

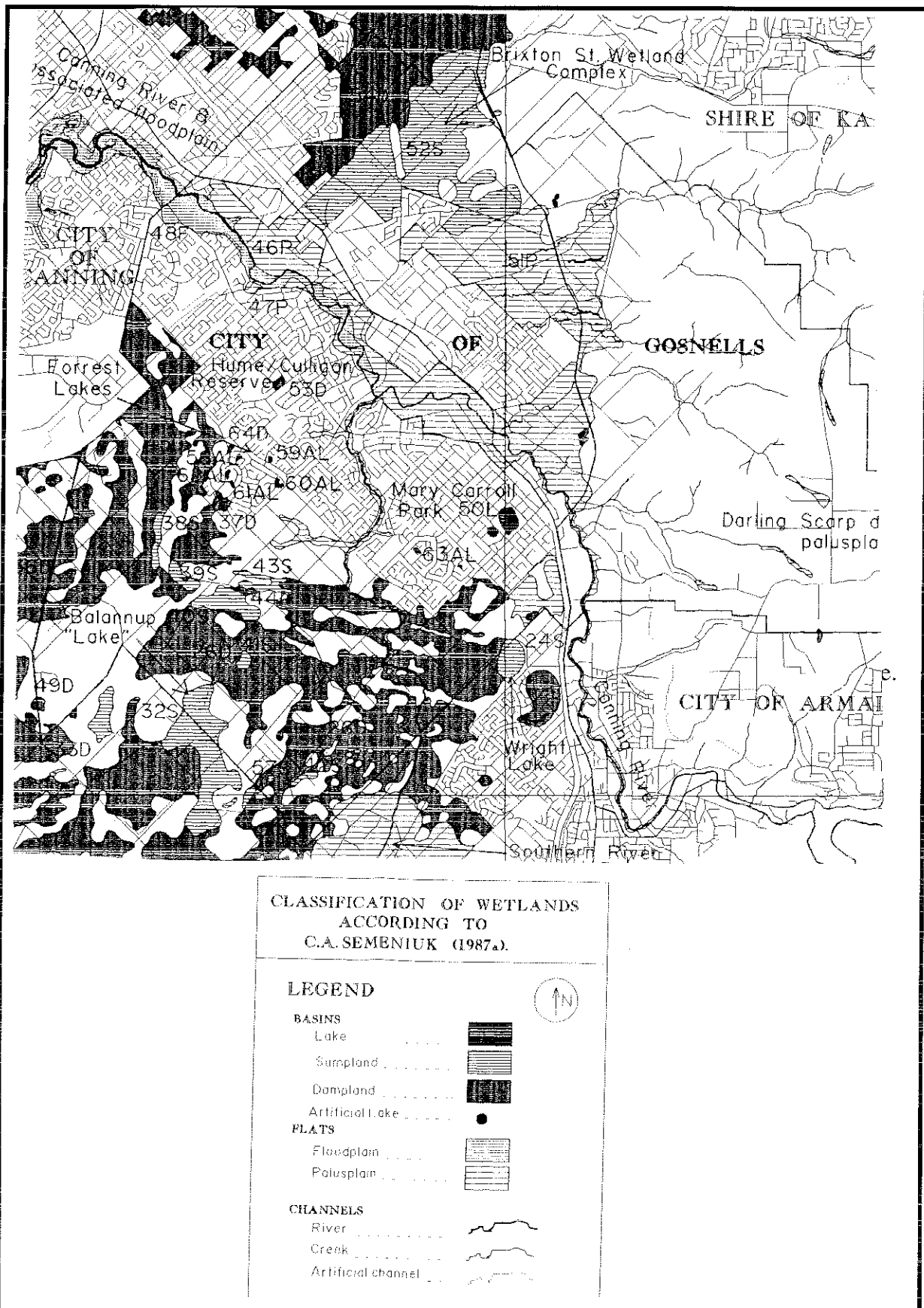


Figure 4: The extent of Lake Balannup as shown on the Water Authority's wetland mapping.

Appendix 1

Environmental Protection Authority wetland management categories (Bulletin 686)

It is possible to identify five different management categories in which to place wetlands, each with specific management objectives.

i) High conservation (Category H)

Attributes

These wetlands possess a high degree of naturalness and there is a high level of interest in using the wetlands for various human purposes.

Management objectives

Active management to maintain and enhance the wetland attributes, particularly natural attributes. Where there is no active management at present it should be put in place as a matter of highest priority.

Active management requires that a detailed management plan is prepared and implemented, with sufficient resources to maintain or improve the wetland's current condition.

This category is recognised as having the highest priority for establishment and implementation as regional park wetlands.

Examples

Loch McNess, Cooloongup, Thomsons Lake.

ii) Conservation (Category C)

Attributes

These wetlands possess a high degree of naturalness.

Management objectives

To maintain and enhance natural attributes and functions.

Examples

Forrestdale Lake, Gngara Lake, Star Swamp.

iii) Conservation and recreation (Category O — for open space)

Attributes

These wetlands have been modified (they have moderate degrees of naturalness) but are considered to play important roles in their urban and/or rural settings (they have a high degree of human interest, either public or private).

Management objectives

To provide for human uses whilst maintaining and enhancing the existing natural attributes.

Examples

Lake Carine, Lake Claremont, Lake Gwelup.

iv) Resource enhancement (Category R)

Attributes

These wetlands have been modified and do not have clearly recognised human-uses in their urban or rural settings (they have moderate degrees of naturalness and human interest). Some of the wetlands in this category will be the focus for controversy if uncontrolled developments begin to impinge upon them.

Management objectives

To maintain and enhance the existing ecological functions.

The term 'resource enhancement' has been used to indicate that opportunities may exist for commercial developments to enhance the conservation values of wetlands (ie the wetland resource) in this management category.

Examples

Hazelmere Lakes, Mariginiup Lakes, Tamworth Hill Swamp.

v) Multiple use (Category M)

Attributes

Wetlands in this category are significantly degraded, possessing few natural attributes and limited human-use interest. Despite this, wetlands in this category can be a focus for controversy if developments impinge upon them. For example, attempts to alter Jackadder Lake, which falls into this category, would be closely scrutinised by the surrounding residents. Despite having few natural attributes, some of these wetlands may provide valuable waterbird habitat.

Management objectives

Objectives should be considered in the context of catchment and land use planning (especially drainage, nutrient enrichment, surface and groundwater pollution), in terms of the current value of the wetland and the potential value to the community if rehabilitated.

Sections of extensive wetlands that fall into this category may only have a hydrological function. Development and management within these areas should address the key issues of water management and off-site impacts.

Examples

Jackadder Lake, Queens Gardens, Wright Lake.