July 2007

Warren-Blackwood Region

Industrial Sites Study

GOVERNMENT OF WESTERN AUSTRALIA

WESTERN AUSTRALIAN PLANNING COMMISSION

Warren – Blackwood Region: Industrial Sites Study

Prepared for the
Western Australian Planning Commission

by

Department for Planning and Infrastructure

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Introduction from the Chairman of the Western Australian Planning Commission

The Warren Blackwood Industrial Sites Strategy is the latest in a series of strategic plans that have been prepared for the Warren Blackwood Region to implement recommendations of the *Warren Blackwood Regional Planning Strategy* (1997).

Warren Blackwood has traditionally been an area of high productivity and great economic importance to the State of Western Australia. It is essential that its economy continues to remain competitive in the global market place to provide employment and lifestyle opportunities, while maintaining its unique character.

The industrial sites strategy complements the *Warren Blackwood Rural Strategy* (2004) by identifying sites that are suitable for the location of moderate sized industrial uses and activities to process local produce such as timber and other agricultural products. The strategy will assist in creating a competitive advantage for the area to assist economic growth, attract new businesses and create opportunities to compete in domestic and international markets.

The strategy identifies a number of sites within the area, which have the capacity to accommodate industry within the region to cater for medium to long-term growth.

The strategy acknowledges that further technical and environmental studies will be required at the development application stage to ensure that the future development of these sites occurs in an environmentally sustainable manner.

The Western Australian Planning Commission thanks the local communities who participated in the community consultation process and who assisted in preparation of the strategy.

Jeremy Dawkins

Chairman
Western Australian Planning Commission

Contents

Figures

Tables

Appendices

Technical appendix

(On compact disc — available on request)

Summary

Introduction

The Warren-Blackwood Regional Planning Strategy 1997 identified the need to locate a potential downstream processing site or sites along the South Western Highway transport corridor in the Warren-Blackwood region. The purpose of the Warren-Blackwood Region: Industrial Sites Study is to identify a site or sites suitable for a sub-regional industrial estate, which will assist the region to gain a competitive advantage that will attract new businesses to the area, creating local economic and employment benefits.

Industrial Sites Hierarchy

The study recognises an industrial sites hierarchy with four levels, including regional, sub-regional, district and urban industrial estates. A sub-regional industrial estate is considered appropriate to accommodate moderate industrial installations, such as timber mills and processing plants for timber and regional produce, and may also include industrial developments relevant to industrial estates of a lower hierarchical level. It is anticipated that the most likely forms of industry that would be located in the estate are industries that are export orientated and associated with processing bulky primary products that are sourced from the region.

Stage 1

In stage 1 of the study, the broad opportunities and constraints for the location of an industrial estate in the region were assessed and eight sites were identified for investigation. Sites selected were investigated using detailed selection criteria and performance objectives. The site selection process sought to integrate economic, social and environmental criteria in assessing the potential to achieve a sustainable development outcome. This broad comparative sustainability analysis identified Yornup as the preferred site for further consideration and the sites of Hester, North Greenbushes and Manjimup as having potential to sustainably accommodate industrial development. The formal consultation process for the study included the establishment of a community reference group to guide the progress and direction of the study. A component of this process was an impact assessment of potential industries.

Stage 2

In response to the outcome of these assessments, and to determine the most appropriate framework for the region to accommodate sub-regional industries, the project steering committee requested the preparation of opportunities and constraints analysis for Hester, Manjimup and North Greenbushes in parallel to further studies at broader Yornup.

The study acknowledges that establishment of a greenfield sub-regional estate requires government, industry and community support, in addition to a catalyst industry to precipitate infrastructure investment. The combination of these criteria will evolve over time; however requires direction and a basis in the short term to gain momentum for the process.

Study Outcomes

An approach based on a two-tier structure identifying sites with short-term and long-term potential was adopted as the preferred option to develop the strategy. The study identified one site for further consideration for a long-term sub-regional level industrial estate and indicated that in the long term, the region will only sustain the development of one strategic sub-regional industrial estate. The study also identified that a significant amount of further investigation is necessary in supporting the potential for planning and development in each of the sites, particularly the areas earmarked for long-term consideration.

Recommendations

An area of unallocated Crown land at North Greenbushes has been recognised as the preferred site for promoting the development of a long-term sub-regional industrial estate; based on considerations of government owned land, proximity of site to rail infrastructure and location of existing industry and infrastructure

The locations of North Greenbushes (land immediately to the south-east of existing industry use), Hester and Manjimup were also identified as having potential to accommodate sub-regional

industries in meeting short-to-medium term demand.

At each of the four sites, investigation areas were identified and recommendations made regarding:

- site establishment
- structure plan requirements and issues; and
- development issues.

Principal recommendations for each site

The principal recommendations for each site are:

- that unallocated Crown land at North Greenbushes be identified as having potential for development as a long-term sub-regional industrial estate; with this requiring government, industry and community support generally and specifically; support for use of unallocated Crown land;
- that the existing Hester industrial area and land to the south and east be classified as a potential short-term district estate, noting that it has the potential for expansion to sustainably accommodate sub-regional industry;
- that the existing North Greenbushes industrial area and land immediately to the south and east be classified as a potential short-term district estate; noting that it as the potential for expansion to sustainably accommodate sub-regional industry; and
- that the Manjimup industrial area be classified as a district estate, noting that it has potential in undeveloped and developed sites to sustainably accommodate limited sub-regional industrial use.

These recommendations provide a framework for government, the community and developers to assist and consider the potential development of each site. While it is identified that in all cases further investigation and site establishment work is required, this framework can be responsive to demand in accommodating development proposals on the short-medium term sites.

In all locations the recommendations noted that the provision of supporting infrastructure, such as securing suitable water supplies and adequate power supplies, would be important issues for development.

1.0 Introduction

The Western Australian Planning Commission commissioned the preparation of the Warren-Blackwood Region: Industrial Sites Study to identify locations suitable for development of a sub-regional industrial estate in the Warren-Blackwood region. The study area comprises the shires of Manjimup, Bridgetown-Greenbushes, Boyup Brook and Nannup (figure 1).

The primary purpose of the study as recommended under the Warren-Blackwood Regional Planning Strategy 1997 is to identify a preferred site that could accommodate a sub-regional industrial estate and address issues associated with site establishment, co-ordination of transport, infrastructure, waste disposal, environmental constraints and buffer requirements. The study will assist the region to gain a competitive advantage that will attract new businesses to the area, creating local economic and employment benefits.

The study acknowledges an industrial sites hierarchy in the South-West Region that generally has the following characteristics:

(i) Regional industrial estate (for example Kemerton) — to accommodate major industrial processing installations, such as steel mills (for imported or regional produce), aluminium smelters and other major plants of state significance (may also include some industrial developments relevant to industrial estates of a lower hierarchical level).

(ii) Sub-regional industrial estate — to accommodate moderate industrial installations for regional produce such as timber mills, timber and agricultural processing plants. The estate would provide opportunity for support industries that may service moderate industrial development to create synergies and function as an industrial estate.

(iii) District industrial estate — to accommodate sub-regional level industries, such as timber mills, timber processing plants and other food and industrial processing facilities that may have location and site requirements not suitably located in an urban industrial estate. District industrial estates are constrained for expansion and therefore would not fulfil the requirements to establish as a sub-regional industrial estate site.

(iv) Urban industrial estate — service, light and general industrial areas near or in townsites.

1.1 Methodology

A steering committee was established to overview the preparation of the study, reporting directly to the Western Australian Planning Commission (WAPC) and including representatives from state and local government. The members of the steering committee are listed in appendix 1.

A community reference group was also established to represent a range of community interests from the Warren-Blackwood region and its membership is listed in appendix 2. The community reference group reported to the steering committee. Section 5.0 of this report outlines the detailed community consultation processes used in the study. Consultation with the project groups, landowners and the wider community has been an integral component of the study process. This consultation process also included establishment of the Yornup Community Committee (section 5.4) and the North Greenbushes Reference Group (section 5.6).

The study has been completed in two main components.

Component 1

Component 1 examined the regional context and background to the possible development of sub-regional industry in the region and defined selection criteria to identify and evaluate potential sites.

A regional overview was prepared to understand the context of the existing and potential economic activity of the Warren-Blackwood region. As part of this background, the existing town planning framework, policies, strategies and directions for growth were noted. Future industrial trends expected to influence the development and location of a sub-regional industrial estate were examined and were explained in terms of possible economic scenarios, potential industry types, trends in manufacturing, trends in transport, trends in the timber industry and identification of location factors.

Figure 1 - Study area

Site selection criteria were developed to identify economic, social and environmental factors. The considerations used in defining the criteria are summarised as:

- likely types of industries and their requirements;
- the most cost effective and sustainable provision of new infrastructure and use of existing infrastructure;
- ensuring that the site characteristics are environmentally and physically capable for the intended use;
- ensuring that the site is suitable for the use, having regard to the strategic planning objectives for the area and the normal operating preferences of firms; and
- regarding social factors that may affect development.

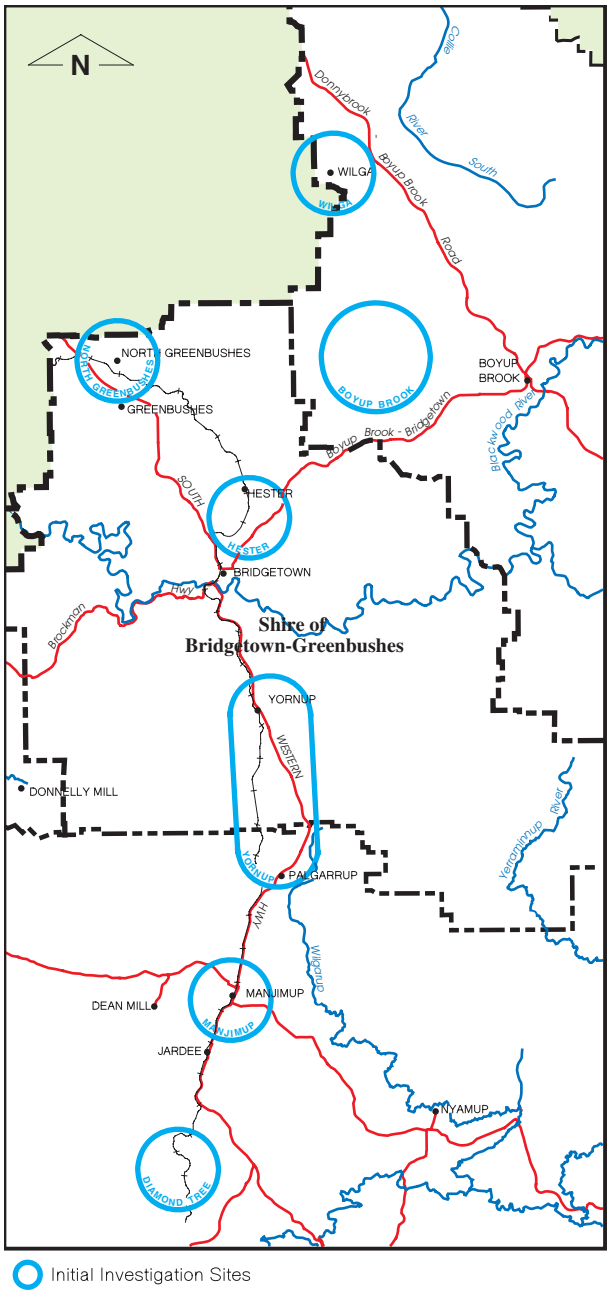
The selection criteria provided an opportunities and constraints framework, which defined an 'area of interest' in which eight sites were nominated for further investigation. This area of interest focused along the strategic transport and infrastructure corridor of the South Western Highway and the South West rail line (figure 2).

The selection criteria were further defined through nominating a set of requirements for the development of an 'estate', which included:

- land area;
- buffers;
- sustainability;
- land capability;
- town planning/environmental processes/implementation;
- transport;
- infrastructure;
- work force; and
- vegetation.

An individual and an overall comparative analysis of the eight selected sites was prepared using the site selection criteria and estate requirements to determine the sustainability of the sites for industrial purposes. This provided the basis for recommending a preferred site for further consideration under component 2 of the study.

Figure 2 - Area of interest



Component 2

Subsequent to completion of component 1, a number of issues arose which affected the evaluation of the sites against the selection criteria and indicated a need to review the approach to the proposed industrial structure in the region. As an outcome of this, a revised approach to the finalisation of the study was adopted. The revised approach was based on providing the highest potential for the region to attract and accommodate sub-regional industries in a sustainable manner. This involved collation of further information on the previously identified sites, with confirmed potential to accommodate sub-regional industries and the development of a future sub-regional industrial structure based on a number of sites as opposed to a single estate.

The recommended industrial framework for the Warren-Blackwood region provides potential for development of sub-regional industry at three locations in the short-to-medium term (district industrial estates) and potential for the establishment of a strategic sub-regional industrial estate in the long term.

2.0 Regional structure

2.1 Overview

The Warren-Blackwood Regional Planning Strategy 1997 identified the need to locate a potential downstream processing site or sites along the South Western Highway transport corridor in the Warren-Blackwood region. The Industrial Sites Study has been developed to address this need by providing a framework to accommodate potential sub-regional level industry (downstream processing) in the Warren-Blackwood region. This framework was confirmed against the study objectives as providing the greatest potential advantage for the region.

The study identified the need to provide a range of opportunities to encourage greater potential for the Warren-Blackwood region to attract new industry and facilitate the expansion and evolution of existing industrial activities.

The Warren-Blackwood Region: Industrial Sites Study reflects the recognised industrial hierarchy in the South-West Region (described in section 1.0) and includes:

- regional industrial estate (Kemerton)
- sub-regional industrial estate
- district industrial estate
- urban industrial estate

The Warren-Blackwood region industrial framework and accompanying recommendations seek to:

- provide clarity to the community about the level of industry that should be considered for location at the sites identified and an expectation that this should not be compromised in the hierarchy of industry important for regional and state industrial development;
- provide a guide to industry regarding land use and planning criteria essential for industry development, and the process which industry will need to undertake in gaining approvals and its ongoing responsibility to the broader community; and
- provide direction for local government and the WAPC in preparing local planning strategies and assessing town planning scheme amendments for industrial proposals.

The Warren-Blackwood Region: Industrial Sites Study recognises:

1. **Regional industrial estate: Kemerton**
   Kemerton (Greater Bunbury region) regional industrial estate is recognised under this framework. The Bunbury Port and associated industrial activities provide regional industrial infrastructure that supports the Warren-Blackwood Region: Industrial Sites Study.
2. **Sub-regional industrial estate**
   The nature of the recommendation for the long term recognises that potential for establishment of a greenfield sub-regional estate requires government, industry and community support, a catalyst industry and infrastructure investment.

   The development of a greenfield sub-regional estate is considered to be a long-term option for the region due to the additional investigation, planning and development of infrastructure and services that are required.
3. **District estate:**
   Due to the need to provide for sub-regional industrial development in the short-medium term, existing locations were considered as these showed potential to sustainably accommodate suitable industry types and were included as part of the regional framework. Through this process three sites were investigated in detail and recommendations regarding the potential for the development of sub-regional industries were provided. The sites were identified at:

   Hester

   Has potential to develop as a district estate and may provide opportunities to accommodate sub-regional level industry. May accommodate one key industry with the balance of the area being used for smaller service industries.

   Manjimup

   Functions as both a district and urban industrial estate. Further development would consolidate the existing centre. Other service industrial subdivisions and development in proximity to the townsite will provide complementary development options.

North Greenbushes

Has potential to develop as a district estate with opportunities to expand to accommodate smaller service industries to existing mill operations.

4. **Urban industrial estates**

Boyup Brook

A small urban estate catering for local needs focusing on the existing zoned land and also potentially using vacant Crown land in the vicinity of the railway reserve and Forbes Street.

Bridgetown

Provision of an urban estate in one or more locations catering for local needs and complementing possible development at Hester.

Council has previously identified land near the sports ground on the Boyup Brook Road as a suitable site but servicing costs and in particular the cost of extending the water supply is prohibitive. Alternative locations may be identified by council through the completion of its local planning strategy.

Nannup

Provision of a small urban estate catering for local needs focusing on the existing zoned land and the sawmill site.

Northcliffe

Provision of a small urban estate catering for local needs, focusing on the existing zoned land and the sawmill site.

Pemberton

Does not have any defined industrial areas except for two timber mills. There has been a long-term need to identify a suitable location for a small urban estate to cater for local needs.

Walpole

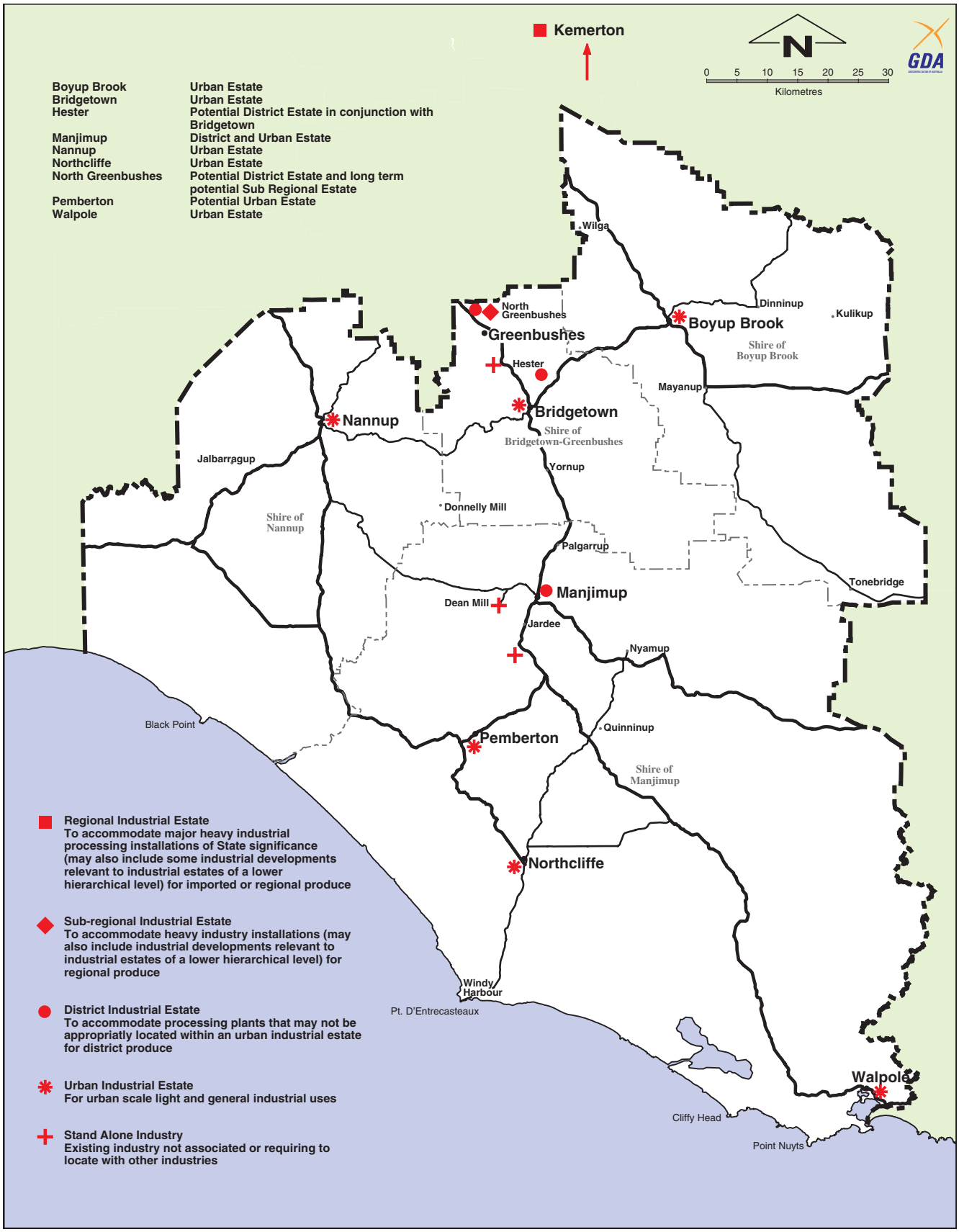
Provision of a small urban estate catering for local needs focusing on the existing zoned land at the old sawmill site.

The Industrial Sites Study also recognises that there are, and will continue to be, a number of stand-alone industries in the region. These are generally existing timber mill sites and in figure 3 the following have been identified:

- Diamond Mill;
- Deanmill Timber Mill; and
- Greenbushes Mine.

These are industries, which have specific needs and associated buffers that tend to favour stand-alone locations. Industries of a similar nature that wish to locate within the study area may also require single locations, although may be large enough to draw services and infrastructure to the location. The development of such industries will not prejudice the Industrial Sites Study and may provide opportunities for additional development.

Figure 3 - Regional structure



3.0 Comparative analysis

The comparative analysis of the sites is primarily based on the objectives in table 7 - site selection criteria. The ability of a site to meet the selection criteria is not absolute and compliance is a question of degree, with the outcome a summary of all factors related to a specific criteria at each site. The analysis is summarised in table 1.

In applying the selection criteria to each site, regard was given to the level of suitability of each of the criteria. Where the criteria could not be addressed, or was considered a fatal flaw to the specific site, it is shown in the table by the symbol (✹). It is defined as a constraint that is not easily overcome in terms of processes, time or expenses.

Where the criteria is not a fatal flaw, however cannot be met easily it is shown by the symbol (✦). A site that meets the objectives subject to suitable management measures is shown by the symbol (♦). A site that generally meets the objective is shown by the symbol (✓). A site that meets and surpasses the criteria is shown by the symbol (✔✔).

In consideration of the eight sites, Yornup was recognised as the specific area with the greatest potential to accommodate a future sub-regional industrial estate as described in component 1. Yornup also has the greatest flexibility in terms of location factors with sufficient land area, however it is recognised that specific management measures would need to be introduced to address key environmental considerations.

Consideration of North Greenbushes under component 1 identified limitations in terms of land availability, along with constraints from the surrounding development and existing land patterns. However, further consideration by the steering committee under component 2 recognised that a large area of unallocated Crown land at North Greenbushes might have potential for consideration as a long-term sub-regional industrial estate (section 7.2.2).

Hester is constrained in terms of provision of a suitable site area for a sub-regional estate but its location and characteristics may be suitable for expansion of local industry serving a sub-regional function.

Boyup Brook and Wilga are remote from the main transport and servicing corridors, while Palgarup is limited by a number of factors; including the proximity to the townsite and the high water table.

Manjimup was considered, as existing industrial areas in the estate could be further developed; however, the fragmented ownership and land tenure issues associated with Crown land may make this difficult. The site has excellent road access but also potential problems with buffers and waste disposal.

Diamond Mill has the existing Lambert rail siding and the main Manjimup substation located at the site; however these benefits are mitigated by the conservation issues and possible conflicts with the planning objectives of protecting this vegetation and protecting prime agricultural land.

Table 1 - Comparative site analysis

FACTOR	SITE							
	North Greenbushes	Hester	Boyup Brook	Wilga	Yornup	Palgarup	Manjimup	Diamond Mill
Ownership	✹	✓	✓	✓	✓	✓	✦	✹
Area	✦	✹	✓	✓	✓	✓	✦	✹
Buffer	✹	✓	✔✔	✓	♦	✹	♦	✦
Ability to enlarge	♦	✹	✔✔	✔✔	✔✔	✦	✦	✹
Slope	✓	✓	✓	✓	✓	✓	♦	♦
Access to work force	✓	✔✔	✓	✓	✓	✓	✓	✓
Power	✦	✓	✓	✓	✓	✓	✓	✔✔
Road	✓	✔✔	✹	✓	✓	✦	✔✔	✓
Gas	✓	✦	✹	✹	✓	✓	✓	✦
Water	✹	✹	✹	✹	♦	♦	♦	✦
Rail (*)	✔✔	✓	✹	✹	✓	✓	♦	✔✔
Town planning	✓	✓	✓	✓	✓	✓	✓	✹
Groundwater pollution	✦	✦	✓	♦	♦	✹	✓	♦
Waste disposal (liquid & solid)	♦	♦	♦	♦	♦	♦	♦	♦
Surface water pollution	♦	♦	✓	♦	♦	✹	♦	♦
Dust	♦	♦	✓	♦	♦	♦	♦	♦
Hazardous materials	♦	♦	♦	♦	♦	♦	♦	♦
Noise	♦	♦	♦	♦	♦	♦	♦	♦
Light	♦	♦	♦	♦	♦	♦	♦	♦
Public safety	♦	♦	♦	♦	♦	♦	♦	♦
Vegetation	✦	✓	✓	✓	✓	♦	♦	✹
Fauna	♦	✓	✓	✓	✓	♦	♦	✹
Odour	✦	♦	♦	♦	♦	♦	♦	♦
Heritage	✓	✓	✓	✓	♦	♦	♦	✓
Visual impact	✓	♦	✓	♦	♦	✓	♦	♦

(*) The importance of rail as a factor will decline if the rail line closes. The continued existence of the rail corridor means it is still a location criteria to be considered.

4.0 Impact analysis

The development of a sub-regional industrial estate will have social, economic and environmental implications for the region and associated communities. There is generally a presumption that these implications would increase as the size of the estate or individual industrial operations increases. The impact may also vary depending on where development occurs within each site and on the location of the site itself. A key issue is whether the social structure and economic changes caused by the development of an estate in one location are greater in comparison to other locations and how the community manages these changes.

The impact of a proposal is assessed by examining the associated social, economic and environmental issues. This provides a balanced and integrated approach and a framework in which to understand the impacts of a specific proposal. The framework also provides a consistent approach when comparing the impact at different locations.

Social implications can vary depending on community and individual perceptions of a proposal and the values associated with the location. Hence, a similar proposal in a different location may have different social implications depending on the characteristics of the community. The environmental management issues associated with a proposal can be reasonably well anticipated.

Economic implications are interdependent and involve linkages, multipliers and externalities in the local economy.

The Warren-Blackwood region has been undergoing significant structural change. This has been precipitated by many factors, including the Regional Forest Agreement and changes in agriculture. Changes that are occurring in the region include:

- restructuring of the native timber industry;
- increase in plantation development;
- declining reliance on traditional farming, dairy and horticulture;
- increase in viticulture;
- changing population base;
- increasing awareness of residents' rights and demands to participate in processes;
- decline of the traditional farming family;
- broader awareness of the scenic and quality-of-life attributes of the region;
- increase in tourism; and
- increase in lifestyle developments.

The Shire of Manjimup, in its submission on the draft forest management plan,[1] believes there is evidence of a range of social and health problems in the shire and these problems are exacerbated by the restructuring of the native timber industry and other changes to employment (for example, job losses in the vegetable processing business, the pine saw mill closure and a loss of small businesses).

Change is a normal process in all communities and it is the nature and pace of the change that can affect a community's reaction. This can be either an evolutionary type of change, that has no clear beginning or end; or a dramatic change associated with a particular event or proposal.

An assumption in the component 1 analysis was that a sub-regional estate would provide a large source of employment in the region, and therefore should be located to take advantage of existing townsites which provide accommodation, facilities and services for the work force. This means that associated implications will be focused on existing townsites when considering the broader social impacts.

For the purpose of this analysis, two individual industries will be studied to identify the likely social, economic and environmental implications rather than the implications of a hypothetical sub-regional estate. These industries are:

- a timber processing centre directly employing 100 persons; and
- a food/vegetable processor directly employing 200 persons.

1 CALM Supplementary Social and Economic Report FMP 2002 page 17.

4.1 Social impact

There is no definitive method available to measure the social impact of a proposal. While there may be clear effects on social infrastructure such as hospitals and schools, the impacts on lifestyle relate to how individuals and communities perceive and react to change in an area.

Expectations and desires of the community and individuals will vary. The community includes both the immediately affected landowners and local community, and the broader regional community.

Issues to be considered in understanding the social impact of an industrial proposal or designation of an area for an industrial estate are discussed below and may be confirmed or expanded through a detailed consultation program.

Rural identity

The development of an estate and/or individual industries may potentially alter the existing character of an area and expectations of the local community. The extent of change will depend on the nature and characteristics of that community, including its previous exposure to, or familiarity with, similar developments.

All the sites investigated have experienced some form of development for industrial purposes or have industry located nearby. Overall, the sites considered in the study are generally associated with a strong rural identity. It is important to ensure that any potential future industrial development in the region considers the impact on the rural identity.

The Yornup locality, while considered to have a strong rural character and identity, has historically hosted a timber mill and, in addition, currently accommodates a transport depot. Hester and Greenbushes are recognised for industry, however rural lifestyle opportunities have also been provided near the localities.

The strategic designation of preferred sites will provide the opportunity for careful planning and management of landscape and visual elements over a gradual period of time to reduce their impacts on the locality. This will provide a wider benefit as the impacts can be managed at specific locations.

Lifestyle

The quality of lifestyle in the Warren-Blackwood region is highly valued and relates to the predominant rural character. Specifically, this includes the relative peace and quiet of the region, landscape values and environmental features such as the air quality, bushland and rivers.

The impact of a potential estate on a particular locality, as well as the general impact of increased industrial operations in the region, requires careful consideration throughout the planning and management processes to ensure that any potential impacts are minimised. Impacts associated with general industrial operations may include increased rail and vehicle movements in connecting transport corridors and localised effects of the estate on the surrounding area.

Development will attract new industry to the region, which will benefit the wider community economically. This may also generate additional lifestyle opportunities in the region. The general positive linkages between secure employment opportunities and confidence in the region are important contributing factors in improving lifestyles.

Environmental

All environmental management issues cited in section 6.2 are also likely to have social implications.

The social impacts may be less definitive than specific environmental management issues as they may vary depending on the perception or values of an individual or community. For example, while an industry may meet the legal requirements of the noise abatement regulations, the 'noise' may be audible in the locality where previously that noise might not have existed.

A wider community benefit may be that industries also offer support for community and environmental programs. There may well be many positive environmental benefits to the wider community that are not directly attributable to a specific site.

Road safety and movement

Proximity to the South Western Highway was an important location criterion in the site selection process. The potential impacts on the roads and on residents adjoining those roads will vary between each site, however all potential sites are located to take advantage of existing heavy haulage routes. With the exception of Hester, all sites are adjacent to declared main roads. The Hester link road is a designated heavy haulage bypass for Bridgetown.

Each site is also located at a central junction in the secondary road network and the development of any one site may also involve the use of this network. This may have a more pronounced impact on the adjoining communities than does the use of the main highways. The issue is whether any part of these road networks would be carrying a disproportionate amount of heavy traffic associated with the estate and whether the associated road network can adequately cater for such increases.

North Greenbushes also has access to the eastern areas of the region via the Greenbushes-Boyup Brook Road, which is a sealed secondary rural road. Secondary access to Yornup is also available from Gommes Road via Kingston Road to the Boyup Brook–Cranbrook Road. Kingston Road is a gravel forestry road.

Consideration of upgrades or improvement requirements to the road infrastructure as a result of future industry operations and resultant traffic will be important to ensure that other functions of the highway are not compromised. The use of regional transport corridors provides the opportunity for safe and efficient use of infrastructure with wider benefits to the community.

Community values

A proposal to establish an industry may generate differing views and attitudes in a community. The views of the local community and nearby residents may also be different to those held by members of the broader affected community; particularly where lifestyle and/or local community values are threatened.

The creation of jobs and the provision of stable employment opportunities are perhaps the most significant social benefits that will result from the development of a potential sub-regional estate/industry for the broader region

Other community benefits could include:

- retention of local businesses;
- reducing outward migration from the region, especially youth;
- increasing the range of skills in the region;
- attracting government funding for infrastructure provision;
- providing a catalyst for training and skills development;
- attracting development that may have located in an alternative location;
- developing relationships with other industries in the region and attracting investment; and
- providing an ability to reduce the impact of structural change in the region.

Townsite impacts

The potential social impacts of either a vegetable or timber processing operation establishing at each of the preferred locations identified in the industrial structure and the effects that it will have on the various centres in the area of interest are summarised in table 2.

Table 2 - Summary of possible social impacts

	Social impacts of potential vegetable and timber industry at **North Greenbushes**
Boyup Brook	May alter the regional road transport routes with associated issues and concerns in the local district and townsite. May have a flow-on effect on housing demand.
Bridgetown	Local support for local housing, community services, recreation and businesses as the nearest centre. May provide opportunities for improved use of social and recreation facilities without affecting the character of the town. May potentially increase heavy haulage through the town and focus on the townsite bypass issue. Will reinforce, in conjunction with existing mining operations, the perception of Greenbushes as a major industrial and employment node in the South-West Region with associated benefits for Bridgetown.
Greenbushes	Diversification of industries may provide greater protection to the town and community from structural changes and fluctuations in mining and forestry based industries. Provides potential to use local housing, school, recreation and businesses. Development may indirectly affect the character, and hence lifestyle opportunities, particularly of existing rural residential properties. Town may benefit from improved infrastructure, depending on the nature of the industry, that is water, power, gas etc.
Hester	May emphasise the use of Hester Road as a haulage route. May benefit from service upgrades, and in particular power supplies.
Manjimup	May gain some advantages as the designated regional centre, although due to the distance there would be external leakages towards Bunbury.
Nannup	May provide opportunities for the development of agricultural properties in the area.
Yornup	Would not be expected to have any significant impact.

	Social impacts of potential vegetable and timber industry at **Hester**
Boyup Brook	May alter the regional road transport routes with associated issues and concerns in the local district and townsite. May have a flow-on effect on housing demand.
Bridgetown	Development would require employment, housing and access to community and social infrastructure, including recreation facilities, medical, schools. Would create opportunities for support industries and services in the town. May provide opportunities for improved use of social and recreation facilities without affecting the character of the town. Creates a linkage to Hester, effectively extending the townsites. May potentially increase haulage through the town and focus on the CBD bypass issue. May benefit from service upgrades, and in particular power supplies, and possible extension of water. Will place additional pressure on the operation of the local landfill site.
Greenbushes	May benefit from long-term extension of regional infrastructure along the highway corridor.
Hester	Would provide for potential townsite redevelopment and upgrade. Development may alter the character of Hester and conflict with the aspirations of the existing residents or disrupt their lifestyle choices. Would emphasise the use of Hester Road as a haulage route and the need to develop a bypass around the town development.
Manjimup	May gain some indirect advantages as the designated regional centre.
Nannup	Would not be expected to have any significant impact.
Yornup	Would not be expected to have any significant impact.

	Social impacts of potential vegetable and timber industry at **Yornup**
Boyup Brook	Would not be expected to have any significant impact.
Bridgetown	Development would require employment housing and access to community and social infrastructure, including recreation facilities, medical, schools. Would create opportunities for support industries and services in the town. May potentially increase heavy haulage (in both directions) through the town and focus on the townsite bypass issue. May benefit from long-term extension of regional infrastructure along the highway corridor.
Greenbushes	Would not be expected to have any significant impact. May benefit from long-term extension of regional infrastructure along the highway corridor.
Hester	Would not be expected to have any significant impact.
Manjimup	Development would require employment housing and access to community and social infrastructure, including recreation facilities, medical, schools. Would create opportunities for support industries and services in the town.
Nannup	Would not be expected to have any significant impact.
Yornup	May alter the nature and character of the area. Extent of changes would depend on the types of industries. Little scope for additional settlement due to buffer requirements. May result in loss of long-term families as they move from the area and changed population characteristics as new owners move into the area.

	Social impacts of potential vegetable and timber industry at **Manjimup**
Boyup Brook	Would not be expected to have any significant impact.
Bridgetown	Secondary support for local housing, community services, recreation and businesses as a percentage of employees would commute from Bridgetown. May benefit from long-term extension of services along the highway corridor. May potentially increase haulage through the town and focus on the CBD bypass issue.
Greenbushes	Would not be expected to have any significant impact. May benefit from long-term extension of services along the highway corridor.
Hester	Would not be expected to have any significant impact.
Manjimup	Development would require employment housing and access to community and social infrastructure, including recreation facilities, medical, schools. Would create opportunities for support industries and services in the town. May provide opportunities for improved use of social and recreation facilities without affecting the character of the town. May benefit from service upgrades, and in particular power supplies and possible upgrade of water. Would reinforce Manjimup's role as the primary centre for the region. Would provide catalyst for development and marketing of the southern portion of the study area and associated settlements, that is, Pemberton.
Nannup	May provide opportunities for the development of agricultural properties in the area.
Yornup	Would not be expected to have any significant impact. May benefit from long-term extension of services along the highway corridor.

4.2 Economic impact

The economic structure of the Warren-Blackwood region is changing. The purpose of this study is to provide the preliminary measures and framework to encourage positive change. A new or expanding industry is expected to have economic impacts beyond the employment and income generated by the original project.

Economic impact analysis is a means to assess the measurable impacts resulting from a proposed development. Two of the most common methods used to asses potential economic impacts are the use of input–output models and the calculation of multiplier effects. A multiplier is a single number which summarises the total economic benefits resulting from a change in the local economy. When applied correctly, multipliers provide planners and community leaders with estimates of potential change in factors such as employment, gross sales and income that will result from a new economic activity. Comparison of the alternatives can help communities decide where to invest time and resources to get the greatest benefit. For example, a new manufacturing facility will create economic changes, which can spur ripple effects or spin-off activities. Multipliers measure the economic impact of these new exports, including the resulting spin-off activities.

Multipliers are simple ratios of change over a given period. The Department of Treasury and Finance[2] identifies three major multiplier classifications as:

- output multipliers (which are most frequently quoted) that show the increase in the total production of all industries in the economy from an external (and usually unexplained) $1 increase in final demand for one industry. An output multiplier captures the increase in intermediate demands required to service the increase in final demand;
- income multipliers, which show the increase in economy-wide income from an external increase in demand; and
- employment multipliers, which show the increase in economy-wide employment from an increase in demand.

Multipliers for Western Australia have been calculated for a range of industries (Table 3).

Table 3 - Economic multipliers

Industry	Output multiplier	Employment multiplier	Income multiplier
Food and beverages	2.40	4.03	3.37
Wood, wood products	2.36	2.50	2.67
Forestry and logging	2.24	1.96	1.77
Road transport	2.02	1.89	2.20
Agriculture	1.88	1.70	3.26
Miscellaneous manufacturing	1.89	2.42	2.44

Source KW Clements and Y Qiang - A New Input-Output Table for Western Australia Economic Research Centre UWA 1995

Output multiplier

Multiplying the increase in sales of the exporting industry by the output multiplier provides an estimate of the total increase in sales for the study area.

For example, a timber processor creates an additional $1 million of produce. An output multiplier of 2.36 indicates that for every $1 of timber exported from the region that an additional $1.36 of output is produced in the local economy. If $1 million of produce is sold, then $1 360 000 of additional output is produced locally to supply the company, other affected industries and consumers.

Similarly, for a food processor that creates an additional $1 million of produce. An output multiplier of 2.4 indicates that if $1 million of produce is sold, then $1 400 000 of additional output is produced locally to supply the company, other affected industries and consumers.

The region still benefits from the base value of the production, which in the above examples is $1 million dollars. However, if most of the supplies and services are purchased from outside the local community, the output multiplier would be considerably lower.

2 Department of Treasury and Finance: The Use and Abuse of Input–Output Multipliers – Economic Research Articles 2002

The multiplier takes into account the direct, indirect and consumption-induced effects arising from the initial increase in demand.

Employment multiplier

The number of jobs that are expected to be created as a result of a new industry is often a key justification for the establishment of that industry. This includes the multiplier effect on local employment.

Hence, if a new timber-processing centre employs 100 persons with a multiplier of 2.5, the total number of jobs that would be created in the region is 250. This consists of 100 direct jobs and 150 indirect jobs. Similarly, a food processor that creates 200 direct jobs with an employment multiplier of 4.03 would create additional 606 indirect jobs created in support and service industries.

Income multiplier

The income multiplier measures the total increase in income in the local economy resulting from a one-dollar increase in income received by workers in the new industry.

If the new industry such as timber processor pays wages of $1 000 000 with a multiplier of 2.67, then the total increased wages in the region will amount to $2 670 000. This consists of $1 000 000 to direct employees and $1 670 000 to indirect employees. Similarly, a food processor that pays wages of $2 000 000 with a multiplier of 3.37, then the total increased wages in the region will amount to $6 740 000. This consists of $2 000 000 to direct employees and $4 740 000 to indirect employees.

From this it can be seen the potential multiplier effects from food processing industries are much greater than for timber processing or agriculture as this reflects the more complex nature of the operations.

The potential impact of industries locating in the region will include consideration of the following issues[3]:

- employment generation potential;
- potential to improve the skills base of local residents;
- competition with existing businesses;
- diversification of the local business base; and
- benefit to the region.

The potential economic impacts of either a vegetable or timber processing operation establishing at each location and the effects that it will have on the various centres in the area of interest are summarised in table 4.

It should be noted that this assessment is based on basic processing industries and as the processing becomes more complex there is generally greater value added to the product, providing greater potential multipliers and linkages through the region. The introduction of industries that are able to provide greater downstream processing of the raw product, such as paper production, clothing or manufacturing would have greater benefits.

3 Redland Shire Council: Job Grow Incentive Funds Notes

Table 4 - Summary of possible economic impacts

	Economic impacts of potential vegetable and timber industry at **North Greenbushes**
Boyup Brook	Minor employment generation potential.
Bridgetown	Would provide significant employment generation potential with ability to improve the skills base of residents. Likely to complement rather than compete with existing businesses and create strategic alliances. Offers some diversification potential and benefits from possible downstream processing. Would provide potential training opportunities. Secondary benefits to local businesses and services.
Greenbushes	Would provide significant employment generation potential.
Hester	Would provide significant employment generation potential.
Manjimup	Would provide secondary employment and training opportunities with benefits to local businesses and services.
Nannup	Minor employment generation potential.
Yornup	Would not be expected to have any significant direct impact.

	Economic impacts of potential vegetable and timber industry at **Hester**
Boyup Brook	Minor employment generation potential.
Bridgetown	Would provide significant employment generation potential with ability to improve the skills base of residents. Likely to complement rather than compete with existing businesses and create strategic alliances. Offers some diversification potential and benefits from possible downstream processing. Would provide potential training opportunities. Secondary benefits to local businesses and services.
Greenbushes	Minor employment generation potential.
Hester	Would provide significant employment generation potential.
Manjimup	May gain some indirect advantages as the designated regional centre.
Nannup	Would not be expected to have any significant direct impact.
Yornup	Would not be expected to have any significant direct impact.

	Economic impacts of potential vegetable and timber industry at **Yornup**
Boyup Brook	Would not be expected to have any significant impact.
Bridgetown	Would provide significant employment generation potential with ability to improve the skills base of residents. Likely to complement rather than compete with existing businesses and create strategic alliances. Offers some diversification potential and benefits from possible downstream processing. Would provide potential training opportunities. Secondary benefits to local businesses and services.
Greenbushes	Would not be expected to have any significant direct impact.
Hester	Would not be expected to have any significant direct impact.
Manjimup	Would provide significant employment generation potential with ability to improve the skills base of residents. Likely to complement rather than compete with existing businesses and create strategic alliances. Offers some diversification potential and benefits from possible downstream processing. Would provide potential training opportunities. Secondary benefits to local businesses and services.
Nannup	Would not be expected to have any significant direct impact.
Yornup	Would provide significant employment generation potential.

	Economic impacts of potential vegetable and timber industry at **Manjimup**
Boyup Brook	Would not be expected to have any significant impact.
Bridgetown	Would provide secondary employment and training opportunities with benefits to local businesses and services.
Greenbushes	Would not be expected to have any significant direct impact.
Hester	Would not be expected to have any significant direct impact.
Manjimup	Would provide significant employment generation potential with ability to improve the skills base of residents. Likely to complement rather than compete with existing businesses and create strategic alliances. Offers some diversification potential and benefits from possible downstream processing. Would provide potential training opportunities. Secondary benefits to local businesses and services.
Nannup	Minor employment generation potential.
Yornup	Would not be expected to have any significant direct impact.

4.3 Environmental impact

Development of a sub-regional industrial estate must be managed in a sustainable manner to ensure minimal impact on the environment and compliance with the *Environmental Protection Act 1986*, other environmental legislation and associated regulations.

A range of legislation exists to assure that new industries do not create adverse impacts on either the environment or residents of a locality. For example, section 51 of the *Environmental Protection Act 1986* requires owners to;

(a) comply with any prescribed standard for an emission; and

(b) take all reasonable and practicable measures to prevent or minimise emissions.

An "unreasonable emission" is defined in the Act as an emission or transmission of noise, odour or electromagnetic radiation which unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person.

The technical appendix to this report contains a detailed description of the elements of environmental control in Western Australia, dealing with licensing, planning measures, noise, odour, gaseous emissions, particulate emissions, wastewater and solid waste.

Having regard to this, the following overview of the issues associated with these industries has been prepared.

4.3.1 Food/vegetable processing

Fruit and vegetable processing operations can be carried out in locations which service local producers. With modern commodity transport (refrigerated container transport), both local and international markets can be targeted.

The relevant environment management characteristics, considered by the Environmental Protection Authority (EPA), are summarised in table 5.

Table 5 - Food/vegetable processing - management requirements

Factor	Management requirement				
	n/r	low	medium	significant	high
air		■			
odour				■	
water					■
noise			■		
Sludges and solids				■	

Environmental management

Typically this industry generates large volumes of effluent and solid waste. The effluent contains high organic loads, cleaning and blanching agents and salt and suspended solids (for example fibres and soil particles). Wastes (for example soil washings, peels) may also contain pesticide residues. The main solid wastes are organic materials, including discarded fruits and vegetables. Odour problems can occur with poor management of solid wastes and effluents.

While pond systems may be used for on-site treatment of wastewater; odour problems, soil deterioration and groundwater pollution need to be controlled. Use of advanced production processes and pollution prevention measures can yield both economic and environmental benefits.

Wastewater

Preliminary treatment of effluent should include screening (or sieving to recover pulp) and grit removal if necessary. This is followed by pH adjustment and biological treatment of the organic load.

The flows are frequently seasonal and robust treatment systems are preferred for on-site treatment. Pond systems are used successfully to treat fruit and vegetable wastes but odour nuisance, soil deterioration and groundwater pollution require careful management. The quality of the effluent is normally suitable for discharge to municipal systems, although peak hydraulic loads may require moderation.

Air and odour

The most common source of odour will be from wastewater treatment. Typically point source odours from processes such as cooking will be process specific and readily managed. Other odour problems can occur with poor management of solid wastes and effluent.

Airborne particulates may be generated as a result of power generation for steam required for fruit and vegetable processing. Where this is generated on site (for example, biomass burners using waste products such as sawdust), engineering controls must be incorporated to limit particulate emissions. The use of gas scrubbers or biofilters may also alleviate point source odour problems.

Noise

Noise emissions from fruit and vegetable processing can originate from a number of operational sources such as cooling plants, truck movements, and related management activities, such as reversing beepers and external telephone horns.

The plant is generally enclosed in the processing area and accordingly noise generation is unlikely to be excessive if appropriately sited, engineered and maintained to meet noise abatement regulations.

Solid wastes and sludges

The large quantities of soil and other suspended particulate materials derived from vegetable and fruit washing need to be appropriately managed.

Solid wastes, particularly from processes such as peeling and coring, typically have a high nutritional value and may be used as animal feed. Other solid wastes should be disposed of in secure and lined landfill sites to avoid contamination of surface and groundwater.

Hazardous materials

A number of cleaning, sterilising, stabilising and blanching agents are used in the fruit and vegetable processing industry. Washings may also contain elevated pesticide concentrations and require specific management techniques. Generally, all impacts may be managed through the adoption of good housekeeping and waste disposal practices.

Buffer separation distance

The EPA (1997) in its draft policy industrial-residential buffer areas (separation distances) recommends a 300 m buffer distance for vegetable oil production. As no other fruit or vegetable processing buffer requirements have been issued, determination of buffer areas will be made on a case-by-case basis:

Recommendations and key issues for prospective industries

The key production and control practices required include:

- implementing water conservation and recycling measures; and
- adopting dry cleaning and peeling methods.

Reductions in wastewater volumes of up to 95 per cent have been reported through implementation of good practices (World Bank 1999). Where possible, measures such as the following should be adopted:

- procure clean raw fruit and vegetables, thereby reducing the concentration of dirt and organics in the effluent;
- use dry methods (vibration or air jets) to clean fruit and vegetables;
- separate and re-circulate process wastewaters;
- use steam instead of hot water to reduce quantity of wastewater going for treatment;
- minimise the use of water for cleaning floors and machinery;
- remove solid wastes without the use of water; and
- re-use concentrated wastewaters and solid wastes for production of by-products.

4.3.2 Timber processing

Timber processing includes the processing of wood products into seasoned or unseasoned timber for building trades and/or production of other timber products. The preparation of raw materials includes debarking, sawing, chipping and the use of chemical processes. Residues may be reprocessed to yield by-products such as compost and mulch.

The relevant environment management characteristics, considered by the EPA, are summarised in table 6.

Table 6 - Timber processing - management requirements

Factor	Management requirement				
	n/r	low	medium	significant	high
air					
odour					
water					
noise					
Sludges and solids					

Environmental management

All timber processing produces a high volume of solid waste (by nature of debarking). The use of chemical processing in the production of veneers and laminates also results in chemical wastes requiring safe storage and disposal.

Environmental management programs should focus on reducing wastewater discharges and minimising air emissions. Process recommendations include:

- using energy-efficient processes wherever feasible;
- minimising the generation of effluent through use of advanced techniques and recycling wastewater;
- minimised effluent volume and treatment by using dry debarking; and
- minimising emissions to the atmosphere.

Scrubber systems may be used to control the release of exhaust gases from emulsion/formaldehyde plants, which involves ducting gases through either absorber towers or chimney stacks (ATA Environmental, 2002).

Air emissions

Dust emissions may result from all materials handling operations, stockpiles and transport activities. The generation of vapours from the storage of volatile materials and exhaust gases from emulsion plants and formaldehyde plant may also impact on air quality.

Noise emissions

Timber processing industries may generate substantial amounts of noise. Noise emissions from operations on site will be required to comply with the Environmental Protection (Noise) Regulations 1997 (Environmental Protection Authority, 1997b).

Transport activities

Noise, and to a lesser extent vibration, will be generated by transport operations. Tonal noise elements can result from vacuum air brakes, engine and gearbox noise on accelerating and gear changing, or train operation.

Dust from transport operations can originate from the logs being carried or re-suspended from the road surface and shoulders as a consequence of the passage of the vehicle.

Hazards to the public range from direct (collision) to indirect hazards (road damage from heavy vehicle use).

Solid waste

The principal solid waste is bark generated during debarking and prior to further processing of the wood. Accumulated fines and residual bark may require disposal. Scrubber liquor may be produced during chemical processing and require disposal at an appropriate location.

Wastewater

Log watering may contribute particulate materials and tannins, requiring treatment and management of wastewater generated by timber processing.

The safe storage of environmentally hazardous chemicals is necessary to ensure that liquid spills or leakages do not contaminate either the stormwater system or the groundwater table.

Solid waste

Approximately half the weight of the logs delivered to the mill becomes residues, including bark, sawdust, shavings, round-offs, end cuts, trimmings and reject timber. Processes have been developed to convert wood processing residues into products such as pulp, particleboard, animal bedding and garden products. In many cases, efficient use of residues is necessary for a sawmill to operate profitably.

Buffer separation distance

The EPA (1997b) in its draft policy industrial-residential buffer areas (separation distances) recommends:

- 1000 m buffer distance for wood fibre processing (including wood chip products); and
- 500 m buffer distance for sawmills.

Recommendations and key issues for prospective industries

The key production and control practices that will lead to compliance with emissions guidelines include:

- use of dry debarking processes;
- prevention and control of chemical liquid spills;
- controlling noise from wood processing;

- management of truck movements;
- safe storage of resins and chemicals;
- aiming for zero-effluent discharge where possible, thereby reducing wastewater discharges;
- reducing emissions from incinerators; and
- encouraging the use of plantation timber as the raw material.

4.3.3 Buffer implications

The amenity and health of the community must be protected from adverse impacts. The primary aim is for industry to contain amenity and health impacts and risk on-site. When planning an estate, it is desirable that the core area house industries that are considered to have the greatest potential for off-site impacts, as some industries by their nature generate a range of emissions that cannot be fully contained within their specific site. Generally, emissions decrease and the impacts reduce with increasing distance from the source.

Where emissions cannot be contained on-site a buffer will be required to separate industrial areas and other sensitive land uses from potential impacts. A 'buffer area' is the area in which sensitive land uses are prohibited or special measures are necessary to ameliorate the impacts of industry or essential infrastructure.[4] These buffers may extend beyond the investigation areas that have been identified for each site.

As previously indicated, off-site buffers are likely to be in the order of between 500 m and 1000 m; however actual sizing will depend on industry type and site specific factors. Further buffer issues are also discussed in the technical appendix.

As indicated in section 4, it is preferable to use areas of state forest as industrial buffers over private land. In consideration of the management of the buffer, the proponent, industry or government agency will be required to liaise with the Department of Environment and Conservation (DEC) to ensure that the intended purpose of the DEC estate will not be jeopardised through the introduction of industry into the area.

With regard to the location of existing and future dwellings, the sites and potential impacts are required to be investigated. This includes rural farm dwellings as well as urban residences. At all the proposed sites potential off-site buffer areas will impinge on existing dwellings and potential locations for future dwellings and this will require resolution through detailed planning processes.

4.4 Conclusion

The potential impacts of the estate, whether they are social, economic or environmental impacts, must all be managed in a sustainable manner. The sustainability objectives for the estate as identified in component 1 included the following:

- local economic benefits and employment;
- increased recycling and re-use;
- decreased natural resource use;
- improved water efficiency;
- improved energy efficiency;
- improved transport efficiency;
- decreased greenhouse gas emissions;
- non-contaminating land uses;
- protection of biodiversity;
- development of partnerships between the local community, business and government; and
- increased business competitiveness.

The identification of the potential industrial sites has been undertaken on the basis of criteria selected to ensure that location of future industrial uses within the sites is able to be undertaken in a manner that is socially, environmentally and economically sustainable. In the region there are, however, different impacts and benefits that will accrue depending on the location of development. This will influence location decisions of industry and community and government support for the further planning and development of a particular site.

4 WAPC Draft statement of planning policy 4.1 – State industrial buffer policy July 2004.

5.0 Community consultation

Community consultation is integral to the study process and has been integrated into each stage of the strategy development. The Western Australian Government recognises community consultation in its 'commitment to accountability, transparency and engagement'. This is a guiding principle of the decision-making process, which identifies that public engagement lies at the heart of all sustainability principles (Hope for the Future: The Western Australian State Sustainability Strategy 2003).

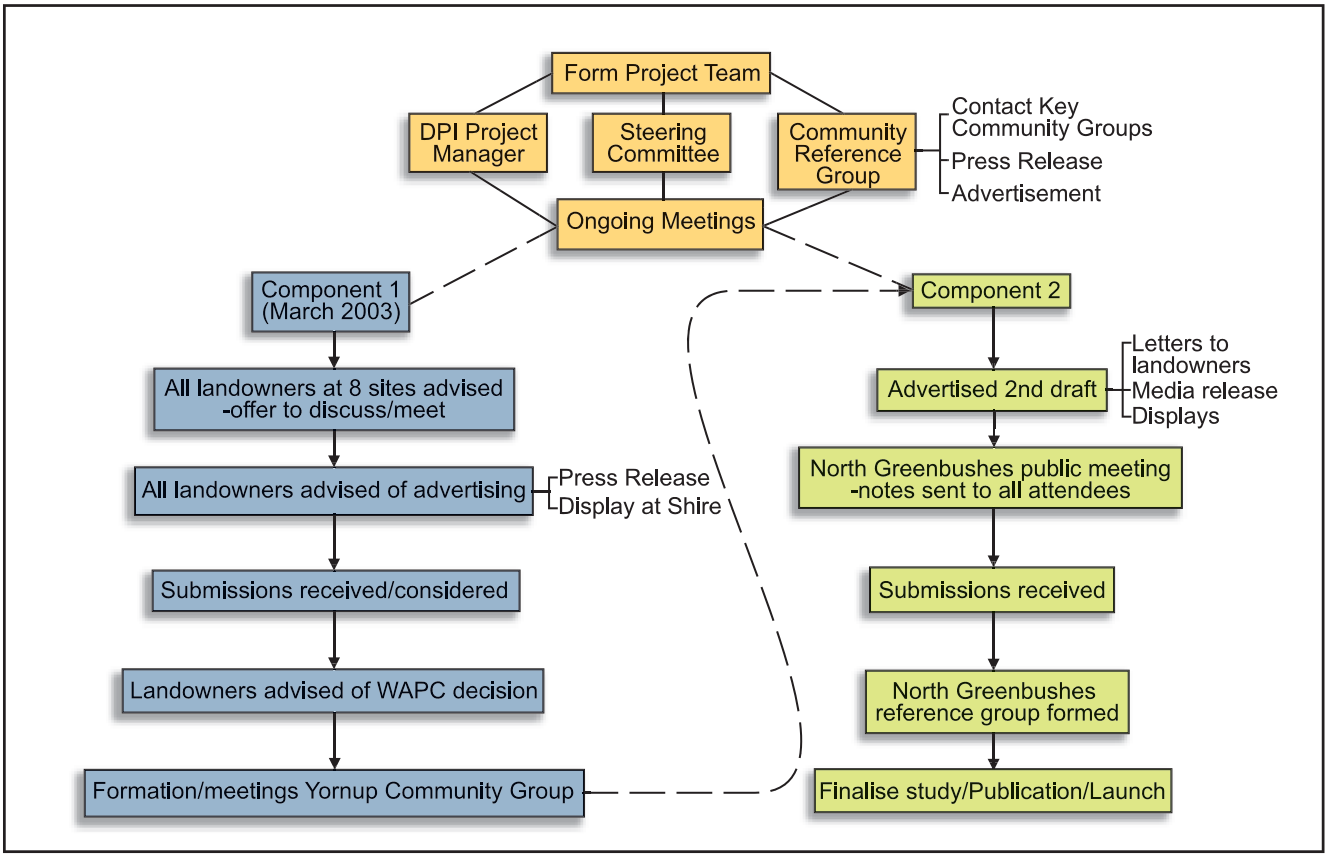
The steering committee recommended the need to prepare a community consultation strategy in the initial phase of the study. The consultation process is outlined in figure 4.

5.1 Community consultation strategy

The community consultation strategy was prepared in the preliminary phases of component 1. The aims of the consultation strategy were to:

- improve the quality of the decision making in the study;
- demonstrate a commitment to accountability, democracy and transparency;
- empower citizens and promote community involvement;
- confirm the priority for site options;
- offer and/or create new perspectives and solutions on the selection issues;
- provide greater legitimacy for decision making;
- reveal actual or potential problems; and
- identify the needs and wants of the community.

Figure 4 - Consultation process



The overall objectives of the consultation strategy were to:

- enable the community to participate in partnership in the study;
- give all the community the opportunity to comment;
- allow for the consideration of community opinions;
- provide for continuous community reference throughout the study;
- promote the use of innovative and creative methods of consultation;
- design consultation for its specific purpose, follow a consistent approach and incorporate monitoring and evaluation; and
- regard the consultation facilitated by others (that is, previous studies and work with partners) to reduce overlap and consultation 'fatigue'.

The adopted community consultation strategy provided for a high level of community involvement. In review of the study process it was acknowledged that while agencies and planning authorities are well represented on the steering committee, the wider community needed to be involved in the initial planning process. A community reference group was established to ensure that the wider community was included in the consultation process.

5.2 Community reference group

A media release advising the general community of the study was advertised in local newspapers in December 2002. Community groups, agencies and businesses were targeted to attract a representative to be a member of the group. A number of nominations were received in response to letters of invitation and initial media advertisements to allow formation of the community reference group.

A second media release advising of the formation of the community reference group and request for nominations for a further two non-allied members was published in local newspapers during the last week of April 2003. This process attracted one additional member to the group.

Membership of the community reference group was intended to represent a cross-section of the community. The group was structured so that group members could operate as a conduit of information from the wider community to the steering committee. The role of the community reference group was to report to the steering committee and provide it with information about community attitudes, provide input into consultation processes and on other issues being considered during the study process. Membership of the community groups is included at appendix 2.

5.3 Component 1 report

The preparation of component 1 of the report involved a number of important consultation steps with both landowners in the areas of interest and in the broader community. In the initial preparation phase of the component 1 report, eight areas of interest were identified targeting sites for consideration and assessment. The spatial extent and boundaries of these 'areas of interest' were not specifically defined. Landowners in the core of each of the areas of interest were notified of the study. Each landowner was contacted by an officer of the Department for Planning and Infrastructure (DPI) and informed of the start of the study. Correspondence followed the phone call to provide a summary of the purpose of the study and to give contact details for further information on the study.

Following endorsement by the steering committee and the community reference group the component 1 report was released for a six-week public consultation period. The community reference group had the opportunity to meet twice as a group and provide comments on the draft report prior to its release. The draft component 1 report did not provide specific recommendations or conclusions on sites; however, its release was considered an important component of the general process of consultation and engagement, and provision of information to the community on the site analysis.

Advertising of the component 1 report commenced on 19 May 2003 and the closing date for submissions was 27 June 2003. A display was held at each of the four local government offices throughout the advertising period. DPI officers were available to discuss the study at these displays. Members of the project groups, relevant agencies and affected landowners were individually notified. Information brochures were produced summarising

the key points and potential questions about the component 1 report. These brochures were included with a letter to landowners and were also available at each of the local government offices for information. A copy of the draft report was available on the DPI website. Hard copies were made available to community reference group members, steering committee members and the four local authorities' libraries, and on request to affected landowners and community members. Eighteen submissions were received. A summary of the issues raised from the submissions received is included in appendix 3.

5.4 Yornup Community Committee

Subsequent to the WAPC endorsement of Yornup as the preferred site, the Yornup community expressed strong opposition towards the consideration of the area for future industry. The community advised that these concerns were not raised strongly during the initial consultation as it was not generally considered that Yornup would be identified as a preferred site. The concerns raised by the community included the impact on land values, lifestyle and productive agricultural land, the study consultation processes (community reference group) and environmental issues associated with future industrial development, including water contamination. In addressing these issues a representative Yornup consultative committee was established to meet with a sub-group of the steering committee during the next phase of the study.

The Yornup Community Committee also requested that the study consider areas of degraded state forest for the location of sub-regional industry rather than productive farmland, and that the area of Yornup indicated for investigation under component 1 be broadened to include surrounding areas of state forest.

5.5 Component 2 report

The methodology (section 1.1) describes the process followed by the steering committee in its review of the study approach based on the issues that arose from the consultation processes and additional issues that had been identified.

The steering committee consulted with the community reference group in developing the revised approach for completion of the study, which was then endorsed by the WAPC. Throughout the process of reviewing the study approach, the Yornup Community Committee was kept informed of the process.

The component 2 report reflected the steering committee recommendations endorsed by the South West Region Planning Committee. The draft report (component 2) contained recommendations for a sub-regional industry structure for the Warren-Blackwood region, outlining the potential for development of sub-regional industry at four locations providing short-to-medium and long-term options.

Advertising of the draft report by the WAPC was carried out with the support of the four local government councils, the steering committee and the community reference group. The six-week advertising period involved direct contact with affected landowners at displays at each of the local government offices and a copy of the report was posted on the WAPC website. During the advertising period a public meeting was also held in North Greenbushes to facilitate the public consultation process.

Thirty-seven submissions were received which have been summarised in the Summary of submission issues – component 1 (appendix 3). These issues have been summarised relative to each site and long-term/short-term options.

5.6 North Greenbushes Reference Group

The need for a public meeting at North Greenbushes was held in response to a large number of calls raising issues in relation to identification of the area as a potential site for future industry. Sixty local residents attended the meeting; meeting with staff from the DPI (Bunbury and Perth offices), representatives from the South West Development Commission and the Shire of Bridgetown-Greenbushes. Concerns and issues raised at the meeting related to:

- type of industry and hours of operation;
- public consultation process and the planning process;

- environmental considerations/impacts/processes;
- transitional areas and buffers;
- the road-to-rail intermodal proposal; and
- heavy haulage traffic and transport routes.

During the meeting a request was made by community members to continue their involvement in the study process. The steering committee and the community reference group resolved to form the North Greenbushes Reference Group to assist in resolving the issues and concerns that were raised at the public meeting in written submissions that had been previously received. Eight representatives were nominated by North Greenbushes community members to meet with members of the steering committee (a DPI officer, Shire of Bridgetown-Greenbushes chief executive officer and two members of the community reference group).

This meeting was held to resolve issues that had been raised through the submissions on the study and determine ways in which the study could address these issues. The North Greenbushes Reference Group was advised the outcomes of recent community reference group and steering committee meeting recommendations in relation to the draft report and submissions received.

Concerns were also raised in relation to the management of existing industry operations, which are outside the scope of the study. The manager of the local Whitakers timber mill (who is a member of the community reference group) and the shire council chief executive officer agreed to continue facilitated discussions at the venue following the Warren-Blackwood Region: Industrial Sites Study meeting to discuss contentious local planning issues.

The community reference group and the steering committee considered the submissions received and provided recommendations that were presented to the South West Region Planning Committee (along with the outcomes of the meetings with the North Greenbushes Reference Group). The South West Region Planning Committee considered the steering committee recommendations to the submissions, public meetings and endorsed the finalisation of the industrial sites study.

6.0 Planning considerations and key issues

6.1 Background and rationale

6.1.1 Site selection criteria

The process of selecting potential industrial development sites integrates economic, social and environmental criteria to achieve a sustainable outcome from development. It is also important for the estate site or sites to be economically competitive in terms of development and operational costs. The objective is to minimise these costs as far as practicable without compromising development standards or environmental and social requirements.

The State Government has released the State Sustainability Strategy for Western Australia and it is committed to the following principles for sustainability:

1. conservation of biological diversity and ecological integrity (as the basis on which life depends);
2. the precautionary principle (lack of scientific certainty should not delay measures to prevent environmental degradation and other damage);
3. inter- and intra-generational equity (our decisions today should not compromise the choices of those generations still to come and should provide for equity within generations); and
4. improved resource valuation, pricing and incentive mechanisms to protect and repair the environment.

Sustainability characteristics and objectives for the estate location include:

- local economic benefits and employment;
- increased recycling and re-use;
- decreased natural resource use;
- improved water efficiency;
- improved energy efficiency;
- improved transport efficiency;
- decreased greenhouse gas emissions;
- non-contaminating land uses;
- protection of biodiversity;
- development of partnerships between the local community, business and government; and
- increased business competitiveness.

The sustainability objective is achieved by ensuring that the defined selection criteria and objectives reflect sustainability principles. The second stage of the study considers economic, environmental and social criteria in more detail. The final level of implementing sustainability principles will be through the promotion of best management practices and recommendations in the design and management of the estate.

In considering potential areas for the estate, detailed selection criteria were developed (table 7). These criteria were identified based on discussions with industry and service agencies, a review of existing government policies and requirements of various agencies. The criteria have been identified specifically to fulfil the sustainability objectives of the study. In applying the selection criteria the identification of a preferred location is an outcome of overall assessment, and full compliance with each criteria will not necessarily be achieved.

Table 7 - Site selection criteria

Factor	Relevant area	Objective
Site characteristics		
Ownership	Core and buffer area	To minimise impact and uncertainty to the affected landowners. The land identified for the estate preferably should have a simple ownership pattern and tenure.
Estate size	Core area	Optimum 200 ha of unconstrained land (minimum of 100 ha) with the potential for a larger area if required.
Buffer size	Buffer area	Minimum of 500 m with the potential for 1000 m.
Lot sizes	Core and buffer area	Preferably in large holdings (40 ha +).
Slope	Core area	Less than 10 per cent.
Soil	Core area	The estate to be located on land with high capability for the intended uses.
Access to work force	Core area	Within 30 km of major settlement.
Services		
Power	Core area and associated service corridor	To reduce the need for new transmission lines and to be aware of the strategic implications for other users. The estate to be within 5 km of the existing 132 kV network.
Road	Region	To minimise impact on existing communities. The estate to be near existing strategic transport and haulage routes.
Gas	Service corridor	Identify potential service routes and potential benefits for other users. The estate to be located to take advantage of potential gas supply routes, while recognising the need to extend services to local communities.
Water	Region	To secure an appropriate supply with minimal impact on other users and the environment. The estate to be located to take advantage of potential water supply routes, while recognising the need to extend services to local communities.
Rail	Region	To promote the use of rail as a sustainable and preferable alternative to road transport. The location of the estate to give preference to sites that are near existing or proposed rail connections, or that have the potential for a spur connection.
Air	Region	To have regard to existing and potential airfield sites to offer flexibility for air use in the future.
Telecommunications	Region	To recognise the growing importance of communications and to identify opportunities and constraints for improved services at a site.

Factor	Relevant area	Objective
Town Planning		
Strategic	Region	Ensure consistency with regional policies. To ensure that the estate does not result in a loss of designated priority agricultural land.
Local	Core and buffer area	Have regard to local planning controls and objectives in considering sites. Ensure that the location of the estate does not conflict with local planning objectives.
Buffer protection	Buffer area	Ensure potential for protection of designated buffers through appropriate planning controls.
Pollution management		
Groundwater quality	Below the site and hydraulic head	Ensure that beneficial uses of groundwater can be maintained.
Liquid and solid waste disposal	Core area	Liquid and solid waste to be contained and isolated from groundwater.
Surface water quality	Core area	Ensure that surface water is managed to prevent discharge of contaminated water from the site or to groundwater.
Dust	Core area, access road and buffer	Minimise airborne dust.
Hazardous materials	Core area	Comply with *Explosives and Dangerous Goods Act 1961, Occupational Safety and Health Act 1984 and Environmental Protection Act 1986.*
Noise	Core and buffer area	Ensure that cumulative noise emissions are as low as reasonably practicable and comply with Environmental Protection (Noise) Regulations 1997.
Light overspill	Core area, buffer and surrounding district	Manage potential impacts from light overspill and comply with Australian Standard 4282.
Public health and safety	Core area, access road and buffer	Ensure that risk is as low as is reasonably achievable.
Odour	Core and buffer area	Ensure no adverse effect on the welfare and amenity of land users.

Factor	Relevant area	Objective
Biophysical		
Vegetation	Core and buffer area	To maintain the abundance, species diversity, geographic distribution and productivity of communities. The core area should be predominantly cleared with minimal remnant vegetation. The buffer area can contain remnant vegetation but the objective must be to ensure that no areas of high conservation value that may be located in the buffer are unduly affected.
Fauna	Core and buffer area	Protect any protected (threatened) species
Social surroundings		
Heritage	Core area	Comply with *Aboriginal Heritage Act 1972* in relation to areas of cultural and historical significance. Have regard to local municipal heritage inventories in identifying potential sites.
Visual amenity	Core area, buffer and surrounding district	Visual amenity of the area adjacent to the project should not be unduly affected by the proposal. The location of the estate should have minimal profile and visibility from major roads and designated tourist and scenic routes.
Public consultation	Local community	As per agreed strategy to provide the public with ample opportunity to understand the project.
Lifestyle	Surrounding area	Minimise perceived loss of lifestyle opportunities.
Sensitive premises	Surrounding area	Minimise impact on existing and future dwellings
Work force location	Region	Predict likely requirements and possible locations. The estate should be located within 30 km of major centres.

6.1.2 Defining an area of interest.

The development of a new industrial estate must be planned to balance the requirements and needs of industry, the environment and community. The estate must be sustainable by meeting accepted standards of environmental protection and the aspirations of the community as reflected in the various strategies for the area.

Having regard to this, potential industrial areas must have location and site characteristics that are appropriate to ensure that industries locating in these areas have the ability to remain competitive on the international export market. Reducing the direct and indirect costs of servicing and transport will assist in achieving this and is also consistent with state sustainability objectives.

Based on these assumptions, the selection criteria and the existing pattern of land use and development as described in the Warren-Blackwood region plan, the opportunities and constraints for the location industry sites in the region have been assessed. It is clear from this that the major opportunities for locating the estate are along the strategic transport and infrastructure corridor following the South Western Highway (figure 2).

The Shire of Nannup was excluded from the defined area of interest because:

- the geographical source area for products, especially related to plantation development, are more focused to the east of Nannup;
- the need to position the estate in a location that can service a wide catchment in the region facilitating transport towards the Bunbury Port;
- the objective to promote the strategic transport corridor along the South Western Highway, especially for potential rail use;
- the absence of any recommendations in the previous studies to investigate sites in Nannup;
- the location of Nannup in relation to the principal road haulage routes for the region; and
- remoteness of the area from the potential gas pipeline.

6.1.3 Estate area

To determine an appropriate size for the estate, consideration has been given to the land area requirements of selected industries and in facilitating the objective for multiple industries to be located together.

It is expected that there will be a catalyst industry to initiate development of an estate and this industry may need a reasonable sized land holding (that is, 50 ha). Many regional and sub-regional level industries do not, however, need large areas of land for their processing operations. Based on an assessment of existing industry characteristics the site should have a preferred core area of at least 200 ha with the potential to expand to 500 ha.

6.1.4 Potential sites

Based on the defined selection criteria a detailed examination has been undertaken for sites selected at:

- Wilga;
- Boyup Brook;
- North Greenbushes;
- Hester;
- Yornup;
- Palgarup
- Manjimup; and
- Diamond Tree.

The selection criteria were used to prepare a detailed analysis for each site. A summary of the comparative analysis undertaken is included at table 1. The impact analysis outlined in section 4 provides further detailed analysis on the sites further investigated through component 2 based on the sustainability objectives. The analysis considers the economic, social and environmental impacts of each of the sites in the region.

The review of industry potential identified that the source area for product for processing in the study area may extend well beyond the Warren-Blackwood region. This has the potential to result in development of sites to the north of the study area along the South Western Highway corridor extending towards Donnybrook.

6.2 Submissions: summary of key issues

6.2.1 Component 1

Eighteen submissions were received during advertising of component 1. A summary of the issues raised from the submissions received is included in appendix 3.

The main issues raised through assessment of the submissions by the steering committee and community reference group included:

Preferred site or sites

In response to a submission, the community reference group raised concern that selecting only one preferred site for assessment would negate the other identified sites' opportunity to be considered for future industrial development.

Site assessment methodology

Several submissions highlighted perceived inconsistencies between assessments of the sites. Both the steering committee and community reference group noted that given the broad level of assessment, the variation in the size of sites identified; that compliance with selection criteria is not an absolute and therefore inconsistencies might appear at this level. These issues would be clarified through further detailed assessment of the sites as part of component 2.

Implementation issues

Most issues raised throughout the submissions highlight implementation, which was an aspect to be considered in component 2.

After the advertising of component 1 recommending Yornup as the preferred site, meetings held with the Yornup Community Committee raised concerns, which included:

- the impact on land values;
- lifestyle and productive agricultural land,
- the study consultation processes (community reference group); and
- environmental issues associated with future industrial development, including water contamination.

It was also requested that the study consider areas of degraded state forest for the location of sub-regional industry rather than productive farmland, and that the area of Yornup indicated for investigation under component 1 be broadened to include surrounding state forest.

Based on submissions received, consultation with the Yornup committee, and other issues that arose after completion of component 1 in respect to future industrial development in the region and the nature of likely industrial development projects, resulted in the steering committee reviewing the framework for completion of the second stage of the study.

This revised approach involved:

Site assessment methodology and preferred site recommendations

The collation of further information on the previously identified sites with potential to accommodate sub-regional industries to evaluate the potential for a future sub-regional industrial structure based on a number of sites as opposed to a single estate.

To assist further consideration of this approach opportunities and constraints analysis were prepared for Hester, Manjimup and North Greenbushes in parallel to further studies at broader Yornup. The impact analysis of all sites considered each site in relation to the sustainability objectives of the study (section 4).

Consideration of state forest/government owned land

In consideration of advice from the Department of Conservation and Land Management (now the DEC), the steering committee agreed that a request to have access to state forest for industrial uses would be unlikely to be supported by the Conservation Commission based on legislative restriction. Advice from the DEC provided that state forest might be used as a buffer as long as the buffer did not restrict the purpose for which the state forest was vested.

In consideration of government owned land, in the area that confirmed the study's objectives and selection criteria, an area of unallocated Crown land west of the existing industrial node with potential for future industrial development was also identified in North Greenbushes.

6.2.2 Component 2

Thirty-seven submissions were received which have been summarised in the Summary of submission issues – final draft (appendix 4) The key issues have been summarised relative to each site and long-term/short-term options. Concerns and issues raised at the North Greenbushes public meeting related to:

- type of industry and hours of operation;
- public consultation process and the planning process;
- environmental considerations/impacts/processes;
- transitional areas and buffers;
- the road-to-rail intermodal proposal; and
- heavy haulage traffic and transport routes.

Short-term sites

North Greenbushes received the most interest through the submissions relating to sites identified under the study's short-medium term framework for the location of sub-regional industry. The key issues related to:

- environment processes;
- clarification and recommendations regarding the transitional or buffer area; and
- transport issues associated with the movement of heavy haulage vehicles in the locality.

Long-term sites

Most submissions relate to the identification of long-term sub-regional industrial development at Yornup. Many submissions opposed consideration of Yornup for an industrial area for reasons relating to environmental management, social implications and impacts on privately owned agricultural land, which reiterated previously raised concern. The submissions relative to the North Greenbushes long-term site options supported the nominated area of unallocated Crown land but objected to recommendations relating to privately owned land. The key issues raised regarding North Greenbushes relate to traffic and heavy haulage vehicle management.

During the study process, local government representatives raised concerns that this study should promote and progress planning for industry in the region. In an effort to focus study efforts, the steering committee recommended that the study identify one site for further consideration as a long-term sub-regional level industrial estate. The study also indicated that in the long term the region might sustain the development of one strategic industrial estate only. This led to the primary focus of the study on North Greenbushes as the preferred site to accommodate long-term needs for the location of sub-regional level industry in the region.

The key issues have been addressed and are broadly addressed below. Many of the changes have been incorporated into section 7.0 Implementation.

Environmental considerations

The implementation section for each of the sites in section 7 addresses environmental management and natural values at a broad strategic level. Each stage of the planning process, however, requires consideration of environmental values and the relevant environmental management response. Any scheme amendment process will require (in)formal assessment by the EPA. Proponents will undertake environmental impact assessments prior to development, and development will be managed in a sustainable manner to ensure minimal impact on the environment and compliance with the *Environmental Protection Act 1986* and with other environmental legislation and associated regulations. Flow charts in figures 5 and 6 identify the planning and associated environmental assessment that will be conducted through each phase of the planning process.

The Warren-Blackwood Region: Industrial Sites Study is a strategic document and, as demonstrated through the flow charts, there are many further opportunities for investigation and assessment to ensure that environmental issues are managed and that development occurs in a sustainable manner. The planning process provides also a number of opportunities for further community consultation to occur in relation to structure planning and more detailed development proposals.

Transport

The principal transport corridor in the region is focused along the alignment of the South Western Highway and the Bunbury-to-Greenbushes rail line. The development of heavy haulage routes in the region has been previously addressed for the plantation industry by the Timber Industry Road Evaluation Strategy (TIRES) Committee. The committee has investigated the impact and management of the increases in road freight, and while these studies specifically related to the plantation industry, they provide a useful guide to other potential industries in the region that may have a dispersed resource area.

Through the course of preparing this study, the operation of the Bunbury–Manjimup rail line ceased. However, in August 2006 state government funding was allocated to upgrade the section of track between North Greenbushes and Bunbury. A new log transport rail service is to be introduced to North Greenbushes, ensuring the operational status of the line between North Greenbushes and Bunbury. This supports the location of North Greenbushes as a long-term location for future sub-regional industry.

Individual industry types will generate different traffic movements and volumes. Traffic management will be addressed throughout the planning process and specific management plans will need to be submitted to the local government for consideration and approval prior to the introduction of new industry at the nominated sites.

Traffic issues and concerns in relation to North Greenbushes, are currently being addressed by Main Roads Western Australia and the Shire of Bridgetown-Greenbushes (outside the scope of this study). Main Roads Western Australia supports that all road trains bringing timber from the north-east will use the Donnybrook to Boyup Brook Road then the Boyup Brook to Greenbushes Road. The Shire of Bridgetown-Greenbushes may prohibit the use of road trains along the Grimwade Road and other minor roads in the shire to ensure the Main Roads preferred route is used. This detail is reflected in the implementation section of this report.

Buffer requirements

A buffer area is defined by specifying a distance in relation to an industrial or infrastructure operation for the purpose of avoiding conflicts between incompatible land uses.

The analysis of industry characteristics indicates the need to provide a minimum buffer distance of at least 500 m, and preferably up to 1000 m. This allows for any cumulative effect that may result off site from the clustering of industrial activities or where air emissions are involved. Adopting a precautionary principle means that a minimum buffer of 1000 m will be preferred for the site selection and planning of the estate.

Management of industry emissions and associated buffer areas has been addressed through each site's land use framework and guidelines for implementation in section 7.0. Particular reference is made to the short-term district estate recommendations for North Greenbushes, where the advertised plan indicated a transitional area north of the industrial investigation area. This area has been modified as a rural buffer that is not suitable for additional industrial uses. Details on the management of this buffer area will be clarified throughout the more detailed structure planning process.

Type of industry

The combination of technology change and the rapid process of international deregulation have been important drivers of the global knowledge economy which has manifested itself in three key areas:

- liberalisation of trade, that is, reduction of tariff and non-tariff barriers to trade in both goods and services;
- liberalisation of capital markets, including floating of currencies, deregulation of financial markets more generally and reduction of barriers to direct foreign investment (and to other international capital flows and technology transfer); and
- deregulation of internal markets for goods, services and financial flows.

One effect of these trends is the growing inter-relationships between the economic activity in regions and the world economy. Regional economies are becoming more permeable and more

strongly linked to other national and international regions. The effect of these possible scenarios and the emergence of the 'new economy' reinforces the need to provide an industrial estate with a high degree of flexibility to cater for a range of future scenarios.

The changing characteristics of the transport industry and the opportunity for new initiatives must be recognised in considering the potential for new industries in the region. These factors will be considered in the location decisions of companies and are relevant in the consideration of potential industry types likely to locate in the region. There is a clear objective from the State Government to maximise the use of rail as an efficient and sustainable form of transport. This may influence the location decisions for industry investment and the proposed industry structure should support the use of the rail transport corridor.

In assessing the potential location and characteristics of industry for the Warren-Blackwood region, the relationship between the industry, its catchment, market and existing transport systems and corridors must be recognised.

The factors that determine the location of industry are varied both within and between industries. There are many geographical location theories that attempt to model and explain the location choices of firms. Industries that are orientated towards export markets are likely to seek to locate the primary processing facility close to the source of the product. In many cases this is simply to reduce the transport costs and to avoid double handling.

The site that has the greatest flexibility in terms of location factors and development costs is likely to be the most robust site in catering for the range of economic scenarios that may face the region and the industry types seeking to locate in these areas.

No specific industry has been identified for location at any of the sites in the Warren-Blackwood Region: Industrial Sites Study. The study considers the location of sub-regional level industries which are moderate downstream processing industries, relative to produce in the region.

The range of potential industries that could be considered is extensive. Many industries have similar characteristics in terms of their requirements and effects, however, there is no direct correlation between the size of an industry (however measured) and its infrastructure needs or potential effect on the community and natural environment.

7.0 Implementation: planning considerations and recommendations

This section provides a general overview of the issues highlighted through the broad studies of the recommended industrial sites and how these ought to be considered through the planning and environmental processes required prior to development. The section provides detail in relation to further investigations required in pursuing statutory approval, however as investigations progress other issues may arise requiring additional studies. Broadly defined in figures 5 and 6 is an explanation of the planning process and corresponding environmental approvals process.

Implementation of statutory processes will be greatly supported and processes streamlined should comprehensive strategic environmental and planning investigations be undertaken to support local planning scheme amendments. This will ensure clear direction and leadership in achieving sustainable development outcomes.

7.1 Long-term strategic sub-regional industrial estate: North Greenbushes

Research conducted for the Warren-Blackwood Region: Industrial Sites Study has indicated that the Warren-Blackwood region may only sustain the development of one strategic industrial area. An area of unallocated Crown land at North Greenbushes has been recognised as the preferred site for promoting the development of a long-term sub-regional industrial estate based on the selection criteria, which include proximity of the site to road and rail infrastructure and location to existing industry and service infrastructure. Development of this site will require support from state government, local government, community and industry, and will be dependent on the suitability of the identified area to house appropriate industry types.

The North Greenbushes site has access to the South Western Highway, rail line and the proposed intermodal road-to-rail transfer facility. Power is remote from the site as the existing transmission line to the Greenbushes is fully committed for use by the existing mine operation. The details of the existing conditions are shown in figure 5.

Figure 6 identifies the characteristics of North Greenbushes and provides a recommended land use framework. The investigation areas are approximately 230 ha and are split between two locations comprising:

- area 1 – 115 ha located east of Daronche Road; and
- area 2 – 105 located west of Daronche Road.

Area 1 is predominantly unallocated Crown land but includes two freehold lots. The land is well vegetated. Area 2 is private land that has been developed for semi-rural purposes and contains areas of remnant vegetation. It straddles the South Western Highway and would most suitably be an extension to area 1 if required.

The sites are potentially suitable for:

dry industries;

- small-medium sized industries;
- road based transport industries; and
- non-power intensive industries.

Examples would include primary product manufacturers such as timber processing and some forms of bulk materials or light industries needing larger land area requirements, especially associated with the transport industry. There is some scope for processing type industries with larger land requirements.

A key issue to be addressed at the site is the relationship, management and ownership of the existing townsite dwellings. Although these are not great in number, they are significant as they are adjacent to the rail line and would be between the existing and new development areas. In addition, the proximity of other dwellings north of the site will require careful consideration of industry emissions.

Figure 5 - North Greenbushes existing conditions

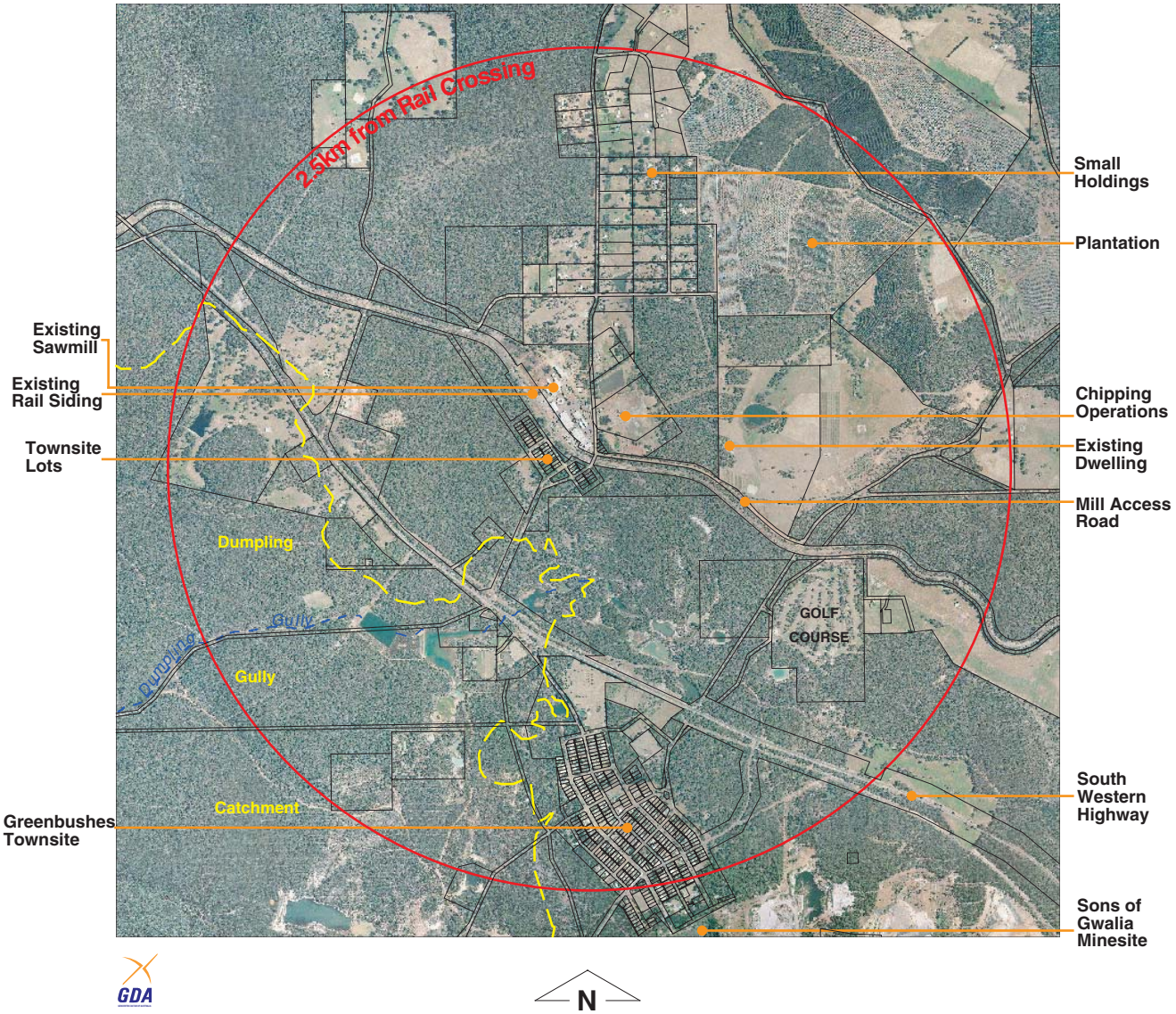


Figure 6 - North Greenbushes long-term recommendations

LAND USE/TENURE

- DEC Estate
- Residential
- Unallocated Crown Land
- Small Rural Lots
- Private Farmland

LAND CAPABILITY CONSTRAINTS

- Valley System Slope Constraint < 10%
- Remnant Vegetation
- Wet Upland Flats
- Existing Dwellings
- Investigation Area
  1 = 115ha
  2 = 105ha

The issues relating to environmental management are:

Air quality

There is undulating land with high surface roughness, surrounded by state forest, which will assist in dispersing air emissions. Existing air pollution sources are minor, though cumulative impacts may need to be considered.

Water quality

Local drainage systems are poorly defined.

Solid waste management

Existing municipal landfill site at Spring Gully Road has reached its capacity and is due to be closed. Council is investigating potential regional facility to be located between Yornup and Manjimup.

Management of hazardous materials and hazardous wastes

The regional road network and rail allows for ready transport. Management of the site would be required.

Noise control

Close proximity to nearby noise sensitive premises requires management to ensure that industries and associated traffic will not exceed acceptable noise criteria.

Vegetation

No detailed vegetation survey has been conducted at the site. A preliminary examination has indicated that the unallocated Crown land located off Daronche Road includes remnant vegetation, which is well represented from a regional perspective.

Fauna

No detailed fauna survey has been undertaken at North Greenbushes.

Land capability

Landforms in the North Greenbushes area vary from undulating ridges and hillcrests, minor valleys and swampy depressions. The soil and landform units in the site have been assessed in terms of their suitability for possible development. Drainage may be restricted and swampy depressions are known to occur in such areas.

In summary, the North Greenbushes site has the following characteristics:

- existing industrial area;
- access to regional road and rail infrastructure;
- the land is relatively flat;
- the site is well defined spatially and predominantly surrounded by Crown reserves.
- proximity to existing residences and small rural lots to the north of the site;
- existing remnant vegetation on unallocated Crown land (well represented in the region);
- limited power supplies;
- limited understanding of water availability;
- poorly defined drainage system; and
- native title issues relative to the unallocated Crown land.

Recommendations

Site recommendations (figure 6)

1. That area 1 be considered and further investigated as a potential sub-regional industrial estate subject to addressing the vegetation and land availability issues.
2. Area 2 should be considered as a potential expansion area for an estate, in conjunction with area 1 only.
3. That areas 1 and 2 be identified as investigation areas in the shire's local planning strategy and remain as a rural zone in the town planning scheme.
4. It is not recommended that any private land be acquired by government for the development of the strategic industrial estate. The priority for consideration is the unallocated Crown land.
5. Consideration of area 2 for expansion of the estate into the long term will depend on landowner will and in consultation with the council and the local community.
6. Seek the creation of a Crown lease or conversion to freehold land for the unallocated Crown land.
7. Native title claim clearance process for the unallocated Crown land is required.
8. That the shire's local planning strategy outline the requirements for preparation of a structure plan to eventually support an amendment to

council's local planning scheme. The preparation of a structure plan should address servicing, environmental and community issues.

Structure plan requirements and issues

9. Identify sustainable water supplies (either surface or groundwater).
10. Undertake a detailed vegetation survey to determine conservation values. The vegetation complexes on site are well represented in the region.
11. Identify the requirements for managing emissions based on sub-regional level industry characteristics and location of existing dwellings. These should ensure that the impacts of industry be contained in the boundaries of the unallocated Crown land. Given the location of existing dwellings and intended industry type, the emissions for consideration will primarily be noise (industry and associated transport) and dust. Consideration of air quality and odour limits will also need to be addressed.
12. Outline the range of industries suitable for the site (based on the definition of sub-regional industries), indicate suitable locations and size of lots for the intended use as demonstrated by a land capability and emissions analysis for the site.
13. Prepare a conceptual transport network to identify servicing needs. The preferred heavy haulage route for road trains from the north east is the Donnybrook-to-Boyup Brook Road and the Boyup Brook-Greenbushes Road. The conceptual transport network should recognise the preferred heavy haulage route and also consider the function and management of Grimwade Road in limiting traffic servicing needs for existing and future industry.
14. That a stormwater and drainage management plan be prepared addressing such issues as: the protection of drainage lines; adoption of DEC guidelines for the protection of stream values; and site discharge requirements and nutrient retention.
15. Prepare a noise model to determine the extent of existing background noise and the likely impact on existing dwellings. Prepare a management plan that addresses issues associated with existing residences and residential lots adjoining the rail.
16. That a social impact statement be prepared to identify responses to the values and issues of the residents in the area.
17. That the shire's local planning strategy outline the structure plan content and process to be addressed.

Development issues

18. Proposed industry to meet the guidelines of an endorsed structure plan for the estate and all necessary statutory planning and environmental approvals.
19. Investigate the potential to extend the transmission line based on the needs and likely loads generated by industry in the area. That Western Power investigate the potential to extend the transmission network to the site based on the needs and likely loads generated by potential industry.
20. Development of any 'wet' industry must be supported by evidence of a suitable water supply and wastewater disposal system.
21. That an environmental assessment and management plan be required for any proposed industry.
22. A survey of existing remnant vegetation be undertaken to determine conservation values.
23. The need to submit a notice of intention to the DEC for the possible removal of vegetation.
24. The potential use of mine areas for surface water supplies.
25. The need to comply with native title requirements and address Aboriginal heritage issues.
26. That any development be required to demonstrate the likely demand for housing and social infrastructure in each townsite and the proposed measures to accommodate these.
27. A community relations plan should be developed aimed at informing, consulting and involving key stakeholders and residents in the locality.
28. Proposed developments should identify possible linkages to local business and services.

7.2 Short-term options: Hester, North Greenbushes and Manjimup

Sites identified in component 1 that although having some limitations to meet the site size requirements for a sub-regional estate were noted as having potential to accommodate sub-regional industry have been further examined as short-to-medium term options as part of the regional structure.

Descriptions of each of the sites are presented in terms of:

- details of the location (including area);
- mix of industries on the site (to ensure that the industries are compatible — for example, that neighbours of food processing plants do not pose a risk of contaminating food products);
- layout and design;
- transport services;
- issues related to air quality management;
- water quality management, including the provision of common effluent treatment facilities, as required;
- solid waste management;
- management of hazardous materials and hazardous wastes; and
- noise control.

Recommendations have then been provided in conjunction with a conceptual land use framework for each area.

7.2.1 Hester

Hester is recognised under the Warren-Blackwood Region: Industrial Sites Study as a potential short-term district estate, noting that it has the ability to accommodate sub-regional industry development.

The site is located adjacent to Krsuls Road, extending between the Hester townsite and the north-eastern edge of Bridgetown. Hester contains three existing timber operations, including a pine treatment and processing plant. Hester Road connects the South Western Highway to the Bridgetown-Boyup Brook Road and is a designated alternative heavy haulage route. Krsuls Road is a main feeder into the Bridgetown urban area.

The site is currently in private ownership comprising three locations. The site is not regular in its size and depth from Krsuls Road, with both the Geegelup Brook and the rail line forming the western boundary. The 132 kV transmission spur line to Greenbushes crosses the southern portion of the site. The railway line borders the site to the west and a decommissioned narrow gauge rail siding extends into the northern section of the site.

State forest is located to the east and west of the site and a council reserve is situated to the south, which includes the sports ground and trotting track. The State Government is proposing that these areas of state forest will form part of the Hester Conservation Park.

The details of the existing conditions are shown in figure 7 and the potential land use framework of Hester is shown in figure 8.

Hester has been identified as a district industrial estate with the capacity to support sub-regional industry. Potential industries may include primary product manufacturers such as timber processing, bulk material handling, or light industries needing larger land area requirements, especially associated with the transport industry.

The site is potentially suitable for:

- dry industries;
- energy intensive industries (short distance to suitable connection); and
- road based transport industries.

The gross investigation area is approximately 200 ha and includes a portion of land on the eastern side of Krsuls Road. This comprises the following net development areas:

- area 1 – 40 ha;
- area 2 – 15 ha; and
- area 3 – 53 ha.

A key consideration highlighted in figure 9 is the provision of transitional development area to separate the potential industry from the townsite and associated residential uses.

Area 1, which is located on the southern portion of the site on the corner of the Bridgetown-Boyup Brook Road, is bisected by a 132 kV power line. The northern edge of sub-area A is an existing

drainage line that separates it from sub-area B. The western portion of sub-area A slopes down to the drainage line, requiring special management measures.

Area 2 is adjacent to the townsite development. Due to its narrow configuration it contains a limited amount of usable land. It is also limited in development potential by the need to provide a graduation of uses and associated impacts in the vicinity of the townsite.

Area 3 has been identified as a possible long-term expansion area if it is required. It is a secondary development area due to its relationship to areas A and B, particularly in terms of drainage and servicing. It is also limited in development potential by the need to provide a graduation of uses and associated impacts near the townsite. A further limitation may arise in respect to the provision of buffers to the state forest/conservation park on its southern boundary.

Environmental management issues for the site are:

Air quality

Reasonable separation to designated urban area of more than 1 km. Steep terrain with high surface roughness may affect buffer.

Water quality

Proposed site drains to Geegelup Brook, which flows through the Bridgetown town centre and associated residential areas before discharging into the Blackwood River. While planning and management of any development must abide by the policies of the DEC, designed to ensure that there is no polluted drainage leaving the site, any discharge through urban areas is likely to focus attention on the site. This may limit industries considered suitable for the location.

Solid waste management

Existing municipal landfill site is located in proximity to the site on the southern side of the Bridgetown-Boyup Brook Road. However this site has limited capacity.

Management of hazardous materials and hazardous wastes

Road network allows for ready transport. Managed site would be required.

Noise control

Separation distances to designated urban area of both Bridgetown and Hester townsites can be achieved in excess of 500 m. Hester residential areas are separated from the site by existing industrial operations. Outdoor levels for the noise received at any noise sensitive premises during various times of day in Bridgetown would take into account influencing factors from major transport routes. Steep terrain would influence noise propagation.

The buffer areas can be largely contained in the site and adjoining state forest and/or other Crown land. The more sensitive area is in the northern portion of the site, which contains the buffer from the Hester residential areas. This may be mitigated to some extent because of the existing industry located nearer the residences. The development of this area should allow for a graduation of land uses away from the main core area to facilitate management of possible buffer areas.

The timing of development can accommodate a low level of short-term implementation based on the capacity of existing services. Rural industries could establish immediately, while the development of other industries would depend on rezoning.

In summary, the Hester site has the following characteristics:

- it forms a natural corridor connecting Hester and Bridgetown;
- existing industrial activities adjacent to site;
- regional and local road access;
- landscape screening from the Bridgetown–Boyup Brook Road;
- high voltage transmission lines access the site;
- cleared land;
- surrounding land is predominantly Crown reserves, state forest;
- the overall size with a core of less than 100 ha limits expansion to accommodate a sub-regional estate;
- the long and narrow configuration of the site and position of drainage lines may impact usable area, the drainage line through the site flows directly into Bridgetown;
- moderate slopes on the site may increase infrastructure and development costs; and
- limited availability of water.

Figure 7 - Hester existing conditions

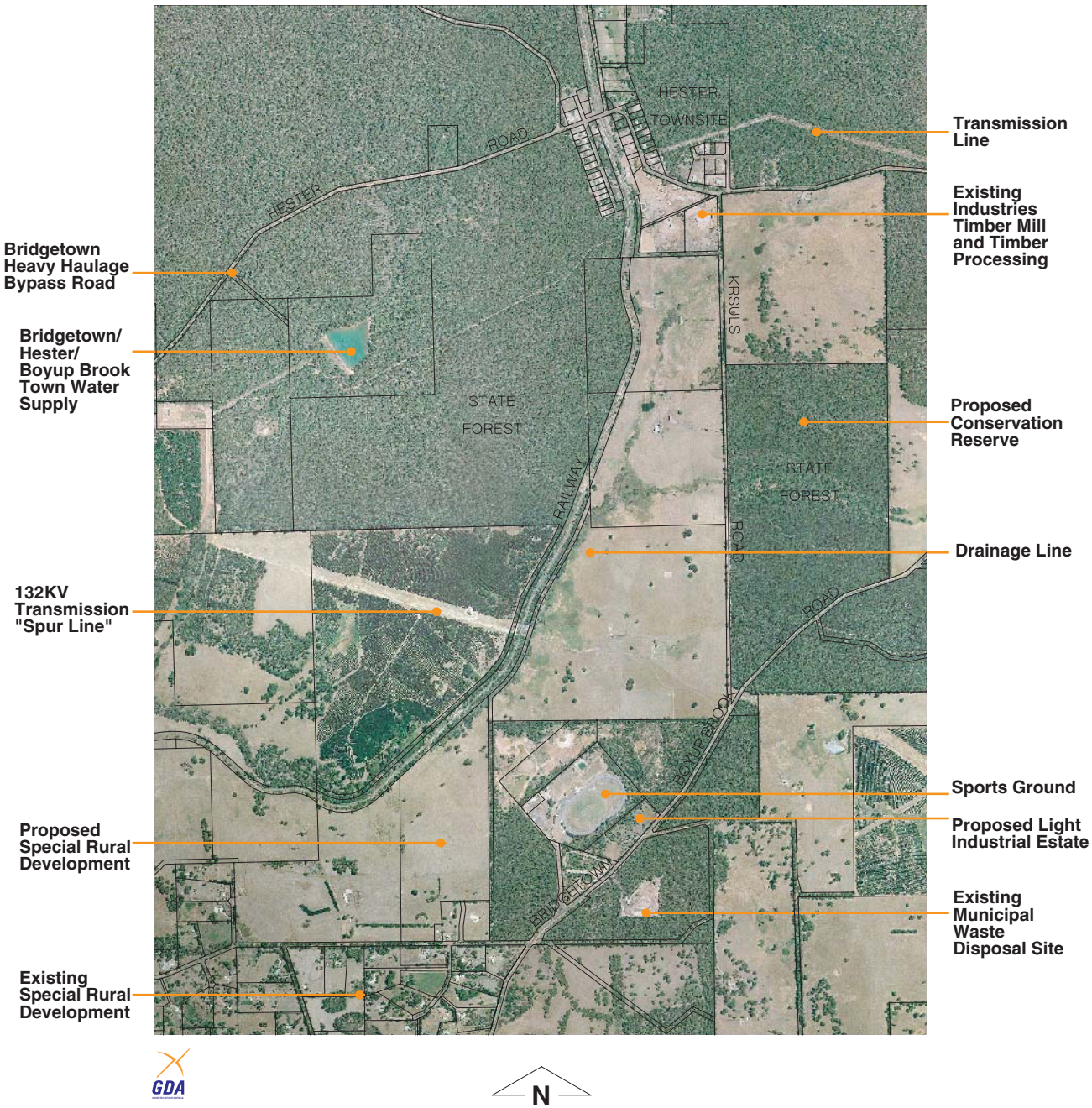
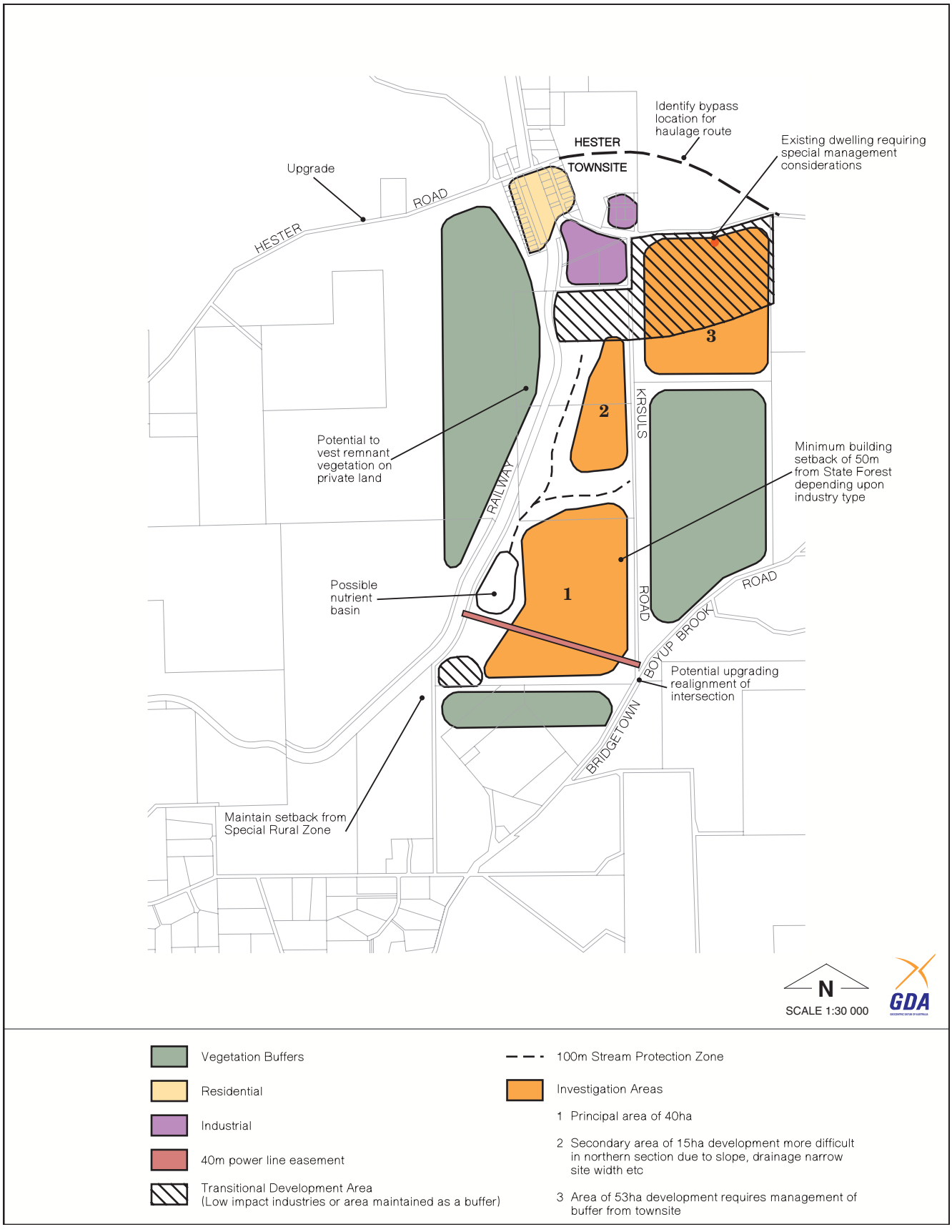


Figure 8 - Hester short-medium term



Recommendations

Site recommendations

29. That areas 1 and 2 be considered as the core development area, with area 3 as a long-term development option to be considered following the development of the other areas.
30. That the investigation areas be identified in council's local planning strategy and remain a rural zone in the town planning scheme.
31. That the shire's local planning strategy outline the requirements for preparation of a structure plan to support an amendment to council's local planning scheme. The preparation of a structure plan should address servicing, environmental and community issues. It is not recommended that private land be acquired by government at this time. Development will depend on landowner will and in consultation with the council and the local community.

Structure plan requirements and issues

32. Identify the limit of industry emissions areas based on the proposed industry characteristics and location of existing dwellings and state forest.
33. Identify suitable land uses to be included in the transitional industrial area that can be accommodated within buffer areas and recommendations for management and ownership of these areas.
34. Consult with the DEC relating to the interface of the proposed industry and the use of state forest as buffers.
35. Outline the range of industries suitable for the site (based on the definition of sub-regional industries), indicate suitable locations and size of lots for the intended use as demonstrated by a land capability and emissions analysis for the site.
36. That a stormwater and drainage management plan be prepared addressing such issues as; the protection of drainage lines; adoption of DEC guidelines for the protection of stream values; site discharge requirements and nutrient retention. Provide for minimum 50 m buffers from the two drainage lines in the estate.
37. Prepare a noise model. Prepare a management plan that addresses issues associated with the Hester townsite.
38. Identify sustainable water supplies (either surface or groundwater).
39. Prepare a conceptual transport network to identify infrastructure needs, including the provision of a possible bypass around Hester townsite. Ensure retention of the landscape buffer (vegetation) to major roads. Provide for the potential widening of Krsuls Road and re-alignment of the Boyup Brook Road intersection.
40. Provide an easement to the satisfaction of Western Power to accommodate the 132 kV power line.
41. That a social impact statement be prepared to identify issues relating to the values and issues of the residents in the area.

Development issues

42. Development of any wet industry must be supported by evidence of a suitable water supply and wastewater disposal system.
43. An environmental assessment and management plan will be required for any proposed industry.
44. The impact of the proposed conservation reserves and the ability of those areas to incorporate buffers.
45. The potential to extend the transmission network to the site based on the needs and likely loads generated by potential industry.
46. Development of sites with lot areas larger than 4 ha must negotiate agreed load requirements with Western Power.
47. The potential to extend the 22 kV line from the Bridgetown substation to the site and determine its maximum capacity to provide for short-term development. If the capacity is insufficient investigate extending the transmission network.
48. To allow for short-term development identify the options for light power use (100 kVa/ha) based on the specific uses where increased power users are responsible for the cost of upgrades.
49. The possible need to realign the intersection of Krsuls and Boyup Brook roads.

50. The possible need to widen Krsuls Road and the method of attributing costs of such works to the adjoining development
51. Any development should be required to demonstrate the likely demand for housing and social infrastructure in each townsite and the proposed measures to accommodate these.
52. A community relations plan should be developed aimed at informing, consulting and involving key stakeholders and residents in the locality in relation to new industries. This may also be required on endorsement of a structure plan.
53. Proposed developments should identify possible linkages to local business and services.

7.2.2 North Greenbushes

The short-term development opportunities addressed at North Greenbushes focus on the existing industrial timber mill site and land located on the eastern side of Greenbushes Road. This area of North Greenbushes is classified as a potential short-term district estate under the regional industrial framework, noting that it has the ability to accommodate elements of sub-regional industrial use. The principal attraction of the site is access to the south-west transport corridor including the rail line and the approved train loading facility

The details of the existing conditions are shown in figure 5.

The main features in relation to this are:

- the proximity of small rural holdings to the north;
- a residential area to the south; and
- surrounding remnant bushland on both public and private land.

The site is potentially suitable for:

- dry industries;
- non-power intensive industries; and
- low noise producing industries.

Two development areas have been identified in the conceptual land use framework (figure 9):

- area 1 – principal area of 14 ha; and
- area 2 – 8 ha.

Area 1 is freehold land that is presently used for industrial purposes. Area 2 is unallocated Crown land that contains remnant vegetation. These areas also provide further opportunities to develop uses adjacent to the rail corridor.

In summary, the North Greenbushes site has the following characteristics:

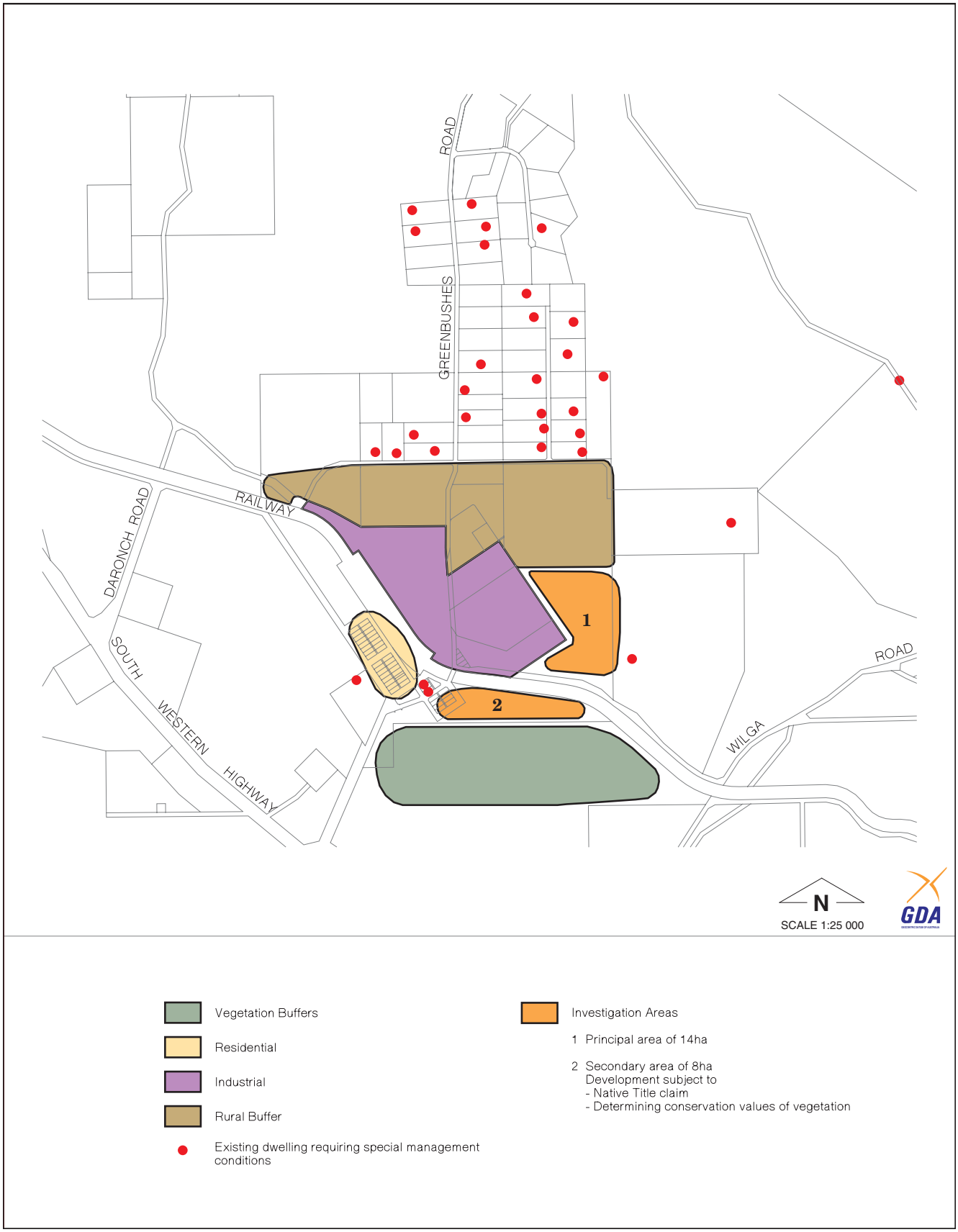
- existing industrial area;
- access to regional road and rail infrastructure;
- the land is relatively flat;
- proximity to existing residences and small lots zoned 'rural 2 general agriculture' to the north of the site;
- existing remnant vegetation on private and unallocated Crown land (well represented in the region);
- limited power supplies;
- limited prospective water availability;
- poorly defined drainage system;
- native title issues relative to the unallocated Crown land.

Recommendations

Site recommendations

54. That area 1 be considered as the core development area with area 2 a potential extension – or for a specific rail orientated use.
55. That the investigation areas be identified in council's local planning strategy and that area 1 remain as rural/special rural and area 2 as a reserved land in the shire's local planning scheme.
56. It is not recommended that private land be acquired by the government at this time. Development will depend on landowner will and in consultation with the council and the local community.
57. Seek the creation of a Crown lease or conversion to freehold land for the unallocated Crown land.
58. Native title claim clearance process for the unallocated Crown land is required.
59. Development proposals on land currently zoned industry under the local planning scheme do not require preparation of a structure plan. The scheme provisions will provide the appropriate guide for development in these areas, however structure planning to support local planning

Figure 9 - North Greenbushes short-medium term



scheme amendments for the investigation areas should integrate and consider the adjacent development.

60. That the shire's local planning strategy outline the requirements for preparation of a structure plan to support an amendment to council's local planning scheme for the investigation areas. The preparation of a structure plan should address servicing, environmental and community issues.

Structure plan requirements and issues

61. Identify sustainable water supplies (either surface or groundwater).
62. That a detailed vegetation survey be undertaken to determine conservation values. The vegetation complexes on site are well represented in the region.
63. Identify the requirements for management of emissions based on sub-regional level industry characteristics and location of existing dwellings. These should ensure that the impacts of industry be contained in the boundaries of the site. Given the location of existing dwellings and intended industry type, the emissions for consideration will primarily be noise (industry and associated transport) and dust. Consideration of air quality and odour limits will also require to be addressed.
64. Outline the range of industries suitable for the site (based on the definition of sub-regional industries), indicate suitable locations and size of lots for the intended use as demonstrated by a land capability and emissions analysis for the site.
65. Prepare a conceptual transport network to identify servicing needs. The preferred heavy haulage route for road trains from the north-east is the Donnybrook-Boyup Brook Road and the Boyup Brook-Greenbushes Road. The conceptual transport network should recognise the preferred heavy haulage route and also consider the function and management of Grimwade Road in limiting traffic servicing needs for existing and future industry.
66. That a stormwater and drainage management plan be prepared addressing such issues as: the protection of drainage lines; adoption of DEC guidelines for the protection of stream values; site discharge requirements and nutrient retention.
67. The buffer area indicated in figure 11 to be reflected in any structure plan to ensure that industrial uses are not permitted. The buffer area should be for uses permitted under the local planning scheme 'rural 2 general agriculture' zone only. Further consideration of management of the buffer, that is revegetation, should be undertaken through the structure planning process.
68. Prepare a noise model to determine the extent of existing background noise and the likely impact on existing dwellings. Prepare a management plan that addresses issues associated with existing residences and residential lots adjoining the rail.
69. That a social impact statement be prepared to identify responses to the values and issues of the residents in the area.
70. That the shire's local planning strategy outline the structure plan content and process to be addressed.

Development issues

71. That development in the existing industrial zone complies with existing scheme provisions.
72. Proposed development in investigation areas to be in accordance with endorsed structure plan guidelines.
73. Rationalise the roads and Crown land boundaries in area 1 to optimise the availability of land in the existing industrial site.
74. That the extent of any upgrading of Mill Road be determined based on the level of proposed development.
75. Development of sites with lot areas larger than 4 ha must negotiate agreed load requirements with Western Power.
76. Investigate the potential to extend the transmission line based on the needs and likely loads generated by industry in the area.
77. Development of any wet industry must be supported by evidence of a suitable water supply and wastewater disposal system.
78. An environmental assessment and management plan will be required for any proposed industry.
79. A survey of existing remnant vegetation be undertaken to determine conservation values and the ability of those areas to incorporate buffers.

80. Any development should be required to demonstrate the likely demand for housing and social infrastructure in each townsite and the proposed measures to accommodate these.
81. A community relations plan should be developed aimed at informing, consulting and involving key stakeholders and residents in the locality.
82. Proposed developments should identify possible linkages to local business and services.
83. The need to submit a notice of intention to the DEC for the possible removal of vegetation in area 2.

7.2.3 Manjimup

Manjimup is a recognised industrial centre with district/sub-regional components under the Warren-Blackwood Region: Industrial Sites Study. Industry components include the food processing and timber processing sites located on larger land to the south and west part of the site. The food processing site includes a large Crown lease that is used for water supply and waste disposal purposes and contains remnant vegetation. The timber processing site contains surplus land with the capacity to attract allied industries to that location.

The site predominantly incorporates the existing Manjimup industrial estate on Franklin and Wetherell streets. It contains a major food processing centre site and major timber processing facility, vegetable and fruit packagers, transport depots, engineering and service industries. It also includes additional undeveloped land to the east. The site consists predominantly of private land with a number of Crown reserves. The total area is approximately 340 ha.

The existing estate is provided with reticulated water but is unsewered. Power is sourced from the Manjimup substation, 7 km south of the town at Diamond Mill. The site has good access to both the South Western and Muir highways.

DEC residential housing is located in the northern portion of the site in the defined industrial precinct. While this is separated from industry by landscape areas, potential impacts on residents from industrial uses must be considered.

The details of the existing conditions are shown in figure 10 and the conceptual land use framework of Manjimup is shown in figure 11.

The site is potentially suitable for a limited number of major activities, including wet industries, wineries, dairy processing, hemp and tea. Other support industries will be limited to dry industries until the area is sewered. Provision of sewerage may make possible the inclusion of primary product manufacturers such as timber processing, food/vegetable processing, tea, wineries and associated activities.

The key feature of this plan is the potential development area to the east of the existing estate. Opportunities in the estate relate to existing Crown land and infill development. A buffer area has been provided along the South Western Highway for landscape and separation from the residential uses on the western side of the rail line.

The identified development area is 100 ha in size. This comprises the following net development areas:

- area 1 - 6 ha in a Crown lease;
- area 2 - 15 ha adjacent to the timber processing lease;
- area 3 - 65 ha adjacent to Muir Highway; and
- area 4 - 16 ha in the existing estate.

Area 1 is approximately 6 ha, which forms part of Crown lease associated with the food-processing site. It is relatively flat and contains remnant vegetation. There is an existing power supply along its eastern boundary. The western portion of this area is being retained for landscape and transitional uses.

Area 2 is Reserve 21763, the purpose of which was recently amended to allow it to be developed for industry. The site contains remnant karri woodland and the start of the main drainage line flowing to the east. In parts it has moderate slopes and requires retaining earthworks along the boundary of the timber processing site.

Area 3 is private land that has been partially subdivided. It has not been fully developed due to the high cost of servicing, particularly sewerage. It also contains the start of an additional drainage line.

Area 4 is farmland adjacent to the Muir Highway. It slopes away from the highway and has been

identified as a potential expansion site. Progressing planning of this area will require consideration of the land to the south to provide appropriate setbacks and buffers.

The issues relating to environmental management are:

Air quality

The site has undulating land with variable low to high surface roughness, surrounded by agricultural areas and areas of remnant vegetation affecting the level of dispersal. Existing air pollution sources are minor, though cumulative impacts may need to be considered.

Water quality

The existing estate has no reticulated drainage system leading to direct discharge from properties. The potential expanded site drains into several defined catchments and watercourses. The other central drainage line flows into the existing industrial water supply dam potentially raising management issues.

Solid waste management

The existing municipal landfill site is located on Ralston Road, Manjimup. It has an estimated 20 to 25 years capacity for expansion.

Liquid waste management

The existing Water Corporation reticulated sewer is on the northern side of Muir Highway. Most of the existing development is located in a separate catchment that would require a pumping station for connection.

The food processing site has significant wastewater treatment facilities and there may be potential to use these for additional industries.

Management of hazardous materials and hazardous wastes

The existing road network allows for ready transport. Managed site would be required.

Noise control

There is a reasonable separation to designated urban area. The closest dwellings (sensitive premises) are within 500 m of existing development but are separated by the South Western Highway and the rail line. Outdoor noise levels for the noise received at any noise sensitive premises during various times of the day in Manjimup would take into account influencing factors from major transport routes, which lie between undulating terrain and would influence noise propagation.

In summary, the Manjimup site has the following characteristics:

- located at the junction of two main highways;
- it is the designated regional industrial area and may benefit from agglomeration factors;
- nearby work force;
- the buffers to the site and community acceptance of development are already well established;
- potential sites available for expansion with existing industry zoning under the local planning scheme;
- potential for the establishment of support industries in the existing subdivided areas;
- existing reticulated water supplies;
- presence of the highway and railway will result in upward noise adjustment, possibly reducing buffer requirements;
- extension of the site may provide opportunities for sewerage extension for part of the existing estate;
- vegetated catchment in food processing site lease provides an opportunity to improve and manage water quality for discharge and for use in processing;
- adjacent to a regional airfield;
- presence of the adjoining urban area may limit potential for certain industries;
- sewerage and servicing development costs have limited further subdivision;
- development of Crown reserves would require removal of remnant vegetation;
- no reticulated drainage or stormwater management system; and
- extension of the site would require additional management of adjoining private land and associated drainage line.

Figure 10 - Manjimup existing conditions

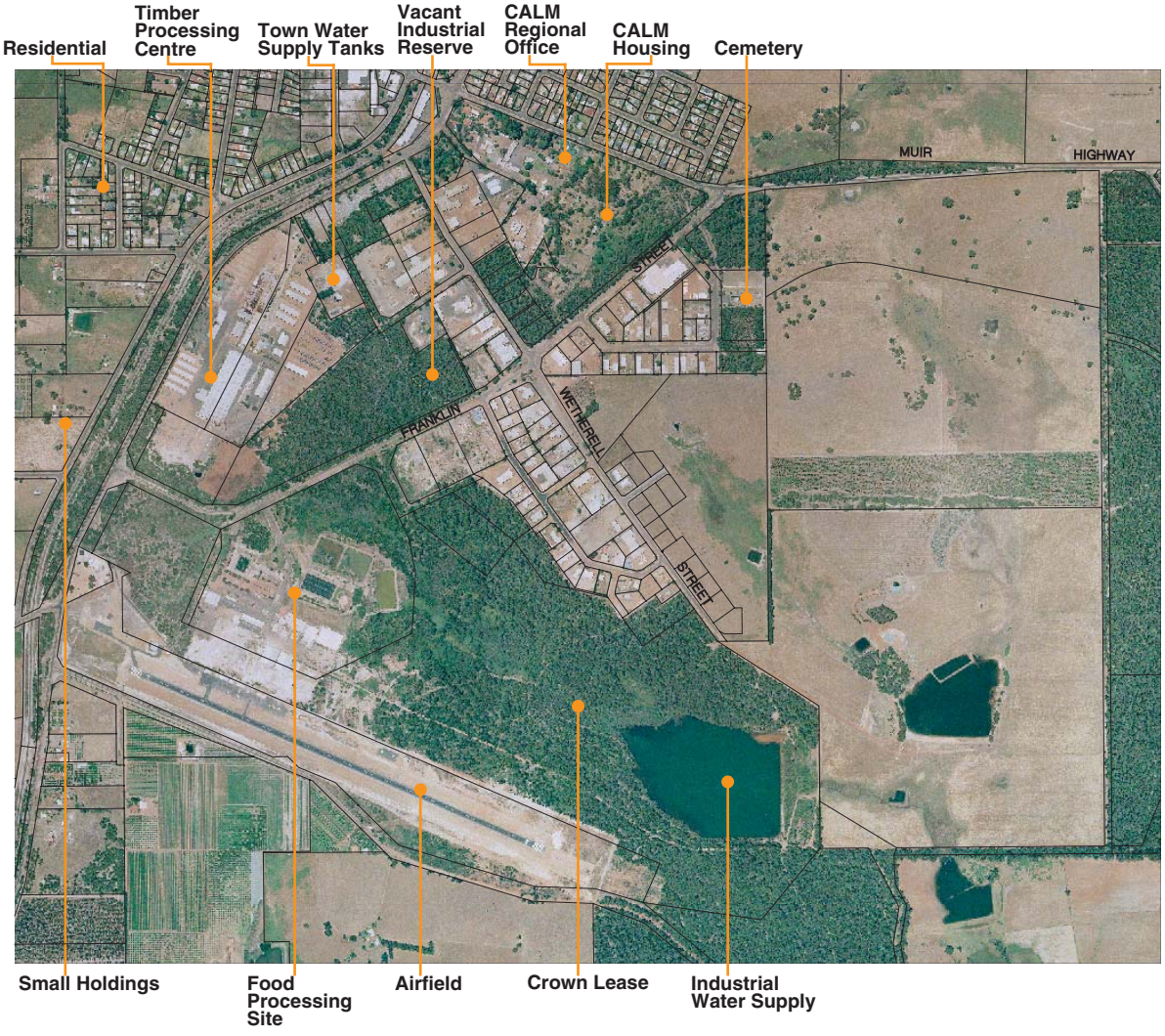


Figure 11 - Manjimup short-medium term

Recommendations

Site recommendations

84. That areas 1 and 2 be promoted for further industrial use.
85. The purpose of the Crown lease for area 1 should be altered to allow it to be developed for suitable industrial purposes.
86. That area 2 should be promoted for timber and furniture uses that will complement the existing processing centre. While area 2 is available in the short term as a Crown lease, consideration should be given to freehold conversion in the mid term.
87. That area 3 be encouraged to develop for dry industries (unsewered) on appropriate sized lots, subject to structure planning.
88. Area 4 is a long-term development option to be considered following the development of the other areas or development for an industry which may have site requirements not available in the estate.
89. That the recommendations of the draft structure plan for the timber processing site and area 2 be implemented having specific regard to the servicing requirements.
90. That area 4 be identified as investigation area in the shire's local planning strategy and remain as a special rural zone in the town planning scheme. That development of area 4 will require an amendment to council's local planning scheme.
91. It is not recommended that any private land be acquired by government. Purchase of the site for development is to be done by a proponent in agreement with the landowner and in consultation with the council and the local community.

Structure plan requirements and issues

92. Identify landscape characteristics to be protected.
93. Identify sustainable water supplies (either surface or groundwater).
94. Outline the range of industries suitable for the site (based on the definition of sub-regional industries), indicate suitable locations and size of lots for the intended use as demonstrated by a land capability and emissions analysis for the site.
95. Prepare a conceptual transport network to identify servicing needs.
96. That a stormwater and drainage management plan be prepared addressing such issues as: the protection of drainage lines; adoption of DEC guidelines for the protection of stream values; site discharge requirements; and nutrient retention.
97. Prepare a noise model to determine the extent of existing background noise and the likely impact on existing dwellings. Prepare a management plan that addresses issues associated with the location of the Manjimup town site.
98. That a social impact statement be prepared to identify issues relating to the values and issues of the residents in the area.

Development issues

99. Council and the DPI should continue to negotiate with the lessee of area 1 with a view to converting it to freehold title in the mid term.
100. Existing vegetated areas along the South Western Highway and Franklin Street should remain as buffer areas to the existing residential development.
101. There is a need to prepare a long-term sewerage catchment plan incorporating areas 1, 2 and 4.
102. Development of any wet industry is likely to require connection to sewerage.
103. That an environmental assessment and management plan be required for any proposed industry.
104. That special consideration be given to the drainage of the existing developed industrial areas and the potential impact on the water supply catchment for the food processing centre.
105. The potential to extend the transmission network to the site based on the needs and likely loads generated by potential industry.
106. Development of sites with lot areas larger than 4 ha must negotiate agreed load requirements with Western Power.
107. To allow for short-term development identify the options for light power use (100 kVa/ha) based on the specific uses where increased

power users are responsible for the cost of upgrades.

108. That a flora and fauna survey be undertaken in area 2 to determine the conservation values.

A notice of intention is prepared for the possible removal of vegetation in areas 1 and 2 where required.

109. That any development be required to demonstrate the likely demand for housing and social infrastructure in each townsite and the proposed measures to accommodate these.

110. A community relations plan should be developed aimed at informing, consulting and involving key stakeholders and residents in the locality.

111. Proposed developments should identify possible linkages to local business and services.

8.0 Conclusions

The Warren-Blackwood region is highly productive and this has characteristically focused on forestry and agriculture. The region has traditionally engaged in the production of bulk commodities which compete in large markets and are export orientated. Over the past decade the region has come under economic pressure from industry restructuring, with considerable stress across the traditional timber and agricultural sectors. The study has been prepared to assist the region to gain a competitive advantage in attracting new businesses to the area, creating local economic and employment benefits.

The objective of the study is to identify a suitable site or sites for location of a sub-regional industrial estate and provide a framework for future attraction and accommodation of industry in the region. The emphasis of the document is providing an industrial framework to accommodate potential sub-regional level industry (downstream processing) in the Warren-Blackwood region. This required evaluation of issues in respect to site establishment, planning for infrastructure provision, buffer protection, waste product management and transport co-ordination.

The document provides direction for local government and the WAPC in preparing local planning strategies and dealing with town planning scheme amendments for industrial proposals, and provides a guide to industry regarding land use and planning criteria essential for industry location and the process which industry will need to undertake in gaining approvals and its ongoing responsibility to the broader community. The study provides information to the community about the level of industry that should be located at the sites identified and an expectation that this should not be compromised in the hierarchy of industry important for regional and state industrial development.

During the process of the study it became evident that the identification of a greenfield estate might not provide the best framework for attracting or accommodating industry in the region successfully. Through the investigations it was demonstrated that the initiation of the establishment of a greenfield estate without a catalyst industry or support from industry, community and government support would be a constraint to development in the region. The following issues create uncertainty in the process of securing and developing a greenfield estate and were taken into account:

1. not having industries currently seeking to establish in the area;
2. community concerns;
3. political and economic trends; and
4. the existing industrial hierarchy working to attract industry to established locations.

The study therefore adopted an approach based on identifying existing sites and new sites that have the potential to accommodate sub-regional industries. In the site evaluation it was clear that there was a convergence of infrastructure provision and transport options along the South Western Highway corridor and the most suitable areas for additional development would be in this corridor.

In all cases, provision of supporting infrastructure, such as securing suitable water supplies and adequate power supplies are important issues for development. Generally, the infrastructure in the region is insufficient to cater for new development and the potential costs of upgrading may make new ventures unviable without industry assistance. The potential cost to industry in having to establish essential services for development can be a very real threat to the feasibility of a project and constrains the potential to develop industrial estates without confirmed demand.

The study presents the Warren-Blackwood region industrial framework, which recognises unallocated Crown land at North Greenbushes as a potential long-term sub-regional industrial estate. In consideration of sites with existing industry it was identified that North Greenbushes, Manjimup and Hester have industrial expansion potential and the study recommends that these sites provide the short-medium term opportunities for sub-regional industries and are classified as district industrial estates.

Further development of these options will depend on the need and demand from industry and on government and community initiative and support for basic infrastructure. Identification of these sites in local planning strategies is important to ensure that the areas are protected from inappropriate uses that would compromise future potential. The framework proposed through this study is considered to give the region the greatest flexibility

in terms of location factors and development costs in catering for the range of economic scenarios.

It is also acknowledged that there will be situations where specialised industries require isolated locations that do not fit in the regional structure. These are able to be considered where they do not conflict with the principal planning objectives for that location and reinforce the overall structure and infrastructure investment.

APPENDIX I

The Warren-Blackwood Region: Industrial Sites Study Steering Committee

Department for Planning and Infrastructure (Chair)	Ms Janine Griffiths
Department for Planning and Infrastructure	Mr Roy Johnson
Shire of Manjimup	Mr Steve Thompson Mr Jim Lee
Shire of Bridgetown-Greenbushes	Mr Tim Clynch
Shire of Nannup	Mr Leigh Guthridge
Shire of Boyup Brook	Mr William Pearce
South West Development Commission	Mr Ashley Clements Mr Dominique Van Gent Mr Mike Barrett/Ms Gayle Gray
Department of Industry and Resources	Mr Leigh Mathieson Mr Tom Grigson
Conservation and Land Management (now DEC)	Mr Peter Keppell
LandCorp	Mr John Clifton (Until September 2003) Mr Peter Tesoriero Mr Graeme Watt
Warren Blackwood Economic Alliance	Ms Anita Iuretigh (until October 2003)
Department for Planning and Infrastructure (until 2004)	Mr Nigel Bancroft

APPENDIX 2

The Warren-Blackwood Region: Industrial Sites Study Community Reference Group

Warren Blackwood Economic Alliance

South West Aboriginal Land & Sea Council

Manjimup Chamber of Commerce and Industry

Manjimup Economic Development Committee

Manjimup Land Conservation District Committee

Tourism South West

Shire of Bridgetown-Greenbushes Council

Blackwood Valley Landcare

The Western Australian Farmers Federation

New Opportunities for Australian Horticulture

Warren Blackwood Business Assistance Centre

Blackwood Environment Society

Sons of Gwalia

Bridgetown-Greenbushes Chamber of Commerce and Industry

Sotico

Whittakers Timber Products

Community representatives (2)

APPENDIX 3

Summary of submission issues – component 1

Factor	Summary of issue	Comment (includes community reference group and steering committee comment)	Outcomes Response
Transport	Access to the site needs to be addressed, particularly in respect to the effect transport will have through Bridgetown. This should be considered in conjunction with the Bridgetown bypass study.	Noted. Transport is an important selection criteria. The site will be processing material which should reduce road traffic due to the smaller processed volumes or the use of rail.	Outcome of overall study to be provided to Bridgetown bypass study.
	The study to provide a broader regional focus as the major focus for industrial investment in the region will be the Bunbury Port.	Noted. The study has had regard to regional transport requirements.	No change.
	Timber industry development will be more regionally based with emphasis on transport linkages.	Noted. It is an important consideration and factor in successful development of the estate.	No change. Addressed.
	The preferred site is located on deteriorating road and rail assets and is unlikely to be a successful site unless the government agrees to upgrade these assets.	Noted. A primary transport selection criteria relates to the South West Highway transport corridor, where future infrastructure funding will be focused.	To be further considered in component 2 of the study.
Buffer	Delineation of the buffer is a critical factor in approval of the industrial site.	The extent of the buffer area is considered in general terms of a minimum 500 m distance with the potential for 1000 m. The general location of features within these radii will influence the ability of sites to meet the criteria.	No change.
	Buffer assessment needs to take into account effect on dwellings and conservation values.	The number of houses in the buffers at each site vary and have been considered in evaluation of the criteria. Allowance has been made for Manjimup being an existing industrial area. Concern regarding conservation values at Diamond Mill being within the buffer are noted.	Requires consideration on site specific basis under component 2.

Factor	Summary of issue	Comment (includes community reference group and steering committee comment)	Outcomes Response
Water	Water resource assessment at each site is required in greater detail.	Availability of water for industrial purposes assessed broadly for each site to determine potential. Further detailed investigations required at component 2 to confirm availability.	Requires consideration on site specific basis under component 2.
	Wastewater management needs to be carefully considered and in the absence of sewerage needs detailed capability investigation.	Noted. Ability to re-use water from existing wastewater treatment plant was not considered as selection criteria. All sites need to meet capability requirement for on-site disposal.	No change.
	Warren-Blackwood regional waste facility study has now been released for public comment.	Noted.	No change.
	Public drinking water source areas potentially affect Wilga, Hester and Diamond. Manjimup, Palgarup and Yornup are in water reserves.	Noted. Clarification of public drinking water source areas and levels of protection will not eliminate any sites for assessment.	No change.
	Proposed Yarragadee pipeline route does not follow South West Highway and would be unfeasible along this route.	Noted. The reference was the possibility of a new extension of the pipeline to service the region.	Amend report.
Social	Visual assessment must protect tourist routes.	Noted. Visual impact potential was assessed as part of component 1 site evaluation. Specific site design can be addressed with suitable management measures.	No change. Visual assessment on a site specific basis will be undertaken as part of specific design proposal.
	Lifestyle issue not addressed in sufficient detail.	The study has not incorporated a detailed social impact analysis.	Social impact analysis to be included in component 2 evaluation of the site.
	Work location assessment insufficient.	This matter considered in detail in the assessment process.	No change.
	The description of potential industries does not establish the potential impacts on local residents, land values, landscape.	The study has been based on determining a site which will minimise potential impacts in respect to all of these factors for a broad range of industrial uses while balancing against access to services and infrastructure.	Component 2 will include two case examples of sub-regional industry types which will address social impacts.
	All sites should be evaluated with a focus on social impact.	Broad assessment of site, including social criteria, has been undertaken in stage 1 with further detailed social impact assessment forming a component of stage 2.	As above.

Factor	Summary of issue	Comment (includes community reference group and steering committee comment)	Outcomes Response
	Community consultation considered insufficient.	Component 1 included consultation with landowners, formation of a community reference group, general advertising and referral of a draft report to local governments for consideration.	No change. Included consultation strategy in parallel with preparation of the strategy.
	Area is affected by two native title claims.	Noted.	No change.
Future industries	Bridgetown–Greenbushes is a declared genetically modified free area and will limit the types of industries that can be established.	Noted. This is a matter for the council to address in its town planning scheme and local planning strategy.	No response.
	Study does not clearly define the types of heavy industries that may be permitted on the site. The potential impacts of major industry on the preferred site cannot be defined objectively.	Noted. Each industry would be subject to an individual assessment by the EPA, with the strategic assessment based on generalised impacts of potential industry types. The assessment of the preferred site may result in a limit on the types of industries that can be accommodated.	Range of potential industries to be provided under component 2 of the study.
	There is a contradiction between the promotion of the pulp mill in the original terms of reference and it being defined as a stand-alone industry in the report.	Noted. This relates to the original study brief and the explanation of the industrial hierarchy as it was refined during the study.	Addressed under component 2.
	Define the infrastructure requirements for specific industries which may be developed in the estate.	Noted. The capacity of infrastructure at the site will largely determine the industry.	Range of potential industries to be provided under component 2 of the study. Two industries will be taken as case studies under component 2 which will address a broad range of criteria, including infrastructure requirements.

Factor	Summary of issue	Comment (includes community reference group and steering committee comment)	Outcomes Response
Preferred sites: comparative analysis	Opposed to industry at Yornup as it would adversely affect lifestyle and the rural character of the area.	Noted.	To be considered in more detail where appropriate under component 2.
	Opposed to Boyup Brook area being acquired or developed for industrial purposes.	Noted.	As above.
	Hester and Greenbushes should be retained as suitable locations for establishing industry.	Noted.	As above.
	Opposed to further development at Greenbushes-North Greenbushes.	Noted.	As above.
	Endorses Yornup as the preferred site.	Noted.	As above.
	North Greenbushes and Hester should also be promoted for development.	Noted.	As above.
	Although Yornup is a central point in the region, sub-regional industries are more likely to locate closer to the source.	Noted.	As above.
Site assessment methodology	Heritage and waste disposal assessment are required to be consistent and provide more detail at each site.	The study is a comparative balance of the issues and considered adequate given the strategic nature of the study. There is an element of subjectivity with all of the criteria because: • the ability of a site to meet individual selection criteria is not absolute and compliance is a question of degree; and • the study did not identify a specific location at each site.	Group addressed and discussed each point raised in submission 2 and noted that any issues and identified inconsistencies would be clarified in the overall comprehensive draft report which will include outcomes from components 1 and 2.
	Require more detailed assessment process.	As above. A more detailed assessment of the preferred site will take place in component 2.	As above.
Implementation	Council must remain the approval agency.	Noted. Community reference group emphasised that council should be approval agency for industrial development.	Level of implementation to be addressed through component 2.
	Opposed use of state agreements.	Community reference group raised concerns with the use of the state agreement acts, which should not be used to override the powers of local government.	As above.

APPENDIX 4

Summary of submission issues – final draft

Issues/site		Frequency	Summary of comment	Steering committee and community reference group recommendation	Report recommendations	Assessment criteria
1	Long-term sites	5	Please consider the unallocated Crown land at North Greenbushes or cleared areas of state forest in Yornup.	**Upheld.** Unallocated Crown land at North Greenbushes has been identified for further investigation and consideration as a long-term strategic industrial estate under the study's industrial framework. Yornup and North Greenbushes have been identified as potential areas for consideration of a strategic industrial estate in the future. These sites have been identified to provide an option to industry, government and the community. The regional framework will only sustain the development of one strategic industrial estate and based on the criteria, which include proximity of the site to road and rail infrastructure and location of existing industry and service infrastructure, the unallocated Crown land at North Greenbushes has been recognised as the preferred site for promoting the development of a long-term industrial estate.	Report modified in sections necessary to reflect recommendation.	1a
		1 3 1 1	Should areas 2 and 3 impinge on private residents and agricultural industries. Object to long-term options areas 1-3. Object to area 2 of the long-term options for North Greenbushes. Areas 1 and 3 of the long-term options should be the only areas considered.	**Noted.** Unallocated Crown land at North Greenbushes has been identified for further investigation and consideration as a long-term strategic industrial estate under the study's industrial framework. The regional framework will only sustain the development of one strategic industrial estate and based on the criteria, which include proximity of the site to road and rail infrastructure and location of existing industry and service infrastructure and the fact that it is in government ownership, it is recommended that the unallocated Crown land at North Greenbushes be recognised as the preferred site for promoting the development of a long-term industrial estate. Area 3 is an area of logical extension and should not be dismissed, even though it is in private ownership. Area 3 should remain in the framework for future consideration of industrial development.	Report modified in sections necessary to reflect recommendation.	1a

2	Short-term sites	1	Does not support short-term options area 1 for North Greenbushes and transitional areas where recommendations will have an impact on existing industrial uses.	**Dismissed.** Detailed structure plans will not be required for land already zoned industry, unless it is a structure planning requirement from the local government under the provisions of its town planning scheme. Structure plans will be required for expansion of industrial zoned land into area 1. Recommendation 7 in the report will be deleted and the transitional area identified on figure 11 which encroaches over existing zoned land will be removed and replaced by a buffer area in which industrial land uses will not be permitted. The buffer areas will be used for rural land uses only and the addition of sensitive land uses in these areas will be discouraged.	Further clarification required, update plans.	1b
		1	Short-term areas 1 and 2 will affect residences to the north.	**Noted.** Environmental impact assessment will take place prior to any development. Development will be managed in a sustainable manner to ensure minimal impact on the environment and compliance with the *Environmental Protection Act 1986* and other environmental legislation. Structure plans will be prepared and adopted incorporating adequate buffer areas as per the recommendation above.	Further clarification required.	1b
3	State forest	2	An industrial area should be developed at the older mining areas in the Greenbushes mineral field.	**Opinion noted.** The land will not be considered for industrial development as it is state forest land and state government legislation prevents this from happening.	No change.	3e
4	Environmental	2	Existing industry can be heard and smelt from nearby residents and is at capacity given the surrounding uses.	**Comment noted.** Non compliance of existing industry is outside the scope of the study. The local government and the DEC are required to ensure compliance with requirements and legislation. The study recommendations ensure that acceptable environmental parameters are considered throughout the planning and environmental processes.	No change.	2a
		1	No substantiation that the vegetation is under represented in the region. Recommendation in the report states no clearing of vegetation, then why choose area 1 short-term option as an investigation area?	**Noted.** Seek further clarification from the DEC in relation to recommendation 9 (North Greenbushes) of the study. The study has identified areas at a desktop level and recommends that detailed studies take place as part of the structure plan, rezoning and development application stage. (Area 1 appears to contain re-growth vegetation, this will need to be confirmed.)	No change.	2b

2	Identify Dumpling Gully Dam on figures 7 and 8. It supplies Balingup and Greenbushes water supply.	**Comment noted.** Maps will be amended to include existing infrastructure and catchment boundaries.	No change.	1b
1	How will waste be disposed off?	Any waste disposal will take place in accordance with DEC and local government requirements and has been identified as a specific issue in the report. Waste disposal requirements are dependant on industry and will be addressed on a case-by-case basis.	No change.	3c
72 7 2	Concerns of pollution and the effect on lifestyle, impacts on vegetation, watercourses, of existing and proposed industries. And expansion of industry in any of the investigation areas will affect the chosen lifestyle and environment of the area. Careful environmental planning is critical to any heavy industry proposal.	**Noted.** Each stage of the planning process requires consideration of environmental values and the relevant environmental management response. The report identifies that preparation of storm water and drainage management plans address issues of drainage lines, protection of stream values, site discharge requirements and nutrient retention will be required in development of a structure plan. Any scheme amendment process will require (in)formal assessment by the EPA. Environmental impact assessments will be undertaken prior to development and development will be managed in a sustainable manner to ensure minimal impact on the environment and compliance with the *Environmental Protection Act 1986,* other environmental legislation and associated regulations. A flow chart will be included in the report to explain the processes involved.	Further clarification required.	1b
13	Object to expansion of industry at North Greenbushes industrial estate. Concern of pollution, dust, noise and damage to water systems.	**Noted.** Land already zoned for industrial development and under the existing scheme will be allowed to develop further in accordance with scheme requirements. Each stage of the planning process requires consideration of environmental values and the relevant environmental management response. The report identifies that preparation of stormwater and drainage management plans, noise models and identification of buffer requirements will be required in development of a structure plan. Any scheme amendment process will require the formal or informal assessment of the EPA. Environmental impact assessments will be undertaken prior to development and development will be managed in a sustainable manner to ensure minimal impact on the environment and compliance with the *Environmental Protection Act 1986.* A flow chart will be included in the report to explain the processes involved.	Further clarification required.	1b

		1	Noise management measures are dealt with through existing legislation and do not required further consideration.	**Comment noted.** Local government and the DEC are required to ensure that existing industries comply with requirements and legislation. However, where future structure plans are required, noise management will be considered as part of the environmental management considerations that will underpin future planning processes. The study recommends that future planning of the area considers management measures for a buffer area to separate industrial and sensitive land uses.	No change.	3c 2b
5	Transitional and buffer issues	3 1 1	Transitional areas are not considered for development of low impact industry. The transitional area/ buffer already includes three home sites. Concern that there are inadequate buffers.	**Noted.** The transitional area should be referred to as a buffer area. The report will review the terminology of 'transitional area' and nominate a buffer area that may discourage the addition of sensitive land uses and also discourage additional industry that is not associated with rural uses. In essence, the concept plan indicates that there may be an impact on the area by the adjacent industry, however should not have an impact on its use as rural land as designated under the scheme. Recommendation 7 will be amended to delete consideration of transitional industries and consider management measures for the buffer area (that is vegetation buffers, limiting additional sensitive land uses).	Editing to address concern.	1a
		1	Figure 11 shows Blueleaf's land largely in the transitional area or investigation area 1. That land is zoned and operates as industry under the current town planning scheme. This needs to be reflected in the report.	**Comment noted.** Plans will be amended to reflect this, as per the previous recommendation.	Plans amended.	1b
6	General and development issues	1	Proposed industry in existing zoned areas should not have to address the structure plan/requirements of the study, as planning and development in existing zoned land is governed by regulations.	Any proposed industry will need to comply with local and state government requirements. Detailed structure plans will not be required for land already zoned industry.	No change.	1a

		2	Should reflect industrial zonings for the short-term options immediately in town planning scheme and the rezoning process for the long-term options should be commenced.	This study is a strategic document to provide a framework for local governments, developers and/or potential industries to be aware of issues and to consider the potential development of sites. Local governments may incorporate the study recommendations into local planning strategies and schemes. Scheme amendments will only be initiated if an application for development is received by the local government. The report will be amended to include the existing industrial land uses and zonings. Initiation of a greenfield industrial estate would require a catalyst industry and/or community, government and industry support.	Further clarification required.	1b
		1	Any further industry should be limited in operation to 6.30am – 7.00pm.	The details of operation will be considered by the local government at the time of development approval and in view of approved noise management and environmental management plans.		2a 2b
7	Type of industry	3	What is the likelihood of a woodchip plant being considered in this area?	No specific industry has been identified. The study considers the location of sub-regional level industries, which are moderate downstream processing industries, relative to produce in the region. The intermodal facility at North Greenbushes is associated with Western Australian Plantation Resources (WAPRES) and government funding has been allocated for its construction and operation.	No change.	2a
		4	What type of industries are likely to operate here?	No specific industry has been identified. The study considers the location of sub-regional level industries which are moderate downstream processing industries, relative to produce in the region.	No change.	3c
		1	There are other sites more suitable (that is, the area to the north where the South West Highway crosses the railway north of Hay Road, or area south where the railway crosses the Boyup Brook Road).	**Dismissed.** The study has identified areas for future consideration based on a number of selection criteria. The site selection criteria were applied to identify areas suitable for further consideration. Other sites were eliminated due to various constraints.	No change.	3e
		3	Previous industrial developments have been rejected by the residents.	**Noted.** Previous proposals for rezoning of land to expand were rejected due to the lack of a strategic planning document to provide a context and justify consideration of expansion. This study identifies the issues and provides the framework for consideration of industry expansion in the region.	No change.	3e

8	Transport	1 9 19	No heavy haulage north of the mill on Grimwade Road and operating hours for trucks and logs on rail being provided to the community. Concerns relating to impacts of increased traffic on Grimwade Road. Heavy haulage trucks conflict with school buses. Road/rail/intermodal facility must provide assurance that no movement of haulage trucks take place on Grimwade Road, as it services residential areas and is used by school buses. Traffic planning in this area needs to be carefully considered for expansion of industry.	**Noted.** Each individual industry will generate different traffic movements and volumes. Traffic management will be addressed throughout the planning process and specific management plans will need to be submitted to the local government for consideration and approval prior to introduction of new industry. Furthermore, the State Government has allocated significant funding for the upgrading of existing roads and rail. Current traffic issues and concerns are being addressed by Main Roads Western Australia (MRWA) and the shire and are outside the scope of this study. MRWA supports that all road trains bringing timber from the north-east to use the Donnybrook-Boyup Brook Road then the Boyup Brook-Greenbushes Road. The Shire of Bridgetown-Greenbushes can prohibit the use of road trains along the Grimwade Road and other minor roads in the shire to ensure the Main Roads preferred route is used. A statement regarding preferred heavy haulage routes should be included in the report. That the report be amended to include specific reference to Grimwade Road in preparation of conceptual transport network. That the function and management of Grimwade Road be given consideration in the traffic management plan associated with the servicing needs for long or short-term industrial areas that result in rezoning of land; and these considerations be addressed at structure plan and development phases for the identified sites.	Include statement of clarification.	1b
		1	The railway system needs repair.	**Noted.** The State Government has announced that it will allocate more than $10 million for the establishment of an intermodal facility at North Greenbushes. The railway system between North Greenbushes and Bunbury Port will be upgraded to accommodate this facility.	No change	3e
9	Infrastructure, power and water servicing	1	Should not limit it to dry industries as there is plenty of water available from scheme, dam and groundwater sources.	**Noted.** The study has identified land suitable for industrial development. There are no specific industries selected. Intended industries are for downstream processing. Water availability and potential to provide infrastructure will determine nature of industry (that is, wet/dry).	No change	3c
		1	Power supply needs checking.	Each individual industry will have different requirements for power. Each development proposal will have to undertake its own assessment. More specific details and studies will be undertaken at structure plan stage.	No change	3e
		1	Non-power industries are relevant to the current situation.	Each individual industry will have different requirements for power. Each development proposal will have to undertake its own assessment.	No change	3e

		1	The site is serviced by scheme water. The study doesn't mention this.	More detailed studies will take place at the structure plan stage to determine the availability of water at each location.	No change	3c
10	Social	2	Who would be responsible for supplying housing and social infrastructure?	The local government will earmark areas for residential development in its local planning strategy and its planning scheme. Demand for these areas will dictate their development. The report recommends that industries demonstrate the housing and social infrastructure needs to accommodate future work force.	No change	3c
		1	The property will never be for sale and has been in the family for 117 years (area 3 North Greenbushes).	It is not intended that there will be government intervention with the acquisition or resumption of land. It is up to the individual developers or industries to acquire the land and proceed with the approval process.	Further clarification, however no change to recommendation.	1b
		3	North Greenbushes community has not been appropriately consulted.	**Noted.** Community consultation has been ongoing throughout the entire process, including the formulation of community reference groups to act as conduits between the community and the steering committee, public meetings have been held, individual contact has taken place, displays held at the local government offices. A request has been received at the public meeting for the formation of a North Greenbushes community committee. It is recommended that the group be formed as part of the consultative process in addressing submissions received.	No change	3e
		7	Concerned about the impact future industry will have on property value and lifestyle	**Noted.** Section 4.0 provides an understanding of the potential for impacts that may result from introducing industry into the area. Impacts on the surrounding land uses will be addressed through the planning processes (through the introduction of adequate provisions in planning schemes and adequate management measures.	No change	3c
		2	Accept existing industry, however not an expansion.	**Noted.**	No change	3e
11	Economic	1	Impacts on potential tourist activities.	**Noted.**	No change	3e
		1	Do not believe that the type of industry considered will improve the economic situation and will actually deter people from moving into the area	**Comment noted.**	No change	3e

Criteria for analysis of key issues raised in submissions

1. The report recommendations were amended where the comments:
   a) proposed a change that would achieve a better outcome;
   b) provided additional information or indicated need for additional information related to omissions, inaccuracies or a lack of clarity.

2. The report recommendations were not amended where the comments:
   a) introduced issues beyond the scope of the study;
   b) introduced issues to be addressed in implementation of the future planning proposals.

3. The comments were noted but did not result in an amendment to the report where the comments:
   a) clearly supported the recommendation;
   b) offered an unclear or a neutral statement;
   made points already included in the report;
   d) were among several widely divergent viewpoints received and it was considered that the existing recommendations provided the best option;
   e) offered comment or critique which is noted;
   f) requested clarification.