

Rural residential development Jandakot Water Mound

**Rural residential rezoning, subdivision and development of
Lot 418 Liddelow Road, Banjup**

Landcorp and the City of Cockburn

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

**Environmental Protection Authority
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1. Background

The site is located approximately 2km south of Forrest Road on the corner of Liddelow and Gibbs roads in Banjup (see attached map). Lot 418 was originally a reserve for recreation utilised by a model aeroplane club, the activities of which have now ceased. A portion of the site in the south west corner is disturbed as a result of the club's activities. The remainder contains good quality native vegetation including banksia woodland and melaleuca woodland on lower areas. A seasonal wetland traverses the site from the north east to the south west.

The site is over a Priority 2 Source Area as defined by the Water Authority of Western Australia (WAWA) for the protection of groundwater supplies and is also in the Jandakot Underground Water Pollution Control Area. The proposal, as Amendment No. 39 to the City of Cockburn's Town Planning Scheme No. 2, was referred to the Environmental Protection Authority in March 1990 by the Department of Planning and Urban Development for comment. Due to the potential impacts on the groundwater protection areas as mentioned above, the Authority set the level of formal assessment at Consultative Environmental Review (CER).

2. The proposal

The proponents, Landcorp and the City of Cockburn, propose to rezone, subdivide and develop Lot 418 Liddelow and Gibbs roads Banjup to create 17 "Special Rural" lots ranging in size from 2ha to 5.2ha. The site is currently zoned "Rural" under the City of Cockburn's Town Planning Scheme No 2. Through the rezoning process it is intended to apply special provisions to the scheme limiting the the allowed uses and activities, and a copy of these provisions is included in this report. The proposed scheme provisions form part of the proposal as assessed.

The development is seen as an "infill" to develop the site in accordance with the surrounding area, which is largely developed for special rural.

3. Environmental considerations

In examining the environmental implications of this development, the Environmental Protection Authority has given consideration to the following issues:

3.1 Jandakot Priority 2 Source Area

The Priority 2 Source Area has been defined to protect an underground water resource used for Perth's domestic supplies.

At the present time a landuse study for the Jandakot Water Mound (Jandakot Land Use and Water Management Strategy) is being prepared by consultants for the Water Authority and the Department of Planning and Urban Development, and an Environmental Protection Policy for the same area is also being prepared under the Environmental Protection Act 1986. The Authority considers development over the water supply area needs to be carefully controlled to prevent pollution of this important water source.

3.2 Wetlands

In March 1991, the Environmental Protection Authority published the Draft Environmental Protection (Swan Coastal Plain Wetlands) Policy 1991 for public comment. Regulation were published at the same time to ensure the wetlands in the Policy area were protected during the submission period. As a generality, any area which holds water at the beginning of summer (December 1) must not be filled, drained or polluted.

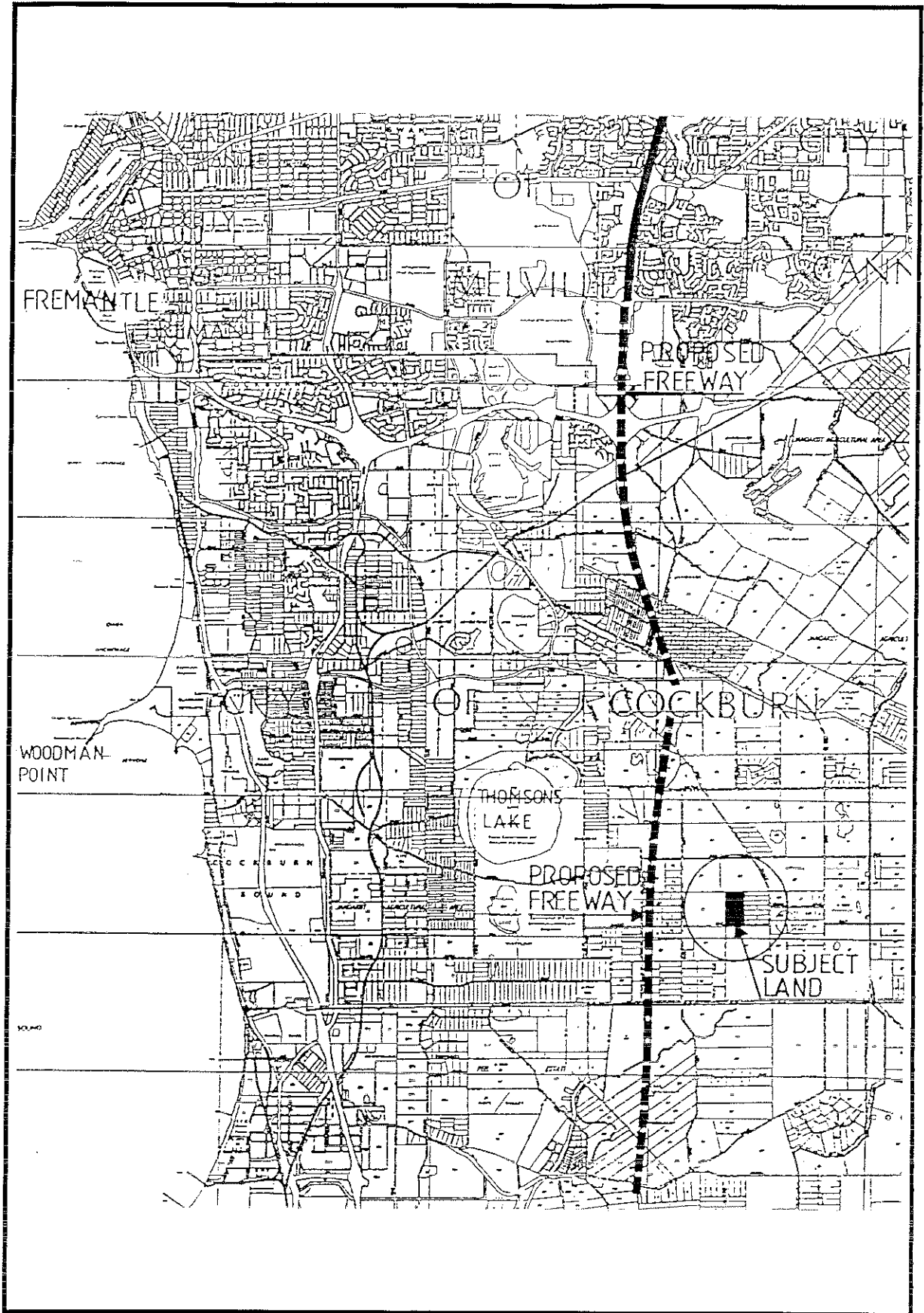


Figure 1: Location map

Subdivision and development around designated wetlands is not excluded provided the requirements of the Policy are accommodated.

There is an ephemeral wetland (that is no permanent water) crossing the site which is ground water fed. Because of its ephemeral nature, the wetland is not listed under the Environmental Protection Policy. However, this does not mean it has no environmental value and it should be noted that the Wetland Policy is only in draft form. If the development were to proceed, the wetland's function and environmental value would need to be assessed and appropriate management provisions put in place to preserve those values.

3.3 The proposed Jandakot Botanic Park

The Department of Planning and Urban Development is currently considering setting aside land for the Jandakot Botanic Park. The Park is for the protection of banksia ecosystems and to provide for recreation. Management proposals for the Park range from reservation for core areas and landuse and development controls over buffer areas to ensure private development is consistent with the Park's objectives. Planning for the park is not yet finalised but it is anticipated that decisions will be made in the near future.

The Authority supports the concept of this Park but given the lack of detail on boundaries and planning requirements, the Authority cannot recommend against developments which may compromise the Park on this basis.

3.4 The nature and impact of rural residential developments

Rural residential lots (or rural retreats) are defined as being greater than 1 hectare and are used primarily for residential purposes. Whilst the primary use is residential, there are still management implications for the ground water resource, particularly the potential for nutrient pollution from on-site effluent disposal systems. The major issues which address the suitability of rural residential development in this location and the management of these problems are examined below.

Land capability

An assessment of the site's environmental capability has been undertaken by the Environmental Protection Authority to determine whether the site is capable of sustaining rural residential development without resulting in an unacceptable environmental impact. This assessment includes the Department of Agriculture's Land Capability Assessment for the site. With regard to the Department of Agriculture's Land Capability Assessment, the Authority prefers this form of development to be sited on land which is classed as 'fair', 'high' or 'very high' for use as 'rural retreats' (i.e. environmentally capable of supporting conventional rural residential development). The development may proceed on such land provided a number of design constraints and management provisions are applied. These fall into two categories: those which apply to the developer and are implemented prior to the issuing of titles for the proposed lots; and those which apply to the local authority and must be reflected in the local authority's town planning scheme.

This proposal is on land which has a land capability classification for rural retreats which is 'low' or 'very low'. This is generally because the groundwater is very high and the nutrient retention and microbial purification ability of the soils is not adequate or the land is subject to flooding.

Sewage disposal

Domestic septic tanks typically release about 3.5kg of phosphorus and 35kg of nitrogen into the soil each year, and because it is confined and concentrated, a significant portion of this reaches the groundwater.

Because of the low density of development associated with rural residential development, connection to reticulated sewerage is not viable and conventional septic tanks with alternating leach drains are typically used for sewage disposal.

For these systems to work effectively, the Authority considers it is necessary for the bottom of the leach drain to be a minimum of 2 metres above the highest water table, and for the system to be at least 100 metres from the nearest watercourse or drain. In many cases this requires the creation of a mound to accommodate the leach drains.

Conventional septic tanks are unacceptable on land classified as 'low ' to 'very low' in the Department of Agriculture's Land Capability assessment, due to high groundwater levels. Until recently rural residential development proposals on land with a 'low ' to 'very low' land capability were considered to be unacceptable to the Authority. However, the Health Department of Western Australia has recently approved a number of alternative domestic wastewater treatment systems which have an acceptable phosphorus retention capacity and meet the Department's health requirements (aerated treatment units and modified leach drain systems).

Both systems have only been approved for a period of 2 years during which the Health Department will monitor their effectiveness. Both types of system are also associated with management issues which still need to be finalised with local authorities and the Health Department.

Because these systems have only been approved on a trial basis, the Authority believes it would be premature to approve their use over a valuable public water resource. Thus until further evaluation is undertaken by the Health Department, the Authority believes these alternate systems are not acceptable on the Jandakot Water Mound Priority Source Areas.

Other

Were development to proceed, there would be a number of other issues that would need to be addressed. These include the following:

- land use controls;
- drainage; and
- clearing.

4. Environmental consultation

The Environmental Protection Authority received comments on the proposal from the following groups and agencies:

- Department of Conservation and Land Management;
- Members of the public;
- Wetlands Conservation Society;
- Water Authority of Western Australia;
- Department of Planning and Urban Development; and
- City of Cockburn.

5. Environmental assessment

The Authority has assessed the proposal on the basis of:

- the information provided in the referral documents;
- submissions received from government agencies and the public; and
- the Authority's knowledge of current rural residential developments and their environmental effects;

The proposed site, in some areas, is subject to flooding and therefore is considered by the Authority to have a **low or very low capability** for development and is situated on the Jandakot Priority 2 Source Area for the protection of public water resources. The development is also situated within the proposed Jandakot Botanic Park and contains wetlands (although not wetlands designated under the Draft Environmental Protection Policy).

The Authority considers that any development which requires the use of conventional septic tanks on low to very low land capability is not acceptable. The use of alternative wastewater treatment systems on the Jandakot Priority Source Areas is not yet acceptable because these systems have only been approved on a trial basis at this stage and it is not certain that they will operate effectively in the long term. Thus the following recommendation is made:

Recommendation

The Authority recommends that because this proposal for intensifying landuse is in an area has a low or very low land capability and is located in the Jandakot Priority 2 Source Area it is not environmentally acceptable and should be refused.