Rezoning application, Pinjarra

Ormond Nominees

Report and recommendations of the
Environmental Protection Authority

Environmental Protection Authority
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Rezoning, rural to industrial
Lot 602 Beacham Road, Pinjarra

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Summary and recommendations

The proposal is for rezoning Lot 602, Beacham Road Pinjarra from Rural to Industrial and to specify that only "dry-industrial" uses would be permitted in this area by adding Clause 7.4.3 to the Shire of Murray Town Planning Scheme No 4 Scheme Text. On-site sewage effluent disposal has been proposed.

The site is within the area defined as the Peel-Harvey Catchment by the Minister for the Environment where clearing, drainage and nutrient controls apply. The Environmental Protection Authority believes that zero nutrient discharge off-site should be the objective for industrial developments within the Peel-Harvey Estuary Catchment.

Lot 602 is located within the Murray Groundwater Area and is located on an area which recharges the Leederville Aquifer. The Leederville Aquifer is a potential potable water supply.

The site is located on Bassendean Sands which have little ability to attenuate nutrients from sewage effluent and where maximum groundwater levels are only one metre below the surface. The site is almost flat.

Whilst this site has a number of difficulties, the Environmental Protection Authority considers that subject to the recommendations below, the site could be used for industrial purposes.

Recommendation 1

The Environmental Protection Authority has concluded that the proposal to rezone Lot 602 Beacham Rd, Pinjarra from Rural to Industrial to create a "dry-industrial" estate is environmentally acceptable provided that;

- **any subsequent subdivision is connected to a reticulated sewerage service; and**
- **subsoil drainage is not installed;**

and recommends that the proposal could proceed subject to the proponent's commitments and the Authority's recommendations in this report.

Recommendation 2

The Environmental Protection Authority recommends that at the time of rezoning, the Shire of Murray should ensure that the proposed Clause 7.4.3 in the amendment to the Shire of Murray Town Planning Scheme Number 4 Scheme Text has the following words added; "Any proposal with an effluent discharge created as a result of commercial operations must demonstrate to the Council that no phosphorus or nitrogen is discharged to the groundwater or as surface run-off."

Recommendation 3

The Environmental Protection Authority recommends that the proponent should ensure that only clean fill is used, to the satisfaction of the Environmental Protection Authority on advice of the Shire of Murray.

Recommendation 4

The Environmental Protection Authority recommends that prior to development commencing, the proponent should submit and subsequently implement:

- **plans for a stormwater disposal system capable of containing at least a 1 in 10 year storm event on site and capable of containing chemical releases on site to the satisfaction of the Environmental Protection Authority on advice of the Shire of Murray and the Waterways Commission;**
- **a nutrient and irrigation management plan for landscaped areas, such as public open space within any proposed subdivision, to the satisfaction of the Environmental Protection Authority; and**

- **management plans for the control of dust and noise generated during development to the satisfaction of the Environmental Protection Authority on advice of the Shire of Murray.**

The Authority 's experience is that it is common for details of a proposal to alter through the detailed design and construction phase. In many cases alterations are not environmentally significant or have a positive effect on the environmental performance of the project. The Authority believes that such non-substantial changes, and especially those which improve environmental performance and protection, should be provided for.

The Authority believes that any approval for the proposal based on this assessment should be limited to five years. Accordingly, if the proposal has not been substantially commenced within five years of the date of this report, then such approval should lapse. After that time, further consideration of the proposal should occur only following a new referral to the Authority.

1. Introduction

This proposal is within the area defined as the Peel-Harvey Catchment by the Minister for the Environment, is located in the Murray Groundwater Area and is above an area which recharges the Leederville aquifer.

The Peel-Harvey Estuary is badly degraded because large quantities of nutrients have flowed into the Estuary from surrounding farm land and urban areas. Algae live on the nutrients and multiply rapidly, stifling life in the Estuary in warmer weather. The algae accumulate and rot on the shores of the Estuary, causing odour problems, polluting the shore, and killing wildlife and fish.

The strategies accepted by the State Government to improve the Estuary's condition include the construction of the Dawesville Channel to improve flushing and catchment management to reduce nutrient input through controlling clearing, drainage and nutrient inputs.

2. Description of proposal

The proposal is for rezoning Lot 602, Beacham Road Pinjarra from Rural to Industrial, as shown in Figure 1, to create a "dry" industrial estate and to specify uses which apply within the zone under Clause 7.4.3 of the Shire of Murray Town Planning Scheme No 4 Scheme Text.

The proposed text of Clause 7.4.3 reads:

"Land uses permitted within the subdivision of Lot 602 Beacham Road, Pinjarra shall be limited to "dry-industrial" uses only. Specific industrial use classes prohibited by the Council include Dry Cleaning Premises, Laundry Services and Food Processing and other industrial and commercial uses which will create in the opinion of the Council, a significant on-site effluent disposal problem".

Approval to subdivide the lots will be sought at a later date, however a subdivision guide plan has been produced to enable consideration of likely issues associated with subdivision.

The proposal seeks to use on-site effluent disposal for the disposal of sewage. Sewage from a "dry" industrial estate would only contain wastes from toilets, showers and staff facility rooms.

Stormwater drainage is proposed to be retained on-site

If subdivision was to be approved, some landscaping may be proposed.

3. Consultation

The Environmental Protection Authority consulted with and received comments on the proposal from the following persons and agencies:

Health Department of WA
Department of Planning and Urban Development
Shire of Murray
Water Authority of WA
Waterways Commission (Peel Inlet Management Authority)

4. Environmental assessment

4.1 Disposal of sewage wastes

The Environmental Protection Authority has specified zero nutrient discharge off-site as the objective for industrial developments within the Peel-Harvey Estuary Catchment. That is, proposals will have to employ appropriate technology and management techniques to contain nutrients on-site or dispose of wastes by discharge to sewer.

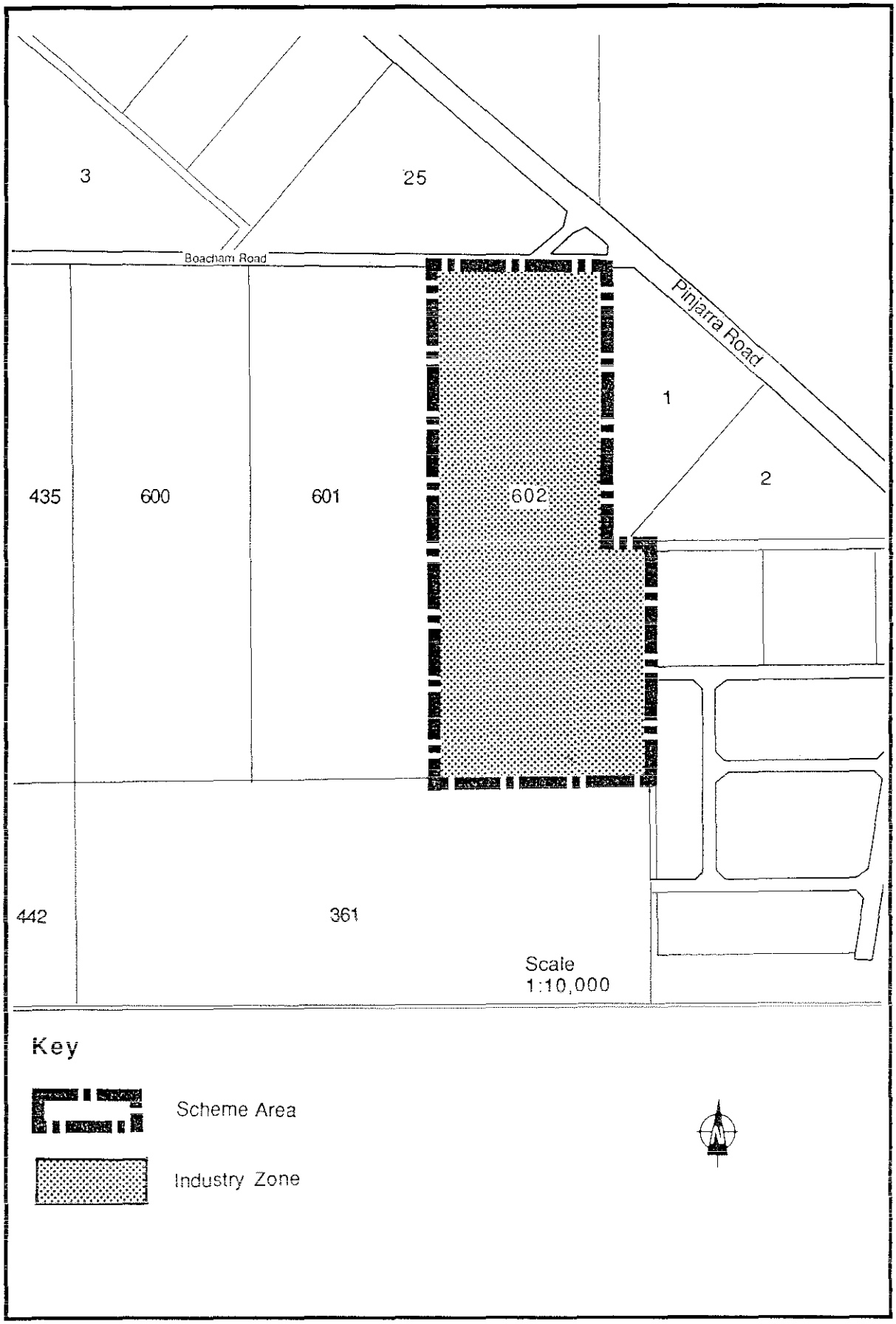

Figure 1: Scheme amendment map

The Western Australian Department of Agriculture has undertaken a Land Capability Study for the Shires of Mandurah and Murray (Wells, 1989) which indicates that the capability of the landform and soils of which Lot 602 is part, to be low for on-site effluent disposal and very low for nutrient retention ability. The Authority considers that, based on the land capability assessment it is likely that nutrients from effluent from on-site sewage disposal would contaminate the groundwater.

Given that the site is relatively flat and that recent drilling has determined that the groundwater levels fluctuate between one and four meters below ground level, sub-soil drainage for the whole of the site or fill would be necessary meet the Authority's requirement for a minimum 2 m vertical separation between the base of the leach drain or soakwell and the highest known groundwater level. The acceptability of sub-surface drainage is discussed below.

Lot 602 is adjacent to the Pinjarra Townsite boundary. The Water Authority policy document "Developer contributions for Water Authority water and sewerage services applicable at subdivision and building stages in country areas" notes that sewerage is mandatory for developments within the townsite boundary.

The Health Department have advised that they consider the site should be sewered.

The nearest sewerage connection is currently about 3.5 km away.

4.2 Sub-soil drainage or fill

For developments within the Peel-Harvey catchment, the Authority requires all drainage waters to be disposed of on-site. Sub-soil drainage would undoubtedly increase nutrient discharge off-site, even if the site is sewered.

In order to protect groundwater any fill used on site must be clean fill. The Shire of Murray would need to determine the need for fill to comply with building regulations.

4.3 Groundwater protection

Lot 602 is located within the Murray Groundwater Area and is located on an area which recharges the Leederville Aquifer. The Water Authority has advised that, although minimal use is currently made of the superficial aquifer, it should be protected as a potential source of water.

If water is to be used in the future for potable water, nitrate levels are of particular importance. Landscaping fertiliser tends to add more nitrate to the soil than that used in rural uses.

Industrial developments would need to be designed to ensure spillages are retained on site to ensure no potential for groundwater contamination.

4.5 Stormwater drainage

For developments within the Peel-Harvey catchment, the Authority considers that all drainage waters should be retained on site to contain a 1 in 10 year storm event.

Consideration should be given to ensuring that accidentally spilled substances cannot reach drains leading to the Murray River. Trapping mechanisms should be installed at intervals along the drainage network within the estate which would contain spillages long enough to enable clean up.

4.6 Types of industries permitted

The Authority concurs with the proposed clause 7.4.3, however, considers that the following words should be added. "Any proposal with an effluent discharge created as a result of commercial operations must demonstrate to the Council that no phosphorus or nitrogen is discharged to the groundwater or as surface run-off."

The addition of the above clause would be consistent with the overall objective of reducing nutrient impacts to the Peel-Harvey Estuary.

4.7 Other issues

4.7.1 Clearing

An aerial photograph of the site taken in December 1989 indicates Lot 602 has been cleared and only a few trees remain on the property.

4.7.2 Changes in nutrient loading from proposal

The proposal application included a detailed calculation of the nutrient loads likely from rural or industrial land uses and concluded that the nutrient loading from industrial use would be substantially less. Appendix one provides a copy of the nutrient loading calculation in the proposal application and the Authority's comments on the calculations in detail.

The conclusion reached from the re-calculation is that phosphorus loads per annum from an area zoned Industrial using conventional septic tank/leach drain technology is likely to be equal to or less than an area zoned Rural, however nitrogen loads are likely to be greater, whether or not the site is sewered. However as previously noted the Environmental Protection Authority has specified zero nutrient discharge off-site as the objective for industrial developments within the Peel-Harvey Estuary

4.7.3 Construction impacts

These should be addressed at the time of subdivision approval. Dust and noise are the main environmental potential impacts to be considered.

4.7.4 Adjacent land use

The Industrial Development Study for the Shire of Murray identified Lot 602 as suitable for industrial development. Land use conflicts appear unlikely.

Recommendation 1

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Reference

Wells M R,1989 Land capability study for the Shires of Mandurah and Murray; Land Resources Series No 2 Perth, Western Australian Department of Agriculture.

Appendix One

Comments on nutrient loading calculation

The Authority considers that there would be more than 3.5 people per lot and considers that more than 5% of each private lot would be landscaped. The table below examines phosphorus and nitrogen loadings using different assumptions for the number of people and area landscaped, assuming that 53 lots will be created. The nutrient loading figures for landscaping include the loading from the 5% public open space.

No of people per lot	Percent private lot landscaped	Sewage Total P per annum (kg)	Sewage Total N per annum (kg)	Landscaping Total P per annum (kg)	Landscaping Total N per annum (kg)
5	5	159	1363	75	632
10	10	318	2725	109	913
15	15	447	4088	142	1194

The nutrient contribution from stock occupying the fertilised area calculation is invalid; stock recycle nutrients applied to the pasture and can be expected to remove 2 to 3 kg P/ha/annum for growth. Assuming 2 kg per year removed for growth rural use would correspond to 568 kg/P/annum.

It can be deduced from the table that phosphorus loads per annum from an area zoned Industrial using conventional septic tank/leach drain technology is likely to be equal to or less than an area zoned Rural, however, nitrogen loads are likely to be greater, whether or not the site is sewered.