

SPECIAL RESIDENTIAL
REZONING AND SUBDIVISION
LAKES ROAD EAST MANDURAH

COLONIAL DEVELOPMENT CORPORATION

Report And Recommendations
of the
Environmental Protection Authority

Environmental Protection Authority
Perth, Western Australia
Bulletin 350 September 1988

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1. BACKGROUND

The Environmental Protection Authority (EPA) has examined the possibilities of nutrients and other contaminants being produced as a result of increasing intensities of human settlement. In particular, nutrient pollution of drainage lines entering the Peel-Harvey estuarine system is a major threat to the biological health of that system and hence to its beneficial uses. Sources of nutrients include groundwater polluted by septic tank effluent and stormwater drainage from areas utilising synthetic and animal fertilisers.

On 22 June 1988, the EPA received a referral from the State Planning Commission (SPC) regarding a proposal to rezone and subdivide Lots 6, 164 and 165 Lakes Road, East Mandurah.

Because sewage disposal is proposed to be by septic tank/leach drain systems, the EPA determined that the potential for environmental impact is such that the proposal should be assessed under Part IV of the Environmental Protection Act, 1986. The level of assessment was set at Notice of Intent.

2. PROPOSAL

The subject land is east of Mandurah and north of the East Mandurah residential district and is bounded by Lake and Gordon Roads. The property is 135 hectares in size and, as its closest point, lies approximately 150 metres west of Lake Goegrup (see Figure 1). Lake Goegrup flows directly into the Serpentine River and then to the Peel Inlet.

The land is relatively low lying and flat, rising from 2 metres to 8 metres (AHD) at its highest point. The site, which has been grazed in the past, is well vegetated with open Tuart woodland and areas of open Tuart-Jarra-Marri woodland.

An environmental study of the subject land was commissioned by the proponent, specifically examining soil type and groundwater movement. The soils were found to be deep yellow sands with a high presence of limestone. The information presented on groundwater movement suggests that there is a groundwater divide or groundwater mound in the northern portion of the subject land, with the direction of groundwater flow for only a small portion of the site being towards Lake Goegrup.

The proposal is to rezone the land from "Future Urban" to "Residential 1" (R Code 5) and subdivide the property into 390 "Special Residential" lots within the range of 2000m² to 4000m², with an average of approximately 2500m². No clearing would be permitted other than for the purpose of firebreaks, access, safety and construction of a dwelling.

It is proposed that the area closest to Lake Goegrup, and to the east of the groundwater divide, be connected to reticulated sewerage, and sewage disposal for the remainder of the land be by septic tank/leach drain systems.

3. ENVIRONMENTAL ASSESSMENT

The Environmental Protection Authority is currently investigating effluent disposal associated with residential development. It is anticipated that new guidelines on environmentally acceptable methods of sewage disposal

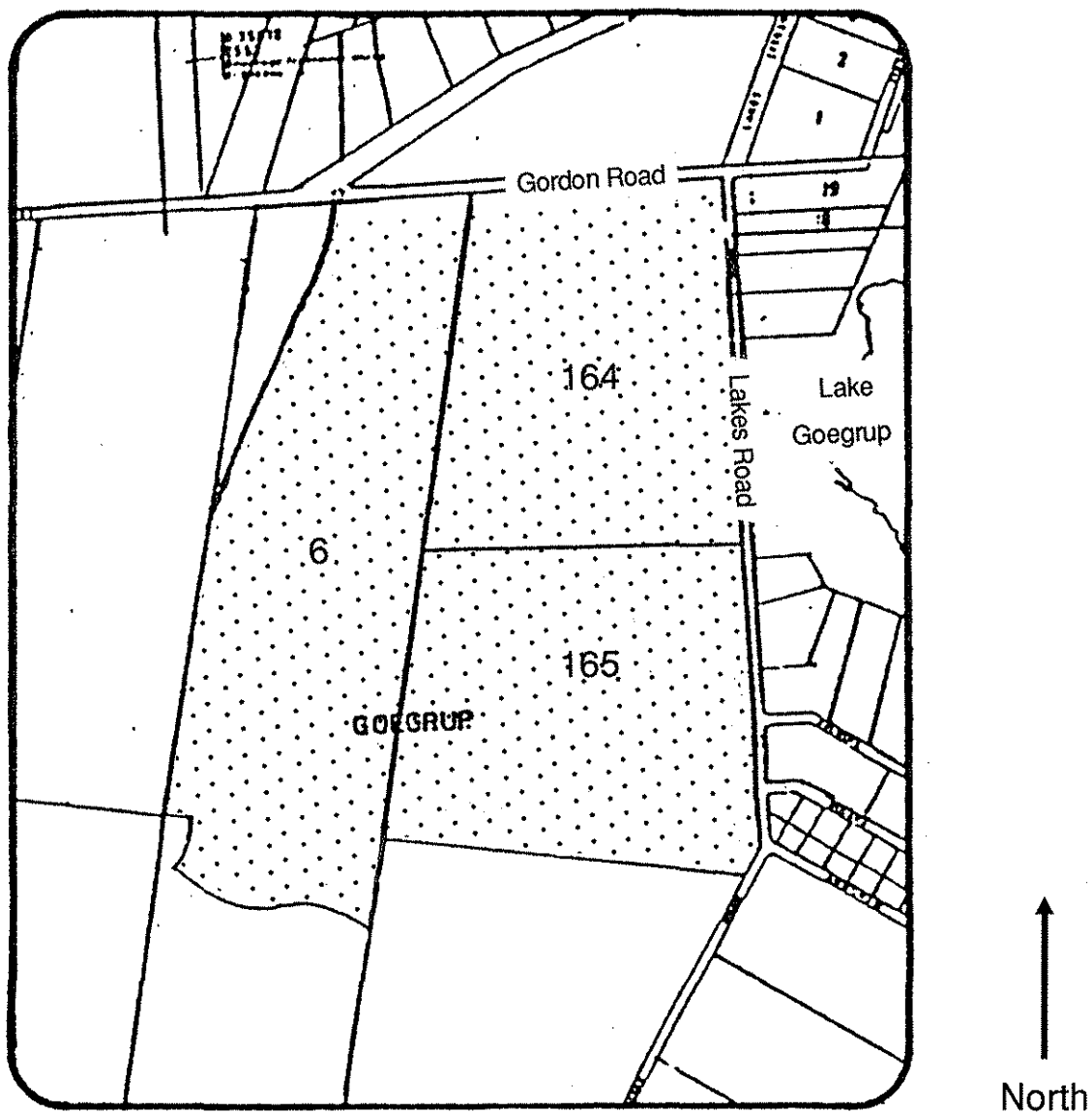


Figure 1. Location of land proposed to be rezoned and subdivided.

associated with various densities of development will be established in the near future. The guidelines would be subject to ongoing review and would be modified in response to new findings.

Because the guidelines have not yet been adopted, it has been necessary to assess the current proposal individually in the light of existing information. However, the EPA would not wish to report on any further proposals for residential subdivision with on-site sewage disposal until they have been established. The report on this proposal should not be seen as establishing a precedent for future proposals.

Specifically, the EPA has examined the environmental suitability of the area for on-site sewage disposal, the potential net export of nutrients to the Peel-Harvey system being the main issue. Compared with other sandy soils which occur on the Swan Coastal Plain, the soils of the subject land are considered to have high phosphate fixing characteristics. Advice from the Mines Department's Geological Survey questions the conclusions stated in the environmental study regarding groundwater movement based on the limited monitoring conducted during the study. The EPA has, therefore, based its assessment of the proposal on the conservative assumption that existing or future groundwater movement for the whole site could be generally towards Lake Goegrup.

The EPA has also addressed the disposal of stormwater drainage, the concern being nutrients and other contaminants contained in the stormwater.

The EPA has concluded that the subject land could be developed for residential purposes in an environmentally acceptable manner providing:

- . all lots less than 2000m² in size were connected to reticulated sewerage;
- . all lots within 200m of Lake Goegrup were connected to reticulated sewerage irrespective of their size;
- . all lots less than 4000m² in size and within 400 metres of Lake Goegrup were connected to reticulated sewerage;
- . septic tank/leach drain systems were installed such that the vertical separation between the base of the leach drain or soak well and the highest known groundwater level is 2 metres;
- . any fill imported to the site and placed below a septic tank/leach drain system had a Phosphorus Retention Index (PRI) of at least that of Spearwood sands; and
- . all drainage waters were disposed of on-site.

In regard to the current proposal by Colonial Development Corporation, the EPA supports the proponent's commitments listed in Appendix 1, and in particular the commitments to sewer the north east area of the site and maximise vegetation retention. The EPA has concluded that the proposal is environmentally acceptable subject to the Recommendations in this Assessment Report.

RECOMMENDATION 1

The Environmental Protection Authority concludes that the proposal to rezone and subdivide Lots 6, 164 and 165 Lakes Road, East Mandurah described in the Notice of Intent and supplementary environmental study is environmentally acceptable and recommends that it could proceed subject to the Environmental Protection Authority's recommendations in this Assessment Report and the commitments made by the proponent.

RECOMMENDATION 2

The Environmental Protection Authority recommends that:

- . lots within 200m of Lake Goegrup (high water mark); and
- . lots less than 4000m² in size and within 400m of Lake Goegrup (high water mark),

be connected to reticulated sewerage to the satisfaction of Water Authority of Western Australia.

RECOMMENDATION 3

The Environmental Protection Authority recommends that septic tank/leach drain systems be installed such that there is a vertical separation of 2 metres between the base of the leach drain or soak well and the highest known groundwater level, to the satisfaction of the Town of Mandurah.

RECOMMENDATION 4

The Environmental Protection Authority recommends that fill imported to the lots and placed below septic tank leach drain systems should have a Phosphorus Retention Index at least that of Spearwood sands, to the satisfaction of the Town of Mandurah.

RECOMMENDATION 5

The Environmental Protection Authority recommends that statutory provision be made in the Town of Mandurah's Town Planning Scheme to ensure controls on clearing referred to by the proponent are met.

RECOMMENDATION 6

The Environmental Protection Authority recommends that the Town of Mandurah gives consideration to requiring householders with septic tank/leach drain systems to a) install a parallel soil absorption system that may be alternated by way of a diversion box, and b) have the septic tank pumped out at least every four years.

RECOMMENDATION 7

The Environmental Protection Authority recommends that all drainage waters be disposed of on-site, to the satisfaction of the Town of Mandurah.

In examining this proposal, the EPA has considered only environmental issues. the EPA recognises that, while it may be possible to satisfactorily resolve the environmental issues, other requirements, such as those of the servicing authorities, would also need to be considered and may well influence the overall acceptability of the proposal.

4. **CONCLUSION**

Upon assessment of the Colonial Development Corporation proposal, the Environmental Protection Authority has concluded that the proposed Special Residential development would be environmentally acceptable subject to the development occurring according to the commitments made by the proponent and the Environmental Protection Authority's recommendations.

APPENDIX 1

The following is a list of Environmental Commitments made by the proponent in the Notice of Intent and subsequent documentation.

1. The landowner will do all that is reasonable to ensure that clearing of natural vegetation be kept to a minimum.
2. On the advice of your Department, only that land which lies to the west of the area bordered in blue on the attached plan will be developed without a sewerage requirement. In that area, the minimum separation between the highest known groundwater table level and the surface is 3 metres or minimal filling will be carried out to achieve a 3 m separation.
3. The amount of fill to take place will be restricted to that part of the site which accommodate a building and as a consequence will limit any impact on the existing vegetation.
4. The area enclosed with a blue border on the attached plan will be sewered as and when development of the site progresses.
5. As much as will be admitted by the relevant approving authorities, stormwater drainage will be contained on site. No direct drainage to Lake Goegrup from the site will take place.
6. Strict compliance with Council's Town Planning Scheme, (particularly those parts relevant to the restriction of the Residential will apply.