

**PROPOSED BIBRA LAKE GENERAL INDUSTRIAL  
ESTATE - LOT 502 NORTH LAKE, SUDLOW AND  
PHOENIX ROADS BIBRA LAKE**

**RESPONSE TO PUBLIC SUBMISSIONS**

**LANDCORP**

JANUARY 2003





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## 1. INTRODUCTION

LandCorp proposes to subdivide 89 ha of land for industrial and mixed business purposes on Lot 502 North Lake, Phoenix and Sudlow Roads, Bibra Lake approximately 17 km south of Perth. LandCorp is seeking to develop the estate to assist in replacing the diminished short-term supply of industrial land.

The land is immediately west of South Lake. South Lake is subject to the provisions of the Environmental Protection (Swan Coastal Plain Lakes) Policy and is part of Beeliar Regional Park. Lot 502 contains extensive areas of native vegetation, some of which is affected by past waste disposal and land uses such as grazing.

A Public Environmental Review (PER) has been prepared for LandCorp to examine the environmental effects associated with the proposed development, in accordance with Western Australian Government procedures. The PER describes the proposal, examines the likely environmental effects and the proposed environmental management procedures.

In addition to community consultation conducted by the proponent during the preparation of the PER, the document is subject to a period of public review following its release. The public review PER ran for four weeks, from Monday 16<sup>th</sup> September to Monday 14<sup>th</sup> October 2002.

Approximately 375 public submissions (of which approximately 325 were form submissions) were received by the EPA. They were collated and summarised and LandCorp has responded to each.

## 2. CHANGE TO PROPOSAL

Since preparing the PER document and after consultation with the EPA and in response to public concern over the size of the development, LandCorp has made the following changes to their proposal:

- Increased the area to be given over to the Beeliar Regional Park from 6.2 ha to 11.2 ha, which now represents 12.6% of the site. The addition of the 5 ha of upland vegetation has numerous benefits to the enhancement of South Lake and protection of fauna values in Beeliar Regional Park (see General Response 4.11).
- Increased area for public use - The amended subdivision plan provides for 4.5 ha of the land to be used for Public Open Space. This together with the 11.2 ha being ceded to Beeliar Regional Park means that LandCorp is giving up a total of 15.7 ha or 17.6% of the site to Public uses.
- Increased the size of the buffer to South Lake such that it is up to 214m wide in some areas.
- Reduced the number of lots to be created from 180 to 171.
- Undertaken to contribute up to \$600,000 to rehabilitate up to 15 ha of degraded areas of Beeliar Regional Park to the south and west of South Lake – rehabilitation work to be carried out under the management of CALM.
- Altered the order of development of stages of the subdivision after consideration of the need to allow fauna opportunity to move from areas being disturbed into areas that have been rehabilitated or into areas of remnant vegetation. The proposed staging of the development is shown in Figure 1. LandCorp's original staging order was based on marketing potential and engineering factors, while the new staging order is based on mainly environmental needs and engineering factors, with only minor consideration of marketing potential.

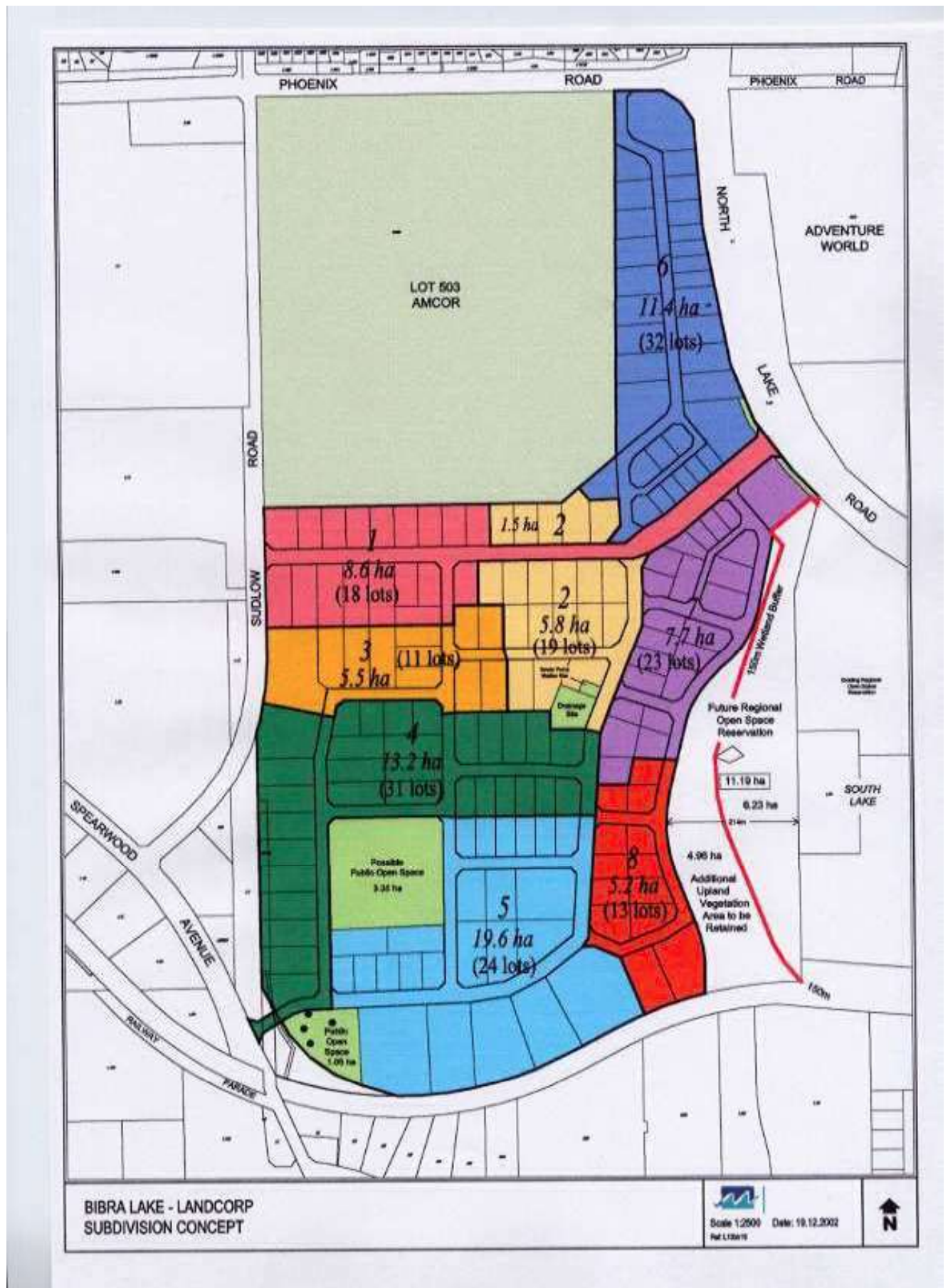


Figure 1 Altered subdivision proposal with increased buffer size

**Table 1 Key characteristics of proposal**

Characteristic	Description
Location	Lot 502 North Lake Road, Phoenix Road, and Sudlow Road, Bibra Lake
<b>Industrial subdivision</b>	
Area	89 ha
Number of lots	171
Proposed Public Open Space	4.5 ha
Associated infrastructure	Roads Native vegetation gardens at North Lake Road entrance and along road verges and median strips where practicable. Power Water Gas Communications
Vegetation disturbance*	Approximately 59 ha of mostly Jarrah Banksia woodland in degraded to very good condition as graded by Bennett Environmental Consultancy 2002.
<b>South Lake buffer strip</b>	
Proposed Regional Open Space	11.2 ha
<b>Rehabilitation programs</b>	
Rehabilitation of buffer	Up to 5 ha to be rehabilitated within South Lake buffer strip
Rehabilitation program around South Lake	Area of approximately 10 ha to be rehabilitated within Beelie Regional Park adjacent to the southern edge of South Lake.

\* excludes all areas classified as highly degraded by Bennett Environmental Consulting.

### 3. DOCUMENT STRUCTURE

This document contains a summary of submissions received during the public review period of the PER and LandCorp's responses to the issues raised. There were some key issues raised by many submitters and LandCorp has provided detailed responses to these issues upfront in the General Responses to Key Issues section (Section 4). These are referred to frequently in the detailed submissions sections (Sections 5 to 13) where LandCorp has responded to each of the main points of the submissions. The submissions have been separated into three parts according to the source of the submission of the submitter and the degree of summarisation:

- Part 1 – Contains a collation of the points raised in submissions from non-governmental organisations (i.e. community and environmental groups). Each comment or issue is attributed to the organisation that submitted it.
- Part 2 – Contains a summary of key issues raised by individual members of the public.
- Part 3 – Contains a collation of the points raised in submissions from Government Departments, Statutory Authorities and Ministers of Parliament). Each comment or issue responded to is attributed to the body that submitted it.

Within each of these parts, the comments / issues have been broken up according to the subject of factor they address (eg. Proposal design, flora etc).

## **4. GENERAL RESPONSES TO KEY ISSUES**

### **4.1 JUSTIFICATION FOR PROPOSAL**

LandCorp has described the justification of the proposal and site selection in Section 3.1 of the PER. The subdivision is required to assist in addressing the diminished short-term supply of industrial land.

LandCorp is justified in its move to develop Lot 502 for its intended use in accordance with its current zoning. The subdivision is entirely within an area zoned for industrial use in the Metropolitan Regional Scheme and hence is an essential component of the long term planning for Perth. The use of this land for an industrial subdivision is also consistent with the City of Cockburn Town Planning Schemes 2 (current) and 3 (proposed).

The area has not been previously identified for conservation in other planning policy processes such as System 6 or Bush Forever and hence LandCorp is ready to develop the land in accordance with its intended use. However, not all the land zoned for industrial use will be developed. An area of 11.2 ha has been set aside for conservation use alongside South Lake to provide a buffer between the estate and lake. This land is to be incorporated into the Beeliar Regional Park and zoned appropriately.

#### **4.1.1 Need for proposal**

This proposal is important to address a potential shortage of general industrial land in the short term. Lot 502 is the last major zoned and subdividable parcel of general industrial land in the proximity of Fremantle in the Southwest corridor. Canning Vale, O'Connor and existing Bibra Lake industrial land subdivisions are virtually fully developed giving rise to the need for new industrial estates over the near, rather than medium or long term.

A number of public submissions argue that existing industrial subdivisions in the area are not being utilised to their optimum and that there is still much available land in these subdivisions. They point to the frequency of vacant industrial land for lease and the presence of existing industrial buildings. However, the amount of apparently vacant land or buildings is not necessarily a reliable indication of the availability of suitable industrial land:

- In many cases, the properties have been bought for investment purposes and the land remains undeveloped until the investors sell or decide to develop the land themselves.
- Many vacant industrial premises may be unattractive to tenants or industrial users because the existing improvements and infrastructure are inefficient and/or unsuitable (i.e. age, design, size, services and/or land for enterprise needs).

There is also a long lead-time associated with the development of large industrial estates. For example, general industrial land within the Hope Valley – Wattleup Redevelopment area will not be available for at least another five years. Even then the first release of general industrial land in Hope Valley – Wattleup will be at the southern extremity of the redevelopment area and a significant distance from Lot 502. The release of general industrial land in closer proximity to Lot 502 Bibra Lake will be at least 10 years away.

The Australian Marine Complex (AMC), formerly known as the Henderson Industrial area is a special industrial estate catering for the specific needs of companies involved in the marine and/or oil and gas industry. There is no general industrial land available within the AMC.

LandCorp acknowledges that over the last few years the take up of general industrial land within the Perth Metropolitan area has been relatively slow. However, new forecasts by BIS Shrapnel indicate that the demand for such land will increase in the near future. This demand has been further investigated as described below.

Dr Paul McLeod of Economic Research Associates was engaged by LandCorp to conduct a study of the economic role of the proposed general industrial estate. Dr McLeod is a respected expert in his field with many years experience in applied economic analysis. He has a PhD in economics from the University of Adelaide and his speciality is applied microeconomic analysis which he teaches and researches at the University of Western Australia. He has special expertise in urban and regional economics, competition policy and trade practices, impact analysis, cost benefit analysis, hedonic price analysis, policy evaluation and industry analysis and has published articles and reports across a wide area of applied economics. He has undertaken many studies related to land demand in Western Australia including the modelling of industrial land demand for the Fremantle Rockingham Industrial Area Regional Strategy (FRIARS) planning study and the assessment of industrial land demand across the State for the Department of resources Development. He has also undertaken studies on the need and preferable location for future technology parks in Western Australia.

The report prepared by Dr McLeod for the Bibra Lake Industrial Estate PER looked at the future development of the estate and the impact it would have on employment and income levels in the area. The report considered:

- the overall demand for industrial land in the area;
- take up rates for industrial land in the area;
- direct employment and incomes likely to be generated; and
- indirect employment and incomes likely to be generated.

The most significant finding of the report was that without the development of Lot 502 there would be insufficient supply of general industrial land to satisfy demand within the southern metropolitan area over the next ten years (McLeod 2002).

Within the next ten years, around 467 hectares of industrial land will be needed in the south west and east corridors of the metropolitan area (McLeod 2002). There is around 262 hectares of competitive land to match this demand excluding 129 ha in Bibra Lake, of which Lot 502 makes up 89 ha, and the Henderson area, which is now zoned for Marine based industry and separately considered (Chesterton International 2001). Without the Bibra Lake land at Lot 502 there is a potential shortage of general industrial land in the southern metropolitan area (McLeod 2002).

#### **4.1.2 Economic benefits of proposal**

There are significant economic benefits associated with the development of the estate in the Bibra Lake area. The establishment of the estate is anticipated to generate 1115 employment positions directly with another 1086 jobs created indirectly elsewhere, with a total employment effect of 2201 (McLeod 2002).

The direct employment is estimated to generate nearly \$50 million in wages and salaries in the estate and a further \$53 million elsewhere, with a total of \$103 million in wages and salaries generated as a result of this proposal. Some existing firms will of course capture some of this flow in expenditure but this cannot be evaluated from the available data (McLeod 2002).

#### **4.1.3 Justification for not conserving all bushland in Lot 502**

The key business outcomes for LandCorp are developing strategically located industrial and urban land to meet the needs of the State, and maximising the social and financial returns to the State from surplus Government land assets.

The conservation of the entirety of the bushland in Lot 502 will cost the State of Western Australia a substantial sum both in the loss of revenue and in holding costs associated with the land. The indirect

economic and social impacts of not developing this land are much greater than these direct financial impacts. The land is required to address diminished supply of industrial land in the short term and the economic growth of the region will inevitably be affected by not developing the subdivision. The establishment of the estate is anticipated to generate a total of \$103 million in wages and salaries. This would provide substantial economic and social benefits to the community both locally and sub-regionally (City of Cockburn and neighbouring municipalities). The conservation of this bushland will result in these benefits not being realised.

However, the proposal has been altered since the period public review and submissions to incorporate the conservation of a larger area of bushland, which has resulted in a reduction in size of the industrial subdivision (see Section 2).

## **4.2 COMMUNITY CONSULTATION**

The development and approval process for the proposal has involved a large amount of public consultation. The public review period of the PER document for the proposal marked a fourth opportunity for members of the public to provide comment regarding the proposal. Previously, government agencies, community and environmental groups were approached and consulted both during the preparation of the Environmental Protection Statement (EPS) document for the original proposal and during the public review period for the EPS. Further and more extensive consultation was undertaken for the preparation of the PER document. This latter program was designed to ensure all those who expressed an interest in the proposal understood and participated in the PER process. The purpose of this round was to ensure that interested members of the community:

- understood what LandCorp is proposing;
- were informed of the environmental studies that were being conducted;
- had the opportunity to present their concerns about the environmental factors targeted by the PER, and other matters of concern to them;
- had the opportunity to compare their concerns with expert opinion assembled so far; and
- could present their ideas on options for improving the proposed development that would make it more acceptable to them.

The discussion sessions encouraged stakeholders to express their concerns and raise options for improving the proposed development in the presence of an independent facilitator rather than directly with the proponent. These views were reported to LandCorp, which then considered possible changes to the proposal and subdivision design in response to community views within the financial constraints on the project. LandCorp incorporated the concerns of environmental and community groups into the design of the proposal, as described in the PER document, while also taking into account economic realities associated with the project.

More recently, following the public review period, LandCorp have further altered the proposal to address public concern over environmental and social issues. The industrial subdivision has been reduced in size to incorporate the conservation of a larger area of bushland (see Section 2).

## **4.3 PROPOSED REGIONAL AND PUBLIC OPEN SPACE**

LandCorp acknowledges that the majority of Lot 502 will be used for general industrial lots and roads and that 18% of the area has been set aside for Regional Open Space (ROS) and Public Open Space (POS). LandCorp is of the view that this is a relatively high proportion of the area to be set aside given the cost associated with not developing land.

LandCorp also recognises that the majority of the land allocated for POS and ROS, has been done so to address specific environmental development issues such as protection of South Lake, landform stability and protection of Aboriginal sites:

- 5.2 ha of proposed ROS between South Lake and subdivision to provide a buffer strip of at least 150m width on western side of South Lake. Buffer width agreed on following intensive discussions with officers of the DEP, Professor Phillip Jennings of the Wetland Conservation Council and Elders of the Nyoongar Community. This area consists of approximately 3 ha of bushland in very good to degraded condition with the remaining land being completely degraded land. LandCorp will rehabilitate degraded areas where necessary following discussion with CALM.
- An additional 5 ha of ROS was added to the proposed South Lake buffer (making it a 180 – 214 m wide buffer) to incorporate the conservation of a larger area of bushland (see Section 2). The additional 5 ha is predominately remnant upland vegetation (Jarrah-Banksia woodland) and its retention may offset a significant proportion of the local impact to fauna values (see General Response 4.11).
- 3.4 ha of proposed POS over the current Amcor landfill site. This area will not be suitable for industrial lots because of the inability of the land to support large building structures. The landscaping and appearance of this area has not been finalised, but is likely to contain native plant gardens, and the establishment of this area may form part of the rehabilitation efforts during the estate development. This area does not currently contain any remnant bushland.
- 1.1 ha of proposed POS in the south western corner of the subdivision to protect several Tuart trees and four ‘scar trees’ of Aboriginal heritage significance. This area will remain as a small pocket of remnant bushland in a good to degraded condition.

Further allocation of areas for POS and ROS would represent significant losses to LandCorp and affect the viability of the project. The project is already financially challenged due to the long period between purchasing the land and approval of the subdivision.

#### **4.4 VALUES OF BUSHLAND**

##### ***Intrinsic value of bushland***

The intrinsic value of bushland is a difficult concept to define precisely. The intrinsic value of any organism or object is subjective and every person’s perception of the intrinsic value of things largely depends on their beliefs and culture. The Dutch Government has attempted to address the concept of intrinsic value in its Health and Welfare Act, and describes the term in the following words:

*‘Acknowledgement of the intrinsic value of animals means that animals have value in their own right and as a consequence their interests are no longer automatically subordinate to man’s interests.’*

Consequently, it is difficult to design and manage a subdivision to take into account the wide range of intrinsic values of the bushland held throughout the broader community. It is also difficult to compare the value of the industrial estate to the community with the intrinsic value of the bushland when this latter value is subjective and unquantifiable. LandCorp acknowledges the differing individual views on the value of bushland but believes that Government policy is appropriate guidance on the value and important attributes of bushland to assess conservation needs and the management measures required to make the proposal environmentally acceptable.

Government policies and guidance such as Bush Forever and the Swan Coastal Plain Lakes EPP inherently take into account intrinsic value as they seek to protect remnant systems often for no other reason than the belief and charter of retaining as high biodiversity as possible. Biodiversity may be

considered an intrinsic value. Therefore such policies have somewhat indirectly considered intrinsic value in determining areas to be protected.

LandCorp also appreciates the community's perception of the intrinsic value of this bushland through its consultation process. Alternative designs of the subdivision were examined to address concerns for the loss of perceived value associated with clearing bushland.

### ***Value of bushland to community***

LandCorp has recognised that the bushland has some current value to the local community, mainly as part of the scenery around South Lake and as a visual buffer between Beeliar Regional Park and industrial land to the west. LandCorp has provided for several measures, including screening and revegetation, to reduce the impact of the proposal on these values. The bushland is on private land and is not used for recreational activities.

The bushland supports values such as habitat for local fauna, which the community views as important to them. The environmental commitments made by LandCorp mitigate the impact on these values. LandCorp has endeavoured to design the subdivision to retain as much of these values as practicable, such as setting the subdivision back up to 214 m back from the lake (high value for wetland fauna) and retaining upland vegetation. It is acknowledged that the clearing required to develop the land will inevitably cause the loss of a substantial proportion of this value. LandCorp has however made numerous commitments that will potentially reduce the net loss of such values. In particular, the commitments to retain upland vegetation in the buffer, rehabilitate the areas west and south of South Lake, establish native gardens through the estate and retain tall trees alongside roadsides and within Public Open Space wherever practicable, will maintain or compensate for a proportion of the loss of values associated with the current bushland.

A regional assessment of bushland values found that the role of Lot 502 as industrial land outweighed its potential role of conservation of bushland in Perth. Bush Forever did not consider the bushland to be of sufficient regional importance to outweigh economic and social factors, such as its zoning and importance for industrial development in the region. In addition, the bushland is adjacent to a large existing regional park, which contains areas of similar bushland. The use of this bushland as a Regional Park is not likely to contribute in a major way to the value of the local area or region in light of the existing regional park adjacent to Lot 502, which already provides for similar values.

## **4.5 BUSH FOREVER**

Bush Forever is an implementation plan designed to identify, protect and manage regionally significant bushland in order to achieve a sustainable balance between conservation of Perth's bushland and development in metropolitan Perth. Bush Forever applied a bushland assessment process involving consultation, evaluation and negotiation to establish conservation objectives and to protect regionally significant remnant bushland.

The importance of the native vegetation of Lot 502 has already been assessed as part of the Bush Forever site selection process. No land was automatically excluded from consideration, but where lands were significantly constrained by existing zoning or development approvals, alternative choices were made where possible. A number of criteria for protection under the policy were employed and the site selection process was also refined to take into account wider social and economic values of land such as land use and the wider financial considerations of Government. Lot 502 did not meet the criteria for the selection of regionally significant bushland under Bush Forever and was not considered for inclusion in the parks and reserve system because of social and economic considerations.

Several of the public submissions have outlined how the site meets many of the criteria used for selection of Bush Forever sites. The regional significance of the site is outlined on page 27-9 of the



PER document. However, it is beyond the scope of the PER to provide a regional assessment of the worth of adding Lot 502 to Bush Forever. This process has already taken place during the original Bushplan selection process and repeated following the City of Cockburn's nomination. There are many other bushland areas that could have similarly met selection criteria but were not included for protection because of social/economic considerations.

The Department of Infrastructure and Planning has provided details regarding the assessment and subsequent exclusion of Lot 502 from the draft Bushplan (now Bush Forever) as well as the nominated additional areas process after a portion of the site was nominated for inclusion in the final Bush Forever by the City of Cockburn:

*Lot 502 was assessed for inclusion in the draft Bushplan, in accordance with the criteria listed in Bush Forever Volume 1; Policies, Principles and Processes (pages 4 & 5) that includes:*

- *Representation of ecological communities;*
- *Diversity and rarity;*
- *Maintaining ecological systems or natural processes;*
- *Scientific or evolutionary importance; and*
- *General criteria for the protection of wetland, streamline and estuarine fringing vegetation and coastal vegetation.*

*Although the vegetation on some areas of the lot appeared completely degraded and/or extensively modified, it was considered to be typical of that from the Karrakatta Complex Central and South and the Bassendean complex - central and south, both of which have already been extensively cleared for development on the Swan Coastal Plain. After considering sites in the context of the assessment criteria, a further refinement of sites gave regard to the wider social and economic, values of a particular land or resource, including land use zoning and the wider financial considerations of the government. In this instance, Lot 502 was considered to be significantly constrained by the existing zoning (Industrial') and was not considered further for inclusion in Bushplan.*

*After the site was excluded from the draft Bushplan, the City of Cockburn nominated a portion of the site for consideration in the final Bush Forever policy and the area was listed as a 'nominated additional area' (DPI 17 DEP 67c). It was nominated on the basis that the adjoining South Lake wetland did not have an adequate buffer, and that the vegetation on the ridge would provide landscape relief to an otherwise industrial sky-line, The vegetation was assessed for regional significance as part of this process and was considered as being consistent with the majority of the upland vegetation in the remainder of the Beeliar Regional Park uplands. The vegetation condition around the wetland was also noted as was the current land use zoning constraints. Wetland buffer issues or landscape relief were not key criteria in the selection of Bush Forever Sites, particularly as suitable wetland buffers are normally addressed through the planning process and are protected through other environmental policies. The boundary of the adjacent Bush Forever Site 254 in this location would have merely followed the existing Parks and Recreation reservation boundary as such lands were deemed to have an existing level of protection. Subsequently, at the Bushplan Co-ordinating Group meeting held on 7 July 1999, it was agreed to examine opportunities to preserve some vegetation and provide a buffer to the adjacent wetland through the industrial structure planning process and was not further considered for inclusion in Bush Forever.*

(Department of Planning and Infrastructure, October 2002)

#### **4.6 REGIONAL SIGNIFICANCE OF VEGETATION AND FLORA**

Dr Eleanor Bennett of Bennett Environmental Consulting conducted an assessment of the regional significance of the vegetation communities and flora of Lot 502. Dr Bennett is a respected botanist

with over thirty years experience in botanical research and environmental consulting. Dr Bennett's areas of expertise include plant ecology, vegetation mapping, vegetation and rare flora assessments, rehabilitation monitoring, plant identification, taxonomic research, the development of environmental management plans. Dr Bennett is widely recognised for her extensive knowledge of the flora and ecology of Western Australia.

The following is a summary of Dr Bennett's work, which was incorporated into the PER document. LandCorp acknowledges that although Dr Bennett found that the vegetation communities of Lot 502 were not threatened and no rare or threatened flora were recorded from the site, the southern area of bushland was of such size, shape and condition to make it worthy of consideration for conservation.

### **Vegetation complexes**

Dr Bennett found that the most significant aspect of Lot 502 is that the majority the bushland is representative of the Karrakatta Central and South Vegetation Complex (Hedde *et al*, 1980) of which less than 10% is reserved under Bush Forever. Bush Forever (Government of Western Australia, 2000) is a 10-year plan that attempts where possible to retain at least 10% of the original 26 vegetation complexes in the Swan Coastal Plain. Seven vegetation complexes (Hedde *et al*, 1980) in the metropolitan region fall below the 10% level. The exclusion of Lot 502 from Bush Forever has been discussed in General Response 4.5 above.

Although an objective of Bush Forever was to protect a target of at least 10% of the original extent of each of the Hedde *et al*. (1980) vegetation complexes in the metropolitan area within parks and reserves, to date only 8% of the Karrakatta Complex C & S has been allocated into such areas. Other areas outside the metropolitan area could be protected to compensate for not reaching the Bush Forever target if deemed necessary. Bush Forever states that:

*'The Karrakatta Central South complex retains more than 10 per cent bushland at present, but is substantially constrained by existing development proposals and Urban/Industrial Zones to the extent that the target is unlikely to be achieved. It is notable that this complex extends north from the Perth Metropolitan Region and there are better opportunities for conservation in these areas.'*

(Page 81, Volume 2 Bush Forever. Government of Western Australia 2000)

The Karrakatta Complex C & S, which originally covered 12% of the SCP, second only to the Bassendean Complex C & S, which covered 16% of the SCP. Although the Karrakatta Complex C & S may be poorly represented in the reserve system as a percentage of its original area on the SCP, under Bush Forever, only six of the 26 vegetation complexes found in the metropolitan region are afforded more protection in terms of area protected.

The Karrakatta Complex C & S is represented in all the Bush Forever sites that make up the eastern chain of the Beeliar Regional Park wetlands (see Table 9). The complex is also protected in other high profile and relatively large parks and reserves in Perth. These include Kings Park, containing 321 ha of Karrakatta Complex C & S; Whitfords Avenue Bushland and Pinaroo Valley Memorial Park in Craigie/Padbury, containing about 190 ha of Karrakatta Complex C & S, and Koondoola Regional Bushland, which contains 124 ha of bushland, all Karrakatta Complex C & S.

It is recognised that vegetation complexes, as defined by Hedde *et al*. 1980, are not representative of a specific vegetation association or community, but rather a description of the mosaic of associations and/or plant communities that occur within its boundaries as defined by changes in geomorphology, geology, climate and hydrology. Vegetation associations and communities can be common to more than a single vegetation complex as found by Gibson *et al*. 1996, who found floristic community types were not necessarily restricted to a specific vegetation complex.

Bush Forever provides for the inclusion of 18% of the original extent of the Cottesloe Complex C & S into parks and reserves, which contains many vegetation communities found in Bush Forever sites located in the Karrakatta complex C & S. Therefore, although a vegetation complex as a mapping unit may be poorly represented in reserves, some communities associated with that complex may be well protected because they are found in association with other complexes and hence further represented in other reserves.

### **Vegetation/floristic communities**

Although the bushland's vegetation complex is under represented in Bush Forever, the dominant Floristic Community Type of Lot 502 (Floristic Vegetation Type 28) is considered well reserved and not under threat (Gibson *et al.* 1996). In all, two Floristic Community Types, 11 and 28 were recorded from the Amcor site. Both are well reserved and considered not to be threatened (Gibson *et al.*, 1994). Floristic Community Type 28 included two vegetation units (Closed Forest to Woodland of *Eucalyptus marginata* subsp. *marginata* and *Banksia attenuata* with occasional to dense *Corymbia calophylla* and Tall Open Scrub to Tall Shrubland of *Hakea prostrata*, *Jacksonia furcellata* and *Kunzea glabrescens*) and Floristic Community Type 11, one vegetation unit (Open Woodland of *Eucalyptus rudis* and *Banksia grandis*) making a total of three for the Amcor site. The nearby Bush Forever sites, 234, 256, 391 and 244 recorded 6, 9, 7 and 5 vegetation units. These sites also included vegetation associated with a lake.

No Endangered or Threatened Ecological Community as defined by the Department of Conservation and Land Management (English, 2001) are found on the site.

### **Vegetation condition**

The Amcor site of 89 ha is a considerable size however the northern half is degraded through infrastructure development and the dumping of paper pulp. As a result the associated bushland is degraded. However the southern section is in much better condition and could be considered as worthy of conservation. The southern remnant of the Amcor site recorded a vegetation condition score of 3-4, Very Good to Good with areas of vegetation condition 5 - Degraded, mainly along the tracks. This condition score is not unusual in the sandy soils of Perth metropolitan area. This section is also compact in shape and of a large enough size to be able to maintain its very good condition.

Some of the degraded areas are so degraded that it would be a very large task to attempt to restore them to their original condition. By watering the paper pulp areas large number of native plants have been killed and the area has then been invaded by weed taxa. Generally the paper pulp areas recorded a diverse list of weed taxa. However most of the natural and relatively undisturbed vegetation has the potential for long term viability.

### **Flora**

Most of the Amcor site is vegetation unit Closed Forest to Woodland of *Eucalyptus marginata* subsp. *marginata* and *Banksia attenuata* with occasional to dense *Corymbia calophylla* which recorded 132 taxa including 43 weeds. Both the other two vegetation units were very small by comparison. They are Tall Open Scrub to Tall Shrubland of *Hakea prostrata*, *Jacksonia furcellata* and *Kunzea glabrescens* recording 57 taxa including 18 weeds and Open Woodland of *Eucalyptus rudis* and *Banksia grandis* recording 44 taxa including 24 weeds.

No Declared Rare or Priority Flora were recorded from the site.

## **Linkages**

The Amcor site links directly with South Lake on its eastern side. As the Amcor site is adjacent to the Bush Forever Site 254 (South Lake) it is important that as much bushland as is possible be retained.

South Lake links by North Lake Road to Bibra Lake and southwards through Little Rush Lake and Yangebup Lake to Thomson's Lake and then to Harry Waring Reserve, resulting in nearly 11km of bushland linkage. South Lake, and the Amcor site, is part of Greenways 75 and 90 and part of a regionally significant bushland/wetland linkage (Government of Western Australia 2000)

## **Conservation listings**

The site is not listed under any other government environmental or heritage listing. The Heritage Council of WA does not have a listing for Lot 502.

Lot 502 has been listed as being of heritage value by the National Trust of Australia (Western Australia), a non-government organisation dedicated to identifying, conserving and promoting heritage in WA.

## **4.7 IMPACT ON FAUNA**

The role of the bushland to fauna is described in Section 7.1 of the PER document. LandCorp has acknowledged that the clearing of approximately 59 ha of upland (Jarrah-Banksia woodland) habitat will have some direct impacts on fauna. It has described the anticipated impacts in detail in Section 7.5 of the PER document in a local (South Lake and surrounds), sub-regional (City of Cockburn and adjacent municipalities), and regional (Perth Metropolitan Region) context.

LandCorp acknowledges that there will be net declines in the size of most of the fauna populations as construction impacts will be direct in terms of habitat loss. However, the potential impact of the proposal has been reduced as a result of the reduction in size of the subdivision compared to that originally proposed in the PER document (WEC 2002) and the subsequent retention of an additional 5 ha of upland vegetation.

Appendix 3 of the PER document shows a summary of the conservation status of significant species possibly utilising or inhabiting the site as well as an indication of the level of local and regional impact to the species. The potential impact of the project on these species is further described in Bamford (2002), as well as the sub-regional impact to species not of high conservation significance.

The proposal could result in a moderate to high reduction in the numbers of Carnaby's Black Cockatoo, listed under the WA Wildlife Conservation Act and the EPBC Act, visiting the site. The reduction in habitat could also potentially result in a moderate to low reduction of the numbers of Quenda, CALM Priority 4 listed species, in the immediate area of Lot 502 and South Lake. The potential impact on these species will be reduced through specific rehabilitation measures that will focus on restoring habitat for these species and the retention of woodland in the South Lake buffer. There is a small possibility that the site is utilised by the Peregrine Falcon, listed under the WA Wildlife Conservation Act, and the Square-tailed Kite, a Priority 4 CALM listed species, and if so there will be a reduction in the area which it can utilise at Lot 502 and South Lake.

The impact of the proposal on all species in a sub-regional context (City of Cockburn and adjacent municipalities) is of moderate to low significance and no species are expected to be reliant on Lot 502 for their persistence in the region (Perth Metropolitan Region). The removal of upland habitat from the area may theoretically increase the risk of disappearance of some species that occur in low population densities from the City of Cockburn and adjacent area. Species most likely to be so affected include large predatory reptiles, such as goanna species, sedentary birds, such as fairy-wrens

and thornbills, and the Brush-tailed Possum. The potential impact on these species will be reduced through specific rehabilitation measures that will focus on restoring habitat for these species and the retention of woodland in the South Lake buffer.

No species are expected to be reliant on Lot 502 for their persistence in the Perth Metropolitan Region because of the existence of large areas of similar habitat and the relative size of the area proposed to be cleared.

Because the site does not lie between conservation areas, its loss will not fragment fauna communities, but will have some impact on adjacent mobile fauna that use it as a seasonal food source.

The sequential nature of the development should give time for some fauna to move into neighbouring remnant areas. It is acknowledged that displaced individuals of many species can only survive if there is space within neighbouring populations for them. This capacity to cater for displaced individuals can be increased by restoring habitat in degraded areas and hence early rehabilitation of degraded areas west and south of South Lake should increase the capacity of these adjacent areas to accommodate higher numbers of fauna. The sequential nature of the development should also allow for some recolonisation of species that are suited to occupy created habitats in the native gardens landscape of the industrial estate (numerous reptile and bird species).

#### **4.8 IMPACT ON SOUTH LAKE AND BEELIAR WETLAND SYSTEM**

LandCorp is highly confident that the proposal can be implemented without environmental impact to South Lake. The potential for and management of impact to South Lake and the Beeliar wetlands is described in detail in Section 9.5 of the PER document. A summary of this assessment is provided below.

The water levels and environmental quality of South Lake will not be affected by the long-term operation of the proposed industrial estate due to the natural westerly groundwater flow, the diversion of stormwater drainage away from the lake and the implementation of a Drainage and Groundwater Management Plan.

It is acknowledged that the removal of bushland to the west of the lake will decrease the amount of upland habitat adjacent to the lake but does not expect the ecology of the wetland to be significantly affected. The retention of the buffer strip (up to 214 m wide), which includes upland vegetation, will minimise the impact of the proposal on these species as most of their activity would be restricted to within this area. For example, the Long-necked tortoise would typically remain within 200 m of the lake for its nesting purposes and hence the buffer area should incorporate this species' needs.

The proposal will not disturb South Lake or any other wetlands in the adjacent Beeliar wetlands chain. The proposal will in fact improve the condition of vegetation surrounding it through rehabilitation of the buffer area. The addition of the buffer strip to Beeliar Regional Park and the rehabilitation of degraded areas within the buffer will increase the conservation value of South Lake. The collaborative rehabilitation program for the area south of South Lake would also increase the lake's conservation value, if established, by increasing the condition and protection of vegetation immediately around the wetland.

#### **4.9 ADEQUACY OF PROPOSED WETLAND BUFFER**

Since the preparation of the PER document, LandCorp has increased the width of the South Lake buffer such that it is at least 180 m wide and up to 214 m wide in some parts, compared to 150 m wide previously proposed, and such that its area has increased by 5 ha (see Figure 1). This additional area predominantly consists of upland vegetation.

LandCorp attests that the proposed buffer is more than sufficient to protect the ecology and hydrology of South Lake from any direct or indirect impacts of the development of the industrial subdivision. It is also confident that it meets all agency requirements for a wetland buffer as it will be supported by the proposed stormwater drainage system which directs surface runoff from the estate away from the lake.

Wetland buffers and their management requirements are generally required to comply with environmental policies and guidelines, and specific advice from regulatory and management authorities such as the EPA, Department of Environmental Protection (DEP), Water and Rivers Commission (WRC), and the Department of Conservation and Land Management (CALM).

EPA Bulletin 686 states that the size of buffer zones should be determined according to the physical and ecological properties of the individual wetland and the purpose for which it is being managed (EPA 1993b). Property or reserve boundaries used in the above computation should be at least 50 m from the wetland edge<sup>1</sup>. The bulletin indicates that the higher the proportion of a wetland's perimeter surrounded with a 50 m or wider strip of native vegetation, the higher its natural attributes value.

The Draft Guidelines for Environment and Planning (EPA 1997b) state that as a general guide, the minimum recommended distance between intensive landuses and wetlands should be 50 m from, or 1 m AHD higher than, the furthest extent of the wetland vegetation (minimum dryland buffer) whichever is the larger (EPA 1997b). In regard to South Lake, this possibly extends out no more than 70 m from the high water mark of the wetland. The buffer, which is at least 180 m wide, is more than double the required width of the guidelines.

More recently, the *Guidance for the Assessment of Environmental Factors EPA Draft Guidance No. 26: Management of Surface Runoff from Industrial And Commercial Sites* (EPA 1999) provides similar recommendations for buffers between wetlands and other landuses. It also assumes that there is no vector for contaminated surface water runoff to reach the wetland, which is also a requirement of the guidelines and is the case with this proposal.

The Water and Rivers Commission (WRC) has a position on buffer requirements for wetlands outlined in *Wetlands Position Statement* (6<sup>th</sup> June 2001) and *Water Notes January 2000, Advisory Notes for Land Managers on Rivers and Wetland Restoration*. The distances presented, as shown in Table 1, are guidelines only and do not represent any statutory requirements as the distances are based on the best scientific information available, albeit limited (WRC, pers. comm. 2001). Again, the buffer width<sup>2</sup> recommended for a particular wetland is dependent upon the conservation significance of the wetland and the purpose of the buffer. As a general guideline to protect wetland's environmental values, the WRC recommends that a minimum distance of 50 m is established from the boundary of wetland dependent vegetation to an adjacent land use. The 50 m requirement is based on the protection of the wetland from weed invasion from residential areas (see Table 2).

The 50 m requirement is generally sufficient for determining requirements for adjacent residential land, but for land uses such as horticulture and industry, a setback of at least 200 m is recommended to protect the wetland from pollution sources (see Table 2). However, a variation to the setbacks can be considered where it can be demonstrated that the wetland functions and values will be maintained. In the case of the Bibra Lake industrial estate proposal the 200m setback is not necessary, as the drainage

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<sup>1</sup> The provision of 50 m does not appear to have a solid scientific basis and its justification is not detailed in the Draft Guidelines for Environment and Planning (EPA 1997b), but is a popular 'safe' width of vegetation for the protection of a wetland.

<sup>2</sup> The term buffer in the WRC Wetlands Position Statement June 2001 refers to a distance required between a wetland and another land use. The statement does not refer to a requirement for vegetation within this buffer distance.

plan will ensure no surface water runoff from the estate will reach the lake and the westerly groundwater flow makes it practically impossible for any groundwater flow to reach the lake from under the estate. In addition, the lots abutting the buffer, within 200 metres of South Lake, are intended to be marketed as a business park concept. Therefore developed lots closest to the lake will be utilised for the establishment of offices and perhaps warehousing as opposed to workshops or fabrication facilities. Offices and warehouses are unlikely to involve storage and transfer of hydrocarbons or other pollutants and hence this land use further reduces the risk of pollutants entering the lake to a negligible level. However, the buffer does exceed 200 m at some points in the modified proposal (see Section 2).

A buffer of 200 m or greater may also be recommended in situations where a wetland has significant conservation value or has characteristics such as high midge populations which would require greater distances to decrease its impact on the public. Midge buffers are typically greater between wetlands and residential areas compared to wetlands and industrial areas. In the case of this proposal, the wetland is a Resource Enhancement wetland (not of highest conservation significance) and a midge buffer is not essential as the subdivision is industrial not residential. LandCorp is confident its 180-214 m wide buffer is compliant with WRC guidance.

**Table 2 Water and Rivers Commission recommended widths for wetland buffers on the Swan Coastal Plain**

Purpose of Buffer	Land Use Example	Recommended Buffer Width*
Reduction of impact of nuisance insects on residents (e.g. midges)	Residential housing	800-1 000 m depending on orientation of wetland#
Protection from nutrient inputs	Market garden	200 m on transmissive soils, 100 m on non-transmissive soils
Protection from pollution (e.g. petroleum hydrocarbons, surfactants)	Mechanical workshop	200 m
Protection from heavy metal contamination	Mineral processing operation	200 m
Protection from pesticide drift	Orchard	200 m
Reduction of sedimentation	Timber harvesting operation	100 m
Protection of groundwater quality	Agricultural composting facility	2 000 m in direction of groundwater flow for transmissive soils
Protection of avifauna nesting and roosting sites	Residential housing	200-800 m
Protection from weed infestation	Residential housing	50-100 m
Maintenance of natural water levels	Vineyard	200 m but dependent on water extraction

(from Wetlands Position Statement, WRC 2001)

\*Buffer width recommendations may be varied at the discretion of the Commission as new data becomes available. Guidance on the Commission's buffer recommendations is received from the State Wetlands Coordinating Committee working group on wetland buffers.

# Current practice for insect nuisance buffering is 500 m. It is understood that distances in excess of this have not yet been applied in practice.

Advice on buffer requirements is also provided by the Department of Conservation and Land Management (CALM) for proposals that are adjacent to or may affect wetlands in CALM managed land. Proposals are referred to either the Regional and District branch or the Environmental Protection branch within CALM. In either case, an officer is typically assigned to the request for advice and they specifically assess and determine a buffer requirement by taking into account:

The Department of Planning and Infrastructure (DPI) is currently reviewing setbacks and buffers around wetlands.

The DPI also has operational policies that it follows, one of which, the Development Control (DC) Policy, refers to setback from lakes and watercourses. These operational policies are largely policies that have been adopted by the Western Australian Planning Commission (WAPC) to guide decision-making on subdivision and development applications in WA. The WAPC approves plans of subdivision under Section 20(1) (a) of the *Town Planning and Development Act, 1928*.

In relation to residential subdivision near wetlands Western Australian Planning Commission DC Policy 2.3 (Public Open Space in Residential Areas) Clause 3.2.2 states:

*“The required width of a foreshore or coastal reserve varies according to the size of the watercourse or body of water and the condition of its banks, shore or coastline. Generally, in the case of river or lake foreshores, a reserve of 30 metres’ width is required, but each application is examined in detail. Where for topographical or other reasons, such as protection of a floodway, a greater or lesser width is considered necessary or desirable in the public interest, such a width may be specified.”*

The current policy also states that the reserve is to be determined from the high water mark for tidal waters and from the top of the bank, as determined by a surveyor, for non-tidal waters. As wetlands, particularly those on the Swan Coastal Plain, do not have definite banks, the high water mark in winter would be the typical boundary from which to determine the Separation Distance.

Historically, a major problem across government departments regarding buffers was defining the edge of the wetland dependent vegetation. Buffers widths are typically measured from this boundary but there is often not a clear definable boundary between wetland and upland vegetation communities. This problem has been made easier on the SCP with the WRC wetlands mapping identifying the boundaries of wetlands, which incorporates the extent of wetland vegetation (WRC, pers. comm. 2002). It is, however, more difficult in other regions where no previous mapping has been conducted.

In the preparation of the EPS document Dr Arthur Weston undertook a brief vegetation survey to define the limit of wetland dependent vegetation on Lot 502 around South Lake. Discussions were held with Professor Philip Jennings and officers of the DEP to reach an agreed position on the extent of both the wetland dependent vegetation and the buffer to South Lake. It was agreed at this time that a 150 metre buffer offered adequate protection to South Lake. As discussed, this buffer has been subsequently increased in width and is now up to 214 m wide.

In summary, the original buffer distance was been set from the high water mark of the wetland in agreement with the Department of Environmental Protection and Nyoongar Elders consulted during the Aboriginal Heritage survey. It has been subsequently increased in width again and the setback provided by the buffer exceeds that recommended by EPA, WRC (assuming drainage in place) and DPI.

#### **4.10 ROLE OF REHABILITATION PROGRAMS**

LandCorp has committed to rehabilitating two adjoining degraded areas around South Lake. The two rehabilitation programs are as follows:

- South Lake buffer strip rehabilitation (up to 5 hectares of degraded land in the 180-214m wide buffer strip between the proposed subdivision and South Lake);
- Collaborative rehabilitation program of area south of South Lake (10 hectares of degraded land within the South Lake reserve).

The total area to be rehabilitated is approximately 15 hectares. The terrain is mostly low lying dune sands gentle sloping upwards to the south.



The original vegetation would have been of wetland-uplands transitional vegetation type (consisting of species found in association with both wetlands and uplands eg. *Banksia grandis*, *Hakea prostrata* and *Eucalyptus rudis*). These types of areas are particularly useful to fauna, which are associated with wetland areas but utilise upland habitats occasionally for foraging and breeding purposes.

The rehabilitation programs will be designed such as to restore suitable habitat for those species which are potentially at higher risk of impact due to habitat disturbance relative to other fauna species. This includes sedentary bird species such as the Splendid Fairy Wren, Quenda, and large reptile species such as the Goanna.

Of particular interest at Lot 502 are Carnaby's (or Short-billed) Black-Cockatoo, which is a non-breeding visitor mainly in autumn and winter, the Splendid Fairy-wren which is most abundant in the "panhandle" section of Lot 502, and the Quenda or Southern Brown Bandicoot, also most abundant in this "panhandle" area. This area was noted as being of potentially higher importance or 'significance' to fauna values compared to the remaining vegetated areas of Lot 502. The area's role to these species was a major consideration in determining the significance of that area. LandCorp proposes to replace the values that may be lost from this area with the rehabilitation program.

Dr Mike Bamford, Consulting Ecologist was asked to comment on the extent to which LandCorp's proposed rehabilitation programs will offset the loss of this habitat and the benefits of rehabilitation to South Lake and its fauna that are likely to result.

#### **Offsetting of removal of high value habitat in 'pan-handle' area**

The total area of rehabilitation proposed will be up to the order of 15 ha, compared with approximately 59 ha of vegetated habitat and 25 ha of degraded and cleared habitat to be disturbed. Although there is the potential for some habitat protection and development within the industrial estate, there is clearly a discrepancy with a net loss of fauna habitat, although this loss would not be as great as if no rehabilitation were undertaken. Habitat value is not simply a matter of area, however, and the value of the rehabilitated habitat can be enhanced by designing it to favour species of conservation significance (Bamford, pers.comm. 2002).

Rehabilitation around South Lake will create habitat of dense, riparian vegetation and adjacent woodland that is currently badly degraded. The area proposed for rehabilitation is similar in size to the "panhandle" section of the industrial site, and should be able to replace this section as fauna habitat. Vegetation in the "panhandle" is degraded but is valuable for fauna, particularly species that have declined badly in the Perth region, including the Quenda or Southern Brown Bandicoot, and the Splendid Fairy-wren. The vegetation structure in the "panhandle" is particularly important for fauna because it includes dense shrubs and low trees that provide food and cover, and this structure can be recreated in the rehabilitation area within a period of 5-10 years (Bamford, pers.comm. 2003).

Rehabilitation around South Lake will have the added benefit of contributing to the integrity and linkage within Beeliar Regional Park (Bamford, pers.comm. 2003).

Carnaby's Black-Cockatoo feeds on the seeds of Banksias, hakeas and introduced pine trees, and therefore the rehabilitation can be designed to favour this species by using favoured food plants such as *Banksia menziesii*, *Banksia attenuata* and *Hakea prostrata* furthest from the water's edge, and *Banksia littoralis* close to the water (Bamford, pers.comm. 2002).

The Splendid Fairy-wren and Quenda favour the "panhandle" area because the vegetation structure is more complex than elsewhere on Lot 502, with dense shrubs and open areas providing the sort of patchy cover that these species utilise. There may also be differences in food supply between the dense shrubs and patches of degraded vegetation in the "panhandle", compared with the eucalypt woodland that occurs over most of the rest of Lot 502. This vegetation structure can be replicated in

the rehabilitated area. For the Splendid Fairy-wren and Quenda, important features in the rehabilitation area would be: a low density of tall trees, such as eucalypts, to avoid shading that can result in the understorey becoming sparse; and dense clumps of understorey providing cover right around South Lake, but interspersed with open, foraging areas (Bamford, pers.comm. 2002).

There are many variables to consider but it is possible, if designed properly and successful, then the rehabilitation could replace the value of the “panhandle” section for those two species (Fairy-wren and the Quenda), and probably go some way to replacing the value of the rest of Lot 502 to these species. The rehabilitated area could potentially support in the order of 50-75% of the former populations of these two species across Lot 502. For the Black-Cockatoo, quantification of habitat value would be difficult, as the same number of birds may visit the area, but they may spend only a third or half the time on the site depending on the food resource available (Bamford, pers.comm. 2002).

Rehabilitation tailored to the requirements of these three species has the potential to give the rehabilitated site a value out of proportion with its area. The rehabilitated areas would also support many other species, and would improve linkage for wildlife between South Lake and other parts of Beeliar Regional Park (Bamford, pers.comm. 2002).

The combined effects of rehabilitation around South Lake and the retention of upland vegetation as part of the revised proposal (see General Response 4.11) are expected to offset much of the potentially significant impacts of the proposal.

#### ***Benefit of rehabilitation to South Lake fauna***

The areas to be rehabilitated are close to South Lake and currently very degraded, with few native plants and an abundance of mostly annual weeds. Rehabilitation would mainly be of benefit to terrestrial species, but will be extended into the riparian zone for weed control. This can be expected to benefit aquatic species (waterbirds, frogs, aquatic invertebrates) in the long term through the replacement of weeds with native riparian plant species. Rehabilitation away from the water's edge will also be of benefit to aquatic fauna such as frogs that use upland habitats for part of their life cycle, and waterbirds that nest in tree hollows. There may also be some benefit from upland vegetation removing nutrients from water leaching towards the wetland (Bamford, pers.comm. 2002).

Despite these benefits, it does need to be recognised that weeds growing on the edge of wetlands provide cover for nesting waterbirds and other wildlife. Therefore, removal of such weeds should be progressive, allowing time for native plants to provide replacement habitat (Bamford, pers.comm. 2002).

#### **4.11 FURTHER OFFSETS RESULTING FROM ALTERATION OF PROPOSAL**

Since preparing the PER document, LandCorp has reduced the size of the area to be developed and the number of lots that will be created in the subdivision (see Table 1). This has been done to further address environmental concerns and in response to public concern over the size of the development. In consultation with the EPA, LandCorp has increased the width of the South Lake strip such that it is up to 214 m wide in some parts, compared to 150 m wide previously proposed, and such that its area has increased by 5 ha. This additional area predominantly consists of upland vegetation.

Dr Mike Bamford (Consulting Ecologist) has provided expert advice regarding the potential benefits of increasing the size of the buffer and incorporating a larger area of upland vegetation, as follows.

The upland buffer provides fauna habitat that cannot be readily or quickly created through rehabilitation. This has two components. The proposed development line will retain an approximately 50 m wide buffer strip of woodland that includes large, old trees that contain nesting and roosting hollows and crevices for birds, bats and possums. It will take many decades for the rehabilitation area

to provide such habitat trees, so the upland buffer will complement the habitats that can be created by rehabilitation. In addition, the buffer provides habitat that is slightly higher in the landscape and is therefore intrinsically different from that which can be created in the rehabilitation area around South Lake (Bamford, pers.comm. 2003).

The buffer contains plant species that will probably not do well low in the landscape where rehabilitation will take place. The Buffer includes all the tree species that make up the woodland throughout the development area, including a range of banksia and eucalypt species, so the buffer will therefore provide representative upland habitat. The range of tree species is important, as species often have different flowering times and therefore the combination of species can provide food sources for nectar-dependent fauna across the year. The combination of lowland rehabilitation and upland buffer will provide a variety of fauna habitats and a sequence of habitats from the lake's edge. The combination and sequence of habitats will maximise the number of fauna species that can be supported in the rehabilitation and buffer areas (Bamford, pers.comm. 2003).

#### **4.12 BENEFITS OF ESTABLISHING NATIVE GARDENS**

Dr Mike Bamford (Consulting Ecologist) has provided expert advice on the ability of native gardens to be utilised as fauna habitat. Such gardens will allow the populations of wildlife to be larger and therefore less likely to suffer from local extinction than could be supported by the buffer zone alone, and would allow wildlife to move through the industrial area, providing linkage to bushland along road verges and in suburban areas to the north.

Many species of reptiles and frogs are known to survive in urban gardens and hence should be able to exist in native gardens within the estate, particularly if they are linked with the remnant vegetation around South Lake (Bamford 2002).

**PART 1- SUBMISSIONS FROM NON-GOVERNMENTAL ORGANISATIONS****5. GENERAL**

	<b>Submission</b>	<b>Response</b>
1.	The EPA must take national, state, international agreements, treaties, policies and legislation seriously or it will lose its credibility. National, state agreements, policies, legislation apply in this case, BUT the proposal has chosen to ignore them, so far successfully. (Waterbird Conservation Group)	This is a matter for the EPA. LandCorp is confident its proposal is consistent with National and State agreements, policies, legislation that apply.

**5.1 THE PER DOCUMENT**

	<b>Submission</b>	<b>Response</b>
2.	The PER has only looked at maximising the amount of area for industrial development and has totally dismissed any environmental considerations. In no way does the document come up with sustainable solutions able to meet the EPA objectives. (Wildflower Society)	LandCorp disagrees. It believes it has designed the subdivision and committed to sufficient mitigation such that the EPA objectives will not be compromised. The rehabilitation efforts in particular will address the most significant of potential impacts (see General Response 4.10)  In addition, in response to public concern over the size of the development, and in consultation with the EPA, LandCorp has reduced the size of the subdivision to further address environmental concerns. An additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.
3.	7.2 EPA objectives This proposal goes completely against the EPA statement in section 7.2 of the PER. It is trying to justify the reasons for destroying the area, but does not look at the consequences of the destruction of this lot. (Friends of North Lake)	LandCorp disagrees. It believes it has designed the subdivision and committed to sufficient mitigation such that the EPA objective shown in 7.2 will not be compromised. It has been upfront about the expected impacts of developing the lot, in particular of clearing 59 ha of bushland, all of which are described in detail in the PER document. LandCorp believes the management measures proposed will mitigate a proportion of the impacts expected.
4.	It is obvious that the EPA's objectives for flora, fauna, the protection of South Lake (an Environmental Protection Policy wetland) dust, particulates and visual amenity are not met in the P.E.R. (Waterbird Conservation Group)	LandCorp disagrees. It notes the submitter's opinion.

	Submission	Response
5.	Does the EPA Service Unit have quality control of proponent PER documents to ensure any summary of information is a good summary with main things adequately reflected? (Waterbird Conservation Group)	The EPA Service Unit reviewed the draft PER document in the light of the supporting documentation. Changes and additions were subsequently requested by the EPA Service Unit, and made to the PER document.
6.	The PER document did not discuss sustainability, a relevant issue. (Waterbird Conservation Group)	Sustainability principles were inherent in the environmental impact assessment. The National Strategy for Ecologically Sustainable Development that protects biodiversity was used as part of the Assessment Framework for impacts as described in Section 6.3 of the PER.
7.	The PER's selective use of flora and fauna information gives a skewed picture. The PER ignores basic environmental principles, downplays the importance of flora and fauna, ignores scientific information provided by the Bennett report, and acknowledges the presence of significant fauna, but then ignores the scientific information. (Waterbird Conservation Group)	LandCorp disagrees. The submitter's comments show little understanding of the comprehensive assessment, based on EPA and Government policies, presented in the document. The submitter has made accusations with no explanation or evidence.

## 5.2 PROPONENT

	Submission	Response
8.	Executive Summary This section shows LandCorp's complete disregard for the environment, concerns were raised, but LandCorp are again showing total disregard. This booklet shows that there is a need to protect this bushland, but LandCorp are trying to find ways to get around those concerns. Let me remind you of the Triple bottom line whereby the Government and its agencies are supposed to follow Ecological Sustainable Development, Social, Economic and Environmental issues. There is also the National Objectives & Targets for Biodiversity Conservation, page 7 1.1.4 which states 'by 2001, all jurisdictions have clearing controls in place that will have the effect of reducing the national net rate of land clearing to zero'. (Friends of North Lake)	LandCorp disagrees that it has disregarded environmental concerns. LandCorp has relied on the provisions of Bush Forever to maintain regional biodiversity which was to provide security to both the environment and development. The Bush Forever process, which was enacted as a result of National Objective for Biodiversity Conservation, is described in detail in General Response 4.5 of this document. The site was excluded from protection under Bush Forever. LandCorp has however still addressed the local and regional significance of the site. It believes it has designed the subdivision and committed to sufficient mitigation such that the targets for Biodiversity Conservation will not be compromised.

	Submission	Response
9.	<p>Lack of environmental planning:</p> <p>The planning mechanism seems to be at fault. The Government recognises the importance of preserving bushland yet the EPA does not appear to be fulfilling its function of protection in this instance. Where is the environmental planning?</p> <p>Destruction of upland vegetation is not consistent with recommendations of the Parliamentary Enquiry into the Perth Urban Bushland strategy and the Perth Bush Forever strategy. It is important for the government to be showing leadership, it is important for the government to be doing the right thing, to be honouring and respecting life, to be continuously learning in relation to protection of regional and local bushland. (Kanyana Wildlife Rehab Centre)</p>	<p>This site was considered in environmental planning processes including Bush Forever (see General Response 4.5).</p> <p>LandCorp believes it is acting environmentally and socially responsible in the development of the subdivision and the implementation of the described commitments (see Table 14 of PER, page 102).</p> <p>The Department of Planning and Infrastructure has advised that to the best of its knowledge there has not been a Parliamentary Enquiry into the Perth Urban Bushland strategy and the Perth Bush Forever strategy. The submitter may be referring to the Report of the Premier and Cabinet on Implementation of Policy Commitments of Bushplan. This report and its recommendations are not finalised or available to the public.</p>
10.	<p>Concern that government instrumentalities should be subject to same processes as others, as Government stated they will be. The submitters will be looking to see that is so. (Waterbird Conservation Group)</p>	<p>LandCorp notes the submitters concern but this is a matter for the government to consider.</p>

### 5.3 THE PROPOSAL

#### 5.3.1 Justification for proposal

	Submission	Response
11.	<p>Consideration of Alternatives - As a result of the FRIARS report and subsequent Government action a large general industrial estate will be developed in Wattleup over the next decade. There are many sites in Wattleup that would be suitable for this type of development. They have better road and rail access and will have less impact on the environment. Considering that Wattleup is only 4 km south of this site it would make more sense to put this development there. We believe that this site is far too valuable as a buffer to South Lake and as a flora and fauna habitat to allow it to be cleared and sand mined as proposed. (Wetlands Conservation Society)</p>	<p>General industrial land within the Hope Valley – Wattleup Redevelopment area will not be available for at least another five years. Even then the first release of general industrial land in Hope Valley – Wattleup will be at the southern extremity of the redevelopment area and a significant distance from Lot 502. The release of general industrial land in closer proximity to Lot 502 Bibra Lake will be at least 10 years away.</p> <p>General Response 4.1 further describes the need for the proposal and the reason why other areas are not suitable as an alternative.</p> <p>LandCorp has provided for a buffer to South Lake in the proposal (see Section 9.5.2 of PER) and addressed the impact to flora and fauna in Sections 6.5.1 and 7.5.1 of the PER respectively.</p>

	Submission	Response
12.	<p>This site represents the last remaining large undeveloped site in the Bibra Lake industrial area. Canning Vale is nearly full and any general industrial land to be released as part of the Master Plan process, which implements the Fremantle Rockingham Industrial Area Regional Strategy, will not be available for a number of years. Consequently, this land is needed for industrial purposes to meet a shortfall that has developed in the supply of general industry land in the Perth metropolitan area, particularly in the south.</p> <p>In this regard, we concur strongly with the finding by McLeod that there is a shortfall of general industrial land in the south of the metropolitan area.</p> <p>The Perth metropolitan area can ill afford to experience a shortage of general industry land, even in the short term. Opportunities would be lost and Companies would be just as likely to set up interstate and overseas as they would be to locate elsewhere in WA.</p> <p>The output of general industry makes a significant contribution to the WA economy. McLeod's calculation that the development of industrial land on this site will create 1,115 direct jobs and 2,201 jobs in total is realistic and further serves to emphasise the importance of developing this land for general industry. Further, it would be reasonable to expect that the majority of these positions would be filled by people from surrounding areas. The propensity for workers in industrial areas to reside close to their place of employment is supported by the findings of the Kwinana Industrial Area Economic Impact Study -an example of industry interaction 2002 which found that a very high proportion, 70%, of the workforce that work in the Kwinana Industrial Area come from the surrounding municipalities of Kwinana, Cockburn and Rockingham.</p> <p>(Chamber of Commerce)</p>	<p>LandCorp acknowledges the Chamber of Commerce's endorsement of the proposal and agrees with its submission.</p>

### 5.3.2 Industrial use of Lot 502

	Submission	Response
13.	<p>The Coolbellup Community Association is of the opinion that if this land is to be subdivided then it should be for residential purposes only as there is already plenty of industrial land in Cockburn, (i.e.) Wattleup and the Friars development area.</p> <p>(Coolbellup Community Association)</p>	<p>LandCorp is unable to develop this land for residential uses as it has made a legal agreement (caveat) between Amcor and LandCorp preventing the land from being developed for anything other than General Industrial purposes. This was imposed by Amcor to protect the Paper Mill operation from urban encroachment.</p> <p>Amcor would need to agree to withdrawal of the caveat in order for the land to be developed for residential purposes.</p>

	Submission	Response
14.	<p>I am pleased that LandCorp is taking the initiative to produce industrial land which will plan ahead of requirement, helping us curtail the price escalation of the land. This therefore makes the proposal more financially viable to interstate, overseas and local parties wishing to set up business in this area.</p> <p>I note from the report that Lot 502 is zoned industrial under the Perth Metropolitan Regional Scheme under the City of Cockburn's Town, Planning Scheme number 2, and also under the City of Cockburn's Town Planning Scheme number 3, thus confirming that it is not a project that has recently commenced from the basic zoning format of rural and has been known to all statutory authorities and the public for a considerable period of time, as industrial land and its potential use.</p> <p>We know that the South Lake and Beeliar regional parks are adjacent to the land, with zoned Parks and Recreation, which in my belief is a complimentary neighbour to industrial land usage. Activity of industrial property during the week and the activities of the adjacent sporting and recreational areas make the best use of the land and is providing a buffer to adjacent residential land.</p> <p>Industry requires good transport access and the major roads of Kwinana Freeway, Stock Road, North Lake Road, Phoenix Road and Spearwood Avenue make this an ideal location for development.</p> <p>(Carooda)</p>	<p>LandCorp acknowledges Carooda's endorsement of the proposal and agrees with its submission.</p>



	Submission	Response
15.	<p>This site represents the last remaining large undeveloped site in the Bibra Lake industrial area. Canning Vale is nearly full and any general industrial land to be released as part of the Master Plan process, which implements the Fremantle Rockingham Industrial Area Regional Strategy, will not be available for a number of years. Consequently, this land is needed for industrial purposes to meet a shortfall that has developed in the supply of general industry land in the Perth metropolitan area, particularly in the south.</p> <p>In this regard, we concur strongly with the finding by McLeod that there is a shortfall of general industrial land in the south of the metropolitan area.</p> <p>The site is ideal for general industry. Its proximity to other industrial estates means that industry here will receive significant benefits of co-locating close to established industry and relatively close to the city centre. The area is well serviced by infrastructure and industry locating here will be able to tap into a nearby skilled workforce.</p> <p>The output of general industry makes a significant contribution to the WA economy. McLeod's calculation that the development of industrial land on this site will create 1,115 direct jobs and 2,201 jobs in total is realistic and further serves to emphasise the importance of developing this land for general industry. Further, it would be reasonable to expect that the majority of these positions would be filled by people from surrounding areas. The propensity for workers in industrial areas to reside close to their place of employment is supported by the findings of the Kwinana Industrial Area Economic Impact Study -an example of industry interaction 2002 which found that a very high proportion, 70%, of the workforce that work in the Kwinana Industrial Area come from the surrounding municipalities of Kwinana, Cockburn and Rockingham.</p> <p>(Chamber of Commerce)</p>	<p>LandCorp acknowledges the Chamber of Commerce's endorsement of the proposal and agrees with its submission.</p>
16.	<p>Industrial development is totally inappropriate for this large and valuable area of bushland. Industry by its very nature is polluting, and in Western Australia appears to be poorly policed. The region will inevitably be harmed if the proposal were to be accepted, despite the claims of the proponents.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp disagrees. The site is highly suitable for industrial development as described in General Response 4.1 of this document.</p> <p>LandCorp does not believe the proposal will cause environmental harm to the region.</p>

	Submission	Response
17.	<p>As this is government owned land, there is a greater opportunity to buy this land for bushland protection.</p> <p>(Waterbird Conservation Group)</p>	<p>The mission of LandCorp, a statutory authority, is to foster major Government land and infrastructure projects to assist the achievement of economic and social prosperity for all Western Australians. The land is required to address diminished supply of industrial land in the short term and the economic growth of the region will inevitably be affected by not developing the subdivision. The establishment of the estate is anticipated to generate a total of \$103 million in wages and salaries. This would provide substantial economic and social benefits to the community both locally and sub-regionally (City of Cockburn and neighbouring municipalities).</p> <p>The protection of all of this bushland will result in these benefits not being realised. However, LandCorp have provided for the protection of a proportion of the bushland in the buffer area and Public Open Space.</p>
18.	<p>If the bushland is protected there is an incentive for volunteers to facilitate natural rehabilitation of the buffer between South Lake and the bushland, by controlling weeds and access. This is obviously the only sensible, responsible, and acceptable solution.</p> <p>(Waterbird Conservation Group)</p>	<p>As above.</p> <p>Rehabilitation of the buffer will be facilitated quicker with the implementation of the proposed rehabilitation program.</p>

## 5.3.3 Proposal design and description

	Submission	Response
19.	The clearing of 89 hectares of bushland to cater for industry will destroy the native flora and fauna in this area. Should this area be subdivided then we believe as much bushland as possible must be retained. (Coolbellup Community Association)	LandCorp has acknowledged that up to 59 ha of vegetation will be removed and that some loss in local abundance of fauna will be associated with the proposal. The proposal being pursued by LandCorp represents one retaining as much remnant bushland as possible while maintaining the viability of the project.
20.	LandCorp's proposal would require massive earthworks involving the removal from the site of 1.6 million cubic metres. The entire topography of the area would be altered and the 89 hectare site remodelled. The impact on the regional landscape would be immense. All but 3 hectares of the bushland's intact 67 hectares would be lost. This represents a major environmental impact, both regionally and locally. It is not clear whether the removal of 1.6 million cubic metres of sand and also the removal of limestone (which is not specifically mentioned) is a sand and limestone mining venture disguised in the overall development proposal. (Western Australian Forest Alliance)	The removal of sand from the site is required for cut and filling purposes only undertaken to create land contours suitable for industrial lots. LandCorp did initially propose to conduct a quarrying operation to remove 4.3 million cubic metres of sand and limestone. After considering landscape values and community opposition to quarrying, LandCorp is only removing enough sand and limestone to make the topography suitable for industrial lots. The total amount of earth required to be removed from site has been further reduced as a result of LandCorp further reducing the size of the subdivision (see Section 2). The PER addresses the environmental impact of clearing 64 ha of bushland (now reduced to 59 ha) and conducting the earthworks required to make the site suitable for industrial use. LandCorp believes that the proposal is environmentally acceptable.
21.	Also LandCorp is proposing to locate the Public Open Space on Amcor's effluent disposal site. This is an insult to the community. (Western Australian Forest Alliance)	This is incorrect. The POS is located over the existing landfill site. It is not likely to be suitable for industrial lots and hence it is proposed that this area be used for native gardens and parkland as POS. The background to the allocation of POS and ROS is described in General Response 4.3.
22.	Not acceptable that in exchange for clearing of the site the proponent proposes to provide an area of degraded public open space (waste disposal area) and degraded wetland buffer. This is an insult. The community want the bushland protected not the degraded and polluted sites. (Waterbird Conservation Group)	LandCorp notes the submitters view. The waste disposal area will be remediated and replanted with native gardens to become public open space. The buffer area is not all degraded and more than 60% of the area is covered in native vegetation. The remainder of the area will be rehabilitated. The background to the allocation of POS and ROS is described in General Response 4.3.

## 5.3.4 Community consultation

	Submission	Response
23.	Lack of Consultation - Since the Minister requested a reassessment of the proposal we have had no contact with LandCorp although we were clearly identified as a key stakeholder. We did receive a brief visit last December from a Mr Colliver who said that he was a consultant to LandCorp. I explained my concerns to him but there was no follow up or discussion of alternatives and it seems to me that the key aspects of the proposal have not been changed and no attempt has been made to address community concerns. (Wetlands Conservation Society)	LandCorp engaged all key stakeholders via an independent facilitator, Mr Ross Colliver.  The community consultation process is explained in General Response 4.2. Community concerns were addressed as much as possible in the management commitments. Alternative designs for the subdivision that addressed other concerns of community groups were also examined but not pursued due to them being financially unviable options.
24.	The Western Australian Forest Alliance (WAFA) met with a facilitator in December 2001. It was made quite clear to him that WAFA did not support any aspect of LandCorp's proposal. The views of WAFA however do not seem to have been given any weight in the Public Environmental Review (PER). This was not genuine public consultation at all. (Western Australian Forest Alliance)	LandCorp disagrees. Section 2.3.1 of the PER acknowledges that there were some stakeholders that did not support the proposal at all and were not prepared to discuss any more than the complete conservation of Lot 502. The WAFA was one of these groups. The views of this group of stakeholders are shown in Table 3 (page 13) of the PER and LandCorp has provided a response to each of the concerns in this Table.
25.	In allowing the appeal the Minister acknowledged the widespread level of public interest and sought more, in-depth consultation. Despite the Conservation Council's ongoing association with this bushland site it has not been consulted during the PER process. The PER states that a facilitator met with the Conservation Council and the W.A. Forest Alliance In December 2001. No Conservation Council officer or executive, member was present at the meeting- The W.A. Forest Alliance is an entirely separate body from the Conservation council and does not speak for the Council. (Conservation Council)	LandCorp disputes this claim. As stated on their website, the Conservation Council is an umbrella organisation for nearly 70 affiliated conservation groups from throughout WA, one of which is the WAFA. The PER does not presume that they are the same organisation, but during the consultation it was clear that their position was the same.  Mr Peter Robinson, the convener of the Western Australian Forest Alliance and a staff member of the Conservation Council (as indicated on their website <a href="http://www.conservationwa.asn.au/staff.htm">http://www.conservationwa.asn.au/staff.htm</a> ), was the person engaged for consultation with both groups. In December 2001, Mr Robertson was consulted through the use of an independent facilitator, on the position of the Conservation Council regarding the development of Lot 502. The record of this meeting (which was forwarded back and confirmed with Mr Robinson before use) clearly states the position of the Conservation Council. As Mr Robinson is also the convener of the WAFA, it was understood that the position of the WAFA was the same.  It was understood that Mr Peter Robinson does speak for both groups as a staff member of the Conservation Council and the convener of the WAFA.
26.	Unfortunately in the PER it presumes Western Australian Forest Alliance and the Conservation Council are the same organisation. This is incorrect. They are totally different organisations and should not have been listed as one. (Western Australian Forest Alliance)	Refer above

	Submission	Response
27.	<p>The Executive Summary of the Public Environmental Review prepared by the Welker Environmental Consultancy outlines guidelines to be addressed in the P.E.R. The first is that LandCorp undertake "an intensive community consultation program involving an independent facilitator". Unfortunately our Group was unaware of this community consultation program and therefore was unable to participate. We hope that the Group's views will be fully taken into account.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp's consultation program involved a program of one-on-one discussion sessions with stakeholders utilising an independent facilitator and a mail out to nearby residents. The community and environmental groups met were either those identified by EPA to be key stakeholders, those who were consulted or previously submitted appeals during the EPS process and community groups and residents in proximity to the proposal.</p> <p>The Waterbird Conservation Group was not identified during this program but its comments on the project and PER have been responded to here in addition to comments made to the EPA during a meeting in October 2002.</p>
28.	<p>The supplementary documents referred to in the PER had to be obtained separately. By the time obtained, not much time left to properly study them and make submission (given four week public review period).</p> <p>The Waterbird Conservation Group and Wildflower Society consider consultation not adequate. They ended up with less than a week to have a say. The Wildflower Society was consulted with one brief phone call. The Waterbird Conservation Group was not consulted at all.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp supplied copies of the supplementary reports on request. The length of the public consultation period was established following consultation between the Minister for the Environment and the EPA.</p> <p>Both groups had four weeks to review the documentation, it was sent to those members of the public on request if not identified during the proponent's consultation. Although this may have taken a couple of days in the mail, the document was available in local public libraries from the first day of public review. LandCorp has responded to comments from organisations and individuals submitted after the official submissions period, including some submitted over two weeks after the close of submissions.</p> <p>The Wildflower Society was consulted during the proponent's own targeted consultation. The Waterbird Conservation Group was not specifically consulted during the proponent's own consultation program; however, they are affiliated with the Conservation Council of WA who was consulted. In addition, the Waterbird Conservation Group's views have been reproduced here and their comments responded to accordingly.</p>

	Submission	Response
29.	<p>Concerned that LandCorp paid lip service to consultation. It went through the motions only, as no real changes have been made to the development proposal. Consultation carried out has not been in line with good consultation practices.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp disagrees. The methods used in the community consultation program are outlined in Section 2.2 of the PER. The EPA Services were briefed on methodology prior to its implementation.</p> <p>LandCorp views the use of an independent facilitator, to meet with the stakeholders in discussion sessions, is an example of best practice consultation which gave these groups opportunity to voice and discuss issues with the proposal. As discussed in Section 2.5 of the PER, LandCorp has responded to these concerns where practicable.</p> <p>Contrary to this submission, changes were made to the proposal following community input including the changes as described in Section 2. Most significantly these changes included:</p> <ul style="list-style-type: none"> <li>• Widening of buffer (increase in area by 5 ha) and setting developing further back from South Lake up to another 64 m (in addition to the original 150 m).</li> <li>• Providing for rehabilitation of an additional 10 ha of degraded areas within Beeliar Regional Park to rehabilitation program.</li> <li>• Providing a clear staging plan for the development of the subdivision such that movement and survival of fauna will be maximised.</li> </ul>
30.	<p>The community consultation write-ups in the PER document (page ii and elsewhere), do not adequately reflected community positions. Community groups could have been quoted as what they say is generally public information. Their position has not come out in the PER document.</p> <p>Which community groups supported the proposal?</p> <p>(Waterbird Conservation Group)</p>	<p>The main purpose of this consultation was to examine primary concerns of stakeholders and opportunities to address them. The purpose was not to tally the number of groups for and against the proposal. However, the main views of the community groups regarding the proposal were summarised in Section 2 of the PER.</p> <p>The submissions received during the following public review period will give the EPA opportunity to examine the position of the public and community groups on this proposal.</p>
31.	<p>The City of Cockburn's strong opposition to the proposal has not been given any prominence in the PER.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp met with the City of Cockburn during the preparation of the PER. The City Officers present at this meeting did not voice any opposition to the proposal and LandCorp did not receive any advice during this time of the City's opposition.</p>

## 6. ENVIRONMENTAL FACTORS ADDRESSED IN PER

### 6.1 VEGETATION AND FLORA

#### *Bushland Values*

	Submission	Response
32.	<p>The vegetation on the site is important in that it is a relatively large area with 3 vegetation types This has value in its own right and it is not correct to imply that a diverse mosaic of vegetation types is necessary for a Bush Forever site (page 27). Right through the PER a minimalist approach has been taken to the value of the vegetation e.g. page 29 "The area further into lot 502 is upland vegetation weakly associated with wetland as habitat that may be potentially occasionally utilized by fauna of the lake such as bandicoots and tortoise. The vegetation is a vital part of the ecological function of the lake.</p> <p>All of the values attributed to South Lake and Beeliar Regional Park, section 4.3.4 page 30 also apply to lot 502. That is Landscape amenity, Cultural significance, recreation opportunities and research and scientific values.</p> <p>(Wildflower Society)</p>	<p>LandCorp disputes the claim that a minimalist approach has been taken to the value of vegetation.</p> <p>The overall regional and local significance of the Lot 502 is described in section 4.2.4 and 4.2.5 of the PER and the significance of bushland to flora and fauna values are described in Section 6.1 and 7.1 of the PER.</p> <p>Ecological function of South Lake will not be impacted by the proposal due to the retention of the buffer area. LandCorp has altered the proposal since submissions, and an additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p> <p>LandCorp agrees that the area does have similar values to other bushland areas that are already protected in Beeliar Regional Park. It believes the park sufficiently provides for these values in the local and regional vicinity.</p>
33.	<p>It is very cynical to clear all the bushland and then allocate landfill area i.e. "the dump" for public open space.</p> <p>(Wildflower Society)</p>	<p>LandCorp notes the view of the Wildflower Society on this matter. The POS was located over the landfill site to address a development constraint (site will not support large buildings), not to create an appearance of bushland retention.</p>
34.	<p>4.3.4 South Lake and Beeliar Regional Park.</p> <p>The points raised in this section can also be said for Lot 502; it should not be separated from this section. As the previous section said it is locally significant.</p> <p>(Friends of North Lake)</p>	<p>LandCorp agrees that the area does have similar values to other bushland areas that are already protected in Beeliar Regional Park. It believes the park sufficiently provides for these values in the local and regional vicinity</p>
35.	<p>4.2.5 Local significance</p> <p>The four points raised in this section are some of the best; they show what the area is associated with the surrounding lakes. These four points should be remembered through all the proponents' comments why the area should be destroyed and why conservationists wish to protect it.</p> <p>(Friends of North Lake)</p>	<p>LandCorp assures the submitter it has considered local interest and impacts in the proposal design and provision of management measures.</p>

	Submission	Response
36.	No commitment is given in Table 14 to protect the 70 hectares of significant bushland, the main environmental factor. (Conservation Council)	Such a commitment would of course exclude development. Up to 59 ha of the 67 -68 ha of remnant bushland will be removed for the subdivision development.
37.	Important natural asset: This is a beautiful and environmentally significant piece of bushland, now rare on the Swan coastal Plain. It is one of Perth's few remaining natural assets. It is a priceless living resource for the people of Western Australia. Our city would be much the poorer if it was given over to the bulldozer. (Kanyana Wildlife Rehabilitation Centre)	LandCorp acknowledges that there are many values associated with bushland areas (as described in General Response 4.4). Bush Forever has ensured that there will continue to be large bushland areas remaining in the Metropolitan Region.
38.	Quality bushland: The Flora Report (Bennett Consulting Pty Ltd.) states that the area is in better condition than some other Bush Forever sites. Yet the portion displaying the best condition is that which is being proposed for industrial development. This is entirely unacceptable. Size: Its large size is environmentally very important, it is currently sufficiently large to be ecologically viable, particularly by virtue of its association with the adjoining Beelihar Regional Park and South Lake. It complies with Bush Forever's preference for areas over 20 hectares. This factor has not been taken into account in the PER documentation. It is unsatisfactory that the advice given in the vegetation survey to conserve the southern section has been disregarded by the proponents. "This section (the southern) is also compact in shape and of a large enough size to be able to maintain its very good condition". Similarly the Supplementary report on protection of fauna substantiates the case for conserving the site, but its recommendations have been ignored in the PER. (Kanyana Wildlife Rehabilitation Centre)	LandCorp has attempted to conserve as much bushland as possible while maintaining the viability of the project.
39.	Greenways: This bushland is included in a strategic plan for Perth's Greenways. The Greenways concept has been embraced by government agencies such as Department of Planning and Infrastructure and the Department of Environmental Protection. (Kanyana Wildlife Rehabilitation Centre)	Greenways are not uninterrupted bushland corridors, but in most cases represent closely located bushland areas from which fauna in particular, birds can use to move across the city. The proposal involves decreasing the size of a pocket of remnant vegetation that can be used along two Greenways (75 and 90).
40.	National trust: We are advised that this bushland is listed by the National Trust, attesting, to its high value. (Kanyana Wildlife Rehabilitation Centre)	LandCorp has only recently become aware that the bushland is listed by the National Trust (W.A.). The trust is a non-profit community based organisation and LandCorp respects its decision to include Lot 502 on a heritage listing. LandCorp is not however aware of the justification for listing and was not consulted by the Council regarding the listing. LandCorp cannot comment on the significance of the listing, as it has not been informed of the criteria for inclusion.



	Submission	Response
41.	<p>Natural Heritage values. Australia's geographic isolation has produced some of the most extraordinary life forms known to the world and to science. The flora and fauna represent millions of years of evolution and adaptation to semi-desert conditions and depauperate soils. They are a source of wonder and inspiration to Australians and overseas visitors alike. Very little is known or understood about their biological make-up or function. The health of the environment is fundamental to community well-being and economy.</p> <p>(Kanyana Wildlife Rehabilitation Centre)</p>	<p>Bush Forever has attempted to address the conservation of natural heritage values in the Perth Metropolitan Region. Bush Forever did not include Lot 502 for protection.</p> <p>In addition, the site is not listed under any government environmental or heritage listing. The Heritage Council of WA does not have a listing for Lot 502. Lot 502 has been listed as being of heritage value by the National Trust of Australia (Western Australia), a non-government organisation dedicated to identifying, conserving and promoting heritage in WA. See previous response above.</p>
42.	<p>EPA Objectives: Destruction of the bushland would be contrary to the EPA objectives shown on page xi of the PER.</p> <p>(Kanyana Wildlife Rehabilitation Centre)</p>	<p>LandCorp disagrees but this is a matter for the EPA to decide.</p>
43.	<p>We strongly object to the proposal to clear the bushland on Lot 502 for an industrial site. This bushland block is one of the few remaining large, environmentally significant areas on the Swan Coastal Plain. The majority of the bushland is in good condition. It is strategically located adjacent to the Beelihar Regional Park and should be included in the Park. The bushland supports a diversity of flora and fauna. The habitat is critical to the survival of important fauna populations.</p> <p>(Canning River Regional Park Volunteers)</p>	<p>LandCorp notes the objection of the submitter. There are many large and similarly sized blocks in the metropolitan area that will be protected under Bush Forever.</p> <p>The overall regional and local significance of the Lot 502 is described in section 4.2.4 and 4.2.5 of the PER and the significance of bushland to flora and fauna values are described in Section 6.1 and 7.1 of the PER.</p>
44.	<p>The proponent is attempting to shift the focus of the proposal away from the prime issue of clearing to incidental issues such as rehabilitation of a buffer zone on the western side of South Lake and planting of native gardens. This proposal is about the acceptability of urban clearing on a large scale. It is not about dealing with cosmetics. A proposal to clear around 70 hectares of structurally intact bushland in an urban context is significant. There are permanent unacceptable consequences for the regional Cockburn environment should this development proceed.</p> <p>(Conservation Council)</p>	<p>LandCorp disagrees. The PER has been prepared to assess the potential environmental impacts of the proposal and provide for sufficient management measures to manage and minimise the predicted impact.</p> <p>The overall regional and local significance of the Lot 502 is described in section 4.2.4 and 4.2.5 of the PER. The impact sections (sections 6 to 14) of the PER address the potential impact of the proposal both locally and regionally. LandCorp does not anticipate the proposal will cause significant regional harm.</p>
45.	<p>The North/Bibra Lake component of the Beelihar Regional Park based on the Cockburn chain of wetlands is linear in nature. The Amcor site would give it a much needed west/east habitat construct. This would add to its diversity of plant communities, and be an important factor in retaining the integrity of the Park in an intensively developed urban setting.</p> <p>(Conservation Council)</p>	<p>LandCorp anticipates the provision of the buffer, which contains both wetland and upland vegetation, will contribute to an east/west habitat construct.</p>

	Submission	Response
46.	Development Environmental Management Plan This plan assumes that the development is environmentally acceptable. It is not. (Conservation Council)	LandCorp disagrees but this is a matter for the EPA to decide.
47.	Shape. Bush Forever put forward a preferred management shape. Lot 502 conforms to that preferred shape, except for the linear extension on one section. (Kanyana Wildlife Rehabilitation Centre)	LandCorp acknowledges that the site appears to meet many of the criteria for inclusion in Bush Forever but reiterates that the site has already been considered twice for inclusion and both times has been rejected. The exclusion from Bush Forever is a matter for the Department of Planning and Infrastructure to address and LandCorp is not required to justify its exclusion. The background to the exclusion of this site from Bush Forever is described General Response 4.5 of this document.
48.	Logical Extension of Beeliam Regional Park: This bushland is closely associated with the adjoining Beeliam Regional Park, thus enhancing the conservation value of both the bushland and the Regional Park. This was not taken into account in the PER, document. Logically Lot 502 needs to be included in the Beeliam Regional Park. (Kanyana Wildlife Rehabilitation Centre)	LandCorp disagrees. The land is zoned for industrial use and Beeliam Regional Park already conserves many natural values in the area. Although the bushland is associated with the adjoining park, which was acknowledged in the PER (section 4.2.2, 4.2.3, 4.2.4, And 4.2.5), this does not mean it has to be included in the park. Using this argument, all bushland in contact with the park should be conserved, which is an impracticable suggestion. Retaining and not developing land costs the State large sums of money not only in unrealised revenue from the selling of land but also in the cost of upkeep and maintenance.
49.	The Group supports the “no development” option. None of the bushland should be cleared. (Waterbird Conservation Group)	LandCorp notes the submitters view.
50.	It was obvious that the bushland not only provided a magnificent buffer to South Lake but also supported valuable plant and animal communities. (Waterbird Conservation Group)	The overall regional and local significance of the Lot 502 is described in section 4.2.4 and 4.2.5 of the PER and the significance of bushland to flora and fauna values are described in Section 6.1 and 7.1 of the PER. Ecological function of South Lake will not be impacted by the proposal due to the retention of the buffer area, which is up to 214 m wide.
51.	The bushland is considered free of dieback. The Welker P.E.R. says, “that the probability of the pathogens being present is extremely low” (see Figure 8). Also the survey conducted by Fieldview Nominees Pty Ltd checked for the presence of <i>Armillaria luteobubalina</i> and found it clear. This adds to the importance of the bushland. The case for its preservation within the Beeliam Regional Park is even stronger. (Waterbird Conservation Group)	LandCorp acknowledges the possible Dieback free status of the bushland. The overall regional and local significance of the Lot 502 is described in section 4.2.4 and 4.2.5 of the PER and the significance of bushland to flora and fauna values are described in Section 6.1 and 7.1 of the PER. Retaining and not developing land costs the State large sums of money not only in unrealised revenue from the selling of land but also in the cost of upkeep and maintenance.

	Submission	Response
52.	The Welker P.E.R. has concluded that "there will be negligible effect on regional floral diversity as vegetation communities and individual species in Lot 502 are not regionally restricted." The very narrow approach which the Welker P.E.R takes is not consistent with Government policies on vegetation clearing. Nor does it take notice of information provided in both the flora and fauna consultants' reports with respect to natural values. (Waterbird Conservation Group)	The PER has considered all current Government policy and guidance regarding the clearing of native vegetation in assessing the significance of impacts of the development. It has also included all relevant information from the Weston (2000), Bennett (2001) and Bamford (2002) reports in assessing potential impacts on flora and fauna values.
53.	With the Government in the process of introducing legislation to prevent broadscale clearing, it is inconceivable that it could allow its own government land developer to proceed.  The EPA has come out strongly against broadscale clearing of native vegetation in rural areas. It is difficult to understand how the EPA can agree to this happening in view of the Authority's position on clearing. (Waterbird Conservation Group)	LandCorp notes the submitters view. This is an EPA matter.
54.	Clearing our precious bushland needs to stop especially alongside an important wetland which would rapidly degrade if clearing took place. (Urban Bushland Council)	LandCorp acknowledges a substantial proportion of the remnant vegetation of Lot 502 will be removed for the development of the estate.  The remainder will however be retained and protected in proposed ROS and POS  The impact of clearing this bushland to vegetation, fauna landscape values, and South Lake is described in the PER in Sections 7, 8, 9, and 10 respectively.
55.	Combining areas considered of importance in Bennett report with areas considered important by Bamford, all of site is of importance. This is not looked at in PER document. (Waterbird Conservation Group)	The PER contained an assessment of the significance of the bushland (see Sections 4.2.4, 4.2.5, 6.1 and 7.1). The objective findings of Bennett and Bamford were incorporated into these sections.
56.	Community groups have been through the site and found it of good quality, not very weedy except inevitably along tracks. (Waterbird Conservation Group)	Much of the area was found to be in good condition by Dr Eleanor Bennett (Consultant Botanist). There were however, many infestations of weeds through the bushland area which lowered its condition rating. Weeds were at there densest along tracks and in association with areas of paper pulp disposed adjacent to the area.

	Submission	Response
57.	Connectivity – an important consideration in favour of this site. Greenways identify two corridors through this site – an east-west link as well as a north-south link. These help maintain the ecological stability of the area. This issue was not explored or recognised in the PER. (Waterbird Conservation Group)	The issue has been addressed. Section 4.2.3 of the PER acknowledged the north-south linear belt of wetlands that Lot 502 is associated with and Beeliiar Regional Park, which the bushland is joined to. Section 4.2.4 acknowledged that the lot is part of Greenways 72 and 90 and is part of a regionally significant bushland/wetland linkage.  In discussing potential impact, the last paragraph of 7.5.1 of the PER stated that 'because the site does not lie between conservation areas, its loss will not fragment fauna communities, but will have some impact on adjacent mobile fauna that use it as a seasonal food source'. The retention of the buffer area will ensure links to and between adjacent bushland are conserved.
58.	The site is classified by the National Trust of Australia (WA). This is not acknowledged in PER. (Waterbird Conservation Group)	LandCorp has only recently become aware that the bushland is listed by the National Trust of Australia (WA). The trust is a non-profit community based organisation and LandCorp respects its decision to include Lot 502 on a heritage listing. LandCorp is not however aware of the justification for listing and was not consulted by the Council regarding the listing. LandCorp cannot comment on the significance of the listing, as it has not been informed of the criteria for inclusion.
59.	Even though the site is not included in Bush Forever, that should not be an end all. As well as of regional values, the site is very much of local value. (Waterbird Conservation Group)	The PER has acknowledged and managed for the local values of the bushland. Section 4.2.5 describes the local significance of the site, while Sections 6.5.1, 7.5.1, 8.5, address the management of local impacts in regard to flora, fauna and visual amenity respectively.
60.	The importance of an east-west perspective to the Beeliiar Regional Park was not addressed at all in the PER. (Waterbird Conservation Group)	Lot 502 is not part of Beeliiar Regional Park.

**Biodiversity**

	Submission	Response
61.	<p>Other undesirable impacts include loss of local biodiversity. This proposal involves the clearing of 63 hectares of <i>Jarrah / Banksia</i> woodland adjacent to the South Lake Reserve in the Beeliar Regional Park. This vegetation is on the Karrakatta soil association and this is poorly represented in the conservation estate, and especially in the Beeliar Regional Park. This is the last chance we have to protect a relatively large area of this vegetation and to provide a substantial fauna habitat and pool of local biodiversity in the Cockburn area. Its proximity to the Beeliar Regional Park enhances its value as a wildlife refuge and flora reserve.</p> <p>(Wetlands Conservation Society)</p>	<p>LandCorp acknowledges that there may be some small impact to local floral biodiversity as described in Section 6.5.1, page 46 of the PER.</p> <p>The regional significance of vegetation and flora of the site is described in general response 4.6 of this document. No significant regional impact to floral biodiversity should occur as a result of this proposal. The provisions of Bush Forever additionally protect regional biodiversity.</p> <p>LandCorp notes the submitters view on the value of the site.</p>
62.	<p>6.3.1</p> <p>I would like to point out the fact that it is stated that Biodiversity has two key aspects Its functional value at the ecosystem level; and Its intrinsic value at the individual species, species assemblages and genetic levels. These points again should be remembered as this proposal goes against these values.</p> <p>(Friends of North Lake)</p>	<p>LandCorp notes the submitters view</p>
63.	<p>6.7 Outcomes</p> <p>Dot point 1. There may be no significant decrease in the regional context, but there is at the local level.</p> <p>Dot point 2. This point contradicts the amount mentioned in the Summary of the environmental issues, Potential Impacts, in Executive summary. If they have got this wrong what else is wrong.</p> <p>Dot point 3. A decrease by this percentage is great; this means a decrease in local biodiversity. This goes against the EPA Objective, and National objectives and targets for biodiversity conservation.</p> <p>(Friends of North Lake)</p>	<p>Dot point 1: LandCorp has been upfront with the possible small decrease in local floral diversity.</p> <p>Dot point 2: The amounts do not contradict. As clearly stated, the percentage of Karrakatta complex cleared referred to in Section 6.7 Dot point 2 is expressed as a percentage of the original extent of the complex, while in the Executive Summary it is expressed as a percentage of that now remaining.</p> <p>Dot point 3: The national objectives and targets for biodiversity conservation in regard to the Karrakatta Complex central and south will be dealt with by protecting areas outside the metropolitan area. Bush Forever states that this complex extends north from the Perth Metropolitan Region and there are better opportunities for conservation in these areas (page 81, Volume 2 Bush Forever. Government of Western Australia 2000).</p>

	Submission	Response
64.	<p>Biotic erosion - loss of ecosystem diversity and bio-diversity:            Unquestionably the proposed development would lead to regional bio-diversity impoverishment and biotic erosion. Bio-diversity declines in simplified ecosystems.            (Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp acknowledges that there may be some small impact to local floral biodiversity as described in Section 6.5.1, page 46 of the PER.</p> <p>No significant regional impact to floral biodiversity should occur as a result of this proposal. The provisions of Bush Forever additionally protect regional biodiversity. The regional significance of vegetation and flora of the site is described in general response 4.6 of this document.</p>
65.	<p>The previous Premier Hon. Richard Court committed the Western Australian Government to implement The National Strategy for the Conservation Of Australia's Biological Diversity the goal of which is "to protect biological diversity and maintain ecological processes and systems". This goal has not been met.            (Conservation Council)</p>	<p>The goal is apparently in the process of being met through the Bush Forever process and other environmental planning and conservation mechanisms.</p>
66.	<p>It is vital that the EPA takes a strong stand on the clearing of vegetation in urban areas. It has developed a Position Statement on the clearing of native vegetation in the agricultural area, and this was very welcome. However it cannot choose to ignore broad scale clearing in urban areas if it is to retain credibility. The reasons for the development of the Position Statement - e.g. the direct loss of plant species and associated loss of fauna have, just as much relevance to urban areas. Satellite imagery reinforces the case for protection of all large bushland remnants in urban areas.            (Conservation Council)</p>	<p>LandCorp notes this submission although it is a matter for the EPA to address.</p>
67.	<p>Biodiversity of Beelii Regional Park will be affected. The PER document did not bring out the implications of a loss of genetic material in maintaining species or the exchange of genetic plant and animals.            (Waterbird Conservation Group)</p>	<p>The potential impact to biodiversity in Beelii Regional Park will be reduced through the retention of upland vegetation in the buffer and rehabilitation of degraded areas. The majority of flora species found across Lot 502 should remain in the local area within the buffer and the South Lake reserve. There are likely to be some local losses of species, but this is not expected to significantly affect regional biodiversity.</p> <p>All fauna species should remain locally because of these measures and hence regional fauna biodiversity shouldn't be significantly affected.</p> <p>The consideration of genetic diversity is inherent in the assessment of regional biodiversity impact.</p>
68.	<p>Concern over cumulative effects of clearing in area. Not covered in PER. There has been a considerable amount of clearing in region over past 10 years. The extent of the clearing is alarming.            (Waterbird Conservation Group)</p>	<p>The cumulative effect of clearing has been addressed as a regional bushland issue under Bush Forever.</p>

**Bush Forever**

	Submission	Response
69.	I am surprised that this piece of bushland was not put into Bushplan as it is one of the largest areas of fairly undisturbed bushland left south of the river. It is also in Government ownership and the Government should be setting an example to others in the community not bulldozing areas of bushland. (Friends of Brixton St Wetlands)	The site was excluded from Bush Forever as described in General Response 4.5 of this document. It is a charter of LandCorp to supply general industrial land for the social and economic benefit of the State. LandCorp believes it is being environmentally responsible in this proposal.
70.	The outstanding natural values of the bushland have not been recognised in the Public Environmental Review (PER). Lot 502 is a large area of relatively intact bushland. It compares more than favourably with the surrounding Bush Forever areas with respect to its condition, 43% of which is considered Very Good to Good (Bush Forever Condition rating scale). It has a compact shape, making it very manageable for conservation purposes. It is strategically important as it abuts South Lake (Western Australian Forest Alliance)	The vegetation and fauna studies did not find that the bushland of Lot 502 was of outstanding natural value anymore than other similar sized remnant bushland areas in the metropolitan area, many of which are protected under Bush forever. The PER does however describe the values that the flora and fauna consultants found associated with the site and is upfront about its local and regional significance (see Sections 4.2.4, 6.1.3, and 7.1 of the PER). The function of the bushland as a buffer to South Lake is being retained from the provision of a buffer strip up to 214 m wide between the subdivision and lake see Section 9.5.2 of PER).
71.	Quality bushland: The Department of Environmental Protection (DEP) identified it as being largely of Good to Very Good Condition as measured by the Bush Forever Condition rating scale. Its condition compares favourably with other Bush Forever sites in that locality. The site was accordingly given a conservation priority nomination by the City of Cockburn and by community groups for inclusion in Bushplan 1996. (Kanyana Wildlife Rehab Centre)	The exclusion of the site from Bush Forever is described in General Response 4.5
72.	All of the conservation related criteria for the selection of Bush Forever sites, of rarity; size, shape, condition, and relationship to other areas are thoroughly met by Lot 502. Rarity Bush Forever set a minimum target of preserving 10% of each Vegetation Complex. Lot 502 comprises the Vegetation Complex of Karrakatta Central and South. This Complex has failed to meet the 10% target, with only 8% conserved. Vegetation Complexes with less than the 10% minimum target set by the Government should be protected. (Bush Forever, Government of Western Australia, Volume 2, Section 1.4, Figure 2).	LandCorp acknowledges that the site appears to meet many of the criteria for inclusion in Bush Forever but reiterates that the site has already been considered twice for inclusion and both times has been rejected by the Government. The exclusion from Bush Forever is a matter for the Department of Planning and Infrastructure to address. The background to the exclusion of this site from Bush Forever is described in General Response 4.5 of this document.

	Submission	Response
72 (cont.)	<p><b>Size</b> Bush Forever prefers areas over 20 hectares. A large remnant is preferable to A condition." This advice has been ignored.</p> <p><b>Shape</b> Apart from the "pan handle" section, Lot 502 is compact having the preferred Bush Forever management shape.</p> <p><b>Condition</b> The condition is considerably better than some Bush Forever sites in the region (Report, Bennett Consulting Pty. Ltd.)</p> <p><b>Relationship to Other Areas</b> Lot 502 is strategically located adjacent to a wetland, and as such the upland woodland in Lot 502 also enhances the values of the wetland. Lot 502 is part of Greenways 75 and 90. (Environment Australia, and Ministry for Planning, 1998). (Western Australian Forest Alliance)</p>	
73.	<p>In April 1999 the Conservation Council nominated the Amcor bushland to Bushplan. It was the Councils priority nomination. Local conservationists strongly supported this nomination. The Council was upset to learn that the Amcor bushland was to be exempted from consideration due to its current zoning and because LandCorp had (or was) in the process of acquiring the land. Other landowners whose bushland was nominated to Bushplan were not given the preferential treatment afforded to LandCorp. Only a brief inspection of some of the eastern side of the Amcor bushland was made, as part of the Bush Forever assessment, and a very short report filed. The bushland's values were never given any further consideration. The Amcor bushland meets all of the regional significance criteria related to natural values. As far as we are aware it has not yet been formally excluded from Bush Forever (Bush Forever Summary of Submissions, December 2000).</p> <p>We understand that the City of Cockburn also nominated a large part of the Amcor bushland to Bush Forever. It is encouraging when local government authorities are prepared to stand by their Greening Plans. The City of Cockburn's Greening Plan shows the Vegetation Condition (Figure 5c) as Very Good to Excellent through most of the site.</p>	<p>LandCorp acknowledges that the site appears to meet many of the criteria for inclusion in Bush Forever but reiterates that the site has already been considered twice for inclusion and both times has been rejected.</p> <p>The objective of Bush Forever was to protect adequate bushland areas to maintain regional biodiversity and provide assurance to developers on what land they could develop.</p> <p>The exclusion from Bush Forever is a matter for the Department of Planning and Infrastructure to address. The background to the exclusion of this site from Bush Forever is described in General Response 4.5 of this document.</p>



	Submission	Response
73 (cont.)	<p>The Karrakatta Complex Central and South (which comprises most of the Amcor bushland) at best can only meet an 8% Protection figure based on current Bush Forever sites. Also not all Bush Forever sites are assured of protection. An additional 863.2 hectares is needed to meet the 10% target (which in itself is low). There is little likelihood of this target being met even if the Government meets its promise to look at sites outside the metropolitan area. The Amcor site offers the opportunity to increase the 8% figure. There is no excuse for not doing so. When LandCorp acquired the bushland it must have been well aware that the bushland had the potential to be a Bush Forever site, but were in the fortunate position of being able to approach the relevant government agencies to plead a case for the sites exemption. This is an affront to the community who expected the Bush Forever process to be transparent and fair.</p> <p>BushPlan (1998) described the Spearwood Dunes "as extensively cleared and urbanised". It was evident during the preparation of Bushplan that the Karrakatta Complex Central and South was not well represented in the conservation estate. Therefore any Karrakatta Complex Central and South over 20 hectares should have been a priority consideration.</p> <p>Information on the value of this site was available to the Planning agency as far back as 1994. In preparation for an expansion of conservation reserves on the Swan Coastal Plain the Perth Environment Project (PEP) was initiated by the planning agency. "The Perth Environment Project is an initiative of the Department of Planning and Urban Development (DPUD) to give greater prominence to the environment in statutory and strategic planning" (1994 National Greening Australia Conference Proceedings).</p> <p>The Intention was to gather information on remnant vegetation in the metropolitan area. In 1993 discussions were held between the Department of Planning and Urban Development and Murdoch University. This resulted in pilot surveys of bushland in the City of Cockburn and the City of Melville as part of the PEP process. A Report by Fran Chambers Dr Colin Walker "Urban Bushland Development of a Methodology for Perth's Urban Bushland Inventory" was completed in early 1994 and a Working Group meeting at which a Conservation Council member attended was held on the 11th of March, 1994. The Amcor land was identified in that research and its flora was given a high natural attribute rating.</p> <p>(Conservation Council)</p>	
74.	<p>The Amcor site meets the Bush Forever criteria of regional significance in Bush Forever, as follows:-</p> <p>Rarity:</p> <p>Using Vegetation Complex representation (Bush Forever) the Amcor bushland has less than the minimum 10% target set by the Government of Western Australia. Karrakatta Central and South can only achieve 8% based on of the proposed Bush Forever sites.</p>	As above

	Submission	Response
74 (cont.)	<p><b>Size:</b></p> <p>As a metropolitan bushland remnant the Amcor site is very large. Maintaining biological diversity for flora and fauna is easier with larger sites. This was a key factor in determining the inclusion of bushland in Bush Forever. The size of the Amcor bushland greatly enhances the viability of fauna populations. The fauna diversity is high with 8 frog species, 38 reptiles, 80 birds, 16 mammals (11 of which are native). It is expected that abundance of many of these species is also high, because of the size and the uninterrupted association of upland and wetland. The size of the area in combination with South Lake, which, also links to other conservation areas, must be taken into account. Strategically the Amcor bushland's location enhances both the Amcor site and that of South Lake. Bush Forever states "the capacity of an area to support the full species range of a given vegetation type will diminish with decreasing size".</p> <p>The fauna consultant's Report includes a habitat map which shows areas A (almost all of the northern linear strip, and a part of the eastern side of the Amcor site) as being of high value, as fauna habitat. This has not been set aside for conservation.</p> <p>Area E (Main upland woodland of project area) was not assessed, but would undoubtedly provide food, shelter and habitat for a large proportion of the fauna found on the site and also be of high value.</p> <p><b>Compact:</b></p> <p>The southern part of the Amcor bushland is very compact. The ratio of perimeter to area is ideal for conservation management purposes. This is considered to be an important factor when selecting Bush Forever sites.</p> <p><b>Relationship to other areas:</b></p> <p>The Amcor bushland adjoins South Lake. The association of dry and wet habitats greatly enhances the values of both Areas. This is confirmed in the flora consultant's Report "All of the (Amcor) land is uplands of the Spearwood Dune system, which form a very important and essential component of South Lake, as it would increase the ecological diversity of this Bush Forever site".</p> <p>The Amcor bushland provides important habitat for wetland fauna some of whom require a mix of dry and wet habitats throughout their life cycle. This is confirmed in the fauna consultant's Report with respect to frogs, reptiles, waterbirds and mammals.</p>	

	Submission	Response
74 (cont.)	<p>The Tingay study on wildlife corridors prepared on behalf of Environment Australia and the Ministry for Planning identified the Amcor bushland as part of a greenways corridor. The Amcor land is part of Greenways No 75 and No 90. These vital links must be retained and enhanced if the greenways concept is to be implemented. It is not acceptable for government agencies to disregard responsible technical advice in reports they commission.</p> <p>The proponent's flora consultant was asked to "address regionally significant bushland criteria as in Bush Forever (Government of Western Australia, 2000)".</p> <p>The flora consultant's Report confirmed the Amcor site met the Bush Forever regionally significant criteria with respect to size, shape, condition and relationship with other areas. Also that the bushland's relationship with South Lake greatly enhances the values of both sites.</p> <p>The report pointed out Bush Forever recommendations with respect to Conservation Category Wetlands (South Lake) such as</p> <ul style="list-style-type: none"> <li>• Providing a wildlife corridor between the wetland and upland</li> <li>• Providing feeding and/or breeding habitat for birds</li> <li>• The importance of fringing vegetation, and associated upland vegetation</li> <li>• The increase in ecological diversity of the wetland</li> </ul> <p>(Conservation Council)</p>	
75.	<p>The vegetation condition of the bushland within the Beeliar Regional Park (Bibra and North Lake Bush Forever sites) is only 20% (Bush Forever, Government of WA 2000) compared to the 43% condition rating for Lot 502. This is a very significant fact.</p> <p>(Western Australian Forest Alliance)</p>	<p>LandCorp is not sure what condition rating WAWA refer to in this submission, so is unable to respond.</p>
76.	<p>Furthermore the bulk of the weeds in Lot 502 are in the completely degraded areas, i.e. those proposed either for conservation or Public Open Space. (See Map 3: Weed Suites). Bush Forever sites (244, 254, 256) all have areas of severe localised disturbance. This does not mean they are not significant.</p> <p>(Western Australian Forest Alliance)</p>	<p>LandCorp agrees.</p>

	Submission	Response
77.	<p>The Greenways concept is an important one. It has been widely promoted and accepted by government agencies particularly the Department of Planning and Infrastructure and the Department of Environmental Protection. This site is included in "A Strategic Plan for Perth's Greenways - Final Report (Tingay &amp; Associates). It was prepared for Environment Australia and the Ministry for Planning to enhance the Bush Forever initiative. Lot 502 is part of Greenways 75 and 90 in this Report.</p> <p>The development proposal ignores the significance of Lot 502 as a link to South Lake (and from South Lake to Bibra, Little Rush and Yangebup Lakes). LandCorp's consultant points out that the "eastern side of the Amcor site ... is important as part of the Greenways and regionally significant bushland/wetland linkages. Consideration should therefore be given to maintaining this area as bushland and combining it with the Beeliear Regional Park.</p> <p>(Western Australian Forest Alliance)</p>	<p>Greenways are not uninterrupted bushland corridors, but in most cases represent closely located bushland areas from which fauna in particular, birds can use to move across the city. The proposal involves decreasing the size of a pocket of remnant vegetation that can be used along two Greenways (75 and 90).</p> <p>A substantial proportion of the eastern side of the Amcor site will be conserved within the buffer strip, which is up to 214 m wide.</p> <p>The retention of all of the eastern section of the site by restricting development west of ridgeline was considered in LandCorp's examination of alternatives (Alternative 2 as summarised in Section 3.1.3, page 16 of the PER). LandCorp found such an alternative proposal severely affected the viability of the project and was not pursued.</p>
78.	<p>Endangered habitats:</p> <p>This bushland displays a diversity of vegetation and habitat types, principally the Karrakatta Complex. Representative examples of all plant communities must be retained and such examples must be sufficiently large to be viable. This bushland is currently large and viable. Were the proposal to go ahead, less than 8% of the Karrakatta vegetation complex would remain in reserves. This is less than Bush Forever's prescribed 10%. This is quite unacceptable.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>Bush Forever states: <i>'The Karrakatta Central South complex retains more than 10 per cent bushland at present, but is substantially constrained by existing development proposals and Urban/Industrial Zones to the extent that the target is unlikely to be achieved. It is notable that this complex extends north from the Perth Metropolitan Region and there are better opportunities for conservation in these areas.'</i></p> <p>(Page 81, Volume 2 Bush Forever. Government of Western Australia 2000)</p> <p>Contrary to this submission, the amount of this complex in reserves will not decrease as a result of this proposal.</p>
79.	<p>Plant Communities:</p> <p>The PER ('Conclusion' P ix) argues its case from an unacceptable minimalist position, grossly understating the massive impact that the proposed development would have on a local and regional level in terms of the points we have made in this submission.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp disputes the claim that a minimalist approach has been taken for the assessment of impact on a local and regional scale.</p> <p>The impacts in both a local and regional context are described in Sections 6 to 14 of the PER.</p>

	Submission	Response
80.	<p>The importance of conserving geographical context has been stressed above. The Bennett study acknowledges the same (Discussion P21) by referring to the regionally significant 11 km of bushland-wetland linkage. The study concludes: "if development is to be considered for this site this bushland linkage provided by the Amcor site should be retained".</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>The Amcor site links directly with South Lake on its eastern side. South Lake links by North Lake Road to Bibra Lake and southwards through Little Rush Lake and Yangebup Lake to Thomson's Lake and then to Harry Waring Reserve, resulting in nearly 11km of bushland linkage. The bushland linkage provided by Lot 502 will be retained and enhanced by establishing a formal buffer area up to 214 m wide and rehabilitating degraded areas on the western side of South Lake. The subdivision will not separate South Lake bushland from Bibra Lake to the north or Little rush Lakes to the south. The subdivision sits to the west of the linkage and its removal does not represent a disruption in this linkage.</p>
81.	<p>Bushplan (1998):</p> <p>This bushland was nominated for inclusion in Bushplan by community groups and the city of Cockburn. The government appears to have ignored this. The public process must be upheld.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>The background to the exclusion of this site from Bush Forever is described in General Response 4.5 of this document.</p>
82.	<p>Bush Forever - General criteria for protection of wetland</p> <p>Referring to the comment that the upland vegetation is weakly associated with the wetland as habitat that may be potentially occasionally utilised by fauna of the lake such as bandicoots and tortoise. This statement total disregards the above statement and the comments raised in the fauna section and the follow section.</p> <p>(Friends of North Lake)</p>	<p>LandCorp acknowledges that the site may have met this criterion for inclusion in Bush Forever but reiterates that the site has already been considered twice for inclusion and both times has been rejected.</p> <p>The exclusion from Bush Forever is a matter for the Department of Planning and Infrastructure. The background to the exclusion of this site from Bush Forever is described in General Response 4.5 of this document.</p>
83.	<p>The Group made a submission to Perth's Bushplan in March 1999, in which it urged the addition of the Spearwood upland area (Lot 502) to South Lake and the Beelie Regional Park. The Group has been very disappointed that its nomination of the Spearwood upland area appears to have been dismissed by the Department: of Environmental Protection. The Group thought that nominations by individuals or Groups to Perth's Bushplan would be thoroughly processed. It seems this is not the case.</p> <p>(Waterbird Conservation Group)</p>	<p>The exclusion from Bush Forever is a matter for the Department of Planning and Infrastructure. The background to the exclusion of this site from Bush Forever is described in General Response 4.5 of this document.</p>

	Submission	Response
84.	<p>The management of a wetland is greatly assisted when there is a large area of bushland surrounding it. Unfortunately it is often not possible to ensure that a wetland has a large bushland boundary and as a consequence intensive management has to be undertaken. The opportunity to set such a boundary on South Lake is possible through the Bushplan process. This must be pursued.</p> <p>We understand the City of Cockburn nominated over 30 hectares of the bushland during the Bushplan submission period. As there is local community support for the protection of this area, and also support from the local government authority the consideration of the site for Bushplan should be renewed.</p> <p>(Waterbird Conservation Group)</p>	<p>There is currently no formal buffer on the western side of South Lake. At the Bushplan Co-ordinating Group meeting held on 7 July 1999, it was agreed to examine opportunities to preserve some vegetation and provide a buffer to the adjacent wetland through the industrial structure planning process and was not further considered for inclusion in Bush Forever.</p> <p>This proposal will include the formalisation of a buffer of up to 214 m wide on the western side of South Lake, the degraded areas of which will be rehabilitated.</p> <p>The exclusion of the site from Bush Forever is a matter for the Department of Planning and Infrastructure. The background to the exclusion of this site from Bush Forever is described in General Response 4.5 of this document.</p>
85.	<p>As the principal Vegetation Complex of Karrakatta Complex Central and South at best can only achieve a protection of about 7.6% of its original area all large bush blocks should be seriously considered for inclusion in Bushplan. This large bush block cannot be ignored if Bushplan is to have credibility. By adding Lot 502 to Bushplan the 7.6% figure goes to 9.0%, which although not yet reaching the 10% target, is a lot closer.</p> <p>(Waterbird Conservation Group)</p>	<p>Bush Forever states: <i>'The Karrakatta Central South complex retains more than 10 per cent bushland at present, but is substantially constrained by existing development proposals and Urban/Industrial Zones to the extent that the target is unlikely to be achieved. It is notable that this complex extends north from the Perth Metropolitan Region and there are better opportunities for conservation in these areas.'</i></p> <p>(Page 81, Volume 2 Bush Forever. Government of Western Australia 2000)</p> <p>The exclusion from Bush Forever is a matter for the Department of Planning and Infrastructure. The background to the exclusion of this site from Bush Forever is described in General Response 4.5 of this document.</p>
86.	<p>There is a contradiction in spending a lot of money on buying land for Bush Forever, then allowing bushland like this to be bulldozed.</p> <p>(Waterbird Conservation Group)</p>	<p>The idea of Bush Forever was not only to conserve bushland area, but also to provide some assurance to land developers and planners of the environmental acceptability of using some bushland areas for important land uses. The site not included for protection under Bush Forever as described in General Response 4.5. Therefore the proposal is consistent with Bush Forever rather than contradictory.</p>

	Submission	Response
87.	<p>Concerns over why was site not included in Bush Forever. This bushland was a primary nomination to Bush Forever by the Waterbird Conservation Group and other non-government organisations. It was never subject to a fair assessment based on flora and fauna values. It must be.</p> <p>The site was not considered because of its zoning and ownership. It is not acceptable to dismiss an area of bushland based solely on economic reasons. If the site was not considered important because of the degraded area adjacent to South Lake, and the effluent pond area, then these areas should have been left out and the 70 ha bushland area considered in isolation. Will the EPA make recommendations about this site being considered for inclusion in Bush Forever because it meets the criteria?</p> <p>The bushland meets five Bush Forever 'significance' criteria and overall has a higher proportion of site in good quality vegetation compared to some of the nearby Bush Forever sites e.g. Bibra and North Lakes Bush Forever sites (as shown by figures in Bennett report page 12).</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp acknowledges that the site appears to meet many of the criteria for inclusion in Bush Forever but reiterates that the site has already been considered twice for inclusion and both times has been rejected.</p> <p>The objective of Bush Forever was to protect adequate bushland areas to maintain regional biodiversity and provide assurance to developers on what land they could develop.</p> <p>The exclusion from Bush Forever is a matter for the Department of Planning and Infrastructure to address. The background to the exclusion of this site from Bush Forever is described in General Response 4.5 of this document.</p>

**Vegetation communities**

	<b>Submission</b>	<b>Response</b>
88.	The clearing of the vegetation should not be allowed, as the level of the different complexes is below the level of 30%, that which is thought necessary for biodiversity conservation and in this case is of sufficient size to be sustainable. What the proponent has set out is not. (Wildflower Society)	The threshold level of 30 % has historically been applied to vegetation units at much grander scales i.e. Forest Ecosystem types in the RFA which are made up of numerous vegetation complexes. Bush forever applies a target of retaining 10 % of the original extent of complexes within the metropolitan area. The complexes are often found and protected outside the metropolitan area as well.  The regional significance of the vegetation is described in General Response 4.6. The proposal is not anticipated to impact on regional biodiversity.
89.	Maintaining Ecological Processes or Natural Systems The lot is included as part of Greenways 72 and 90 (as per Alan Tingay and Associates 1998) and is part of a regionally significant bushland/wetland linkage. Why is this being overlooked? (Friends of North Lake)	Greenways are not uninterrupted bushland corridors, but in most cases represent closely located bushland areas from which fauna in particular, birds can use to move across the city. The proposal involves decreasing the size of a pocket of remnant vegetation that can be used along two Greenways (75 and 90).  The issue was not overlooked as was acknowledged in Section 7.1.7 and the potential impact addressed in Section 7.5.1. The proposal was not thought to potentially fragment fauna communities but may have some impact on adjacent mobile fauna (using wildlife linkages) that use the site as a seasonal food source.
90.	9.7 Outcome The proposal may not disturb the lake, but will result in vegetation loss. (Friends of North Lake)	LandCorp agrees.
91.	Conserving processes: A balance of nature/equilibrium is necessary- The preservation of vital biological processes in our region is essential. The disruption of cycles which would occur as a result of the proposed development would amount to major disturbance -it would disrupt the areas' dynamic sheet flow and cause altered hydrology and habitat loss, water quality will worsen as a result of pollution (Kanyana Wildlife Rehab Centre)	LandCorp does not believe that the proposal will cause significant environmental harm, with the most significant impact being the associated habitat loss of local and potential sub-regional significance.  There is very little surface flow of water over the site and most rain quickly percolates through the sandy soils. The strong groundwater flow to the west is unlikely to be disrupted.  Neither surface water nor groundwater quality will be affected by the proposal.



	Submission	Response
92.	<p>The Karrakatta South and Central Complex is under-represented; 90% of this bushland is of this Complex. Bush Forever states that 19% of the original Complex now remains, i.e. 6275 ha; 1941 ha is reserved and a further 649 ha is proposed for reservation which makes 2590 ha or just over 7.5% of the original Complex. The Lot 502 contains a further 1.4% of the Complex which if added to the area reserved and proposed for reservation brings the total to 9% which is close to the 10% that Bush Forever considers to be the minimal amount of any Complex that should be conserved.</p> <p>The PER, the Bamford report on the Amcor Bushland, and the Bennett Survey of Lot 502 (i.e. the same area) are confusing or incorrect in their indication of the amount of the Karrakatta South-Central complex that remains and how much is conserved.</p> <p>Bamford (P13) indicates that originally there was 34,532 ha, of this 6,275 ha remains, i.e. 18%, and that 2,081 ha is 'reserved or proposed for reservation'. The Amcor bushland contains 4.2 % of that proposed for reservation (or should this have been 'conserved and proposed for reservation?') This would amount to about 87 ha which is the area of the site.</p> <p>The PER (P ix) states that 2590 ha of the complex are protected under Bush Forever, does this include conserved and areas proposed for conservation?</p> <p>Bennett (p-20) states that only 8% of the remaining 18% is conserved, i.e.- c. 500 ha. (Kanyana Wildlife Rehab Centre)</p>	<p>Lot 502 contains 0.2 % of the original extent of the complex, not 1.2% (it is 1.2% of that remaining). The protection of Lot 502 under Bush Forever would increase the percentage of original extent of the complex from 8 % to 8.2%.</p> <p>Bush Forever states: <i>'The Karrakatta Central South complex retains more than 10 per cent bushland at present, but is substantially constrained by existing development proposals and Urban/Industrial Zones to the extent that the target is unlikely to be achieved. It is notable that this complex extends north from the Perth Metropolitan Region and there are better opportunities for conservation in these areas.'</i></p> <p>(Page 81, Volume 2 Bush Forever. Government of Western Australia 2000)</p> <p>LandCorp acknowledges that there a number of percentages being quoted throughout the PER and consultants reports.</p> <p>The percentages quoted in the fauna study (Bamford 2002) assumed that the entire site (89 ha) was considered to be remnant Karrakatta Complex Central and South. This is not so, as bushland that is completely degraded (approximately 22 ha) is not considered remnant vegetation. The area of Karrakatta Central and South in Lot 502 is subsequently 67 ha, 59 ha of which will be cleared as part the proposal.</p> <p>Following the modification of the proposal and the reduction in size of the subdivision, the clearing of bushland of Lot 502 represents at the most (as there may be some Bassendean Complex within the area of Lot 502:</p> <ul style="list-style-type: none"> <li>• 0.2 % of the <b>original</b> extent (pre-European settlement) of the Karrakatta Complex central and south complex in the metropolitan region;</li> <li>• 0.9 % of that now remaining in the metropolitan region;</li> <li>• 2.3 % of that proposed to be protected following implementation of Bush Forever</li> </ul> <p>Under Bush Forever, 8 % of the original extent (pre-European settlement) of the Karrakatta Complex Central and South complex in the metropolitan region is protected which includes both current and proposed conservation areas.</p>
93.	<p>"Most of the Floristic Community Type 28 sampled at the Amcor site has the potential for long term viability."(E. Bennett, P 17). This is yet another strong factor in its favour. (Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp notes that this is a favourable aspect of the site. Dr Bennett also states that the condition of the vegetation was not unusual in the sandy soils of the Perth metropolitan area.</p>

	Submission	Response
94.	<p>An analysis of the reports on the flora and fauna substantiates the case for no development. Apart from two areas labelled Condition 6, Map 2 Bennett Environmental Consulting Pty Ltd, in the south of the site, the flora is in a fairly undisturbed state. Most of the disturbance is along the edges. The vegetation a few metres in from tracks is very good. Disturbance along edges would be common in most urban bushland settings.</p> <p>Figure 7 clearly shows the extent of the very good and good condition vegetation. All of this would be cleared if the industrial development went ahead.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp has presented the vegetation condition mapping in the PER (see Figure 7 page 38).</p> <p>Contrary to this submission, not all of the vegetation in very good to good condition will be cleared. An area of 9 ha of remnant woodland will be retained, including that in a very good to good condition.</p>
95.	<p>Strangely enough one of the areas labelled Condition 6 is proposed for conservation by LandCorp. The reason for this is undoubtedly that this land could not realistically be developed for industry because of its proximity to South Lake. We understand this land may also have a gazetted road alignment through it.</p> <p>We cannot understand why an environmental document can propose the bulldozing of a large area of native vegetation in wonderful condition, at the same time proposing to set aside a small degraded area. It makes no sense whatsoever.</p> <p>(Waterbird Conservation Group)</p>	<p>This area is proposed for conservation to provide a sufficient buffer between the subdivision and South Lake. It does not have a gazetted road alignment through it. It is unfortunate that a proportion of the proposed buffer (to be protected) is severely degraded. LandCorp has proposed an intensive rehabilitation program to restore vegetation in this area. However, in response to public environmental concerns, an additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p>
96.	<p>Terms like communities and complexes need to be explained in PER document.</p> <p>(Waterbird Conservation Group)</p>	<p>A broad description of vegetation complexes is included in the third paragraph of page 37 of the PER document. The description indicates that communities are contained within complexes. LandCorp notes that in future documents that are required to contain technical descriptions of vegetation, a glossary of terms could be provided.</p>

### Flora

	Submission	Response
97.	<p>The clearing of 89 hectares of bushland to cater for Industry will destroy the native flora in this area.</p> <p>(Coolbellup Community Association)</p>	<p>59 ha of bushland will be cleared for this proposal. There will inherently be direct losses of flora from the site.</p>
98.	<p>6.5.4 Fire</p> <p>I would like to point out here that the ecology of the area will alter anyway without fire because of the removal of the upland vegetation and landscape alteration (levelling).</p> <p>(Friends of North Lake)</p>	<p>The ecology of the adjacent bushland, which the fire management measures are proposed to protect, should not be significantly affected by the proposal in the medium to long term. There may be some disruption to local fauna ecology as fauna are displaced.</p>

	Submission	Response
99.	Dot point 4. Section 6.7, page 50 - This outcome says they are going to increase the protection of <i>E. rudis</i> and <i>B. grandis</i> , which grow at higher water levels. What happens to the upland species? (Friends of North Lake)	A small area (approximately 7-8 ha of upland vegetation) will be retained in the buffer strip with an additional one hectare retained in the POS in the south western corner of the subdivision.
100.	The Tuart trees in the northern part of Lot 502 would be lost if the development proceeded. The Western Australian Government has recognised the threat to the Tuart through the establishment of the Tuart Response Group. Tuarts grow along a narrow 400 kilometre coastal strip on Quindalup, Spearwood and in some instances Bassendean soil. They are susceptible to attack by the Longicorn beetle as well as fungal pathogens. The decline in Tuarts is of great concern. All remnant Tuart woodland should be protected. (Western Australian Forest Alliance)	The aim of the Tuart Response Group is to protect Tuart woodland. The bushland of Lot 502 is not Tuart woodland, it is <i>Jarrah-Banksia</i> woodland where Tuarts are only found scattered in low densities through the bushland with the exception of the south-western corner in proximity to the proposed POS. A number of Tuarts will be protected in this POS.
101.	This proposal fails to meet the Preliminary EPA Objective with respect to flora. The proposed development does not avoid the loss of abundance, diversity, geographic distribution or productivity of flora either at the species or ecosystem level. (Western Australian Forest Alliance)	LandCorp disagrees but this will be decided by the EPA. The regional significance of the vegetation and flora of the site are described in General Response 4.6 of this document. Section 6.5 of the PER addresses the potential impact of the proposal on local and regional flora values.
102.	Rare Banksia - Jarrah - Tuart Woodland: Banksia-Jarrah woodlands are now rare on the Swan Coastal Plain; their loss would not be 'negligible'. An added threat to Banksia and Jarrah is dieback disease. The Banksia species present (with a few exceptions) and Jarrah are endemic to only a small region in our southwest. There are about 8 or 9 species of Banksia at stake in the metropolitan region. Their future is at risk. These must be protected. (Kanyana Wildlife Rehab Centre)	LandCorp disagrees. The Banksia-Jarrah woodland that covers most of the vegetated parts of Lot 502 is representative of Floristic Community 28 - Spearwood <i>B. attenuata</i> or <i>B. attenuata</i> – <i>Eucalyptus</i> woodlands (as per Gibson <i>et al.</i> 1996). It is found through many vegetation complexes on the Swan Coastal Plain. It is considered well reserved on the Swan Coastal Plain and at low risk (Gibson <i>et al.</i> 1996). It is not considered a Threatened Ecological Community by CALM. General Response 4.6 describes the regional significance of the vegetation further.
103.	If the proposal were to be accepted all Tuarts at the northern end of Lot 502 would be cleared. Yet Tuart trees are in decline. We understand that the Department of Conservation and Land Management has set up a task force to look into the preservation of the remaining Tuart woodland, which suggests they consider its future is at risk. Tuart stands should be protected, along with the surrounding hydrological and ecological systems associated with them. This type of bushland is critical for the survival and continuance of many native plants and animals unique to our region. (Kanyana Wildlife Rehab Centre)	Tuarts as a species are not rare or threatened. The aim of the Tuart Response Group is to mainly protect Tuart woodland. The bushland of Lot 502 is not Tuart woodland, it is <i>Jarrah-Banksia</i> woodland where Tuarts are only found scattered in low densities through the bushland with the exception of the south-western corner in proximity to the proposed POS. A number of Tuarts will be protected in this POS. Similar bushland areas have been protected and will be conserved under Bush Forever. The survival and continuance of the region's plants and animals should be assured.

	Submission	Response
104.	<p>Flora survey incomplete:</p> <p>The flora information available to the public (PER) is inadequate. In the Draft Report: 'Spring Rare Flora Search, LandCorp property West of Bibra Lake' by Arthur Weston, the botanical consultant was assigned to survey only the Declared Rare Flora, Priority Flora and other significant flora.</p> <p>This flora survey is incomplete due to limitations imposed on the consultant. As a result the consultant did not assess the bushland as whole, e.g. the overall ecological values, intact structure, size, condition, vegetation complex, etc and failed also to convey the regional context- This is a serious omission.</p> <p>It did not take account of plants which flower in other seasons.</p> <p>Furthermore the PER failed to include the Bennett study, which can only be obtained with difficulty as a separate document. This is entirely unacceptable.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp is aware of the limitations of the Weston flora surveys. At the time of commissioning, LandCorp were only required to conduct a DRF and priority Flora search of the site. This was conducted twice (once time being in Spring).</p> <p>The Bennett Environmental Consulting (2001) flora survey of Lot 502 was a much more detailed study of the vegetation communities and flora of Lot 502. This study did examine the values of the bushland as a whole, the overall ecological values, structure, size, conditions etc.</p> <p>Contrary to this submission, the Bennett study was used for the preparation of the PER and was the primary source of information regarding vegetation and flora of Lot 502 and the bushland s regional significance. The Bennett assessment of the regional significance of the vegetation and flora has been reproduced in General Response 4.6.</p>
105.	<p>The Bennett Study's reference to 'Threatened Ecological Community' (5.8, P 13) is open to question. The consultant in quoting English states that "The Department of Conservation and Land Management (English 2001) lists none of the vegetation types at the Amcor sites as a Threatened Ecological Community". This would appear not to be the case as all bushland and wetlands in the Perth Metropolitan region have been vastly reduced and many of the remnant areas are under constant threat of development.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>The term Threatened Ecological Community in the PER is consistent with CALM's use of the term as defined by English (2001).</p> <p>Although, bushland in Perth historically has been massively cleared, the majority of vegetation is not considered threatened. The purpose of Bush Forever was to protect regionally significant bushland and has ensured there will be many areas of remnant bushland for future generations.</p>
106.	<p>The development would result in the loss of the Tuart trees in the northern part of the site and the isolation of the Tuarts in the southern part of the site.</p> <p>The proposed earthworks would put at risk the minimal protection being suggested.</p> <p>(Conservation Council)</p>	<p>Large numbers of Tuarts were not recorded in the northern part of the site, however if present it is likely that some individuals will be felled during development. The POS in the south western corner of the subdivision will be isolated from direct contact with other bushland, however it is close enough proximity to Beeliam Regional Park that birds may use the small pocket as a 'stepping stone' to larger areas of bushland.</p> <p>Strict clearing guidelines imposed by the Landscape Protection and Management Plan and monitoring of earthworks such that no encroachment into these areas will occur will protect remnant of areas of bushland not required to be cleared.</p>
107.	<p>Overall the flora is considered to be very diverse, As stated the weeds are confined to the area used for effluent disposal, land fill, and along the edges of the bushland tracks, Map 3 Weed Suites, Bennett Environmental Consulting Pty Ltd.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp notes that these were generally the findings of Bennett Environmental Consulting. The report stated that it did not view the vegetation as being particularly diverse, although the consultant has since revised the finding to be that its diversity was similar to other bushland areas.</p>

	Submission	Response
108.	Tuart trees are recognised as under threat by the Government. Although some Tuart trees may be retained the rest would be knocked over. Those retained would be more at risk because of the disturbance to the site. (Waterbird Conservation Group)	Tuarts as a species are not rare or threatened. The aim of the Tuart Response Group is to mainly protect Tuart woodland. The bushland of Lot 502 is not Tuart woodland, it is <i>Jarrah-Banksia</i> woodland where Tuarts are only found scattered in low densities through the bushland with the exception of the south-western corner in proximity to the proposed POS. A number of Tuarts will be protected in this POS.
109.	Tuart is present on this block. Dr Judy Edwards, MLA, has set up the Tuart Response Group to investigate the reasons for the alarming decline of the Tuart Forest so it is imperative that we save all Tuart Trees and other plant and animal species under threat. LandCorp should hand over this land to the Sate Government so that it can manage this bushland effectively. (Urban Bushland Council)	As above
110.	Supplementary flora report by Bennett Environmental Consulting (2001) is good. (Waterbird Conservation Group)	LandCorp acknowledges the submitters opinion.
111.	Value of site is increased through it being dieback free, this should be seen as a plus. PER did not see it that way. (Waterbird Conservation Group)	The PER did not suggest the dieback free status decreased the significance of the site.

### Mitigation

	Submission	Response
112.	The rehabilitation of the buffer around the lake will in no way compensate for the upland clearing as it is impossible to recreate the biodiversity of the bushland. In the same way the establishment of native gardens through the estate will in no way replace the biodiversity attributes of the bushland and in any case they will not be sustainable in the long term. (Wildflower Society)	LandCorp has not implied that its management measures will compensate for all of the clearing of vegetation for the proposal. Rehabilitation of the buffer and area around South Lake and the establishment of native gardens will however mitigate a proportion of the impact.

	Submission	Response
113.	<p>Retention of a buffer zone and planting native vegetation</p> <p>The retention of a buffer zone (p 59) and planting of native gardens are a good suggestion and a minimum requirement in ensuring the persistence of at least some species post clearing. The successful re-vegetation of the buffer zone will be of great importance in allowing dispersal between other areas of suitable habitat. We would recommend that the rehabilitation of the buffer zone takes place BEFORE the commencement of clearing the rest of the lot.</p> <p>(Birds Australia)</p>	<p>The buffer rehabilitation program will commence immediately upon approval of the subdivision. Stage 1 of development will not occur until 12 months following approval, with the staged development progressing over ten year. This will give time for the newly established vegetation to reach some level of maturity to make the area suitable for colonisation by more individuals. The staging program has been specifically designed to increase benefits to fauna (see Section 2).</p>
114.	<p>6.5.6 Rehabilitation of buffer</p> <p>Dot point 2, compensate for some impact from the removal of upland vegetation, by restoring some upland vegetation on the more elevated fringes of the buffer area.</p> <p>Native vegetation has specific requirements and they will not grow in areas which are unsuitable. That is the reason for different species in different areas, upland species will not grow in these lower elevations due to the height of the water table. So this compensation will not work nor will altering of conditions.</p> <p>(Friends of North Lake)</p>	<p>The buffer area has a steep gradient and upland species are found within 30 m of the lake in the northern part of the buffer. The elevation of the buffer reaches 25 m AHD with the underlying groundwater at about 13-14 m AHD and hence these elevated areas are not considered low lying. Upland species will grow in the more elevated fringes of the buffer area.</p> <p>In any case, the rehabilitation plan will address the issues of effects of topography on the species establishment.</p> <p>In addition, in response to public concern over the removal of upland vegetation, an additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p>
115.	<p>6.5.7 Collaborative rehabilitation program for South Lake</p> <p>Paragraph 3. Appropriate is not the word that should have been used, either they are going to do it or not.</p> <p>(Friends of North Lake)</p>	<p>The needs of the collaborative rehabilitation program have not been finalised. As LandCorp will be funding this rehabilitation program anyway, it will examine all areas where it can utilise earthmoving equipment used in the development for the program, such that its funds can be spread further to improve the outcomes of rehabilitation.</p>
116.	<p>6.5.7 Collaborative rehabilitation program for South Lake</p> <p>Dot point 2. There is no upland vegetation south of South Lake. The only upland vegetation is the vegetation that is going to be destroyed (Figure 4 gives an indication).</p> <p>(Friends of North Lake)</p>	<p>The land is of sufficient elevation on the southern fringes of the South Lake reserve such that it may have once been upland habitat and that upland species may potentially be restored. It is likely that the rehabilitation program will involve planting some upland species in the far southern extent of the reserve while planting more wetland associated species moving closer to the lake.</p>

	Submission	Response
117.	<p>8.5.1 Clearing of vegetation and landforming.</p> <p>Dot point 6, According to figure 4 and with the levelling of the hills which will cause them to slide, there will be no vegetation left along this boundary, this will mean replanting.</p> <p>8.5.2 Paragraph 3 page 66. Retention of vegetation along roads. When contractors or developers cut and fill, all vegetation is lost, especially where hills are concerned.</p> <p>(Friends of North Lake)</p>	<p>The amount of levelling required in the north eastern extent of the Lot 502 is minimal. Earthworks will be restricted such that the fringing trees along North Lake Road are retained wherever practicable. A row of trees along North Lake Road should still remain following development (see Figure 13 of PER, page 71).</p> <p>There are other opportunities for retention along road sides, namely along Sudlow and Spearwood Avenue where the levelling requirements are also low.</p> <p>LandCorp acknowledges that inside the estate there will little opportunity for retention of trees along roads as the majority of the area will require levelling.</p>
118.	<p>The "offsets" being proposed are worthless. An extension of the completely degraded buffer zone around South Lake by 50 metres is no compensation for the loss of 67 hectares of intact bushland.</p> <p>(Western Australian Forest Alliance)</p>	<p>LandCorp disagrees. Currently South Lake does not have a formal buffer on its western side. The proposal shall involve establishing a buffer of up to 214 m wide and restoring the vegetation within the degraded parts of it.</p> <p>Section 16.1.2 of the PER summarises the potential environmental benefits of the proposal which offsets a proportion of the anticipated impact.</p>
119.	<p>LandCorp is endeavouring to compensate for the clearing 64 hectares of bushland by promising to set aside a very small area of the completely degraded vegetation, while all of the very good vegetation is to be bulldozed.</p> <p>(Western Australian Forest Alliance)</p>	<p>Seven to eight hectares of remnant upland vegetation will now be retained in the buffer strip and one hectare of bushland in POS set aside for the scar trees in the south west corner of the subdivision. 59 ha of remnant vegetation will be disturbed.</p> <p>LandCorp acknowledges that much of the POS has been located in degraded or completely degraded land. However, the POS for scar tree protection in the south western corner does contain some vegetation in good condition.</p> <p>As described in General Response 4.3, much of the POS was put aside to address specific environmental development issues such as Aboriginal heritage and unsuitability of landforms to support industrial lots. The project viability would have been significantly affected if further areas were to be retained in POS or ROS.</p>

	Submission	Response
120.	<p>Flora, Fauna and South Lake – Offset</p> <p>Again the offset assumes that the development is environmentally acceptable. It is pointless to destroy excellent quality bushland while spending thousands of dollars trying to recreate at best a second-class bushland habitat. It is assumed that most of the rehabilitation which would take years of intensive work would be expected to be undertaken by volunteers?</p> <p>Over the past few years the Cockburn Wetland Education Centre in cooperation with local conservation and community groups have planted thousands of shrubs and trees around the southern part of South Lake. Undoubtedly they will continue to do so. Community groups must be very disheartened to see a government body prepared to clear up to 70 hectares of woodland knowing the considerable effort, over decades, which is needed to replace even a small number of plant species. These people deserve better.</p> <p>The offset is merely a token gesture. The main environmental impact cannot be offset. (Conservation Council)</p>	<p>It is a matter for the EPA to decide if the proposal is environmentally acceptable.</p> <p>South Lake is currently immediately surrounded by severely degraded land. LandCorp views the rehabilitation of this land as an offset for some of the impact the proposal will have on local habitat. The rehabilitation of the degraded areas in Lot 502 that are within the buffer area would not have occurred in the absence of this proposal.</p> <p>LandCorp will be funding the rehabilitation of both the buffer area and area south of South Lake.</p> <p>LandCorp is aware of the rehabilitation efforts by volunteer community groups around the southern part of South Lake. The rehabilitation plan for these areas will utilise the existing plantings to their fullest. LandCorp notes the Conservation Council's view regarding the significance of the proposal to the community groups.</p> <p>LandCorp has not attempted to imply that its management measures will compensate for all of the clearing of habitat for the proposal. Rehabilitation of the buffer and area around South Lake and the establishment of native gardens will however mitigate a proportion of the impact (see General Response 4.10).</p> <p>In addition, LandCorp has reduced the size of the subdivision to further address environmental concerns. An additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p>
121.	<p>5. 1 Clearing of native vegetation</p> <p>They claim that they will clear the estate gradually, but they also state they cannot do this because they need to put the associated infrastructure into place before building commences.</p> <p>Dot point 10 Encourage businesses throughout the reserve to use native plants. This will not occur unless made mandatory in their contracts and maintenance is also required to stop weed invasion that they claim they will try to stop.</p> <p>Dot point 12 Establish collaborative rehabilitation program with CALM. This trade off should not occur as rehabilitation is a life long commitment, not a part time project where they work doing rehab for the time of the project. (Friends of North Lake)</p>	<p>Infrastructure will be developed stage by stage and hence not require immediate clearing across all of Lot 502.</p> <p>Dot point 10: As part of the contract of sale, LandCorp will require enterprises to undertake appropriate landscaping of their lots. Each buyer will be supplied with a copy of the Landscape and Protection Management Plan, which will guide land owners on appropriate landscaping and planting to undertake.</p> <p>Dot point 12: CALM will administer the collaborative rehabilitation program for the southern area of South Lake and hence will be responsible for ongoing maintenance of the rehabilitation. For the buffer areas, LandCorp will be responsible for the buffer rehabilitation until the DEP are satisfied that the rehabilitation is satisfactory (which is likely to mean self sufficient).</p>



	Submission	Response
122.	<p>The local community has been actively involved in rehabilitation work in the Beelihar Regional Park for over 10 years. Rehabilitation takes an inordinate amount of volunteer effort. Very little of the intensive work is done by paid workers, most is done by volunteers. It is not possible to rehabilitate the full suite of species, only the major plants can be put back. The result is more a 'bushland garden' than bushland. Therefore it is vital that all intact areas of vegetation be retained. Retention is always the best option.</p> <p>(Waterbird Conservation Group)</p>	<p>The rehabilitation program proposed around South Lake as part of this proposal is of much larger scale and budget than previously experienced in Beelihar Regional Park. There is likely to be a large utilisation of paid workers in the initial establishment of vegetation.</p> <p>Although, not all of the original species may be specifically included in the revegetation program, the use of topsoil removed from the areas to be developed will contain seeds for most species currently in the bushland. In the long term, other species may be introduced by natural vectors in the rehabilitation area.</p>
123.	<p>Development of the area would increase the risk factor of introducing dieback and other pathogens into the Beelihar Regional Park. If these pathogens were introduced into the Park through the considerable activity generated by clearing and recontouring lot 502, it would decimate the susceptible Banksia woodland. The cost of mounting a dieback treatment program would be huge, and ongoing. If the development was approved the government would need to set aside a very large amount to deal with dieback treatment over at least the next 30 years. This would not be a sensible option. It makes much more sense to prevent the situation arising than to attempt to treat the impacts.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp is confident its Dieback and Weed Management Plan (to be prepared as part of the Development Environmental Management Plan) will allow effective control of Dieback spread.</p>
124.	<p>Rehabilitation cannot replace native vegetation habitat. Can't put back native vegetation.</p> <p>(Waterbird Conservation Group)</p>	<p>The original composition of the vegetation will be difficult to restore in the degraded areas to be rehabilitated. However, the use of local native plants sourced from seed stock in soil and vegetative material removed from Lot 502 will assist in maximising the return of species in the rehabilitated areas. Contrary to this submission, native vegetation can be put back onto the degraded areas.</p> <p>Over the long term, providing bushland links are maintained with the rehabilitated areas, it is possible that recalcitrant species will return to the area.</p>
125.	<p>The amount of money which would be used to rehabilitate is enormous. It makes more economic sense to spend money on acquisition.</p> <p>(Waterbird Conservation Group)</p>	<p>The benefits to South Lake and Beelihar Regional Park appear to be significant enough to warrant the allocation of resources to a rehabilitation project.</p>

	Submission	Response
126.	<p>The proposed offset (rehabilitation around South Lake) does not provide a benefit that would not otherwise have been achieved. The local community have been working on the area south of South Lake for many years and can be expected to continue to work on the area far into the future – whereas LandCorp would do something on a more time restricted basis.</p> <p>Undoubtedly the PER is proposing that volunteers spend countless hours over decades rehabilitating a degraded buffer while LandCorp clear and bulldoze the prime bushland.</p> <p>LandCorp would need to be involved for in planting for 20 years plus. CALM do little rehabilitation work themselves, they get contractors or volunteers to do it. It is most unlikely that volunteers would be prepared to do planting, weeding, watering etc for the next 20 + years when LandCorp are destroying adjacent structurally intact bushland. Who would be doing the on ground work.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp acknowledges the excellent rehabilitation work the local community has done around South Lake and Beelii Regional Park. However, the \$600,000 rehabilitation program proposed here is of a much larger scale and more intensive than the rehabilitation projects previously conducted in the park, which are primarily based on the use of volunteers.</p> <p>The rehabilitation program will involve an intensive weed control program and replacement of native vegetation cover over a 15 ha area. Contractors with revegetation expertise will primarily be used. The objective of the rehabilitation program is to restore a self sustaining ecosystem that will not require on-going maintenance. This rehabilitation program would be an example of best practice rehabilitation on the Swan Coastal Plain.</p>
127.	<p>Estimate 100,000 truck movements will be involved would be involved in developing the site. This has implications for dieback hygiene. All of those trucks will have to be cleaned.</p> <p>(Waterbird Conservation Group)</p>	<p>Dieback hygiene procedures will be applied where appropriate. It is however likely that many of the truck movements will not require hygiene procedures to be applied as they will not leave the sealed roads.</p> <p>The final number of truck movements required to develop the site has not been finalised to date and LandCorp is not aware of the basis on which the submitter has calculated these numbers.</p>

**6.2 FAUNA**

	<b>Submission</b>	<b>Response</b>
128.	Already birdlife has suffered from the clearing of bushland in St Paul's Estate; many species of birds are now fighting one another for nesting places in the trees alongside Coolbellup. (Coolbellup Community Association)	LandCorp has proposed several measures to decrease the impact of decreased habitat for birds including retaining upland woodland close to South Lake in buffer, rehabilitating unvegetated areas around South Lake and establishing native gardens which will be suitable for some species.
129.	The clearing of 89 hectares of bushland to cater for Industry will destroy the native fauna in this area. (Coolbellup Community Association)	There will be some impact on local populations of fauna. Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document.
130.	7.2 EPA objectives This proposal goes completely against this EPA objective; LandCorp is trying to justify the reasons for destroying the area, but does not look at the consequences of the destruction of this lot. (Friends of North Lake)	LandCorp disagrees. The impact assessment has addressed the consequences of removing habitat from Lot 502. Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document.
131.	Other undesirable impacts include loss of wildlife habitat. (Wetlands Conservation Society)	Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document.
132.	The edge effects of long, narrow habitat are well documented however, such habitats in an urban context are unlikely to maintain bush-dependent species that are poor dispersers and predisposed to edge pressures such as increased predation and human disturbance (Oehler and Litivatis 1996, Laurance 1994). Usually only matrix tolerant species that can exploit the changed environment flourish post habitat loss (Laurance, 1994). It is likely that bush-dependent species such as the Splendid Fairy wren will experience a slow decline to extinction post habitat loss. (Birds Australia)	The PER acknowledges that there is an increased risk of disappearance of some species that occur in low population densities from the City of Cockburn and adjacent area as a result of decreasing the size of suitable habitat in the South Lake environs (see Section 7.5.1, page 58). Species most likely to be so affected include large predatory reptiles, such as goanna species, sedentary birds, such as fairy-wrens and thornbills, and the Brush-tailed Possum.  This risk has been decreased by the retention of upland vegetation in the buffer (see General Response 4.11) and the rehabilitation programs (see General Response 4.10).

	Submission	Response
133.	<p>Loss of habitat for locally declining species</p> <p>The over-riding concern of the Birds Australia WA Group Conservation Committee is the loss of a large area of habitat that is regionally important for a range of bird species that are uncommon or declining in urban areas.</p> <p>The loss of Banksia Woodland habitat on the Swan Coastal Plain has been rapid and extensive and little such habitat now remains in most metropolitan areas. The habitat represented in the focus area comprises a significant and large proportion of the remnant habitat in the local region. It is connected and adjacent to the Beelihar Regional Park and comprises an important "stepping stone" to habitat located further to the north and south-west. Although Beelihar Regional Park provides an area of protected habitat, the loss of important adjoining habitat such as Lot 502 will influence the long-term capacity of Beelihar Regional Park to maintain species. The inability of small, unconnected reserves to retain a full complement of species is well established (Diamond 1975, MacArthur and Wilson 1967, Soule 1986).</p> <p>Lot 502 contains several species that are uncommon or declining on the Swan Coastal Plain as a result of habitat loss. These include the Splendid Fairy-wren, Weebill, Varied Sitella and Grey Butcherbird, amongst others. Bushland dependent species such as the Splendid Fairy-wren and Weebill are poor dispersers, rely on native habitat for feeding and breeding and are unlikely to tolerate the matrix of roads and urban land (Wilcox, 1999).</p> <p>(Birds Australia)</p>	<p>There will be some impact on local populations of fauna. Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document.</p> <p>The PER acknowledges that there is an increased risk of disappearance of some species that occur in low population densities from the City of Cockburn and adjacent area as a result of decreasing the size of suitable habitat in the South Lake environs (see Section 7.5.1, page 58). . Species most likely to be so affected include large predatory reptiles, such as goanna species, sedentary birds, such as fairy-wrens and thornbills, and the Brush-tailed Possum. This risk has been decreased by the retention of upland vegetation in the buffer (see General Response 4.11) and the rehabilitation programs (see General Response 4.10).</p> <p>LandCorp has proposed several measures to decrease the impact of decreased habitat on these susceptible species including rehabilitating unvegetated areas around South Lake and establishing native gardens that will be suitable for some species. Dr Mike Bamford (Consulting Ecologist) has provided an opinion on the benefits of rehabilitating areas around South lake and the ability of this to offset some of the impact of clearing habitat in Lot 502 (see Appendix 4 of PER). He refers to in particular the benefits of rehabilitating the areas around South Lake to decrease impact to species such as the Splendid Fairy-Wren.</p> <p>It is anticipated that the revegetated buffer area will be able to support these species that are uncommon and susceptible to disappearing from the local area. The composition of the rehabilitated areas around South Lake will be specifically aimed at providing suitable habitat and foraging sites for these species.</p>
134.	<p>Loss of important foraging habitat for Carnaby's Black-Cockatoo</p> <p>Another concern for our organisation is the loss of an area of important feeding habitat for Carnaby's Black-Cockatoo, a species listed as Endangered under the federal EPBC Act and under the state Wildlife Conservation Act. Carnaby's Black Cockatoo forages in woodlands dominated by proteaceous species (Saunders and Ingram, 1995). Prime food sources include the seeds of Banksias, Eucalypts, Hakeas and Grevilleas (Higgins, 1999). Obviously, all of these food sources are likely to abound in Lot 502 and this habitat is doubtless an important regional foraging site in a diminishing matrix of fragmented native vegetation. The loss of feeding habitat is identified as a key threat for Carnaby's Black-Cockatoo (Garrett and Crowley, 2000).</p> <p>(Birds Australia)</p>	<p>The potential for impact on this species is described in 7.5.1 (reproduced in General Response 4.7).</p> <p>The composition of the rehabilitated areas around South Lake will be specifically aimed at providing suitable habitat and foraging sites for this species. Carnaby's Black-Cockatoo feeds on the seeds of Banksias, Hakeas and introduced pine trees, and therefore the rehabilitation can be designed to favour this species by using favoured food plants such as <i>Banksia menziesii</i>, <i>Banksia attenuata</i> and <i>Hakea prostrata</i> furthest from the water's edge, and <i>Banksia littoralis</i> close to the water (from Bamford opinion, Appendix 4, PER).</p>

	Submission	Response
135.	<p>7.1.4 Mammals</p> <p>It is quoted in the first paragraph that the high level of extinction has been attributed to changes in fire regime, habitat loss, and fragmentation. More fragmentation and habitat loss is going to occur if this development proceeds.</p> <p>(Friends of North Lake)</p>	<p>The development should not increase fragmentation of communities as it is only connected to bushland on its eastern side. There will be some habitat loss associated with this proposal and the management measures to decrease the impact of this loss on fauna is described in Section 7.5.1 of the PER.</p>
136.	<p>7.1.5 Invertebrates</p> <p>Protection of habitat for the 3 native bees, listed as fauna that is rare or likely to become extinct and 4 other species has been listed as priority species. These will be pushed closer to extinction if clearing continues to occur.</p> <p>(Friends of North Lake)</p>	<p>The retention of sufficient habitat for these species has been addressed as regional bushland issues under Bush Forever. All remnant bushland in Perth is potentially used by these species.</p>
137.	<p>7.1.6 Habitat</p> <p>The comments raised in this section show that the area is needed for habitat. Vegetation units and trees are needed for fauna to live and survive. Paragraph 3, shows that fauna relies heavily on areas of good vegetation not the degraded areas.</p> <p>(Friends of North Lake)</p>	<p>There will be some impact on local populations of fauna from the removal of habitat. Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document.</p>
138.	<p>Linkages are needed to facilitate fauna movement and prevent inbreeding.</p> <p>(Friends of North Lake)</p>	<p>The development of Lot 502 will not disrupt linkages between adjacent bushland sites.</p>
139.	<p>7.4 Potential source of impacts</p> <p>Dot points 1 &amp; 2, these show the things that will result from the clearing of lot 502, but will these affect other areas in the region as they become more fragmented and more pressures of increased feeding occurs.</p> <p>(Friends of North Lake)</p>	<p>Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document, which addresses the regional significance of clearing on fauna.</p>
140.	<p>7.5.1 Clearing of habitat</p> <p>Paragraph 3, states that the sequential nature of the development should give time for fauna to move into neighbouring remnant areas. Remember other areas are degraded and support their own populations of fauna. They will die crossing the roads or if they stay because they are habitat specific. Recolonisation will take time as regeneration will also take time to mature.</p> <p>(Friends of North Lake)</p>	<p>The rehabilitation programs around South Lake will commence immediately upon approval of the subdivision. Stage 1 of development will not occur until 12 months following approval, with the staged development progressing over ten years. This will give time for the newly established vegetation to reach some level of maturity to make the area suitable for colonisation by more individuals. The proposed staging program has specifically addressed the needs of fauna (See Section 2).</p> <p>Fauna will not have to cross roads from Lot 502 to South Lake bushland which then links to bushland to the north and south. Road crossings will be required to move from South Lake into other bushland areas.</p>

	Submission	Response
141.	<p>7.5.1 Clearing of habitat</p> <p>Dot point 4 after paragraph 4. The statement of population sizes is already at unsustainably low levels and the species is likely to become locally extinct regardless of development. This should not be a reason for destroying this area, linkages and rehabilitation could remedy this. Bush Forever is a start, now it is time to act. The government and its agencies need to work at fixing planning mistakes and help the volunteers working to repair the environment, not destroy more, if we don't extinctions will become the norm.</p> <p>(Friends of North Lake)</p>	<p>The likely already unsustainable population sizes of mammal species possibly present has not been used as a reason for destroying the area. However, the clearing of habitat in Lot 502 will have little consequence to species if their presence is either improbable or unlikely to continue.</p>
142.	<p>7.5.1 Clearing of habitat</p> <p>Paragraph 1, add in the other species that will be effected mentioned previously, such as the Weebill, invertebrates and Quenda</p> <p>(Friends of North Lake)</p>	<p>As stated in Section 7.5.1 of the PER, the clearing of habitat will potentially cause declines in the local populations of many species including the Weebill, Quenda, and invertebrate species. Refer to General Response 4.7 for potential impact on fauna</p> <p>More specifically, the proposal is likely to have a moderate to low impact over the long term on the Quenda. The rehabilitated areas will be designed to accommodate this species to prevent significant local declines.</p> <p>The potential local impact on Weebill populations is high, but the retention of Tuarts (which the Weebill utilises) in the south west corner of the site) and the rehabilitation of the areas around South Lake should decrease the risk of this species disappearing locally.</p> <p>The retention of sufficient habitat for invertebrate species needs to be addressed as a regional bushland issues relying on Bush Forever as all bushland in Perth are potentially used by conservation listed invertebrates.</p>
143.	<p>7.5.1 Clearing of habitat</p> <p>Paragraph 4, it is a conservation area and it is fragmented, that is why it is important and needed for conservation and linkage</p> <p>(Friends of North Lake)</p>	<p>The areas to be cleared in Lot 502 do not appear essential for linkage between bushlands. The retention of vegetation on either side of South Lake ensures that there is a continuing north-south linkage of bushland from Bibra Lake to South Lake to Little Rush Lake.</p>
144.	<p>Mitigation - Relocation of species is impracticable as stated before (7.5. 1), and by protecting just a few Tuarts is just fragmenting the lot even more and what are their survival prospects considering there will be no regeneration.</p> <p>(Friends of North Lake)</p>	<p>Initial discussion with CALM has indicated that relocation of Quenda and possibly Brush Tailed Possums is feasible.</p> <p>Tuarts are already scattered through the bushland and not found as specific stands. Tuarts will not be regenerated in developed areas.</p>

	Submission	Response
145.	<p>9.7 Outcome. The proposal may not disturb the lake, but will disturb the habitat that is utilised by fauna.</p> <p>(Friends of North Lake)</p>	<p>Dr Mike Bamford (Consulting Ecologist) has indicated an area of potentially higher importance (area A) to fauna, in particular because of its potential use by lake fauna such as the Long-necked Tortoise, frogs and Quenda (see Figure 9, page 56 of PER). The proposed buffer makes up a substantial proportion of this area and the impact on lake fauna should minimal.</p>
146.	<p>This bushland supports up to 147 vertebrate species including 8 species of frogs, 38 species of reptiles, 80 species of birds and 11 native species of mammals. The fauna would be decimated if the development went ahead.</p> <p>(Friends of Brixton St Wetlands)</p>	<p>LandCorp has been upfront about the potential impact on fauna. There will be some impact on local populations of fauna as a result of proposal. Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document.</p>
147.	<p>The supplementary report commissioned by LandCorp further documents the bushland's significance for fauna.</p> <p>Four out of the eight frog species would be lost if their terrestrial habitats disappeared. This includes the entirely terrestrial Turtle Frog, The Moaning Frog and Pobblebonk, spend their adult life away from the wetlands. The Moaning Frog is particularly dependent upon a predictable rise in water levels and would be adversely impacted if seasonal patterns were to change. Also Guenther's Toadlet uses upland areas. The other four species also use terrestrial habitats but would not be so dramatically affected by the loss of the entire woodland habitat. The Report says that the cleared land adjacent to South Lake is unlikely to be of value to the frog species.</p> <p>The rich reptile community would be decimated if this development went ahead. 27 species are considered to be of Local Conservation Significance and consequently would be unlikely to persist and would decline dramatically as a result of clearing.</p> <p>The Black-striped snake is of National Conservation Significance as it is listed under the Western Australian Wildlife Conservation Act, in Cogger <i>et al.</i></p> <p>The significance of the bushland for species such as the Fairy-wren and thornbills is not addressed by the proposed rehabilitation of the western side of South Lake. These birds rely on habitat linkages to move between sites. The development would destroy all of these linkages. The Report identified the current Fairy-wren and thornbills habitat as of high conservation.</p> <p>37 species of birds are of Local Conservation Significance and therefore would be dramatically affected.</p>	<p>This submission contains information similar to that contained in LandCorp's fauna consultant's report and was reproduced in the PER document. As stated in the PER, there will be some impact on local populations of fauna. Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document. This also discusses the sub-regional and regional significance of the declines and the impact on conservation species. Table 4, Appendix 3 of the PER specifically addresses the potential impact on conservation species.</p> <p>The PER acknowledges that there is an increased risk of disappearance of some species that occur in low population densities from the City of Cockburn and adjacent area as a result of decreasing the size of suitable habitat in the South Lake environs (see Section 7.5.1, page 58). . Species most likely to be so affected include large predatory reptiles, such as goanna species, sedentary birds, such as fairy-wrens and thornbills, and the Brush-tailed Possum. This risk has been decreased by the retention of upland vegetation in the buffer (see General Response 4.11) and the rehabilitation programs (see General Response 4.10).</p> <p>LandCorp has proposed several measures to decrease the impact of decreased habitat on these susceptible species including rehabilitating unvegetated areas around South Lake and establishing native gardens which will be suitable for some species. Dr Mike Bamford (Consulting Ecologist) has provided an opinion on the benefits of rehabilitating areas around South lake and the ability of this to offset some of the impact of clearing habitat in Lot 502 (see Appendix 4 of PER). He refers to in particular the benefits of rehabilitating the areas around South Lake to decrease impact to species such as the Splendid Fairy-Wren.</p>

	Submission	Response
147 (cont.)	<p>The Golden Whistler is of Regional Conservation Significance. It is rarely seen on the Swan Coastal Plain but has been seen in the region. Its survival would be placed in jeopardy if this large area of woodland were bulldozed.</p> <p>There are 3 birds of National Conservation Significance present. The Square-tailed Kite (Priority 4) Peregrine Falcon (specially protected Fauna under the WA Wildlife Conservation Act) and the Short-billed Black Cockatoo (Endangered under the Act and also Endangered under the Environmental Protection and Biodiversity Conservation Act.) There is concern for the Short-billed Black Cockatoo as its continuing presence around the Perth region is dependent upon sufficient remnant vegetation as is found at Lot 502.</p> <p>Out of the 16 mammal species observed or expected, and excluding the 5 introduced species 4 are of National Conservation Significance and 10 are of Local Conservation Significance. The Echidna and Brush-tailed Possum could not survive the loss of their habitat.</p> <p>Unfortunately LandCorp did not commission a survey of invertebrate fauna.</p> <p>The EPA's Preliminary Objective to maintain abundance, diversity, geographic distribution and productivity of fauna at the species and ecosystem levels would not be met.</p> <p>(Western Australian Forest Alliance)</p>	<p>It is anticipated that the revegetated buffer area will be able to support these species that are uncommon and susceptible to disappearing from the local area. The composition of the rehabilitated areas around South Lake will be specifically aimed at providing suitable habitat and foraging sites for these species.</p>
148.	<p>Frogs:</p> <p>Frogs are in decline worldwide and this is of great concern. Frogs are valuable as environmental indicators. Every effort should be made to conserve local natural habitats where frogs are still present.</p> <p>The report lists 8 species of frogs as present or likely to be present on Lot 502. This represents half of the 16 different species known in the wider Perth metropolitan region. The terrestrial Turtle Frog, Moaning Frog, Pobblebonk, and Guenther's Toadlet are of Local Conservation Significance and all depend on the upland bushland for survival. All would suffer a serious decline in numbers if any of the bushland is lost. Rehabilitation of the buffer around South Lake would help a little. The report recognises that some species of frogs require dryland in association with wetland. The bizarre and fascinating terrestrial Turtle Frog is particularly dependent on such upland Banksia woodlands for its specialised diet of termites. The other frog species need wetland environment but will use dry habitats as well.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>As above</p>



	Submission	Response
149.	<p>Birds:</p> <p>Similarly of very great concern are the many bird species that would be severely affected by the proposed development. 100 species are likely to use the bushland; around 80 species could be expected to make regular use of it, with 34 species observed during the brief, one day site inspection. This number includes water birds that rely on trees away from wetlands for nesting. Nearly half (37 of 80) are of Local Conservation Significance and populations of these would be severely impacted by the proposed development-</p> <p>Some bird species occurring in the area are classified as Threatened and of both National and Local Conservation Significance.- the Peregrine Falcon, Carnaby's Short Billed Black Cockatoo, and the Square tailed Kite, are of National Conservation Significance.</p> <p>Carnaby's Short Billed Black-Cockatoo needs a strong focus of care and attention. The sight and sound of flocks of this seasonally migrating bird is in every way as wonderful as that of the famous Canada Geese - this bushland would be worth saving for them alone.</p> <p>In the fauna report the Carnaby's Short-billed Black-Cockatoo 'rates a high level of significance.' There are special difficulties in establishing the true status of many animals. The Short-Billed Black-Cockatoo may well be endangered- It relies on Banksias as part of its food source in the Perth region- Lot 502 should be regarded as crucial to their long term survival, so diminished are their breeding and feeding habitats. These birds are long-lived and monogamous, producing only one chick a year. Numbers have declined. It is feared that present flocks may contain many old birds, giving a misleading impression of their status.</p> <p>The Peregrine Falcon has been declared Vulnerable (M. Kennedy 1990). The report (P 10) advises that the Peregrine Falcon "would also be severely impacted" if it used the site for nesting. Further removal of vital habitat would push these closer to the brink of extinction. Other outstanding species using the site are the Golden Whistler, Little Eagle, Red-capped Parrot, Elegant Parrot, Purple Crowned Lorikeet, Boobook Owl, Tawny Frogmouth, Sacred Kingfisher, Painted Button Quail, Rainbow Bee-eater, Spotted Pardalote, White Browed Scrubwren, Splendid Fairy Wren and Scarlet Robin.</p> <p>Although rehabilitation around South Lake would be helpful in retaining some bird species, the remnant habitat being proposed would not be enough for a number of species. These include the brown Goshawk, Painted Button Quail, four species of Cuckoos, Varied Sitella and the Golden Whistler.</p>	As above

	Submission	Response
149 (cont.)	<p>190 species was recorded, 4.2 birds per hectare. If the bushland were cleared this would decline to around 1.87 birds per hectare.</p> <p>Furthermore the reduced populations are likely to lead to local extinction of some species. There are a number of species which will disappear if the bushland is lost: these include Thornbills, Weebill, Splendid fairy Wren, 2 Pardalotes, and Western Gerygone. These are of Local Conservation Significance.</p> <p>Populations of certain migratory birds listed under international treaties such as the China Australia Bird Agreement (CAMBA) and the Japan Australia Migratory Bird Agreement (JAMBA) could be expected to use the site. They would be adversely affected. The Grey Teal, Mountain Duck, Wood Duck are some of the many waterbirds found at Lot 502. Such upland locations are vital for the possible use these areas have for the wintering and breeding of some such duck species.</p> <p>Tuarts and Firewood Banksias (north east of the site) are particularly important for some species survival.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	
150.	<p>Reptiles:</p> <p>The bushland supports a rich diversity of reptiles. All but 2 of the 37 species considered to be present on the site would be reliant on the bushland, and 1 species, the long-necked tortoise, is dependent on the surrounding area for egg laying. All would decline as a result of development. 26 of the species would decline dramatically if the bushland were lost.</p> <p>Of great concern are the 2 species that have both National and Local Conservation Significance - Perth Lined (Burrowing Skink) Lerista (rare, vulnerable or insufficiently known) and Western Black Striped Snake (endangered). The Western Black Striped snake is strikingly patterned and probably attractive to poachers. "With a restricted distribution, and occurring as it does so close to Perth, there is concern for this species. Loss of habitat, through urban development could fragment the populations and increase pressure from predators. To ensure its future it is necessary to determine the adequacy of existing protected areas and create further ones if these prove inadequate. Commercial trade in this species combined with other pressures threaten its future survival. The inland population is already probably extinct and urgent management is required to ensure its continued existence." (M- Kennedy 1990)</p> <p>The Perth Lined (Burrowing Skink) Lerista appears to be found only in this region. It would be seriously affected.</p> <p>Species would decline in proportion to the loss of habitat. Some species would become locally extinct. Predation by domestic cats etc would be a factor. Reptiles which need large areas (e.g. Gould's Goanna) would be unlikely to survive for this reason.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	As above

	Submission	Response
151.	<p>Mammals:</p> <p>The Brush Wallaby (Black-gloved Wallaby) is a particularly beautiful and endearing animal; its loss from our region would be lamentable indeed. Of National Conservation Significance, it needs very large areas. This bushland would support less than 10 animals.</p> <p>Echidna may be present and also need large bushland areas to survive</p> <p>The Quenda (short-nosed bandicoot), of National Conservation Significance is present at the site. Its future in our region as a result of clearing is of great concern. Already 1 species of Australian Bandicoot has become extinct another is endangered. This should be cause for great caution.</p> <p>Rehabilitation would provide some replacement habitat in about 20 -80 years time.</p> <p>5 species of bats considered of local conservation significance, the Chocolate Wattled Bat of National Conservation Significance. All roost in tree hollows and under loose bark. Their status is unknown. Because proposed mining would remove mature trees, it is likely all roosting sites would be lost.</p> <p>The fauna report (P13) advises that a significant proportion of the native fauna are dependent on the woodland at the site. All would be severely impacted by the proposed clearing for development. Resulting reduction in population sizes would make some species vulnerable to extinction. Local and regional populations could be reduced to unsustainable levels and become extinct.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	As above
152.	<p>Fauna: This bushland has outstanding faunal values, the list of endemic species is impressive, especially for an urban region. The bushland supports a relatively high diversity of fauna - 147 vertebrate species, including 80 species of birds, 38 species of reptiles, 8 species of frogs and 11 native species of mammals.</p> <p>A significant proportion of the endemic vertebrate fauna are dependent on the woodland. These will decline or disappear if the woodland was cleared. Over half the species would be seriously affected. Some would be pushed towards extinction. Saving dwindling species from extinction takes enormous amounts of energy and funding. All are biologically important.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	As above

	Submission	Response
153.	<p>Serious concerns for fauna:</p> <p>The PER and the report substantiate that there is a high value fauna habitat in the upland woodland despite the fact that it does not appear to have been fully assessed. There is clearly a good concentration of endemic species on the site, as well as rare, endangered and threatened species, and species of Local and National Conservation significance. In total, 8 are of National Conservation Significance, 78 species are classified as of Local Conservation Significance, i.e. species likely to be severely impacted by the proposed development.</p> <p>The fauna report (P 13) states: 'The project area supports a substantial proportion of woodland habitats locally and even regionally. In theory, the population decline within the project area could reduce local and regional populations to unsustainable levels, resulting in local or regional extinction.' Most affected would be 3 large goanna species, fairy wrens and thornbills, and the Brush-tailed possum,</p> <p>Loss of such priceless fauna would clearly be considerable if the proposed project were to proceed. This is totally unacceptable. Profound changes in the region's disturbance regime would be expected which are likely to cause local extinctions.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	As above
154.	<p>Predation of native fauna:</p> <p>The PER fails to mention the additional heavy impact on displaced fauna populations that would be posed by domestic cats and foxes, these have caused a high level of extinction. Because of this all native species should be considered of Local Conservation Significance.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	LandCorp acknowledges that it did not specifically address the effects of predation on displaced fauna. However, once in a bushland area, displaced fauna are no more susceptible to predation from cats and foxes than any other fauna. LandCorp has been upfront that a local decline in some species can be expected as a direct or indirect impact of clearing.
155.	<p>Any destruction of the upland vegetation would be inconsistent with the recommendations of the Perth Urban Bushland Strategy for Perth and Bush Forever. Unfortunately upland/dryland areas have long been targeted for development, so that such areas on the Swan Coastal Plain have become rare. Such upland/dryland vegetation is essential to many fauna species requiring the wetlands (South and Bibra Lakes in this instance) - many of the frogs, reptiles, waterbirds, and mammals cited in this report - and vice versa.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>The retention of upland areas in the Perth Metropolitan Areas was addressed under the Bush Forever process.</p> <p>The nearby Beeliar Regional Park still retains upland areas (for example at Thomson's Lake).</p> <p>In addition, in response to public concern over the removal of upland vegetation, an additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p>

	Submission	Response
156.	<p>Fauna survey incomplete:</p> <p>The PER did not include a list of insects. In the Supplementary Report on the Protection of Fauna (P 11) commissioned by LandCorp, the consultant's brief was to advise only on the vertebrate fauna. Yet the invertebrates are essential to the existence of all higher forms of life. This is a serious omission. The report however does allude to several threatened invertebrate species that may well be present in the woodland areas, including the Graceful Sunmoth, four species of native bees, and the cricket <i>Austrosaga spinifer</i>.</p> <p>It fails to mention that there are reputedly 6 - 8 species of butterflies endemic to this region which are endangered, critically endangered or vulnerable. Banksia woodlands are particularly important to butterflies.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp were not initially directed by EPA to address invertebrate fauna. LandCorp did however request its fauna consultant provide a brief overview of the significant invertebrate species potentially inhabiting the site. LandCorp acknowledges invertebrates are an important component of the ecosystem.</p> <p>LandCorp's fauna consultant did not identify any significant butterfly species to be potentially using the site</p>
157.	<p>Roadside Verges unsuitable as wildlife refuges:</p> <p>The report suggests that with the bushland gone, fauna could survive on roadside vegetation - This is farcical.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>The document does not suggest fauna could survive on roadside vegetation but does state that some species of fauna could utilise suitability designed native gardens, which in turn may link with each other via gardens along road verges if established.</p>
158.	<p>The clearing would have consequences also for the Beeliam Regional Park. Opportunities for fauna to move from the nearby wetlands into an upland area would be lost forever. The gene pool of the Beeliam Regional Park would be significantly diminished if this bushland was bulldozed. Refuge fauna habitat is essential where fires are common. Unfortunately unplanned fires have been a regular occurrence within the Beeliam Regional Park over the past 10 years. Frequent fires reduce the diversity of fauna and flora species. Abundance of many animals also affected. The Amcor site is ideally suited for a refuge and alternative habitat.</p> <p>(Conservation Council)</p>	<p>LandCorp has acknowledged that there may be some impact on fauna in Beeliam Regional Park as a result of this proposal. Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document. This also discusses the sub-regional and regional significance of the declines and the impact on conservation species.</p> <p>LandCorp has noted the Council's argument for the retention of the entirety of Lot 502.</p>
159.	<p>Mitigation measures suggested are inadequate. Results in any case are often extremely disappointing. If mitigation fails to restore habitat or create a similar habitat elsewhere, then the result is a net loss of habitat. Our society is a long way from being able to assemble a fully functioning system. It seldom succeeds in restoring.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp has been upfront with the fact that the proposal will involve a net loss in habitat. The mitigation measures committed to will however reduce the impact on fauna.</p>
160.	<p>The P.E.R. is dismissive of the fauna. All of the fauna would be adversely affected by the proposal and most of the reptiles and mammals would die. To assume that the reptiles and mammals could find alternative habitat in the Beeliam Regional Park, or be successfully translocated is misguided. The practice of translocation is no longer condoned. It has been recognised by government and scientists that fauna habitat should be protected and fauna retained in situ rather than translocated.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp disagrees. LandCorp has acknowledged that there may be some impact on fauna in Beeliam Regional Park as a result of this proposal. Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document. This also discusses the sub-regional and regional significance of the declines and the impact on conservation species.</p> <p>Early advice from CALM has indicated that relocation programs for the Quenda and possibly the Brush-tailed Possum are feasible.</p>

	Submission	Response
161.	<p>Our members are concerned with the impact of the proposal on wetland species such as the southern brown bandicoot. The southern brown bandicoot is territorial and requires a relatively large area to be viable in the long term. It is also mobile and moves between wetlands and bushland. It is of national significance as it is listed as Priority 4 and Conservation Dependent by the Department of Conservation and Land Management. Also it is of local significance which means the bandicoots which use the South Lake and Lot 502 bushland would not survive in sufficient numbers to maintain a viable population. The preservation of the bushland would provide optimum habitat for this animal.</p> <p>(Waterbird Conservation Group)</p>	<p>Dr Mike Bamford has provided advice indicating that the retention of woodland in the buffer area and rehabilitation around South Lake could eventually support 50-75% of the current populations. The long term persistence of this species in the region is not threatened by this proposal.</p>
162.	<p>There are a number of significant species using the site.</p> <p>Four duck species are listed as using the area. Wood ducks nest in living trees, often away from a wetland; shelduck also nests in hollow limbs of tall trees, as can black ducks. When nesting sites are at a premium, nesting away from the take in trees is common. No account is taken of the nesting requirements of these species.</p> <p>The Black-fronted dotterel (a bird which is susceptible to botulism) is present in the area. If the development went ahead and water quality in South Lake deteriorated, this species would be affected by botulism outbreaks.</p> <p>The Common sandpiper is also present. This bird is considered common in the northern hemisphere but its presence in the southern part of Western Australia is less so. Again this species would be impacted with the loss of habitat and the inevitable deterioration of water quality in South Lake.</p> <p>There are numerous fauna species of national significance such as the Chocolate Wattleed Bat (Priority 4), and several birds including Carnaby's cockatoo, The Black-gloved Wallaby may also use the habitat from time to time, and could use the linked vegetation to roam over other parts of the Beeliar Regional Park. None of these impacts on threatened fauna are taken into account in the P.E.R.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp has already addressed the potential impact on fauna in Section 7.5.1 of the PER. LandCorp acknowledges that the clearing of habitat will potentially cause declines in the local populations of many species. Refer to General Response 4.7 for potential impact on fauna</p> <p>The water quality of South Lake is not threatened by this proposal and the buffer area incorporates a substantial proportion of the area more likely to be used these species. These species are not likely to be impacted on significantly in a regional context.</p> <p>Contrary to this submission, LandCorp has taken the potential impacts to species of national significance into account. It has been upfront about all the potential impacts. Table 4 in Appendix 3 of the PER contains some specific predictions on the potential impacts on these species. The recent modification of the proposal will further decrease the risk of impacting on these species.</p>
163.	<p>The long-necked tortoise is also present in South Lake. It breeds away from the take. A development and the likelihood of a road through the area would put at risk the successful breeding of this species.</p> <p>(Waterbird Conservation Group)</p>	<p>The Long-necked tortoise would typically remain with 200 m of the lake for its nesting purposes and hence the buffer area should incorporate this species needs. LandCorp is not proposing to put a road through this area.</p>

	Submission	Response
164.	The report too easily dismissed nationally significant species e.g. By saying infrequent visitors, without scientific evidence. (Waterbird Conservation Group)	Nationally significant species were not dismissed in the document. The local and regional impact on these species was described in Section 7.5.1, and Table 4 in Appendix 3 of the PER contained a description of the local and regional impact on each of these species. The prediction of local impact was based on the assumption that the species was present. In some cases, Dr Mike Bamford (Consulting Ecologist) provided advice that species were of low probability of occurring at the site.  Predictions of impact to fauna were based on the findings of Dr Mike Bamford, a renowned fauna expert in Western Australia.
165.	Concern that loss of locally significant species glossed over in PER. (Waterbird Conservation Group)	Section 7.5.1 addressed the potential impact on fauna and the significance of declines in locally significant species. LandCorp has provided measures to reduce the potential impact including retaining areas of upland vegetation rehabilitation of areas around South Lake, and use of native species in subdivision.
166.	Over 130 species of native birds, mammals, frogs and reptiles will be made homeless and most will die. The number of Quendas is rapidly declining in the metropolitan area. (Urban Bushland Council)	Dr Mike Bamford (Consulting Ecologist) has indicated an area of potentially higher importance (Area A) to fauna, in particular because of its potential use by lake fauna such as the Long-necked Tortoise, frogs and Quenda (see Figure 9, page 56 of PER). The proposed buffer makes up a substantial proportion of this area and the impact on local fauna will be significantly reduced because of the inclusion of upland areas in the buffer and rehabilitation of degraded areas (see General Response 4.10 and 4.11).
167.	Taking into account page 6 of Position Statement No 3, site surveys show fauna very significant.  For example, the first principle of the National Strategy for the Conservation of Australia's Biological Diversity says "biological diversity is best conserved in-situ". Principle 8 says comprehensive and adequate reserve system is central to the conservation of Australia's biological diversity. The reservation status of Karrakatta Complex Central and South is not adequate (7.6% Bush Forever). (Waterbird Conservation Group)	The fauna survey was conducted in accordance with EPA Position Statement No 3. Page 6 of Position Statement No 3 lists the principles of the National Strategy for the Conservation of Australia's Biological Diversity.  The principles on page 6 of Position Statement No 3 were used as part of the assessment framework for the PER and hence have been considered in both conducting the fauna survey and evaluating the significance of the results.  LandCorp have considered biological diversity in finalising the size and design of the proposed subdivision. The retention of upland vegetation in the wetland buffer and of the wetland-upland continuum on the western edge of South Lake will contribute to conserving biological diversity both locally and regionally.  The Bush Forever target of protecting 10% of the Karrakatta Complex Central and South was not able to be obtained, but there are opportunities to conserve this complex outside of the metropolitan region (Government of Western Australia 2000).

	Submission	Response
168.	Site has large area and is critical for fauna. (Waterbird Conservation Group)	The significance of the site for fauna is addressed in Sections 7.1 and 7.5.1 the PER.
169.	Maintaining upland vegetation for species going between upland and wetland areas, important. (Waterbird Conservation Group)	LandCorp agrees. It is retaining an area of upland vegetation abutting wetland vegetation within the buffer along the western edge of South Lake, which is up to 214 m in width. A wetland-upland continuum is conserved.
170.	With respect to fauna issues (PER page 56): <ul style="list-style-type: none"> <li>Bamford's area A (high value fauna habitat) ignored by proponent.</li> <li>Area E (main upland habitat) not evaluated by Bamford – this is not explained in PER.</li> </ul> (Waterbird Conservation Group)	LandCorp disagrees with both points: <ul style="list-style-type: none"> <li>Area A has not been ignored. Its importance was recognised and a large proportion of it will be retained in the buffer area.</li> <li>Contrary to this submission, Dr Mike Bamford did evaluate Area E.</li> </ul>
171.	An invertebrate survey was not done, an important bushland issue as pollination related to insects. Bamford mentioned potential for threatened invertebrates. (Waterbird Conservation Group)	Dr Mike Bamford did examine the potential for threatened invertebrates in his review of fauna values in Lot 502.
172.	The fauna consultant was asked to consider how to minimise the impact on a couple of species. The consultant was forced to look at possibilities of habitat enhancement for the Fairy Wren and Quenda. Selecting a couple of species for habitat enhancement is not an ecological approach. Even then, the consultant's recommendations were not taken up. (Waterbird Conservation Group)	This is incorrect. Dr Mike Bamford, the fauna consultant, was asked to recommend strategies to minimise impacts on fauna. He highlighted Fairy Wren and Quenda for particular attention. Contrary to this submission, the consultant's recommendations for use of native specialised gardens (conservation landscape) and for additional upland areas to be retained were taken up.



**6.3 VISUAL AMENITY**

	Submission	Response
173.	8 Visual Amenity 8. 1 Setting Paragraph 4, The backdrop statement is a good one and should be remembered. (Friends of North Lake)	LandCorp agrees.
174.	8.5.1 Clearing of vegetation and landforming. Dot point 4, retaining remnant vegetation up to 150m west of South Lake. There is no vegetation in this area and trees that need to be put back the visual amenity and will take over ten years to mature. This will destroy the current visual amenity and goes against the EPA objective. (Friends of North Lake)	This is incorrect. The western fringe of the southern part of the buffer is lined with trees while the northern half the buffer is well vegetated. (See Figure 7, page 38 of PER).  In addition, the buffer has been increased in width in response to public environmental concerns, and is now up to 214 m wide. It incorporates a dense wooded area between the proposed subdivision and the lake clearing.
175.	8.5.2 Visual impact of the estate. As stated before it will take time for these actions described in these dot points to take effect. (Friends of North Lake)	The impact of the proposal on visual amenity will decrease over time as the screening measures grow. At the same time, the development will be staged, so the existing vegetation in some areas will persist for several years providing some screening.
176.	Earthworks The proposed industrial development involves extensive earthworks and the removal of around 1.6 cubic metres of sand. The level of the site would go down an average of 2 metres. This is not a sensitive low key development. It is a highly intrusive and disruptive development proposal, one which would dramatically change the topography and visual amenity of the area for the worse. Presumably the sand and limestone would be utilised at another site and this would provide an economic boost for LandCorp. The removal of the sand and limestone is essentially a mining proposal. This was not clearly spelt out in the PER. (Conservation Council)	The removal of sand from the site is required for cut and filling purposes only undertaken to create land contours suitable for industrial lots.  LandCorp did initially propose to conduct a quarrying operation to remove 4.3 million cubic metres of sand and limestone. After considering landscape values and community opposition to quarrying, LandCorp is only removing enough sand and limestone to make the topography suitable for industrial lots.  Section 8.5 of the PER describes the potential impact on landscape values and the management of visual amenity for the proposal.  The total amount of earth required to be removed from site has been reduced as a result of LandCorp reducing the size of the subdivision (see Section 2).

**6.4 SOUTH LAKE, BEELIAR WETLANDS AND WATER QUALITY*****Impact on South Lake and other wetlands***

	<b>Submission</b>	<b>Response</b>
177.	Very concerned that development in this area so close to established wetlands will in the long term have an adverse effect on our wetlands. (Coolbellup Community Association)	See General Response 4.8.
178.	Likely adverse impacts on South Lake - The industrial development to the south of the Lake have had a devastating impact on the Reserve. Despite assurances that a buffer would be retained the land has been completely cleared and sand mined. This has caused visual pollution and has also led to sand drift and sand blasting of vegetation in the South Lake Reserve. This is probably what will happen if this development is approved as it involves extensive clearing and sand removal upwind from the Lake. (Wetlands Conservation Society)	LandCorp intends this subdivision to be a benchmark project for environmental and aesthetic outcomes and asks that the community not use previous industrial subdivisions as examples of how this estate will appear and be managed. Section 8.5 of the PER describes the potential impact on landscape values and the management of visual amenity for the proposal. The issue of wind blown dust is addressed in relation to South Lake in Section 11.5 (page 87) of the PER document. Dust management will minimise the generation of dust during development and the retention of vegetation along the western extremes of the buffer area should further minimise the potential for windblown dust to impact on rehabilitation.
179.	6.4 Potential sources of impact Fails to mention the likely adverse effects it could have on the Lake. (Friends of North Lake)	The proposal is unlikely to have any adverse effect on South Lake. See General Response 4.8.
180.	South Lake and its surrounding areas would be severely impact by this development proceeding. South Lake's values would be diminished by the loss of vital terrestrial habitat for wetland fauna. These impacts are real, long term and inevitable. They cannot be addressed. (Western Australian Forest Alliance)	LandCorp disagrees. See General Response 4.8.

	Submission	Response
181.	<p>The proposed development puts South Lake at greater risk. There would be short and long-term risks associated with a development as proposed. All of these risks could not possibly be addressed through the flimsy generic LandCorp plans. These risks would include -</p> <ul style="list-style-type: none"> <li>• The introduction of pathogens and disease (particularly dieback)</li> <li>• Pollution/contamination from earthworks and industry</li> <li>• Spread of weeds</li> </ul> <p>The long term ecological health of South Lake is dependent upon the protection of Lot 502. Lot 502 should be protected and included in the Beelair Regional Park through the Bush Forever process. Bennett Environmental Consulting Pty. Ltd. States "All of the land (Amcor) is uplands of the Spearwood Dune system, which form a very important and essential component of South Lake, as it would increase the ecological diversity of this Bush Forever site."</p> <p>(Western Australian Forest Alliance)</p>	<p>LandCorp disagrees.</p> <p>The risks Western Australian Forest Alliance refer to can and will be managed through the implementation of the Dieback and Weed Management Plan, and the Drainage and Groundwater Management Plan.</p> <p>The proposal will not cause significant environmental change to South Lake. See General Response 4.8.</p> <p>As discussed in General Response 4.5, the site was not included for protection under Bush Forever.</p>
182.	<p>Ecological transition.</p> <p>Of critical importance is the fact that because it adjoins South Lake, an ecological transition (or habitat continuum) is provided from the upland to the wetland. "Wetlands occur at the ecotone between aquatic and terrestrial communities" (Weddell P 349). The upland bushland enhances the high values of South Lake, conversely the Lake enhances the values of the bushland. The conservation value of South and Bibra Lakes would therefore be affected if this upland woodland was cleared. All transitional bushland must be retained.</p> <p>The Bennett report concludes that "All the land (Amcor) is uplands of the Spearwood Dune System, which form a very important and essential component of South Lake, as it would increase the ecological diversity of this Bush Forever Site."</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp has acknowledged the connection between South Lake and the upland bushland of Lot 502 in the PER (Sections 4.2.4, 4.2.5, 7.1.7, and 9.1). In response to public concern over the removal of upland vegetation, an additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p> <p>The rehabilitation of vegetation immediately around South Lake can increase its conservation value.</p>
183.	<p>The proposal fails to note the strategic link to South Lake, which in turn is linked to the Bibra Little Rush and Yangebup Lakes, enhancing the bushland's values. This strategic location of the bushland has not been taken into account in the PER documentation. This is a serious omission</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>The Amcor site links directly with South Lake on its eastern side. South Lake links by North Lake Road to Bibra Lake and southwards through Little Rush Lake and Yangebup Lake to Thomson's Lake and then to Harry Waring Reserve, resulting in nearly 11km of bushland linkage. The bushland linkage provided by Lot 502 will be maintained by the existing bushland in the South Lake Reserve and by protecting the 180-214 m wide buffer strip on the western side of South Lake. The subdivision will not separate South Lake bushland from Bibra Lake to the north or Little Rush Lakes to the south. The subdivision sits to the west of the linkage and its removal does not represent a disruption in this linkage.</p>

	Submission	Response
184.	<p>Beeliar Regional Park:</p> <p>The overall integrity of the Beeliar Regional Park would be at risk with the proposed industrial development to be neighbouring it.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp disagrees. See General Response 4.8.</p> <p>Regional Parks are an appropriate neighbour to industrial development, acting as a buffer between them and residential areas.</p>
185.	<p>Constraints to development:</p> <p>It is impossible to predict precisely in what way the wetland ecosystems neighbouring Lot 502 would respond to the very major disturbances proposed, but it seems highly likely that resulting changes would be irreversible.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp disagrees. The PER includes an examination of the potential impact on the wetland systems (Section 9) reproduced in General Response 4.8.</p>
186.	<p>There would be serious long-term risk of South Lake being contaminated by the large scale earthworks and clearing. The assurances that every effort would be made to prevent contamination are not enough. It would be fanciful to believe that contamination would not occur.</p> <p>(Conservation Council)</p>	<p>LandCorp disagrees. The Drainage and Groundwater Management plan will assist in preventing contamination of South Lake occurring. It should be noted that groundwater flow is directly away from South Lake and so even if spills were to occur on the estate, it would not reach the wetland via groundwater flow.</p>
187.	<p>Sand drift has been a big problem in the area, particularly in the summer when very strong westerly winds are common. If the site was bulldozed as is proposed, it would be impossible to prevent sand smothering the vegetation at South Lake and also adversely impacting on the water quality.</p> <p>(Conservation Council)</p>	<p>The issue of wind blown dust is addressed in relation to South Lake in Section 11.5 (page 87) of the PER document. Dust management will minimise the generation of dust during development and the retention of vegetation along the western extremes of the buffer area should further minimise the potential for windblown dust to impact on rehabilitation.</p>
188.	<p>South Lake's water quality is very good, and to our knowledge there has been no botulism of algal blooms at the Lake over the past 18 years. A large number of metropolitan lakes have problems with eutrophication. The reason for this is usually drainage into the lake, and a lack of a substantial buffer. South Lake currently has a good buffer on the western side of the Lake. If this development is approved this situation would change, and the water quality would deteriorate markedly.</p> <p>(Waterbird Conservation Group)</p>	<p>LandCorp disagrees. The PER includes an examination of the potential impact on the wetland systems (Section 9) reproduced in General Response 4.8.</p> <p>The development of Lot 502 will not affect the water quality of the lake. The Drainage and Groundwater Management plan will assist in preventing contamination of South Lake occurring. It should be noted that groundwater flow is directly away from South Lake and so even if spills were to occur on the estate, it would not reach the wetland via groundwater flow.</p>

	Submission	Response
189.	<p>We are concerned with the enormous upheaval associated with this industrial development. The amount of sand to be taken from the area is 1.6 million cubic metres. Presumably this is a mining operation? There is no proper consideration of the mining impact on South Lake. The disturbance of this large area would mean that sand would be blown over the vegetation and also into the water. The effect on the vegetation and water quality around South Lake is of concern. Vegetation would be smothered by sand drifts.</p> <p>The threat to the health of South Lake from the proposed industrial development has been downplayed. It is foolish to believe that an industrial estate would not produce effluent or pollutants and they would not end up in the lake as the lowest point in the landscape. The Department of Environmental Protection's licence conditions have allowed the dispersal of paper pulp into the Lot 502 bushland. This does not give the public any confidence in this agencies willingness or ability to prevent pollution.</p> <p>(Waterbird Conservation Group)</p>	<p>As above.</p> <p>The issue of wind blown dust is addressed in relation to South Lake in Section 11.5 (page 87) of the PER document. Dust management will minimise the generation of dust during development and the retention of vegetation along the western extremes of the buffer area should further minimise the potential for windblown dust to impact on rehabilitation.</p>

#### Wetland Buffer

	Submission	Response
190.	<p>Loss of Buffer to South Lake - South Lake has been poorly managed by State and local authorities. This was specifically noted by the EPA in the System Six Red Book (1983). The EPA concluded that because the buffers to the east and south had been removed there was a need to enhance the buffer on the west. This block provides that opportunity. The construction of North Lake Road through the fringing vegetation on the east was a tragedy for South Lake. The development of an industrial estate to the south involved the clearing of excellent bushland followed by sand mining. Now only the western buffer remains and LandCorp proposes to remove it and sand mine the area. This must surely be contrary to the EPA's stated objectives of halting clearing and retaining biodiversity.</p> <p>(Wetlands Conservation Society)</p>	<p>Currently, there is no formal buffer on the western side of South Lake. This proposal involves securing a buffer up to 214 m wide on the western side of South Lake. The adequacy of this buffer is addressed in General Response 4.9.</p> <p>LandCorp does not believe the proposal will have a significant effect on regional biodiversity.</p>
191.	<p>9.5.2 Protection of the lake from development and general operation of the estate. They ignored concerns of key stakeholders. The 150 m buffer from the high water mark is the wrong position. Paragraph 3, contradicts paragraph 2 page 75, whereby a set back of 200 m is recommended.</p> <p>(Friends of North Lake)</p>	<p>The adequacy of the proposed wetland buffer is addressed in General Response 4.9.</p>

	Submission	Response
192.	<p>South Lake should have a buffer. This buffer should be all of the Amcor upland area. Ultimately the western boundary of South Lake and the Beeliar Regional Park will be set. It is in the best interests of the Beeliar Regional Park that its western boundary is as large as is possible. At the moment the informal western boundary of South Lake is Sudlow Street. This is obviously the best possible outcome for the natural environment and the quality of life of the residents and the nearby school.</p> <p>(Conservation Council)</p>	<p>The adequacy of the proposed wetland buffer is addressed in General Response 4.9.</p> <p>Securing a wetland buffer up to Sudlow Road excludes development of Lot 502 and hence is not practicable for LandCorp to implement.</p>
193.	<p>9.3 Buffers</p> <p>The buffer boundary undetermined as there is little wetland vegetation left, more upland vegetation should be left to compensate this fact, and 50 m is the minimum. Because fauna need a large feeding area and also to conserve ecologic functions, more is better, this should be where the 200 m + should be implemented. But I am not saying this should occur as this area is needed to protect local biodiversity and added to protect the full 10% of this soil type in Bush Forever.</p> <p>(Friends of North Lake)</p>	<p>The adequacy of the proposed wetland buffer is addressed in General Response 4.9.</p>
194.	<p>The Bennett Wetland protection is achieved through large intact buffers. There is an opportunity to provide a permanent woodland buffer to South Lake now.</p> <p>(Western Australian Forest Alliance)</p>	<p>This proposal involves securing a buffer up to 214 m wide on the western side of South Lake. The adequacy of this buffer is addressed in General Response 4.9.</p>
195.	<p>All current advice from the Water and Rivers Commission and the Department of Environmental Protection is to retain large intact bushland buffers around wetlands. It is hard for the public to understand why this advice could now be ignored.</p> <p>(Waterbird Conservation Group)</p>	<p>The advice has not been ignored. There currently is no formal buffer on the western side of South Lake. This proposal involves securing a 180-214 m wide buffer on the western side of South Lake, which includes remnant bushland. The adequacy of this buffer is addressed in General Response 4.9.</p>
196.	<p>Also the Wetland Atlas was not referred to in the PER. A buffer zone would be set around South Lake regardless of any so called "offset" being offered by LandCorp.</p> <p>(Waterbird Conservation Group)</p>	<p>This is incorrect. Section 4.2.3 refers directly to Hill, A.L., Semeniuk, C.A., Semeniuk, V., and Del Marco, A., 1996. Wetlands of the Swan Coastal Plain, Volume 2A. Wetland Mapping, Classification and Evaluation. Water and Rivers Commission and Department of Environmental Protection. Western Australia, commonly referred to as the wetland atlas.</p> <p>There is no statutory requirement to establish a buffer of the size proposed around South Lake. A 150m buffer was agreed on between LandCorp, DEP and Aboriginal community members. LandCorp has volunteered the provision of an additional 5 ha into the buffer with advice from the EPA which increases its width up to another 64 m.</p>

**6.5 SITE CONTAMINATION (SOIL AND GROUNDWATER)**

	<b>Submission</b>	<b>Response</b>
197.	The clean-up of a contaminated site should not be contingent upon a development proposal proceeding. It is surprising that a Government body is taking this approach to such a potentially serious issue. This site will have to be cleaned-up regardless of any future land use. It is disappointing that LandCorp is seeking to tie the clean-up to their proposal. The landfill material should be removed. The effluent ponds should be decommissioned, and any contamination should be cleaned up. (Western Australian Forest Alliance)	The contaminated site remediation is not contingent on the development proceeding. LandCorp acknowledges that the PER document did not clearly state that it will be up to Amcor to fund the removal of waste from the site. LandCorp's development of site will make the earthmoving activities easier to conduct.  On termination of Amcor use of the land (within approximately 2-3 years), effluent pond and landfill use will cease regardless of the proposal going ahead.
198.	LandCorp seem intent upon linking this project to a cleanup of the effluent ponds and landfill which appear to have been poorly managed over many years. It is hoped that LandCorp's attitude to managing contamination is not held by other government agencies or the Western Australian Government. The contaminated areas should be cleaned up as soon as possible and should be in no way linked to this proposal. (Conservation Council)	As above
199.	Jandakot public groundwater mound:  Such upland catchments are crucial to the maintenance of water quality in Jandakot's public water supply mound- With removal of the bushland both the mound and the rich ecology associated with it will inevitably be affected. The PER concedes that groundwater quality has already been degraded as a result of existing activities- (PER Pvi). The proposed development is not ecosystem-friendly. It is spin-doctoring on the part of the planners to suggest otherwise. The hydrology of the area will be altered. (Kanyana Wildlife Rehab Centre)	This upland is on the western edge of the Jandakot Mound and the water passing though the site will not be used for public water supply purposes. In any case the water quality of groundwater from the site will improve on cessation of effluent disposal on the site.  The overall hydrology of the area will not be significantly affected by the proposal. The assessment of impact of the proposal to surface drainage and groundwater flow is addressed in Section 9.5.3 and 9.5.4 of the PER respectively.
200.	Salinity.  Clearing of vegetation particularly trees should be disallowed to avoid possible salinisation of groundwater. (Kanyana Wildlife Rehab Centre)	Dryland salinity is a major environmental issue in the wheat belt of Western Australia. It does not commonly occur in the metropolitan area and is not considered an issue regarding this proposal.
201.	The effluent disposal area considered to have low levels of contamination is being proposed as Public Open Space by the government body. The public may be alarmed by this proposal. (Waterbird Conservation Group)	The site will be filled and covered. The low levels of contamination will not be of any threat to public safety.

**6.6 AIR QUALITY AND NOISE**

	<b>Submission</b>	<b>Response</b>
202.	<p>Dust and particulates</p> <p>It is clear that the massive earthworks and mining being proposed would create significant problems with dust and particulates for both the local community and the environment. Because of the staggered works program, the situation would continue for 10 years or more.</p> <p>There is no justification for removing the ridgeline vegetation.</p> <p>(Western Australian Forest Alliance)</p>	<p>The issue of wind blown dust is addressed in relation to South Lake in Section 11.5 (page 87) of the PER document. Dust management will minimise the generation of dust during development and the retention of vegetation along the western extremes of the buffer area should further minimise the potential for windblown dust to impact on rehabilitation.</p> <p>The removal of ridgeline vegetation is required to allow the site to be levelled for industrial use.</p>
203.	<p>The PER states that 1.6million cubic metres of fill will be removed from the site during earthworks. From the contour map cuts of up to 6 metres will be made to the landscape, and essentially the estate will be reduced to a terraced lot of yellow sand. Residents of Yangebup have seen this happen before in the Cocos Park development (although this was not terraced) and had to tolerate the dispersion of sand in the strong north-westerly winds for many years.</p> <p>Dust control will be a major issue for this development especially if not all lots are sold quickly.</p> <p>(Yangebup Progress Association (Inc))</p>	<p>The removal of sand from the site is required for cut and filling purposes only undertaken to create land contours suitable for industrial lots.</p> <p>LandCorp did initially propose to conduct a quarrying operation to remove 4.3 million cubic metres of sand and limestone. After considering landscape values and community opposition to quarrying, LandCorp is only removing enough sand and limestone to make the topography suitable for industrial lots.</p> <p>The total amount of earth required to be removed from site has been reduced as a result of LandCorp reducing the size of the subdivision (see Section 2).</p> <p>The issue of wind blown dust is addressed in relation to South Lake in Section 11.5 (page 87) of the PER document. Dust management will minimise the generation of dust during development and the retention of vegetation along the western extremes of the buffer area should further minimise the potential for windblown dust to impact on rehabilitation.</p>
204.	<p>Light industry is notorious for pollution and very difficult to police. Amcor itself appears to have set a poor example.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>All enterprises inside the proposed would not need to have appropriate licenses for potentially polluting materials and would be subject to their own approval and license conditions.</p>



**6.7 TRAFFIC AND SAFETY**

	<b>Submission</b>	<b>Response</b>
205.	Other undesirable impacts include severe traffic problems on North Lake Road arising from the proposed entry to the estate. This entry will become an exit for trucks from the Cocos Park industrial estate that currently exit onto Miguel and Sudlow Roads. (Wetlands Conservation Society)	The potential impact of the proposal on traffic is addressed in Section 13.4.1 of the PER (page 92). Main Roads have advised that the traffic increases anticipated as a result of the estate are well within the capacity of the roads. LandCorp does not anticipate significant traffic issues to arise from this proposal. On the contrary, the placement of a road through the estate from Sudlow Road to North Lake Road will decrease the level of traffic along Phoenix Road, which is adjacent to residential areas as opposed to Sudlow Road, which is in an industrial area.
206.	The PER states that 1.6million cubic metres of fill will be removed from the site during earthworks. This represents according to our calculations approximately in the order of 30,000 truckloads of sand leaving the site, What impact study has been done on this increase of haulage traffic on the adjacent roads and on which roads arc these trucks expected to travel? Yangebup Progress Association	The G.JL Consulting Engineers Project Managers traffic impact study (G.JL 2000) examined the impact of haulage traffic associated with the removal of sand from the site.

**6.8 ABORIGINAL HERITAGE**

	<b>Submission</b>	<b>Response</b>
207.	We are making this submission to express our great concern that as Native Title Holders and Sites Custodians we have not been consulted about our Native Title, Heritage Sites and Environmental concerns regarding this Special Place. We ask that in accordance with Guidance Statement No, 41, the EPA recommend that LandCorp meet with us in good faith in order to reach an agreement about how to protect the Site. We ask that LandCorp engage Marcus Holmes of Deacons lawyers to help both of us to reach that agreement. Marcus has helped make several agreements between us and government, local government and developers. (Swan Coastal Plains Native Title Claimants)	LandCorp has spoken to the Swan Coastal Plains Native Title Claimants Group since this submission. The group were consulted during the Aboriginal Site Identification Survey by R.T. Parker and P. Greenfeld (1999) soon after site acquisition and this misunderstanding has now been rectified.
208.	Aboriginal Heritage sites We are unable to specifically comment however find it difficult to accept that the removal of a section of each of the two scar trees and the relocation of these pieces is anything but a farce. (Conservation Council)	LandCorp disagrees. The commitments were agreed on between LandCorp and the Aboriginal Elders consulted during the Aboriginal Site Identification Survey (in Parker and Greenfeld 1999). They were to the satisfaction of this group.

	Submission	Response
209.	Comments on the Aboriginal Heritage and Use is outside this Group's expertise, however it is questionable whether the EPA's objective relating to Aboriginal Heritage and Use is met by the plans proposed in the P.E.R. (Waterbird Conservation Group)	Aboriginal heritage issues were addressed during site acquisition. The commitments agreed on between LandCorp and the Aboriginal Elders consulted during the Aboriginal Site Identification Survey by R.T. Parker and P. Greenfeld (1999) will ensure the EPA's objectives are met.

## 7. OTHER ISSUES

### 7.1 CLIMATE CHANGE

	Submission	Response
210.	On a global scale any and all clearing of vegetation is known to contribute to the destabilisation of the Earth's atmosphere (global warming), to increasing drought, to the Albedo effect and to increases in atmospheric carbon dioxide. Any further clearing of bushland should cease. Effect on microclimate: No consultation appears to have been made with climatologists or atmospheric scientists. There is no reference to the inevitable impact, which the proposed clearing of 68 ha of natural vegetation will have on the regional microclimate. Such clearing will exacerbate the Urban Heat Island Effect in Perth. Summer heat and dryness is already a serious problem in our region. (Kanyana Wildlife Rehab Centre)	LandCorp did not consider the effects of vegetation clearing from a global, regional or local climate perspective and has not been advised by the EPA that it was a key environmental factor regarding this proposal.
211.	Clearing must also stop to reduce the speed of climate change which will have a devastating effect on us and biological diversity. (Urban Bushland Council)	LandCorp did not investigate the effects of vegetation clearing from a global, regional or local climatological perspective and has not been advised by the EPA that it was a key environmental factor regarding this proposal.

**7.2 RECREATION**

	<b>Submission</b>	<b>Response</b>
212.	<p>The Beelihar Regional Park provides an important social and cultural amenity. It is listed in travel guides to Western Australia. Lot 502 would make a valuable contribution/addition in this sense.</p> <p>Educational and eco-tourism opportunities abound here to observe wildlife and natural places. Local people benefit from biodiversity protection through conservation related activities such as eco-tourism.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp acknowledge there would be recreational and tourism benefits for Beelihar Regional Park should Lot 502 be added to it. The land is however zoned industrial and owned by LandCorp whose charter is to provide sufficient industrial land for the social and economic needs of Western Australia.</p>

**7.3 ENVIRONMENTAL MANAGEMENT**

	<b>Submission</b>	<b>Response</b>
213.	<p>LandCorp's proposed mitigation measures are inadequate to compensate for the loss of this high quality vegetation and habitat.</p> <p>(Wetlands Conservation Society)</p>	<p>LandCorp has not implied that its management measures will compensate for all of the clearing of habitat for the proposal. Retention of upland vegetation in the buffer, rehabilitation of the buffer and area around South Lake and the establishment of native gardens will however mitigate a proportion of the impact.</p> <p>In response to public concern over the removal of upland vegetation, an additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p> <p>Appendix 4 of the PER describes an expert opinion of the benefits of rehabilitating areas around South Lake.</p> <p>The benefits of rehabilitation, retaining more upland vegetation in the revised proposal, and of establishing native gardens for fauna are described in General Responses 4.10, 4.11, and 4.12 respectively.</p>

	Submission	Response
214.	<p>While we welcome the donation of the 150 metre wide buffer zone to the west of South Lake we note that this land is largely degraded by previous grazing and since it is within the South Lake surface catchment it would not have been approved for development in any case. Most of the high quality vegetation is going to be removed.</p> <p>(Wetlands Conservation Society)</p>	<p>The degraded land within the buffer will be rehabilitated as part of this proposal. The statement that development would not have been approved within 150 m of the wetland is conjecture. LandCorp has acted on guidance and come to agreements with government agencies and Aboriginal groups on the provision of buffer of at least 150 m. In addition, in response to public environmental concerns. LandCorp has increased the width of the proposed buffer such that it is now up 214 m wide. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p> <p>LandCorp acknowledges that approximately 59 ha of bushland will be removed as part of the proposal.</p>
215.	<p>LandCorp's offer to revegetate the southern buffer of South Lake is insulting to those community groups (including the WCS) that have worked with CALM over the past six years to plant 15,000 trees in the southern and eastern buffer zone of South Lake. We are currently half way through a three year project supported by BHP's Revive Our Wetlands project (with support from CALM, Alcoa and CVA) to revegetate the buffer zone of South Lake. LandCorp's offer is a Clayton's commitment because this work has already been done. Consequently, apart from the western buffer, LandCorp's proposed mitigation measures are illusory.</p> <p>(Wetlands Conservation Society)</p>	<p>LandCorp is aware of the admirable rehabilitation efforts of community groups in the southern area of South Lake. On inspection, the rehabilitation is however far from complete, requiring an intensive weed program and establishment of groundcover. Additionally, the existing rehabilitation does not extend over the entirety of the 10 ha area proposed to be included in the collaborative rehabilitation program. This program is being planned in cooperation with CALM. The existing planted seedlings will be recognised in the overall rehabilitation program such that they are not disturbed and their protection is enhanced.</p>
216.	<p>The attempt to artificially dress-up this proposal by suggesting that LandCorp would assist CALM with rehabilitation of a buffer zone around South Lake and the southern end of South Lake is absurd. It makes no sense whatsoever to bulldoze excellent condition bushland and then allocate precious resources to rehabilitate completely degraded areas. Presumably LandCorp is unaware that local conservationists have been involved in a rehabilitation program of the southern end of South Lake for many years. Community members who give hundreds of volunteer hours to rehabilitation know at first-hand just how difficult rehabilitation of bushland is, and that worthwhile results cannot be expected for decades.</p> <p>(Western Australian Forest Alliance)</p>	As above
217.	<p>Offset:</p> <p>LandCorp is proposing in consultation with CALM to "offset" the clearing of around 64 hectares of intact bushland by supporting the rehabilitation of small areas of degraded land. This is misleading as local conservationists have for years been engaged in large scale restoration of these degraded areas.</p> <p>(Kanyana Wildlife Rehab Centre)</p>	As above

	Submission	Response
218.	<p>The attempt to artificially dress-up this proposal by suggesting that LandCorp would assist CALM with rehabilitation of a buffer zone around South Lake and the southern end of South Lake is absurd. It makes no sense whatsoever to bulldoze excellent condition bushland and then allocate precious resources to rehabilitate completely degraded areas. (Western Australian Forest Alliance)</p>	<p>An in-principle agreement has been reached between LandCorp and CALM regarding the collaborative rehabilitation program. CALM have already put the Rehabilitation Management Plan for the area out for tender. It will incorporate a 10 ha area along the southern side of South Lake with bush Forever site 254.</p> <p>LandCorp intends the revegetation to be of a very high standard and will assist in choosing the most qualified specialists to plan the work in consultation with CALM.</p> <p>LandCorp notes Wafa's views on the clearing versus rehabilitation issue.</p>
219.	<p>Comparing the initial consultation lot plan with that included with the PER shows little change to the amount of retained vegetation in the estate area. The PER states, "the establishment of native gardens in the estate will compensate for some of the clearing of habitat". Whilst the establishment of a Landscape Protection and Management Plan is admirable, we question how long this plan will be implemented and enforced. As has been seen in some developments previously, after the developer has sold all the land, upkeep of common gardens and facilities ceases. What happens in 10 years time when as always happens in these type of estates, tenants come and go and the original native garden plan is forgotten? A similar assurance was given to Yangebup residents regarding the retention of buffer zones in Cocos Park industrial development, now 10 years later they have been whittled away to almost nothing. For this reason we believe that additional strips of the original bushland of rating 3-4 (Very Good to Good) should be preserved in the development so that fauna is not reliant in the future on maintenance of gardens in the area. (Yangebup Progress Association (Inc))</p>	<p>As part of the contract of sale, LandCorp will require enterprises to undertake appropriate landscaping of their lots. A caveat or restrictive covenant can be registered on title to enforce conditions relating to buildings and landscaping. The caveat can remain on title until the conditions are met. LandCorp standard industrial conditions prevent a purchaser on-selling land prior to development. Each buyer will be supplied with a copy of the Landscape and Protection Management Plan, which will guide land owners on appropriate landscaping and planting to undertake.</p> <p>The Landscape and Protection Management Plan will be prepared with advice from Dr Mike Bamford (Consulting Ecologist) to maximise benefits of native gardens to fauna.</p> <p>LandCorp was not involved with the Cocos Park Industrial Estate and hence cannot comment on why the arranged buffers were not adhered to.</p>
220.	<p>Rehabilitation: While rehabilitation is important it cannot be relied on its own to save fauna displaced by the proposed development. It takes many years for an area to achieve sufficient maturity after rehabilitation before it is useable by fauna. The report is in error where it suggests that they could survive in the interim. (Kanyana Wildlife Rehab Centre)</p>	<p>LandCorp has not implied that its management measures will compensate for all of the clearing of habitat for the proposal. Rehabilitation of the buffer and area around South Lake and the establishment of native gardens will however mitigate a proportion of the impact.</p> <p>The rehabilitation programs around South Lake will commence immediately upon approval of the subdivision. Stage 1 of development will not occur until 12 months following approval, with the staged development progressing over ten year. This will give time for the newly established vegetation to reach some level of maturity to make the area suitable for colonisation by more individuals. The staging program has been designed to specifically address the needs of fauna (see Section 2).</p> <p>Appendix 4 of the PER describes an expert opinion of the benefits of rehabilitating areas around South Lake.</p>

	Submission	Response
221.	The assurances from LandCorp that best management practices would be implemented should the industrial development proceed can be given little credence. (Conservation Council)	LandCorp intends for the subdivision and the associated rehabilitation and management to be a benchmark for land developers in environmental, aesthetic and social outcomes. The commitments are likely to be made part of the ministerial conditions and therefore will be legally binding.
222.	We cannot see any real benefit from the offset mentioned in the P.E.R. Local people have been busy rehabilitating the southern part of South Lake for many years. They are likely to lose their enthusiasm for this demanding work (which involves regular summer watering) if they see government bulldozers in the adjacent bushland. (Waterbird Conservation Group)	The potential benefits of rehabilitation are described in General Response 4.10. These programs are being planned in cooperation with CALM. The existing seedlings that were planted by local volunteers will be recognised in the overall rehabilitation program such that they are not disturbed and their protection is enhanced.
223.	Proponent should do more than cede wetland buffer, as this is a usual requirement. The key issue is the loss of around 70 hectares of significant bushland habitat. As a matter of course, all proponents would be required to cede a 50 plus metre buffer from the edge of hydric soils. A further 200 metres being the secondary zone of influence would also be expected to be conceded on any development abutting an important wetland. So the proponent is not offering anything at all. (Waterbird Conservation Group)	The EPA's position as described in Draft EPA Guidelines for Environment and Planning EPA (1997) is to provide for at least a 50 m buffer. Water and Rivers guidelines do recommend distances of up to 200 m between wetlands and industrial areas, but this is dependent on intended land uses and is not a statutory requirement. There is no statutory requirement to establish a buffer of the size proposed around South Lake. A 150m buffer was agreed on between LandCorp, DEP and Aboriginal community members. LandCorp has volunteered the provision of an additional 5 ha into the buffer with advice from the EPA which increases its width up to another 64 m.  Contrary to this submission, LandCorp is also providing for the rehabilitation of 15 ha of degraded land and the provision of the buffer area as Regional Open Space to Beeliar Regional Park.

**PART 2 - INDIVIDUAL PUBLIC SUBMISSIONS****8. GENERAL****8.1 THE PER DOCUMENT**

	<b>Submission</b>	<b>Response</b>
224.	The PER selectively inflates the doubtful benefits of the development, while downplaying the loss of natural values associated with the proposed broad-scale clearing of the bushland. The document lacks scientific rigour.	The PER is an objective environmental impact assessment prepared by Welker Environmental Consultancy and represents a summary of its own work and that of several sub-consultants' into the potential effects of the proposal. LandCorp does not agree that the document downplays the natural values of the area. The document is upfront about the most significant of the impacts expected from this proposal (i.e. removal of habitat).  Section 4.2.4 of the PER contains a section describing the regional significance of the bushland with Sections 6.1 and 7.1 describing the flora and fauna values in more detail respectively.
225.	Essential that more complete information is available about the socio-economic and geographic characteristics of the areas.	Section 4 of the PER provided an appropriate summary of geographic and socio-economic characteristics. Further information is available from the sources used for this summary.

**8.2 THE PROPONENT**

	<b>Submission</b>	<b>Response</b>
226.	LandCorp has cleared too much of the local bushland in the area already including an area of bushland near the corner of Parkway and Annois St, Bibra Lake.	LandCorp was not responsible for the clearing of any bushland near the corner of Parkway and Annois St, Bibra Lake.
227.	LandCorp were not able to provide a report from Chesterton International as requested by the individual.	The Chesterton International Report was not prepared for LandCorp or specifically for the PER. LandCorp's consultant referenced the report and it was available from LandCorp at the time.
228.	Because it is in Government ownership the Government should be setting an example to others in the community, not bulldozing large areas of bushland.	See Section 1.2 of the PER document
229.	Ignoring triple bottom line. Where social, economic and environmental issues are weighed up. Commonly called ESD, the state government and its agencies are committed to acknowledge this.	LandCorp disagrees. The "Triple bottom line" is an underlying issue throughout the document. Social, economic and environmental issues have all been addressed thoroughly.  LandCorp has relied on the provisions of Bush Forever to maintain regional biodiversity which was to provide security to both the environment and development.

**8.3 THE PROPOSAL****8.3.1 Justification for proposal**

	<b>Submission</b>	<b>Response</b>
230.	<p>There is already enough cleared and available industrial subdivisions/land in the area which could be used for industry. These include vacant industrial land in Henderson and Bibra Lake/Port Kembla Drive.</p> <p>Existing industrial subdivisions should be better utilised (there are many vacant blocks and buildings in existing nearby industrial subdivisions). There has been poor take up rates and huge areas of unused land at for instance in the Cocos Industrial Estate.</p>	<p>General Response 4.1 describes the need for the proposal and the reason why other areas are not suitable as an alternative.</p> <p>There is a perception that some existing industrial subdivisions currently have many vacant blocks and buildings and that these should be used up before new subdivisions are created. As discussed in General Response 4.1, the amount of apparently vacant land or buildings is not necessarily a reliable indication of the availability of suitable industrial land. In the case of industrial estates established by other parties even if the land has not been used to its maximum potential, it is unlikely that the additional land possibly gained by more efficient utilisation of that land could address the predicted short-term demand for industrial land in the southern metropolitan region.</p>
231.	<p>Other planned industrial areas such as Hope Valley/Wattleup preclude the need for proposal. The time taken to develop the estate means that land at Hope Valley/Wattleup will be available. Hope Valley/Wattleup is 5 km away means little impact on freight costs etc.</p>	<p>Hope Valley/Wattleup industrial land will not be available for at least another four to five years with development proposed to commence in the southern areas first.</p> <p>General Response 4.1 describes the need for the proposal and the reason why other areas are not suitable as an alternative.</p>
232.	<p>30% vacancy ratio in industrial land is desirable (McLeod report). Even if this has been the accepted practice in Australia, it would be useful to use as bench marks international practices that use land more effectively. Rather than continually providing cheap land, that is in practice undervalued by industry, emphasis should be placed on using existing industrial land effectively and increasing its value in the community.</p>	<p>There is a perception that some existing industrial subdivisions currently have many vacant blocks and buildings and that these should be used up before new subdivisions are created. As discussed in General Response 4.1, the amount of apparently vacant land or buildings is not necessarily a reliable indication of the availability of suitable industrial land. In the case of industrial estates established by other parties even if the land has not been used to its maximum potential, it is unlikely that the additional land possibly gained by more efficient utilisation of that land could address the predicted short-term demand for industrial land in the southern metropolitan region.</p>
233.	<p>The proposal will create numerous short and mid-term employment opportunities during the construction phase.</p>	<p>LandCorp agrees with this Response</p>
234.	<p>Creation of over 2000 jobs at ultimate development and a substantial increase in the number of services and facilities in the general area for the benefit of local and district residents.</p>	<p>As Above</p>



	Submission	Response
235.	Provision of an east-west road link between North Lake Road/Forrest Road and Sudlow Road.	As Above
236.	Ability to provide much needed road connection to Cocos Driver	As Above
237.	Consolidation of the Bibra Lake Industrial Estate as a major employment and service provision centre.	As Above
238.	Report by Dr Paul McLeod supplied by LandCorp contained many typographical errors and incomplete sentences that do not add professional credibility to the document.	The report was originally intended mainly for internal use and due to time constraints had not undergone a fine editing. Dr McLeod is a highly respected professional in his field.

### 8.3.2 Industrial use of Lot 502

	Submission	Response
239.	Industrial development is totally inappropriate for this large and valuable area of bushland.	The project area has been zoned for General Industrial use under the City of Cockburn's TPS 2 and for Industry under the MRS. Its use for such as subdivision has therefore already been subject to careful assessment through the planning process.
240.	As Lot 502 is owned by the government (i.e. the people), a decision as to its future should be made by the people and not by a government department with an agenda to dispose of all crown land when the time is right. LandCorp has not justified the conversion of this bushland into an industrial subdivision.	LandCorp is a statutory authority whose mission is to foster major Government land and infrastructure projects to assist the achievement of economic and social prosperity for all Western Australians. The key business outcomes for LandCorp are developing strategically located industrial and urban land to meet the needs of the State, and maximising the social and financial returns to the State. It is therefore charged by the State (for the people) to develop such industrial subdivisions as proposed. The justification for its use is described in General Response 4.1.
241.	The project area (Lot 502) is not suitable for an industrial estate because of proximity to Bibra Lake, Adventure World, and residential areas, including St Paul's' estate.	LandCorp disagrees. The site is highly suitable for industrial development as described in General Response 4.1 of this document.
242.	The South Lake bushland used to be a buffer to Amcor papermill when Industrial Area's had Bushland buffers, instead of Light industrial areas being used as buffer's (The illnesses and deaths of workers in the area's has increased incredibly over the past few years and in the future the practice of placing these workers in this situation could cause many problems for future governments)	LandCorp is unsure on what basis the submitter has made these claims.

	Submission	Response
243.	It is stated in the National Objectives and Targets for Biodiversity Conservation, in section 1.1.4 p 7 it states, "by 2001, all jurisdictions have clearing controls in place that will have the effect of reducing the national net rate of land clearance to zero.	<p>The Bush Forever process, which was enacted as a result of National Objective for Biodiversity Conservation, is described in detail in General Response 4.5 of this document.</p> <p>The site was excluded from protection under Bush Forever. LandCorp has however still addressed the local and regional significance of the site. It believes it has designed the subdivision and committed to sufficient mitigation such that the targets for Biodiversity Conservation will not be compromised.</p>

### 8.3.3 Proposal design and description

	Submission	Response
244.	A proposal utilising less land for subdivision should be pursued.	As described in Section of 3.1.3 of the PER, LandCorp investigated several alternatives for its design of the industrial subdivision some of which involved the retention of larger areas of bushland and restricted recontouring levelling from further back from South Lake. The final design, which does include the retention of some remnant bushland, incorporated an area that was assessed as the minimum that LandCorp could develop to meet an acceptable financial return.
245.	An alternative proposal should be considered that serves to retain many of the natural values of the area. All vegetation east of the cleared area (with the storage ponds) could be retained, including the 'panhandle' area identified by Bamford. The area marked as 'uninterpretable' for Dieback in the south-west of Lot 502 is significantly degraded and could be utilised for industrial purposes. This proposal would serve to retain much of the vegetation, thereby ensuring that biodiversity values are maintained and that the area continues to act as a part of the corridor of vegetation in the Beeliam chain.	<p>See above</p> <p>A subdivision incorporating only the degraded areas of Lot 502 would not be financially viable.</p>

<p>246.</p>	<p>There is an objection to the mining of sand and limestone prior to the establishment of the industrial estate. The proposed development involves extensive earthworks and the removal of around 1.6 million cubic metres of sand. The level of the site would go down an average of 2 metres. The removal of the sand and limestone is essentially a mining proposal. This was not clearly spelt out in the PER.</p> <p>The development should capitalise on landscape attributes of the site to reduce impacts.</p>	<p>The removal of sand from the site is required for cut and filling purposes only undertaken to create land contours suitable for industrial lots.</p> <p>LandCorp did initially propose to conduct a quarrying operation to remove 4.3 million cubic metres of sand and limestone. After considering landscape values and community opposition to quarrying, LandCorp is only removing enough sand and limestone to make the topography suitable for industrial lots.</p> <p>The total amount of earth required to be removed from site has been reduced as a result of LandCorp reducing the size of the subdivision (see Section 2).</p> <p>The gradient of the site means that it requires a great deal of earthworks to make the land suitable for industrial development. Besides the potential direct impacts associated with clearing vegetation and habitat (see Section 6.5.1 and 7.5.1 of the PER), there are no significant impact anticipated as a result of recontouring the site</p>
<p>247.</p>	<p>The concept of a staged development over a 10 year period is reasonable. Unfortunately, in past proposals of similar nature these concepts are rarely carried out in practice because it is much more cost effective to clear and landform all in one go.</p>	<p>LandCorp has committed to a staged development as per Figure 1. Each stage will not commence until the previous stage has been completed. It has been estimated that it will likely take a period of around 10 years to complete all stages, which each stage being commenced at least 6 months between each other but typically around a year apart.</p>

**8.3.4 Industrial development in urban environment**

	Submission	Response
<p>248.</p>	<p>Industrial development is polluting. The region will inevitably be harmed if the proposal were to be accepted. Where heavy industry is concerned, regular policing and stringent laws have been implemented in the interests of environmental protection and of public safety. Light industry is not subject to as high level of scrutiny and inherent problems include:</p> <ul style="list-style-type: none"> <li>• Conditions for light industry are too broad, notoriously lax and poorly supervised.</li> <li>• An extreme range of toxic chemicals are used</li> <li>• Willingness to do the right thing varies considerably</li> <li>• It would be naïve to rely on individuals or businesses to act responsibly</li> <li>• Ability to police the effluent and discharges from such a places is extremely difficult</li> </ul> <p>WA has an appalling record of pollution of wetlands and environmental degradation, this only worsens it.</p>	<p>LandCorp disagrees. All enterprises inside the proposed area would need to have appropriate licenses for potentially polluting materials and would be subject to their own approval and license conditions.</p> <p>Additionally, the Stormwater Management Plan/Drainage and Groundwater Management Plan will provide security against pollution reaching nearby wetland and bushland areas should a potentially harmful spill or discharge occur within the subdivision.</p>

249.	South Lake and Beeliam Regional Park, which is zoned for Parks and Recreation, is a complimentary neighbour to industrial land usage. Activity of industrial property during week and the activities of the adjacent sporting and recreational areas make the best use of the land and it provides a buffer to adjacent residential land.	LandCorp agrees.
250.	The earthworks and mining which are being proposed on a massive scale would have an enormous impact over a long period both on a local and regional level. People living in the vicinity would be adversely affected.	The estate development is does not represent a significant risk to public safety. Its use for a general industrial subdivision has been subject to careful assessment through the planning process.  The measures described in the PER to reduce the impacts on Visual Amenity and to reduce the impact of Dust, Noise, and Traffic will minimise the risk of people in the vicinity of the project being adversely affected by the proposal.

### 8.3.5 Community consultation

	Submission	Response
251.	Public review period of four weeks is too short. The minimum period of public consultation for a PER document should be six weeks, and ideally should be longer (8-10 weeks).	The four week period for public submission was determined by the EPA and not LandCorp.
252.	There is a lack of public debate and consultation regarding the proposal. Lack of consultation with the general public	LandCorp disagrees. See General Response 4.2. The community consultation program and outcomes are summarised in Section 2 of the PER.
253.	The Project has been known to all statutory authorities and the public for a considerable period of time, as industrial land and its potential use.	LandCorp agrees
254.	Request for community access to the site through consultation however since LandCorp's acquisition of the site, access to the site is impossible.	LandCorp has not previously allowed general public access to Lot 502 because of safety issues. Access to site would be available to small numbers of persons on request if accompanied by LandCorp personnel.
255.	Local community newspaper had no stories on the proposal in order to gain public interest for the consultation process	Public interest was gained through other measures. See Section 2 of the PER.
256.	Briefings and discussions with Government agencies and Cockburn Council and officers, can not be regarded as community consultation, as there is no consultation and briefings to the community. The Government agencies and Councils are representatives for the community, but should not be used as a tool to keep the community out of the process.	LandCorp disagrees. See General Response 4.2. The community consultation program and outcomes are summarised in Section 2 of the PER.  There was extensive community consultation undertaken for the preparation of the PER document.
257.	No readily available data in the PER document that give the ratios of the responses to the community consultation process. How many respondents in the community consultation process supported the proposed industrial estate compared to those against?	Attendees of the consultation process would have been able to see roughly the ratio of responses.

## 9. ENVIRONMENTAL FACTORS ADDRESSED IN PER

### 9.1 VEGETATION AND FLORA

#### *Bushland Values*

	Submission	Response
	Proposal does not take into account the intrinsic value of the bushland	See General Response 4.4
258.	Proposal does not take into account the value of the bushland to the local and wider community. Intergenerational equity should be considered, the children need to have whatever native bushland protected and conserved. The outstanding natural values have not been recognised in the PER. And 43% is in very good to good condition. The local and wider community would be far better served if this bushland is protected in its entirety and developed as a Regional Park for nature conservation, recreation and education	See General Response 4.4
259.	A greenbelt through residential areas is essential for family living.	The proposal will not decrease the size of Beeliam Regional Park, the existing formal green belt through the Bibra lake Yangebup area. In fact, the proposal will result in an additional 11.2 ha of land being added to the western side of the park.
260.	The bushland's values were formally recognised by the National Trust of Australia (W.A) in August 2001. The site met the high natural values demanded of a Trust classification. This has not been recognised in the PER.	LandCorp has only recently become aware that the bushland is listed by the National Trust (W.A.). The trust is a non-profit community based organisation and LandCorp respects its decision to include Lot 502 on a heritage listing. LandCorp is not however aware of the justification for listing or been consulted by the Council regarding the listing. LandCorp cannot comment on the significance of the listing as it has not been informed of the criteria for inclusion.
261.	The bushland is mostly in a very good to good condition and is apparently free of dieback. Bush in such good condition on the Swan Coastal Plain should be preserved. A substantial proportion of the upland vegetation should be set aside as a "finger" of nature. The woodland could become a component of a "Kings Park" of the south.	<p>There are many large blocks of vegetation in similar condition in the metropolitan area which will be protected under Bush Forever.</p> <p>There is a real economic and social need to develop this land (see General Response 4.1.1). The retention of all the bushland in Lot 502 would have significant economic and social ramifications for the State (see General Response 4.1.3).</p> <p>As described in Section of 3.1.3 of the PER, LandCorp investigated several alternatives for its design of the industrial subdivision some of which involved the retention of larger areas of bushland to possibly add to Beeliam Regional Park. The final design, which follows several changes to the proposal in addressing environmental concerns and now includes the retention of 8-9 ha of remnant bushland, incorporates an area that was assessed as the minimum that LandCorp had to develop for acceptable financial return.</p>

	Submission	Response
262.	To the best of knowledge, the site has not yet been formally excluded from Bush Forever.	See General Response 4.5.
263.	Site should have previously been included in Bush Forever. Shortcomings in original Bush Forever assessment including the brief inspection of only the eastern side of the bushland was made as part of Bush Forever assessment and a very short report filed.	See General Response 4.5.
264.	<p>Lot 502 should be included in Bush Forever as:</p> <ul style="list-style-type: none"> <li>Lot 502 is of sufficient ecological importance and conservation significance and meets all environmental/regional significance criteria for inclusion in Bush Forever. All conservation related criteria (rarity, size, shape, condition and relationship to other sites) for the selection of Bush Forever sites are thoroughly met.</li> <li>There is little likelihood of the Bush Forever target of protecting 10% of the original extent of the Karrakatta Complex central and south being met even if the Government meets its promise to look at sites outside the metropolitan area. The amount of Karrakatta Complex Central and South protected under Bush Forever is 8 %. This complex is poorly represented in the conservation estate. Lot 502 offers the opportunity to increase the 8% figure to 9%.</li> <li>Clearing of vegetation should not be allowed as the level of different complexes is below the level of 30% that which is thought necessary for biodiversity conservation and in the case of Karrakatta Complex Central and South, of sufficient size to be sustainable. This is the last chance to protect a relatively large remnant</li> </ul>	See General Response 4.5 and 4.6
265.	Not correct to imply that a diverse mosaic of vegetation types is necessary for a Bush Forever site	LandCorp did not intend for this to be implied. A diverse mosaic of vegetation types does however add to the value of protecting a bushland, in that higher representation of vegetation communities can be obtained by protecting areas of numerous vegetation types.
266.	Residents of Bibra Lake moved to suburb because of the bushland present in the area. It should remain to be possible to not have to travel for miles to see natural bushland.	<p>The proposal will not decrease the size of Beelihar Regional Park and the residents of Bibra Lake will continue to have a large area of bushland. The proposal actually results in an additional 6 ha of land being added to the western side of the park.</p> <p>The land has been zoned for industrial use since the t mid-1960s and hence its conservation was never implied.</p>
267.	Bushland along the coastal fringe is disappearing too rapidly.	Bush Forever has ensured that there will continue to be large bushland areas remaining in the Metropolitan Region.
268.	South Lake Bushland and Roe Hwy reserve, is our last chance to connect our lakes to the Ocean through Manning Lakes across the dunes near the Port Catherine proposal and down to the Woodman Point Reserve.	There is no apparent existing bushland linkage between South Lake bushland and Manning Lakes.

	Submission	Response
269.	City of Cockburn 14,800 ha in size Remnant Bushland 4,730 ha Parks and Reserves 593 ha	See page iii "The Proposal" of the PER document, 64 ha of native vegetation will be required to be cleared.
270.	The Western Australian Government is saying on one hand that it places a high value on bushland. Yet on the other its land development agency is attempting to get EPA approval to destroy high value bushland.	The retention of bushland has been addressed as regional bushland issues under Bush Forever. LandCorp views this proposal as essential for providing sufficient industrial land for State development.
271.	The local community recognise and put a very high value on the preservation of remnant urban bushland both in its own right and as an essential element in environmental biodiversity and also sustainable development and human social and psychological well being.	LandCorp has recognised that the bushland has some current value to the local community, mainly as part of the scenery around South Lake and as a visual buffer between Beeliar Regional Park and industrial land to the west. LandCorp has provided for several measures, including screening and revegetation, to reduce the impact of the proposal on these values. The bushland is on private land and it is not used for recreational activities.
272.	The woodland (particularly the southern area) is largely intact. This area would have long-term viability because of its size, condition, compact shape, and connection with other parts of the Beeliar Regional Park both north and south. The importance of this woodland to South Lake has not been explored in the PER.	The significance of bushland in Lot 502 to South Lake is addressed in Section Section 4.2 of the PER, Ecological Overview.
273.	Concerns over the Natural Heritage values.	Bush Forever has addressed the conservation of natural heritage values. The site is not listed under any government environmental or heritage listing. The Heritage Council of WA does not have a listing for Lot 502. Lot 502 has been listed as being of heritage value by the National Trust of Australia (Western Australia), a non-government organisation dedicated to identifying, conserving and promoting heritage in WA. LandCorp has only recently become aware the bushland is listed by the National Trust (W.A.). The trust is a non-profit community based organisation and LandCorp respects its decision to include Lot 502 on a heritage listing. LandCorp is not however aware of the justification for listing or been consulted by the Council regarding the listing. LandCorp cannot comment on the significance of the listing, as it has not been informed of the criteria for inclusion.

**Biodiversity**

	<b>Submission</b>	<b>Response</b>
274.	Impact on floral diversity should be considered at the local, genetic or geographic level.	The PER document has addressed the potential impact on floral diversity in a local and regional context (geographic) (see Section 6.5.1). There is likely to be a small decrease in local flora diversity as a result of the clearing for this proposal. The flora of Lot 502 is not restricted to the area and is found in nearby Bush Forever sites in Beeliam Regional Park. Therefore in a genetic context, the strains of flora species from Lot 502 will still remain in the local area and region as they are represented in the park and in close enough proximity to be of similar provenance. Subregional and regional genetic diversity should not be significantly affected by the proposal.
275.	The exchange of genetic material between South Lake and upland vegetation maintains the vigour of flora and fauna communities. The gene pool of the Beeliam Regional Park would be significantly diminished if this bushland was bulldozed.	The PER document has addressed the potential impact on floral and faunal diversity and abundance in a local, sub-regional and regional context (see Section 6.5.1 and 7.5.1 respectively). There is likely to be a small decrease in local flora and fauna diversity and abundance as a result of the clearing for this proposal. The proposal is unlikely to have a significant impact on the floral diversity of Beeliam Regional Park, while the clearing of habitat in Lot 502 could increase the risk of some species that occur in low population densities disappearing from the park. If this occurred, it would potentially reduce the faunal diversity of the park. However, the mitigation measures committed to (i.e. rehabilitation programs around South Lake, native gardens) will decrease this risk especially as the rehabilitation will be designed such as to target those species which are particularly vulnerable.
276.	Lack of full knowledge should not be an excuse for postponing action to conserve biological diversity", as a result of the statement "Information on the distribution and habitat preference of invertebrate species is limited and therefore it is difficult to predict their presence or abundance in the development area".	LandCorp have acknowledged threatened invertebrate species that may occur in the area.



**Vegetation communities**

	<b>Submission</b>	<b>Response</b>
277.	The suggestion that the vegetation types on Lot 502 are well represented in Perth is incorrect, particularly when compared to the former extent prior to urbanisation. The decrease of 50-60% in the local representation of in this particular upland vegetation community is unacceptable. The proponent has not given consideration to retaining the landscape and the associated vegetation.	<p>The vegetation types found in Lot 502 are well represented in Perth relative to other types as determined by Gibson <i>et al.</i> 1996. LandCorp acknowledges that the representation is much lower than it was before urbanisation. Bush Forever has ensured that there will continue to be large bushland areas remaining in the Metropolitan Region, and that the vegetation types found in Lot 502 will be continue to be represented.</p> <p>LandCorp disagrees that it hasn't considered retaining the landscape and associated vegetation. Section 3.1.3 of the PER document describes the alternatives examined for the proposal, which includes investigating the retention of larger areas of bushland and restricting recontouring from further back from South Lake. The current proposal does include the retention of some remnant bushland.</p> <p>In addition, in response to public concern over the removal of upland vegetation, an additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p>
278.	Failure of the PER to address the inadequate representation of Karrakatta Complex, Central and South is unsatisfactory	LandCorp disagrees. This issue is addressed thoroughly in Section 6 of the Per and further detailed in General Response 4.6
279.	Comparisons between the nearby protected areas are misleading as these areas are of different attributes. The surrounding lakes have their upland vegetation protected, while South Lake is not.	All nearby protected areas contain some vegetation of similar attributes to Lot 502 eg Karrakatta Complex Central and South vegetation). A proportion of the existing upland vegetation will be retained and protected in the proposed buffer area.
280.	Habitat juxtaposition is important.	LandCorp agrees. All habitat linkages will be retained and some of the existing habitat in Lot 502 will be retained.

**Flora**

	Submission	Response
281.	Bushland is important for the natural flora in which it encloses. The existing plants will be lost. This type of bushland is critical for the survival and continuance of many native plants unique to our region.	There will inherently be direct losses of flora from the site due to 59 ha of bushland being cleared for this proposal. The PER document has addressed the potential impact on floral diversity in a local and regional context (geographic) (see Section 6.5.1). There is likely to be a small decrease in local flora abundance/diversity as a result of the clearing for this proposal. The flora of Lot 502 is not restricted to the area and is found in nearby Bush Forever sites and will continue to be represented in Beeliar Regional Park.
282.	The clearing of Tuart trees is unacceptable / of concern. Tuart habitat should be protected regardless of cost.	The bushland of Lot 502 is not Tuart woodland habitat; it is <i>Jarrah-Banksia</i> woodland where Tuarts are only found scattered in low densities with the exception of the south-western corner in proximity to the proposed POS. A number of Tuarts will be protected in this POS.  LandCorp notes the views of the submitters regarding the unacceptability of removing Tuart trees.

**Mitigation**

Item	Submission	Response
283.	It is nonsense to offset the clearing of bushland with rehabilitation of degraded areas as our unique plant communities cannot be reproduced.	LandCorp has not implied that its management measures will compensate for all of the clearing of vegetation for the proposal. Rehabilitation of the areas around South Lake and the establishment of native gardens will however mitigate a proportion of the impact.  Bush Forever has ensured that there will continue to be large bushland areas remaining in the Metropolitan Region. The plant communities found in Lot 502 will continue to be represented in Beeliar Regional Park and other Bush Forever sites. .
284.	Rehabilitation of buffer around lake will in no way compensate for the upland clearing as it is impossible to recreate the biodiversity of the bushland.	As above
285.	Keeping small areas in isolated pockets is not a viable solution, especially since it is the most degraded part of the Bushland.	The majority of bushland being retained is in direct contact with South Lake Reserve and hence Beeliar Regional Park and forms part of a large bushland reserve.

**9.2 FAUNA**

	<b>Submission</b>	<b>Response</b>
286.	The proposal does not consider the wildlife in Lot 502	LandCorp disagrees. The provision of the buffer (up to 214 m wide) between the estate and South Lake, the retention of upland areas, and the commitments to rehabilitate areas around South Lake and provision of native gardens within the estate are provided to specifically address potential impacts of local fauna populations. The assessment of impact and management measures to address the impact is described in Section 7.5 of the PER. The potential benefits of retaining upland areas (as part of the revised proal) are described in General Response 4.11)
287.	Vegetation of site comprises a significant and large proportion of the remnant habitat in the local region.  Additional strips of existing bushland that rates as very good to good condition should be preserved so that fauna are not reliant on the future maintenance of gardens in the area.	The regional significance of the vegetation is described in General Response 4.6.  In response to concern over the removal of upland vegetation, an additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.  The proposed buffer area contains an area of remnant upland vegetation (approximately 7-8 ha of Jarrah-Banksia woodland) adjacent to the remnant fringing wetland vegetation on the north-western side of South Lake. The condition of this upland vegetation ranges from degraded to in very good condition with the majority in a good to very good condition (see Figure 7 in PER, page 38). Another one hectare of upland vegetation will be retained in the POS in the south western corner of the subdivision.
288.	Mature trees are an important habitat and will be lost.	There will inherently be direct losses of mature trees from the site from 59 ha of bushland that will be cleared for this proposal. The PER document has addressed the potential impact on fauna (see Section 7.5.1). It is likely that fallen trees will be placed within the rehabilitation areas to recreate some habitat for fauna which rely on logs and bushland debris for their habitat needs.

	Submission	Response
289.	This type of bushland is critical for the survival and continuance of important native animals some of which are unique to the region.	<p>Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document.</p> <p>The PER acknowledges there is an increased risk of disappearance of some species that occur in low population densities from the City of Cockburn and adjacent area as a result of decreasing the size of suitable habitat in the South Lake environs (see Section 7.5.1, page 58). . Species most likely to be so affected include large predatory reptiles, such as goanna species, sedentary birds, such as fairy-wrens and thornbills, and the Brush-tailed Possum. This risk has been decreased by the retention of upland vegetation in the buffer (see General Response 4.11) and the rehabilitation programs (see General Response 4.10).</p> <p>LandCorp has proposed several measures to mitigate the impact of decreased habitat on these susceptible species including rehabilitating unvegetated areas around South Lake and establishing native gardens which will be suitable for some species. Dr Mike Bamford (Consulting Ecologist) has provided an opinion on the benefits of rehabilitating areas around South lake and the ability of this to offset some of the impact of clearing habitat in Lot 502 (see Appendix 4 of PER). He refers to in particular the benefits of rehabilitating the areas around South Lake to decrease impact to species such as the Splendid Fairy-Wren.</p> <p>It is anticipated the revegetated buffer area will be able to support these species that are uncommon and susceptible to disappearing from the local area. The composition of the rehabilitated areas around South Lake will be specifically aimed at providing suitable habitat and foraging sites for these species.</p>
290.	If the woodland was preserved the Brush Wallaby could move between areas and with the proposed greenways it is possible it could survive.	The bushland to be cleared on Lot 502 does not provide a link to other bushland areas. The link between bushland areas will be maintained through the South Lake Reserve complete with the buffer area added in this proposal.

	Submission	Response
291.	<p>The site is important for the following species which may be impacted by the proposal:</p> <ul style="list-style-type: none"> <li>• Quenda</li> <li>• Little Eagles</li> </ul>	<p>This risk of impact to these species has been decreased by the retention of upland vegetation in the buffer (see General Response 4.11) and the rehabilitation programs (see General Response 4.10).</p> <p>LandCorp has proposed several measures to mitigate the impact of decreased habitat on these susceptible species including rehabilitating unvegetated areas around South Lake and establishing native gardens which will be suitable for some species. Dr Mike Bamford (Consulting Ecologist) has provided an opinion on the benefits of rehabilitating areas around South lake and the ability of this to offset some of the impact of clearing habitat in Lot 502 (see Appendix 4 of PER). He refers to in particular the benefits of rehabilitating the areas around South Lake to decrease impact to species such as the Quenda.</p> <p>It is anticipated the revegetated buffer area will be able to support these species that are uncommon and susceptible to disappearing from the local area. The composition of the rehabilitated areas around South Lake will be specifically aimed at providing suitable habitat and foraging sites for these species.</p>
292.	<p>A loss of the protective canopy cover will result in a loss of the ground cover (leaf litter) which acts as a food haven for Quenda's.</p> <p>Quenda has a limited habitat and are CALM priority listed.</p> <p>Displaced Quendas are often victims of predation or road kills. Most of the quenda population would be lost with the loss of the woodland.</p>	<p>It is anticipated the revegetated buffer area will be able to support these species that are uncommon and susceptible to disappearing from the local area. The composition of the rehabilitated areas around South Lake will be specifically aimed at providing suitable habitat and foraging sites for Quenda</p> <p>See General Responses 4.7 and 4.10</p>
293.	<p>Four out of the eight frog species would be lost if their terrestrial habitats disappeared.</p>	<p>Not all terrestrial habitat will be removed. Some upland vegetation will be retained in the buffer. Potential impact to frogs is addressed in Section 7.1.1 of PER document</p>
294.	<p>PER fails to address the threat to any of the 8 fauna species listed of national conservation significance.</p>	<p>LandCorp disagrees. See Section 7.1.1 of PER document.</p>

	Submission	Response
295.	Concern of the impact on Short-billed Black Cockatoo (Carnaby's). The cumulative effect of clearing large remnants is likely to bring about the extinction of this species in the metropolitan area.	<p>Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document.</p> <p>LandCorp has proposed several measures to mitigate the impact of decreased habitat on these species including retaining upland habitat in the buffer (see General Response 4.11), rehabilitating unvegetated areas around South Lake (See General Response 4.10) and establishing native gardens which will be suitable for some species (See General Response 4.12).</p> <p>Dr Mike Bamford (Consulting Ecologist) has provided an opinion on the benefits of rehabilitating areas around South lake and the ability of this to offset some of the impact of clearing habitat in Lot 502 (see Appendix 4 of PER). He refers to in particular the benefits of rehabilitating the areas around South Lake to decrease impact to species such as the Carnaby's Cockatoo.</p> <p>It is anticipated the revegetated buffer area will be able to support these species that are uncommon and susceptible to disappearing from the local area. The composition of the rehabilitated areas around South Lake will be specifically aimed at providing suitable habitat and foraging sites for these species.</p>
296.	<p>The following fauna are at the southern limit of their range</p> <ul style="list-style-type: none"> <li>• Sandhill Dragon</li> <li>• Rosenberg's Goanna</li> <li>• Black-headed Tree Goanna</li> <li>• Worm Lerista</li> <li>• Western Blue Tongue</li> <li>• Narrow-banded Snake</li> <li>• Half-ringed Snake</li> </ul>	<p>Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document.</p> <p>There will be some impact on local populations of fauna. Refer to General Response 4.7 for potential impact on fauna, taken from Section 7.5 of the PER document.</p> <p>The PER acknowledges that there is an increased risk of disappearance of some species that occur in low population densities from the City of Cockburn and adjacent area as a result of decreasing the size of suitable habitat in the South Lake environs (see Section 7.5.1, page 58). Species most likely to be so affected include large predatory reptiles, such as goanna species, sedentary birds, such as fairy-wrens and thornbills, and the Brush-tailed Possum. This risk has been decreased by the retention of upland vegetation in the buffer (see General Response 4.11) and the rehabilitation programs (see General Response 4.10).</p>
297.	The Golden Whistler (limit of their distribution), Sandhill Dragon, Rosenberg's Goanna, Black-headed Tree Goanna and the Perth Lerista are of regional conservation significance.	The potential impact to these species is described in Section 7.5 and Appendix 3 of the PER document.

	Submission	Response
298.	Bamford confirms that all of the species deemed to be of local conservation significance would be impacted in proportion to the loss of their habitat. As around 95% of the habitat would be lost, and as the remaining isolated remnants' values would be severely diminished, a figure of 95% loss would be optimistic.	The findings of Bamford (2002) were reflected in the PER. Since the preparation of his report, LandCorp have reduced the size of the subdivision and the potential local impact has been reduced.
299.	Bushland also supports many reptile, bird, including rare species, Peregrine Falcon and the six native animals supported by this area include the Bandicoot, Brush tailed Possum and Echidna.	The site is only possible used by the Peregrine Falcon and Echidna. The PER contains a list of potential species using the site in Appendix 3.
300.	Lot 502 provides a critical habitat for many bird species, some of which are recognised as endangered.	The potential impact to these species is described in Section 7.5 and Appendix 3 of the PER document.
301.	The area supports a large number of birds, mammals, reptiles and frogs. Almost all of these native animals would be lost if the woodland were to be bulldozed.	The PER acknowledges there is an increased risk of disappearance of some species that occur in low population densities from the City of Cockburn and adjacent area as a result of decreasing the size of suitable habitat in the South Lake environs (see Section 7.5.1, page 58). Species most likely to be so affected include large predatory reptiles, such as goanna species, sedentary birds, such as fairy-wrens and thornbills, and the Brush-tailed Possum. This risk has been decreased by the retention of upland vegetation in the buffer (see General Response 4.11) and the rehabilitation programs (see General Response 4.10).
302.	Because the areas is close to the South Lake wetland it means that waterbirds can leave the lake and nest in the woodland. Many duck species nest in trees.	There is a substantial area of vegetation to be retained in the proposed buffer around South Lake which is used by these birds.
303.	It is the cumulative affect of clearing small areas of bushland that results in the extinction of plant and animal species.	The cumulative effect of clearing has been addressed as a regional bushland issue under Bush Forever.

**9.3 VISUAL AMENITY**

	<b>Submission</b>	<b>Response</b>
304.	Industrial estate is potentially a source of visual pollution	LandCorp has committed to a number of measures to decrease the potential impact on local visual amenity. The appearance of the estate has particular significance when viewed from St Paul's Estate (residential estate) to the north, Beelihar Regional Park and Bibra Lake residential areas to the east. The visual appearance of the estate will be managed to complement the surrounding landscape by providing building codes that control the construction materials used and the colours of the buildings, and by establishing native gardens throughout the estate. The provision of a buffer strip, complete with a raised vegetated bund if considered appropriate now that the proposal has been altered, on the eastern side of the estate will provide a screen to further reduce the impact to visual amenity in Beelihar Regional Park and the Bibra Lake residential area to the east.
305.	"South Lake" and surrounding bushland act as a natural buffer zone between the industrial area and the residential areas of Bibra Lake and South Lake.	<p>The role of the bushland as a buffer between industrial areas and residential areas has been recognised by LandCorp. The measures described in the PER document to mitigate the impact on the landscape values of the area, particularly within Beelihar Regional Park, will also contribute to maintaining this buffer. In particular, the following measures will ensure a buffer between industry and urban areas is still maintained:</p> <ul style="list-style-type: none"> <li>• Retaining remnant vegetation up to 214 m west of South Lake and rehabilitating degraded areas within this buffer area to provide natural screening between the estate and South Lake.</li> <li>• Retaining vegetation along North Lake and Phoenix Roads, such that the North Lake Road entrance into the estate is characterised by a native bushland facade either side of the road and the change in view from St Paul's Estate to Lot 502 is minimised.</li> <li>• Landscaping degraded sections along the western boundary of the buffer area, to form a bund that slopes up to approximately 3 m higher than the existing elevation, along the eastern portion of the site. The planting of trees along this bund as part of the rehabilitation program will eventually increase the density and height of screening measures between South Lake and the estate and further prevent buildings being visible from the Park. As the buffer has been increased since this bund was proposed LandCorp will consult with CALM to assess whether the provision of this bund is still appropriate.</li> </ul>
306.	Hight scenic potential due to "dunal formations (Spearwood Dunes) of distinctive height, which provide an obvious contrast to the landform patterns common in the Swan Coastal Plan".	LandCorp has acknowledged the landscape values in the area. See Section 8 of the PER document.



## 9.4 SOUTH LAKE, BEELIAR WETLANDS AND WATER QUALITY

### Impact on South Lake

	Submission	Response
307.	Vegetation of Lot 502 is vital part of the ecological function of the lake. The value to South Lake of the bushland has not been considered.	LandCorp has recognised that the vegetation in Lot 502 has some importance to South Lake and this importance increases with proximity to the lake. LandCorp has acknowledged the connection between South Lake and the upland bushland of Lot 502 in the PER (Sections 4.2.4, 4.2.5, 7.1.7, and 9.1). Its primary ecological functions in relation to South Lake are as a buffer area and as habitat for lake fauna. The function of the bushland as a buffer to South Lake is being retained from the provision of a buffer of up to 214 m width between the subdivision and lake see Section 9.5.2 of PER). Dr Mike Bamford (Consulting Ecologist) has indicated an area of potentially higher importance (area A) to fauna, in particular because of its potential use by lake fauna such as the Long-necked Tortoise, frogs and Quenda (see Figure 9, page 56 of PER). The proposed buffer comprises a substantial proportion of this area and the impact on lake fauna should minimal.
308.	The long-term protection of South Lake is directly related to the retention of this bushland. The lake is an important EPP Lake and a conservation category wetland. The health of the lake would be affected with the clearing of bushland.	LandCorp disagrees. See General Response 4.8
309.	There is potential to increase stress on surrounding wetlands and cause degradation of values. Lot 502 forms part of the upstream catchment for both Bibra and South Lakes. Impossible to predict precisely in what way the wetland ecosystems neighbouring lot 502 would respond to the very major disturbances proposed, but it seems highly likely that resulting changes would be irreversible.	LandCorp disagrees. See General Response 4.8
310.	Industrial lots should be located further away from the wetland	As described in Section of 3.1.3 of the PER, subdivision design alternatives were examined for the proposal, which included those conserving larger areas of bushland and restricting the development further back from South Lake. During the public submissions period, LandCorp altered its proposal to set Industrial Lots further back from the lake. The proposal being pursued by LandCorp represents one located back as far as possible from South Lake while maintaining the viability of the project.

**Wetland Buffer**

	<b>Submission</b>	<b>Response</b>
311.	The cumulative loss of buffer to South Lake is of concern.	There currently is no formal buffer on the western side of South Lake. This proposal involves securing a buffer of up to 214 m width on the western side of South Lake. This buffer will be secured, placed within Regional Open Space and ideally recognised as part of the South Lake Bush Forever site (Site 254) such that it remains protected. The adequacy of this buffer is addressed in General Response 4.9.
312.	The buffer should be at least 200 m from wetland dependant vegetation	Since the preparation of the PER document, LandCorp has increased the width of the South Lake buffer such that it is at least 180 m wide and up to 214 m wide in some parts, compared to 150m wide previously proposed, and such that its area has increased by 5 ha.

**Drainage/hydrology**

	<b>Submission</b>	<b>Response</b>
313.	The hydrology of the area will be affected.	The hydrology of the area will not be significantly affected. Locally, there is likely to be an increased level of recharge to groundwater as a result of decreased vegetative cover. This will not affect the nearby wetland systems. The regional groundwater flow will remain in a west to north west flow across the site. The assessment of impact of the proposal to surface drainage and groundwater flow is addressed in Section 9.5.3 and 9.5.4 of the PER respectively.

**Impact on the water resource**

	Submission	Response
314.	<p>Significance to regional water supply /quality has not been considered:</p> <ul style="list-style-type: none"> <li>Water sensitive areas are inappropriate for development. Commonsense and intuition dictates that clearing of natural vegetation in a prime water-rich location such as this is wrong.</li> <li>The proposal would compound the existing environmental problems of the area and increase the risk of a major disaster in the associated Jandakot public water supply mound becomes polluted. With the removal of bushland, the Jandakot public groundwater mound will inevitably be affected as such upland catchments are crucial to the maintenance of water quality in the mound.</li> <li>Fresh water is in increasingly limited supply in our region. The Jandakot public water supply mound is an important integral part of Perth's total water resource. With more than 80% of WA' population focused in the Perth Metropolitan region our city planners have a responsibility to ensure that all water resources in whatever form are protected in perpetuity. Industrial development of any kind is incompatible with public water resources.</li> </ul>	<p>This upland is on the western edge of the Jandakot Mound and the water passing though the site will not be used for public water supply purposes. The removal of upland bushland and the earthworks on this elevated area is highly unlikely to affect the water quality and overall hydrology of the Jandakot Mound.</p> <p>The overall hydrology of the area will not be significantly affected by the proposal.</p>

**Wetland management**

	Submission	Response
315.	<p>A management report was intended for the Jandakot wetlands. Has it been released yet? No development should pre-empt the release of this report</p>	<p>LandCorp is not aware of the status of this report but considers it to be independent of this proposal.</p>

**9.5 AIR QUALITY AND NOISE**

	<b>Submission</b>	<b>Response</b>
316.	Industrial estate is potentially a source of air pollution.	The general industrial estate will not contain any noxious or hazardous industry. There is negligible risk of air pollution impact from the enterprises to be established within the estate. The worse case increase in local truck traffic associated with this proposal is 10% above expected levels without the proposal on Stock Road, an increase in local volume not expected to cause significant increases in local air pollution. The increase in truck volume on Stock Road, North Lake Road, and Spearwood Avenue will be offset somewhat by decreases in truck volume expected on Phoenix Road (50% of current volume), the closest road to residential areas.
317.	Dust generated from existing cleared industrial area adjacent to proposal area is a significant existing air quality problem. Proposal will exacerbate problem and potentially impact the health of children, teachers and staff at the Waldorf School. Additionally, health of residents of retirement village in Bibra Lake may be affected. Many residents already suffer from the enormous amount of dust, which blows in from the existing industrial estate close by. Dust control will be a major issue for this development, particularly if not all lots are sold quickly.	Dust control measures as described in Section 11.5 of the PER will minimise the generation of dust during development. With the described measures in place, dust emissions during the staged development of the estate should be within EPA guidelines and the activities are not expected to significantly impact on the surrounding residents.
318.	Industrial development would mean an increase in noise in the area.	Tenant adherence to operational noise regulations will ensure there is no ongoing generation of noise, which will affect the well being of residents. Current background noise in the vicinity of Lot 502 is relatively low, with the principle noise sources being from traffic along North Lake, Phoenix, and Sudlow Roads and Spearwood Avenue, and operational noise from the Amcor Paper Recycling Mill. The establishment of the estate will reduce the frequency and volume of traffic noise experienced by the residents of St Paul's Estate.
319.	Removing bushland buffer zones works against reductions in greenhouse gas emissions.	LandCorp notes this submission. The scale of clearing associated with this project is small compared to the overall Greenhouse gas reduction effort. LandCorp acknowledges that the cumulative effect of clearing bushland will not assist Greenhouse gas reductions however this is a strategic issue that requires to be dealt with at a regional level eg. through regional conservation strategies such as Bush Forever.

**9.6 TRAFFIC AND SAFETY**

	<b>Submission</b>	<b>Response</b>
320.	Industrial development would mean an increase in heavy service vehicles and traffic congestion. Severe traffic problem will occur at the entry to the estate from North Lake Road.	The potential impact of the proposal on traffic is addressed in Section 13.4.1 of the PER (page 92). Main Roads has advised the traffic increases anticipated as a result of the estate are well within the capacity of the roads. LandCorp does not anticipate significant traffic issues to arise from this proposal. On the contrary, the placement of a road through the estate from Sudlow Road to North Lake Road will decrease the level of traffic along Phoenix Road, which is adjacent to residential areas as opposed to Sudlow Road, which is in an industrial area.
321.	This proposal provides an opportunity to resolve a deficit regional road network for this area, but also offer possible better outcomes for the adjoining lake systems (Rerouting North Lake Road from existing alignment between Bibra Lake and South Lake Roads to along eastern boundary of proposed estate).	LandCorp notes this suggestion.
322.	There are health hazards associated with locating industrial areas immediately adjacent to residential area.	The estate development is unlikely to represent a significant risk to public safety. Its use for a general industrial subdivision has been subject to careful assessment through the planning process. The estate development is unlikely to represent a significant increase in risk to public health and safety.
323.	How can they claim that traffic will reduce on Phoenix Road when, according to the options indicated (PER pp. 93-94), it apparently provides one of the main access points to and from the proposed Estate.	The potential impact of the proposal on traffic is addressed in Section 13.4.1 of the PER (page 92).

**9.7 ABORIGINAL HERITAGE**

	<b>Submission</b>	<b>Response</b>
324.	While the PER acknowledges that aboriginal sites exist, this part of the report lacks credibility, there is no confidence that the aboriginal sites have been looked at. There is nothing to substantiate claims that the proponents have talked to the right people – there is no listing of the groups consulted or names given of individuals approached. The token gesture of relocating “two scarred trees” amounts to a gross misrepresentation of aboriginal culture, a parody of Aboriginal issues.	LandCorp disagrees. Section 14.7 states that the local Nyoongar community was consulted on both spiritual and environmental issues.  The removal of the two scar trees was agreed on by Aboriginal community representatives during the Aboriginal Heritage Site Identification Survey (Parker and Greenfield 1999).

**10. OTHER ISSUES****10.1 RECREATION**

	<b>Submission</b>	<b>Response</b>
325.	Must preserve and improve this very popular recreation area.	Lot 502 is not currently used for any form of permitted recreational activities. The adjacent Beeliar Regional Park is used for many recreational activities and the proposal is to be managed such that no recreational values of the park are to be affected.
326.	The population of Southern Metropolitan region is expected to double. The present area's set aside are not going to be able to support or sustain these numbers without a proper over all plan and a lot more recreational areas set aside.	Regional planning is a matter for the Department of Planning and Infrastructure. LandCorp notes this area is zoned for industrial use in the Metropolitan Regional Scheme and the City of Cockburn's Town Planning Schemes and therefore is anticipated in regional planning. .

**10.2 CLIMATE CHANGE**

	<b>Submission</b>	<b>Response</b>
327.	Anthropogenic climate change may have serious implications for biodiversity. Clearing of bushland speeds up the pace of such changes.	LandCorp notes the submitters view. Climate change was not considered a significant issue for clearing at such a relative small scale.

**10.3 EDUCATION**

	<b>Submission</b>	<b>Response</b>
328.	Murdoch University use these wetland areas for vital ecosystem research and preservation and renewal reasons	Murdoch University conduct many field surveys and research activities around the Beeliar wetland system. To the best of LandCorp's knowledge, Lot 502 has not been included in this work. The scientific values of Beeliar Regional Park will not be compromised by this proposal.

**10.4 ENVIRONMENTAL MANAGEMENT**

	Submission	Response
329.	Document does not describe sustainable solutions to be able to meet EPA objectives.	LandCorp disagrees. It believes the environmental management commitments made (as described in Table 14, page 102 of the PER) will ensure the potential impacts are avoided or minimised such that the EPA objectives are met
330.	Inadequate mitigation measures are presented to compensate for the loss high quality habitat	LandCorp has not implied that its management measures will compensate for all of the clearing of habitat for the proposal. Retention of upland vegetation in the buffer, rehabilitation of the buffer and area around South Lake and the establishment of native gardens will however mitigate a proportion of the impact. The benefits of rehabilitation, retaining more upland vegetation in the revised proposal, and of establishing native gardens for fauna are described in General Responses 4.10, 4.11, and 4.12 respectively.  Appendix 4 of the PER describes an expert opinion of the benefits of rehabilitating areas around South Lake.
331.	Environmental protection plans did not specify either measurable criteria or ongoing maintenance obligations of Lot 502, eg. the required survival rate of planted species and choice of species for a specific location, so as to form an appropriate floral community.	See Section 15.3.5 of the PER. The rehabilitation area will be monitored after 6 months, 12 months, and annually for ten years or before, if DEP and CALM are satisfied with the performance of the rehabilitation.
332.	Positive aspects of the proposal will be:	LandCorp agrees
333.	<ul style="list-style-type: none"> <li>• There will be a consolidation of a suitable buffer around South Lake</li> </ul>	
334.	<ul style="list-style-type: none"> <li>• Rehabilitation of degraded land adjoining South Lake</li> </ul>	
335.	<ul style="list-style-type: none"> <li>• Remediation of site contamination upon Lot 502 (from AMCOR activity)</li> </ul>	
336.	<ul style="list-style-type: none"> <li>• Cessation of waste water disposal on Lot 502 (from AMCOR activity)</li> </ul>	
337.	LandCorp's mitigation proposals are riddled with nebulous assurances such as "may", "where practicable" etc., descriptors which inspire only mistrust in relation to their assurances of long term protection and management of the proposed industrial estate – and their commitment to promote native vegetation on the properties and street verges "where practicable" is risible.	LandCorp disagrees but notes the submitter view.

**PART 3 - SUBMISSIONS FROM GOVERNMENT DEPARTMENTS, STATUTORY AUTHORITIES AND MEMBERS OF PARLIAMENT****11. GENERAL****11.1 THE PER DOCUMENT**

	<b>Submission</b>	<b>Response</b>
338.	pp6 Fig. 1 To be of value this plan should have shown the location and extent of industrial zoned land within the South West Corridor or at least within the City of Cockburn to provide an appropriate context. (City of Cockburn)	This figure was referred to in the location and description section of the PER document and was not intended for use as part of the justification for the project. Its use is for the reader to establish the location of the estate in context of the southern metropolitan region.
339.	pp107 References Of the 69 References, 16 are unpublished reports prepared for LandCorp. These are important reports and it is not clear if these are available to the public. (City of Cockburn)	The PER clearly states at the start of the references section where unpublished reports for LandCorp are available to the public for review and who to contact to obtain them. In some cases, reports were not indicated as available because they were outdated or commercially sensitive. All major sub-consultants reports that were sourced were made available to the public. Page 12 of the document (under 2.4 Summary of Issues and Responses) also contained a list of major reports available to the public and who to contact to obtain them  In addition to those documents requested during the community consultation in December 2000, many sub-consultant documents were sent out to individuals, agencies and community groups during the public review period.

**11.2 PROPONENT**

	<b>Submission</b>	<b>Response</b>
340.	pp106 para 1 The proponent has been responsible for the design, development and marketing of industrial estates within the City of Cockburn over a number of years, none of which could be identified as achieving desirable environmental or aesthetic outcomes. (City of Cockburn)	LandCorp aims to establish Bibra Lake Industrial Estate as a benchmark general industrial estate for environmental, aesthetic and social outcomes.



**11.3 THE PROPOSAL**

	<b>Submission</b>	<b>Response</b>
341.	<p>At the outset the Minister for the Environment needs to be aware that the owner of Lot 502, LandCorp, has an Appeal currently before the Minister for Planning which has been outstanding since February 2000. The Appeal was in response to the Council refusing a development application to excavate 4.3 million cubic metres of sand and limestone from Lot 502 in an area of quality bushland</p> <p>In April 2000, LandCorp submitted an application to subdivide the land into industrial lots (WAPC Ref 113648). The Council responded to the subdivision proposal, giving reasons why the application was premature.</p> <p>If the Appeal is upheld and the quarrying of sand and limestone proceeds in accordance with the application by LandCorp, then the natural features of the land will be significantly altered, making the proposals and commitments contained in the PER, superfluous.</p> <p>Until the outcome of the Appeal is known, there is little point in progressing the subdivision plan, given that the land has not been the subject of structure planning and the proposed subdivision has not been formally considered or supported by either the Commission or the Council.</p> <p>(City of Cockburn)</p>	<p>The sand extraction application is a separate proposal and would require its own environmental approval.</p>
342.	<p>However LandCorp describe their project it is in fact a quarrying proposal. The Cockburn Council has already refused a quarrying licence for the Amcor site because of adverse impacts on the area yet the LandCorp development proposal requires such massive earthworks it amounts to a defacto proposal to quarry massive amounts of sand.</p> <p>(Jim Scott MLA)</p>	<p>The removal of sand from the site is required for recontouring purposes only to create land contours suitable for industrial lots.</p> <p>LandCorp did initially propose to conduct a quarrying operation to remove 4.3 million cubic metres of sand and limestone. After considering landscape values and community opposition to quarrying, LandCorp is only removing enough sand and limestone to make the topography suitable for industrial lots.</p> <p>The total amount of earth required to be removed from site has been reduced as a result of LandCorp reducing the size of the subdivision (see Section 2).</p>

**11.3.1 Justification for proposal**

	<b>Submission</b>	<b>Response</b>
343.	<p>The Office of Major Projects wishes to express its strong support for the proposed Bibra Lake General Industrial Estate.</p> <p>With the expected increase in Perth's population it is essential that LandCorp provides environmentally sound, properly planned, general industrial land at strategic locations throughout the metropolitan area, within easy reach of residential suburbs.</p> <p>(Office of Major Projects, Department of Minerals and Petroleum Industry)</p>	LandCorp acknowledges the Office of Major Projects' support of this proposal.
344.	<p>While the proposed Estate is not far from the Hope Valley Wattleup Master Plan area, it will be many years before the northern extremity of the Master Plan area will be developed. The Master Plan area will cater for the longer term general industry needs of the south west corridor but there is also a need for general industry land to supply the pressing needs of the area surrounding Bibra Lake over the next ten years.</p> <p>(Office of Major Projects, Department of Minerals and Petroleum Industry)</p>	LandCorp agrees.
345.	<p>The Bibra Lake General Industry Estate will reinforce the current trend of high profile "value adding" firms establishing in the pleasant environs of Perth, creating a skilled, highly paid workforce.</p> <p>(Office of Major Projects, Department of Minerals and Petroleum Industry)</p>	LandCorp agrees.
346.	<p>PP1 para 1</p> <p>If the reference to the "diminished short term supply of industrial land" is a reference to industrial land in the City of Cockburn, then this is not correct.</p> <p>(City of Cockburn)</p>	The reference to diminished supply of industrial land refers to the short-term supply in the southern metropolitan region and is not limited to the City of Cockburn as described by Dr Paul McLeod (see General Response 4.1).

	Submission	Response
347.	<p>pp12 para 4</p> <p>The assessment of environmental impacts' should be undertaken independently from the "economic realities associated with the project". These are different considerations that should be dealt with separately so that the environmental outcomes drive the projects viability. Viability should not influence an environmental assessment.</p> <p>pp12 para 1</p> <p>The report on the "Economic Benefits from Further Development of the Bibra Lake Industrial Area" by Dr Paul McLeod is an irrelevant consideration when evaluating the environmental impacts of subdividing and developing the land for industrial purposes.</p> <p>The planning justification for the proposal is irrelevant in a PER.</p> <p>(City of Cockburn)</p>	<p>The EPA requires proponent's to provide a justification for their proposals within EIA documents. The justification should outline the need for a proposal and the justification of why a particular location or configuration was chosen and what alternatives were examined. The proponent has done so in the Bibra Lake Industrial Estate PER. The justification is not contained within the assessment of impact to environmental factors and is described independently to the environmental impacts of the proposal.</p> <p>The examination of alternatives considered both environmental and economic factors.</p>
348.	<p>pp15 para 1</p> <p>The claims made in respect to the availability of vacant industrial land in Cockburn are not accepted. It is not clear how an environmental firm, Bowman Bishaw Gorham, would be credited with determining vacant Industrial land in Cockburn, but in any event the claim that there was less than 100 ha of industrial land available in 2001 is disputed. Although discussions with the firm have clarified the point, the comment remains the same.</p> <p>(City of Cockburn)</p>	<p>LandCorp has relied on the information provided to it by Bowman Bishaw Gorham (BBG). The City of Cockburn has not demonstrated that the information is incorrect and LandCorp is satisfied that the information supplied to it from BBG was correct to the best of the consultancies knowledge at that time.</p>
349.	<p>pp15 para 3</p> <p>The "need" for the proposal is not an environmental consideration; however, the "reason" for the proposal would be acceptable as creating the "need" for the environmental review. This section is very difficult to follow, but in any event the rationale is unacceptable.</p> <p>(City of Cockburn)</p>	<p>The section relating to the need for the proposal is within the proposal description section (Section 3 of PER) and not in the environmental impact assessment sections. LandCorp notes the City of Cockburn does not agree with the use of the word 'Need' under the justification for proposal.</p> <p>LandCorp disagrees with the City of Cockburn that the rationale for the proposal is unacceptable. The need for the proposal was described using economic analysis by Dr Paul McLeod as summarised in General Response 4.1.</p>
350.	<p>pp16 para 5</p> <p>The economic benefits of the proposal are irrelevant. Projections are usually to 2021 not-2201. None of this information is substantiated and cannot be validated.</p> <p>(City of Cockburn)</p>	<p>The economic benefits of the proposal are relevant and assist the reader in establishing why LandCorp is pursuing this important project.</p> <p>The projections of employment rates were not projected to 2201. The number 2201 as stated in paragraph pp16 refers to a total number of jobs created, not a date as the City of Cockburn interpreted.</p>

	Submission	Response
351.	<p>Industrial Land is not Required</p> <p>Although my first concern is not environmental it is important to consider that it is not necessary to clear this land to provide industrial building lots, in the Cockburn area. A massive area, of industrial land has been made, available for industrial development with the passing of the Wattleup Hope Valley Redevelopment Act. In addition to Friars LandCorp has developed further industrial land at Henderson and it is finding. There is in fact far more industrial land available in Cockburn than is required in the next fifty years. Much of the land available to LandCorp, in the Friars development area has already been cleared.</p> <p>(Jim Scott MLA)</p>	<p>LandCorp disagrees. The need for industrial land and the justification for using Lot 502 for such an industrial subdivision in described in Section 3 of the PER document and reiterated in the current document in General Response 4.1. LandCorp has utilised the latest economic analysis to confirm the need to develop this land.</p> <p>The Hope Valley/Wattleup industrial area will not be ready to meet the short term demand for general industrial land in the southern metropolitan region.</p>

### 11.3.2 Industrial use of Lot 502

	Submission	Response
352.	<p>pp16 para 1</p> <p>The zoning of land for industrial purposes in the Metropolitan Region is the responsibility of the WAPC. The commentary is too general to be useful. Moreover, Lot 502 is already zoned and accounted for in the regional supply forecasts.</p> <p>(City of Cockburn)</p>	<p>LandCorp agrees with the City of Cockburn that the zoning of land is the responsibility of the WAPC. LandCorp also strongly agrees that Lot 502 is already zoned and accounted for in the regional supply forecasts. This is an important justification for proceeding with the development. The WAPC has considered the industrial use of Lot 502 in its long term planning for the metropolitan region.</p> <p>LandCorp disagrees with the City of Cockburn that the commentary provided is not useful.</p>
353.	<p>Except for the zoning of the land, from most perspectives this site is not suitable for industrial development. Also it is highly unlikely that this land will be fully subdivided and developed within 10 years.</p> <p>(City of Cockburn)</p>	<p>LandCorp disagrees. In addition to the site being zoned appropriately, the site is ideal for general industrial development as South Lake and Beelihar Regional Park, which is zoned for Parks and Recreation, is a complimentary neighbour to industrial land usage. As submitted by a member of the public who had been involved in the planning process, industrial development adjacent to parks and recreation zones makes the best use of the land as these zones provide a buffer to adjacent residential land.</p> <p>LandCorp is unsure of what basis the submitter has made its statement that the proposal is unlikely to be fully developed within 10 years. LandCorp plans to begin develop within 12 months of approval and be finishing the final stages of the subdivision within 10 years of the commencement of the project.</p>

	Submission	Response
354.	<p>The development of huge discreet areas of industrial land is bad for the environment. It causes increased unnecessary traffic movements because products and workers need to be transported over longer distances from the discreet commercial and urban areas of the city. Modern ecologically and socially responsible planning aims to integrate the different planning areas to minimise travel requirements. It also ensures that some areas do not become cheap industrial ghettos. The Cockburn and Kwinana areas are already unfairly impacted in this way.</p> <p>(Jim Scott MLC)</p>	<p>Contrary to this submission, the proposed industrial subdivision is not located in an isolated and large discreet area of industrial land. It is located adjacent to large residential areas to the north, east and south, separated appropriately from these areas by a green corridor (Beeliar Regional Park).</p> <p>Locating an industrial subdivision in this area will ensure transport of products is reduced compared to locating the subdivision further south away from these residential areas which it is designed to serve.</p> <p>Advice from the Department of Planning and Infrastructure does not indicate any inappropriateness of the size and location of the industrial subdivision in this urban area.</p>
355.	<p>Lot 502 should not be developed for industrial use and the existing vegetation retained because the land is steeply sloping requiring major earthworks.</p> <p>(City of Cockburn)</p>	<p>LandCorp notes the submitters view</p> <p>Sand will be removed from site to create land contours suitable for industrial lots.</p> <p>Section 8.5 of the PER describes the potential impact on landscape values and the management of visual amenity for the proposal.</p> <p>The total amount of earth required to be removed from site has been reduced as a result of LandCorp reducing the size of the subdivision (see Section 2).</p>

### 11.3.3 Proposal design and description

	Submission	Response
356.	<p>pp16 para 3</p> <p>Of interest in the case of the residential subdivision alternative examined (Alternative 4), is the caveat over the land by AMCOR prevents LandCorp from using Lot 502 for purposes other than general industrial. This of course is a private arrangement that cannot bind the State or the local government, which have statutory control over the land. Until now the Council has never been aware of this agreement.</p> <p>Never-the-less the impact on the net present value (npv) of the project is not adequately explained, and it is difficult to understand how alternative 4 has such a high npv compared to alternative 1, as the sales rates would be significantly different, and this in turn affects holdings costs. Despite this it is an irrelevant consideration.</p> <p>(City of Cockburn)</p>	<p>Contrary to this submission, the caveat does legally bind LandCorp. The caveat is a legal arrangement between LandCorp and Amcor established during site acquisition. It was established by Amcor to protect the industrial integrity of the Amcor Paper Milling facility.</p> <p>It is not an irrelevant consideration as the caveat legally binds LandCorp to pursue an industrial subdivision proposal as opposed to a residential proposal and is therefore important to further demonstrate the project justification.</p> <p>The caveat does not directly affect the npv. The reason why footnote 2 of Table 4 (page 17) states that the npv assumes no caveat, is that a residential subdivision alternative is only possible with the removal of the caveat.</p>

	Submission	Response
357.	<p>pp17 Table 4</p> <p>None of the approaches contained in the 4 subdivision options need to be mutually exclusive.</p> <p>For residential development the land would need to be rezoned under the MRS and local scheme. Such a decision could not be circumvented by the caveat referred to.</p> <p>This table is also an irrelevant consideration as it compares "cost" not "environmental" benefit of one option to another. Cost comparisons are not the point of a PER.</p> <p>(City of Cockburn)</p>	<p>The approaches contained in the 4 options are not necessarily mutually exclusive (although a combined residential and industrial subdivision option would be difficult to design).</p> <p>LandCorp has acknowledged in the table footnote that rezoning would be required for the residential subdivision option. The caveat would not prevent the land being rezoned, but it would legally bind LandCorp from developing a residential subdivision.</p> <p>LandCorp disagrees that Table 4 is an irrelevant consideration. It shows both the environmental benefits and costs associated with each option. The cost comparisons are provided to support LandCorp's project design justification</p>
358.	<p>pp17 Table 5</p> <p>Although the subdivision contains 4.5 hectares of public open space it has been provided to resolve specific development issues, namely:</p> <ul style="list-style-type: none"> <li>• POS of 3.3512 ha has been designated over the AMCOR landfill site which is highly contaminated, Rehabilitation for development may be too costly. Refer to the Bowman Bishaw Due Diligence Report, February 2000, which states "Converting the landfill to POS appears to be the next most feasible option based on present knowledge". The preferred option was to purchase the land excluding the contaminated land.</li> <li>• POS of 1.0559 ha has been set aside to protect an aboriginal site.</li> <li>• POS of 0.0960 ha has been provided as an entry statement to improve the entrance to the estate.</li> </ul> <p>In addition, the subdivision provides 6.2358 ha of region open space adjoining South Lake. This is to provide for the 150 m setback, which has resulted from negotiation with DEWCP to enable the subdivision to be progressed. LandCorp initially setback the required minimum of 50 m to the wetland, which was unacceptable.</p> <p>(City of Cockburn)</p>	<p>LandCorp acknowledges that as the City of Cockburn has described, the areas of POS and ROS (buffer) have been provided or designated to resolve environmental development issues. This issue is described further in General Response 4.3.</p>
359.	<p>The construction of a 3 m high bund on the bound" of the buffer to South Lake, will have a significant impact on the existing vegetation in this location.</p> <p>(City of Cockburn)</p>	<p>As described in the PER (Section 8.5.2, page 65), the final design and location of the bund will be such that no significant remnant vegetation is disturbed. It will be designed in consultation with CALM.</p>

	Submission	Response
360.	<p>pp18 para 3</p> <p>The removal of 1.6 million cubic metres appears excessive. The proponent should ensure the development capitalises on the landscape attributes of the site, not vice versa. This will provide a number of advantages to the proponent and the community, such as:</p> <ul style="list-style-type: none"> <li>• reducing the number of trucks required to remove fill and so reduce the impacts of noise, dust and traffic;</li> <li>• maintaining the landscape features of the site; and</li> <li>• retaining some of the natural upland vegetation on the natural level where it may be maintained.</li> </ul> <p>(City of Cockburn)</p>	<p>LandCorp disagrees. The total amount of earth required to be removed from site has been decreased as a result of LandCorp further reducing the size of the subdivision (see Section 2). The volume of earth proposed to be removed is not excessive and represents a much scaled down version of contouring for the subdivision compared to that proposed in the EPS (where 4.3 million cubic metres of material was proposed to be removed). The removal of sand from the site is required for cut and filling purposes only undertaken to create land contours suitable for industrial lots.</p> <p>The final contours proposed for the site were arrived at following discussion with the City of Cockburn during the EPA process. The degree of earthworks will provide optimum contouring for industrial lot purposes.</p> <p>LandCorp has addressed the management of noise, dust, and traffic and assessed the potential impact on landscape values and vegetation in the PER document.</p>
361.	<p>pp19 para 4</p> <p>There is little value in attempting to identify the types of enterprises envisaged for the estate. It is an industrial zone; a wide range of uses may be permitted.</p> <p>(City of Cockburn)</p>	<p>LandCorp disagrees. This information was provided to demonstrate the nature of businesses that could be located in the proposed industrial subdivision. LandCorp's experience during community consultation was that many members of the public were under the impression noxious industries could be located in the area and that similar development to that seen in the Kwinana industrial area may occur at Bibra lake. The examples were provided to eliminate any confusion.</p>

## 11.3.4 Community consultation

	Submission	Response
362.	<p>pp13 Table 3</p> <p>The response to the issues are difficult to reconcile because:</p> <ul style="list-style-type: none"> <li>• Response 1 -does not reflect the portrayal on Figure 7 or Figure 8. In fact it appears that the contrary applies.</li> <li>• Response 3 -as for Response 1, this statement does not fit rationally with Figure 7 or Figure 8. Area A on Figure 9 is difficult to accept, Area A appears to conform with the 150 m setback line adopted for the subdivision. Perhaps this is coincidental.</li> <li>• Response 6 -the "extremely high cost" to LandCorp to retain some of the upland vegetation is not an acceptable response to an environmental issue. This is a matter to be resolved following the environmental evaluation.</li> <li>• Response 6 - Is irrelevant to a PER</li> </ul> <p>(City of Cockburn)</p>	<p>Response 1and 2: The area of highest importance to the wetland is that which the lake's fauna would use in greatest density and this is the area closest to the lake. Figure 7 and 8 refer to condition and Dieback status of vegetation, not value to wetland or fauna. Figure 9 is taken directly from Dr Mike Bamford's (Consulting Ecologist) fauna report and Area A was an area of potentially higher importance of local fauna identified by Dr Bamford, independently of LandCorp. Fortunately the proposed South Lake buffer, which is up to 214 m wide, does capture a substantial proportion of this area.</p> <p>Response 6 – LandCorp feels this is relevant and it should be permitted to defend its reasons for developing this land. It is not irrelevant as it supports LandCorp's justification of the proposal. The extremely high cost LandCorp refers to here is that associated with retaining the entirety of Lot 502.</p>
363.	<p>pp106 para 3</p> <p>There is insufficient evidence in the PER to demonstrate that the proponent has "extensively" consulted. Based on Council records, consultation has been minimal.</p> <p>(City of Cockburn)</p>	<p>LandCorp disagrees. The consultation program is detailed in section 2 of the PER document. EPA officers reviewed this program before commencement in December 2001.</p> <p>LandCorp consulted community and environmental groups in one of one discussion sessions via the use of an independent facilitator. Many of these groups were also engaged during the previous EPS process. LandCorp also directly consulted with CALM and the City of Cockburn during both the EPS process and the current PER process. It also employed a mail drop to gain opinion and feedback from residents in close to proximity to the development in St Paul's Estate.</p> <p>A meeting took place between City of Cockburn and LandCorp and its environmental consultant in December 2001. It has also met with the City officers and Mayor since that time at the commencement of the public review period.</p>



	Submission	Response
364.	<p>pp2 para 3</p> <p>The Council received the Public Environmental Review (PER) on 16 September 2002, with the requirement that any submission be received by 14 October 2002. This time frame is far too short to enable an adequate and considered response to be made. Moreover, the Minister is understood to have required the preparation of the PER in August 2001. This means the proponent has had 12 months to prepare and publish the document. The public should therefore be entitled to more than 4 weeks to respond.</p> <p>Because of the short public submission period it was not possible for the matter to be considered by the Council before the closing date of 14 October 2002. It is usual for a PER to be advertised for a greater period as provided for under clause 5.4.4 of the Administrative Procedures under the Act.</p> <p>(City of Cockburn)</p>	<p>The four week period for public submission was determined by the EPA and not LandCorp. Refer to above.</p>
365.	<p>Pp 36 Table 8</p> <p>Council records do not indicate that there has been any meaningful discussion between the Council or its officers and the proponent in respect to the subdivision and development of this land.</p> <p>The briefing/feedback with WEC and LandCorp in December 2001 cannot be confirmed from Council records.</p> <p>A concern with the previous Environmental Protection Statement (EPS) was the lack of community consultation. The Public Environmental Review (PER) is only a slight improvement in this regard. The PER appears to be centred primarily on contacting individual interest groups, State Agencies and the City of Cockburn. While this is necessary, the lack of consultation with the general public partially defeats the purpose of changing the assessment from an EPS to a PER. The proponent does not provide the actual numbers of people consulted which makes it difficult to support the conclusions derived from the consultation process. The sample size appears to be small. The proponent should have undertaken wider public consultation.</p> <p>(City of Cockburn)</p>	<p>A meeting took place between City of Cockburn officers and LandCorp and its environmental consultant in December 2001. The understanding of LandCorp was that the CEO of the City of Cockburn would relay information to the Council itself. Since this time, LandCorp has also met with the City officers and the city mayor at the commencement of the public review period.</p> <p>In its meeting with officers of the City of Cockburn in December 2001, the following issues were raised:</p> <ul style="list-style-type: none"> <li>• Location of further industrial areas in City of Cockburn;</li> <li>• visual amenity, appearance of industrial estate;</li> <li>• traffic, noise concerns and subsequent effect of real estate prices;</li> <li>• protection of South Lake from industry; and</li> <li>• welfare of fauna on site to be developed.</li> <li>• Preference of retaining all vegetation from South Lake up to the limestone ridge and most elevated contours along Lot 502.</li> </ul> <p>The city officers appeared satisfied with the level of community consultation at this date. EPA officers reviewed this program before commencement in December 2001.</p>

	Submission	Response
366.	<p>Pp11 para 3</p> <p>Although this and the following paragraphs describe 3 Community Groups with different views on the future subdivision and development of the land, there is no indication as to the number of people who represented each group. This is fundamental to understanding the level of support for each view and should be provided in the report. Table 3 does not assist in this understanding.</p> <p>(City of Cockburn)</p>	<p>LandCorp did not consider this section should describe the level of support for each of the views, but rather describe LandCorp's responses to issues and comments raised by community and environmental groups.</p>
367.	<p>Appendix 1</p> <p>A mail out to only the residents of St Paul's Estate is inadequate in respect to a project of the size and type proposed. This could not be termed extensive. It would have been expected that there should have been local newspaper advertisements, together with correspondence to the conservation and community groups as well.</p> <p>(City of Cockburn)</p>	<p>The residents of St Paul were directly consulted via the mail out as they represented residents in proximity to the proposed subdivision. Other forms of consultation were also employed as described in Section 2.2 of the PER.</p> <p>LandCorp did advertise its intentions to consult with the local community in the Cockburn City Herald (22 Dec. 2001, V3, No 51, p1).</p> <p>As described in Section 2 of the PER document, ten community and environmental groups were approached to be involved during the consultation process. Eight of these groups were involved in one on one discussion sessions with the independent facilitator.</p>
368.	<p>Council at its meeting held on 15 October 2002 unanimously resolved to write to the Minister for the Environment objecting to the minimum public comment period of four (4) weeks for the Public Environmental Review (PER) for Lot 502 Phoenix Road, Bibra Lake, as it did not allow the Council to consider the matter, because the Council meetings are held monthly.</p> <p>(City of Cockburn)</p>	<p>The four week period for public submission was determined by the EPA.</p>

**12. ENVIRONMENTAL FACTORS ADDRESSED IN PER****12.1 VEGETATION AND FLORA**

	<b>Submission</b>	<b>Response</b>
369.	<p>pp58 para 5</p> <p>The removal of the upland vegetation has a major impact on the local fauna. This is because the upland vegetation has its own unique values compared to the lowland and wetland areas. The report outlines that there is potential for impact on animals such as Carnaby's Black Cockatoo, the Quenda and Peregrine Falcons. The report states that none of these species are dependent on this area of bushland. Even so, these habitats require the same degree of protection as those animals existing in the wetland habitats.</p> <p>The proponent has not, at any stage, considered retention of the upland vegetation. The incorporation of upland vegetation into the development would achieve this aim.</p> <p>(City of Cockburn)</p>	<p>Section 9 of the PER addresses the potential impact on fauna, including the impact of removing a large proportion of upland vegetation west of South lake.</p> <p>Contrary to this submission, an 8-9 ha area of upland vegetation will be retained in the buffer strip and in POS set aside for the scar trees in the south west corner of the subdivision. In response to public concern over the removal of upland vegetation, an additional 5 ha of predominantly upland vegetation was proposed to be retained in the buffer strip. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p>
370.	<p>pp64 para 3</p> <p>With the removal of 1.6 Million cubic metres of soil from the site it is difficult to see how any significant vegetation or habitat can remain.</p> <p>(City of Cockburn)</p>	<p>LandCorp acknowledges a large proportion (approximately 87 %) of the remnant vegetation of Lot 502 will be removed for the development of the estate.</p> <p>The remainder can be retained and protected in proposed ROS and POS</p>
371.	<p>In essence a previous Council submission advised that Lot 502 was bushland adjacent to Bush Forever Site 254 - South Lake Reserve which is part of Beeliar Regional Park. The land contains over 70 hectares of Jarrah - Banksia woodland in good condition, although it is zoned for industrial use under the MRS and local scheme.</p> <p>Although degraded in areas and separated by boundary fences from the South Lake Reserve, the bushland provides an excellent ecological connection and buffer to the wetland, as well as representing an overall wetland-upland ecological unit. Additionally, the bushland has significant landscape and visual value and is representative of the Karrakatta Complex Central and South, which will have less than 10% protection under Bushplan. Given these values it is surprising that the bushland or a portion of it was not recommended for inclusion in Bushplan as an extension to Site 254 particularly as the need for the establishment of an adequate buffer zone around South Lake was highlighted in the Systems Six Report.</p>	<p>The area of remnant vegetation is closer to 67 ha compared to 70 ha.</p> <p>The background to the exclusion of this site from Bush Forever is described in General Response 4.5 and the regional significance of the vegetation communities in General Response 4.6.</p> <p>The impact of clearing a large proportion of this bushland to vegetation, fauna landscape values, and South lake is described in the PER in Sections 7, 8, 9, and 10 respectively.</p>

**Bushland Values**

	Submission	Response
372.	Retaining the unique wetland to upland vegetation transect would accommodate the different flora and fauna on site. An area of good quality upland vegetation should be joined into the wetland regime. The good quality vegetation would require less rehabilitation and provide niches for a large number of animals such as frogs and birds. It also places less reliance on attempting to recreate new habitat, which, if successful, will still take many years to re-establish some habitats. An area of very good vegetation located to the north-west of South Lake should be included into the reserve to provide this transect.  (City of Cockburn)	The proposal does include some retention of the wetland-upland continuum. The proposed buffer area contains an area of remnant upland vegetation (approximately 8 ha of Jarrah-Banksia woodland) adjacent to the remnant fringing wetland vegetation on the north-western side of South Lake. The condition of this upland vegetation ranges from degraded to very good condition with the majority in a good to very good condition (see Figure 7 in PER, page 38).
373.	Steps should be taken by the Minister to have Lot 502 reserved or rezoned to provide for a more appropriate and responsive use for this unique and locally significant bushland area and to achieve this a land exchange with LandCorp should be investigated.  (City of Cockburn)	See Section 3.1.3 in the PER document.

**Bush Forever**

	Submission	Response
374.	(This is summarised form of the submission by the Department of Planning and Infrastructure. Full submission reproduced in General Response 4.5)  Lot 502 was assessed for inclusion in the draft <i>Bushplan</i> , in accordance with the criteria listed in <i>Bush Forever Volume 1; Policies, Principles and Processes</i> (pages 4 & 5) Lot 502 was considered to be significantly constrained by the existing zoning (Industrial) and was not considered further for inclusion in Bushplan.  After the site was excluded from the draft <i>Bushplan</i> , the City of Cockburn nominated a portion of the site for consideration in the final Bush Forever policy and the area was listed as a 'nominated additional area' (DPI 17 DEP 67c). Subsequently, at the <i>Bushplan</i> Co-ordinating Group meeting held on 7 July 1999, it was agreed to examine opportunities to preserve some vegetation and provide a buffer to the adjacent wetland through the industrial structure planning process and was not further considered for inclusion in Bush Forever.  (Department of Planning and Infrastructure)	LandCorp acknowledges the Department of Planning and Infrastructure's submission, which is consistent with the information presented in the PER and with the Responses to Submissions document.

	Submission	Response
375.	<p>pp45 para 6</p> <p>The proposal is for 64 ha of native bushland to be cleared. The proponent emphasises that the exclusion of the area from Bush Forever as a major argument to allow clearing, but admits that there is no information on why it was rejected. Even if it was accepted that the site lacks regional floral significance, this is not a reason to dismiss the value of that area, given its landscape value and local importance.</p> <p>(City of Cockburn)</p>	<p>The background to the exclusion of Lot 502 from Bush Forever is provided in General Response 4.5 and the regional significance of the vegetation and flora is described in General Response 4.6 of this document.</p> <p>LandCorp has not dismissed the values of the site beyond that for regional flora values. The PER document addresses the potential impact of many values associated with the site, including fauna habitat and landscape value. The potential social values associated with the bushland are further described in General Response 4.4.</p>
376.	<p>pp104 para 3</p> <p>There is an unacceptable cyclical argument here as it is because of all the 1.1% sites that have been cleared in the past that there is only 5800 ha of this type of bushland left in the metropolitan region. In recognition of this problem, the State Government decided to adopt Bush Forever so that at least 2590 ha may be protected for the future, most of which is already located in region reserves. This argument can be used for every small site; it's the cumulative effect of these individual decisions that ultimately causes the "surprising" loss. Such unique sites as Lot 502, should be used to their greatest natural advantage.</p> <p>Lot 502 adjoins South Lake which is a declared Bush Forever site</p> <p>(City of Cockburn)</p>	<p>LandCorp agrees that Bush Forever was adopted to protect significant bushland and ensure the continued presence of different bushland types in Perth. However, Lot 502 was not considered to be significant enough to override economic and social considerations and was excluded from Bush Forever (as described in General Response 4.5).</p> <p>LandCorp is highly confident that the proposal can be implemented without environmental impact on South Lake.</p>

	Submission	Response															
377.	<p>The main vegetation complexes which exist within the City of Cockburn are the Bassendean Complex central and south which incorporates Banksia woodlands in the eastern area of the City, the Karrakatta Complex central and south which is largely the western portion, Quindalup Dunes which are on the coast around Woodman Point and Herdsman Complex wetlands. The table below shows the percentage of these vegetation complexes which remain within the Perth Metropolitan Area and the percentage which is proposed for protection under Bushplan.</p> <table border="1"> <thead> <tr> <th>Vegetation Complex (as at March 1999)</th> <th>% remaining SCP</th> <th>% Protected</th> </tr> </thead> <tbody> <tr> <td>Bassendean Complex central and south</td> <td>24%</td> <td>13%</td> </tr> <tr> <td>Karrakatta Complex central and south</td> <td>18%</td> <td>8%</td> </tr> <tr> <td>Herdsman Complex</td> <td>31%</td> <td>24%</td> </tr> <tr> <td>Quindalup Dunes</td> <td>48%</td> <td>21%</td> </tr> </tbody> </table> <p>SCP = Swan Coastal Plain</p> <p>As can be seen from the table, all the vegetation complexes which exist within the City with the exception of the Karrakatta Complex Central and South will have more than 10% of the original vegetation protected under Bushplan. The Karrakatta Complex Central and South will remain below this at 8%. One result of this is that the number and extent of additional areas of vegetation nominated for protection within the City of Cockburn are limited.</p> <p>(City of Cockburn)</p>	Vegetation Complex (as at March 1999)	% remaining SCP	% Protected	Bassendean Complex central and south	24%	13%	Karrakatta Complex central and south	18%	8%	Herdsman Complex	31%	24%	Quindalup Dunes	48%	21%	<p>Similar information regarding the percentage of vegetation complexes remaining and protected under Bush Forever in Perth was provided in the PER.</p> <p>It is acknowledged that to date only 8% of the Karrakatta Complex C &amp; S has been allocated into areas for protection under Bush Forever. However, Bush Forever states that:</p> <p><i>'The Karrakatta Central South complex retains more than 10 per cent bushland at present, but is substantially constrained by existing development proposals and Urban/Industrial Zones to the extent that the target is unlikely to be achieved. It is notable that this complex extends north from the Perth Metropolitan Region and there are better opportunities for conservation in these areas.'</i></p> <p>(Page 81, Volume 2 Bush Forever. Government of Western Australia 2000)</p> <p>Other areas outside the metropolitan area could be protected to compensate for not reaching the Bush Forever target if deemed necessary.</p> <p>The City of Cockburn has already nominated a proportion of Lot 502 for inclusion in Bush Forever and it has been subsequently rejected. This process is described in more detail in General Response 4.5.</p> <p>The current level of protection of Karrakatta Complex Central and South does not limit the number and extent of additional areas of vegetation to nominate for protection.</p>
Vegetation Complex (as at March 1999)	% remaining SCP	% Protected															
Bassendean Complex central and south	24%	13%															
Karrakatta Complex central and south	18%	8%															
Herdsman Complex	31%	24%															
Quindalup Dunes	48%	21%															

### Vegetation communities

	Submission	Response
378.	<p>pp21 Figure 4</p> <p>It is clear that except for the open spaces the entire site is to be earth worked to accommodate the subdivision. This means that virtually none of the existing bushland can be retained. pp47 para 8</p> <p>Only one small bushland site is to be retained and that is to protect an Aboriginal site in the south west corner of the subdivision.</p> <p>(City of Cockburn)</p>	<p>LandCorp disagrees. Eight hectares of remnant upland vegetation will be retained in the buffer strip and one hectare of bushland in POS set aside for the scar trees in the south west corner of the subdivision.</p>

	Submission	Response
379.	<p>pp38 Figure 7</p> <p>Figure 7 (vegetation communities and their condition) shows how good the condition of the upland vegetation is which is proposed to be cleared and subdivided, and how poor the areas to be set aside for public and regional open space are.</p> <p>pp41 Figure 8</p> <p>This aerial photograph shows how complete the bush coverage of the site is, with the exception of those areas that have been the subject of horses, adjustment, waste effluent disposal and landfill operations. It is also pleasing to note that this intact bushland area is dieback free, whereas ironically some of Council's "reserves" are badly infested with dieback. If the bush had been infested then perhaps its wholesale clearance could have been more acceptable.</p> <p>(City of Cockburn)</p>	<p>LandCorp acknowledges that half of the area protected in the buffer area is degraded and poorly vegetated. However, the 11.2 ha buffer area does contain about 8 ha of remnant bushland the majority of which is in a good to very good condition (see Figure 7 in PER, page 38).</p> <p>LandCorp also acknowledges that much of the POS has been located in degraded or completely degraded land. However, the POS for scar tree protection in the south western corner does contain some vegetation in good condition.</p> <p>As described in General Response 4.3, much of the POS was put aside to address specific environmental development issues such as Aboriginal heritage and unsuitability of landforms to support industrial lots. The project viability would have been significantly affected if further areas were to be retained in POS or ROS.</p> <p>LandCorp acknowledges the dieback free status of the majority of the bushland and notes the comment regarding added conservation values.</p>
380.	<p>pp50 para 2</p> <p>The loss of the upland vegetation will result in a 50% to 60% decrease in the local representation of this particular upland vegetation community, This is unacceptable. The proponent has not given consideration to retaining the landscape and the associated native vegetation, and instead intends to reinstate native landscaping in an endeavour to restore conservation value.</p> <p>(City of Cockburn)</p>	<p>LandCorp notes the submitter's point of view that the local decrease in representation of the upland vegetation is unacceptable.</p> <p>LandCorp disagrees that it hasn't considered retaining the landscape and associated vegetation. Section of 3.1.3 of the PER document describes the alternatives examined for the proposal, which includes investigating the retention of larger areas of bushland and restricting levelling from further back from South Lake. The current proposal does include the retention of some remnant bushland.</p>
381.	<p>pp45 para 6</p> <p>The proponent also mentions that the project area consists of vegetation communities found within other conservation reserves within the City. They do not mention that none of these sites are as elevated or provide a clear transect from a wetland to the upland vegetation. The other sites are either lowland systems, or have roads bisecting the wetland from the upland vegetation.</p> <p>(City of Cockburn)</p>	<p>LandCorp disagrees that the decrease in representation of upland vegetation is unacceptable.</p> <p>The Thomson's Lake Bush Forever site (391) is within the City of Cockburn and contains a large area which represents an intact wetland upland continuum on its north western side. No roads bisect the upland and wetland vegetation and the upland vegetation is Jarrah-Banksia woodland representative of the Karrakatta Complex Central and South as within Lot 502. The upland areas are of similar elevations to Lot 502 (around 30 to 40 m AHD) and reach up to 60 m AHD within the site. The site is currently connected to other remnant upland areas outside the Bush Forever site to the west.</p>

**Flora**

	Submission	Response
382.	Appendix 2 The Flora List is comprehensive. (City of Cockburn)	The flora list was the result of three flora surveys of Lot 502 and collated by Dr Eleanor Bennett of Bennett Environmental Consulting.
383.	The Tuarts referred to at the entrance with Spearwood Avenue, is presumably the 1 ha POS lot to protect the Aboriginal heritage site. There is no commitment to keeping additional Tuarts, as this forms part of the heritage obligations already incorporated into the proposed plan. The vegetation is in good condition, contains stands of quality tuart trees. (City of Cockburn)	Further Tuarts will only be retained if located along road verges able to be retained. The bushland is not a Tuart forest or woodland and the species is only found scattered in low densities through the bushland with the exception of the south-western corner in proximity to the proposed POS.

**Mitigation**

	Submission	Response
384.	Wetland Buffer Inadequate The wetland buffer proposed by the consultant Welker is inadequate and at odds with Welker's own description of an appropriate wetland buffer. In fact the so-called buffer bisects the wetland area and leaves no surrounding area of dryland vegetation. Clearly the symbiotic relationships between the flora and fauna of the Beeliar suite are dependent upon the retention of sufficient tall dryland vegetation to provide nesting and protective habitats for birds, turtles and reptiles associated with the wetland suite. (Jim Scott MLC)	LandCorp disagrees. The PER demonstrates how the buffer complies with EPA and Water and Rivers Commission recommended buffer widths in the PER document (Section 9.5.2, page 76). General Response 4.9 of the current document describes further the adequacy of the proposed buffer.
385.	pp47 para 8 It is not clear why Dieback and Weed Management Plan measures need to be implemented, when ultimately the entire site will be cleared. (City of Cockburn)	The Dieback and Weed Management Plan is to protect adjacent bushland from Dieback and further weed infestation. The plan will also be important to ensure rehabilitated areas are maintained free of weeds and Dieback inoculums.



	Submission	Response
386.	<p>The area suggested for incorporation is the Jarrah - Banksia woodland on the dune ridge to the east of Site 254 which would provide a suitable ecological and landscape buffer to the existing wetland and create an overall reserve with significantly increased conservation value.</p> <p>Based on this, the Council is of the opinion that if the subdivision and development of Lot 502 is to proceed, then the 150 metre buffer proposed by the proponent to South Lake should be increased to between 220m to 250m in accordance with the attached plan.</p> <p>(City of Cockburn)</p>	<p>LandCorp investigated the preferred subdivision design of the City of Cockburn (restricting development west of ridgeline). It found it severely affected the viability of the proposal and was not pursued.</p> <p>LandCorp notes the City of Cockburn's position and extent of the buffer as shown in Appendix 1.</p>

## 12.2 FAUNA

	Submission	Response
387.	<p>pp19 para 1</p> <p>Although the objectives identified for the rehabilitation of the buffer are understood, their satisfactory implementation is difficult to accept, particularly in respect to the re-establishment of a suitable fauna habitat.</p> <p>(City of Cockburn)</p>	<p>LandCorp acknowledges the City of Cockburn's submission. Refer to Dr Mike Bamford's expert opinion (Appendix 4 of PER document) on the benefits of rehabilitating the areas adjacent to South Lake.</p>
388.	<p>pp56 Figure 9</p> <p>This figure seems to be contrary to the information contained in Figures 7 and 8. It is difficult to understand. In addition the description of the "Fauna Habitats" is inconsistently described across categories A to E. It would have been expected that the upland woodland (Area E) would have a high value fauna habitat at least equal to the eastern margin of the project area (Area A).</p> <p>(City of Cockburn)</p>	<p>LandCorp disagrees. Figure 9 is not contrary to Figure 7 and 8. All figures show a severely degraded area in the south eastern corner of Lot 502 adjacent to South Lake. Dr Mike Bamford (Consulting Ecologist) has identified an area of potentially higher importance to fauna (Area A) compared to the majority of bushland of Lot 502. The condition of bushland is not necessarily dependent to its value to fauna. In the case of Lot 502, although much of Area A is in worse condition to much of the remainder of Lot 502, its proximity to South Lake and bushland linkage to the north and east increase its significance to fauna compared to the rest of the bushland (Area E).</p>

	Submission	Response
389.	<p>pp57 para 7</p> <p>Although the sequential development of the site will allow the gradual movement of fauna into remnant areas, eventually all the site will be disturbed and then where will the fauna travel to, given this "push" approach? The only direction is east to the reserve around South Lake. The approach advocated is not a satisfactory or acceptable solution to habitat clearance over the development period of 10 years. A more proactive approach to relocation needs to be considered.</p> <p>Any native animals at risk should be trapped and relocated to other suitable sites. (City of Cockburn)</p>	<p>LandCorp has acknowledged that there will be some losses associated with the proposal which may be a result of the inability of the surrounding areas to support all of the fauna displaced by the proposal.</p> <p>LandCorp has proposed that a Quenda relocation program may form part of the fauna management Plan. Initial discussions with CALM indicated that such a program may be feasible and it is to be further explored. CALM would identify alternative locations for relocated fauna as part of a LandCorp funded relocation program if deemed feasible by CALM.</p> <p>LandCorp acknowledges not all native animals can be trapped and relocated. LandCorp will primarily investigate the feasibility of Quenda and possum relocation in consultation with CALM.</p>
390.	<p>pp58 para 2</p> <p>The Council has a policy, which requires a fauna study to be undertaken prior to subdivision and development. (City of Cockburn)</p>	<p>A fauna study of Lot 502 was conducted by Dr Mike Bamford as part of the preparation of the PER.</p>
391.	<p>PP59 para 2</p> <p>Just because some species may not be reliant on Lot 502 for their persistence in the region, does not mean that this is not an important habitat within this locality.</p> <p>The problem is that this approach takes no account of the cumulative effect of clearing numerous individual sites all over the region, based on the same illogical rationale. (City of Cockburn)</p>	<p>LandCorp has not disputed the site may be of some local importance for fauna. The impact of local populations has been assessed in Section 7.5.1 of the PER document.</p> <p>Bush Forever addressed the protection of habitat to ensure the retention populations of significant fauna throughout the region.</p>
392.	<p>pp59 para 5</p> <p>The plan does not allow for any significant bush retention and the rehabilitated buffer could take many years before it is a suitable substitute habitat. By this time the species may no longer exist in the locality. The promotion of native landscaping may help, but the difficulty is having it installed and maintained to achieve the desired outcome.</p> <p>pp60 para 2</p> <p>An issue not highlighted in the report is that the transition of the animals, in particular birds, from the upland vegetation to the rehabilitated wetland buffer areas will not be possible, in the short to medium term, as they require mature trees for nesting and feeding. (City of Cockburn)</p>	<p>The development will be staged over ten years which will give sufficient time for the rehabilitated areas to support some of the fauna displaced by the last stages of the proposal. Fauna displaced earlier in the development will have to move into existing remnant areas. There are however likely to be some losses and the impact on local populations has been assessed in Section 7.5.1 of the PER document.</p> <p>Mature trees will be retained in the proposed buffer, which contains approximately 8 ha of remnant upland woodland.</p>

	Submission	Response
393.	Also there are wetter conditions present in wetland buffer areas, which may restrict the growth of certain plants that are needed by these animals. (City of Cockburn)	LandCorp agrees and it is likely that the vegetation will be more wetlands associated species in the lower lying areas of the eastern part of the buffer and upland species in the western side. The aim will be to restore the upland-wetland continuum in the degraded areas.
394.	The upland vegetated areas beyond the 150 metre buffer will be cleared, with only a few Tuart trees retained in the Public Open Space near Spearwood Avenue. The proponent has proposed establishing native gardens through the road verges and Public Open Space to offset this impact. The establishment of native gardens in the estate has merit and is supported as a positive approach to recreating habitat for some fauna, but achieving this may be problematic and the value of this is uncertain. pp19 para 2, pp60 para 4 Despite this it is very difficult to see it being effective or sustainable given the poor standard of landscaping and landscaping maintenance in many of the industrial areas around the region, particularly in the SW Corridor. The gardens are only one part of creating suitable habitats for fauna. Area, shape, connectivity, exposure, ground conditions, reticulation, garden maintenance and weeding, drainage, noise, light, fences, guard dogs, human activity, litter and pedestrian and vehicular movement in industrial areas could render this approach totally ineffective. It is difficult to see how the "pocket and corridor" approach will provide a suitable and sustainable fauna habitat. The native gardens will not be able to substitute the habitat provided by the upland vegetation. In particular the tall mature trees needed for bird life. The cost of maintaining the native gardens to a standard that will allow the fauna to utilise these habitats would be high. Never-the-less native vegetation will reduce water consumption within the area as native plants require less water. (City of Cockburn)	Dr Mike Bamford (Consulting Ecologist) has provided advice on the ability of native gardens to be utilised as fauna habitat. Such gardens will allow the populations of wildlife to be larger and therefore less likely to suffer from local extinction than could be supported by the buffer zone alone, and would allow wildlife to move through the industrial area, providing linkage to bushland along road verges and in suburban areas to the north. Many species of reptiles and frogs are known to survive in urban gardens and hence should be able to exist in native gardens within the estate, particularly if they are linked with the remnant vegetation around South Lake (Bamford 2002).  The Landscape Protection and Management Plan will be prepared in consultation with Dr Mike Bamford to ensure the created landscape promotes use by fauna able to use native gardens  LandCorp does not mean to imply that the native gardens will substitute for the habitat currently provided by upland vegetation in Lot 502 or that it will be able to be used by all local species or ensure their presence within Lot 502. The creation of such gardens is expected to mitigate some of the local impact on many species (see General Response 4.12).
395.	Native gardens - The requirement to install and maintain landscaping of any type is difficult to police and enforce in any event. (City of Cockburn)	As part of the contract of sale, LandCorp will require enterprises to undertake appropriate landscaping of their lots. Each buyer will be supplied with a copy of the Landscape and Protection Management Plan, which will guide land owners on appropriate landscaping and planting to undertake.
396.	Despite its degraded condition of the buffer area, it is a "high value" fauna habitat, according to Figure 9. Given this, from a fauna habitat perspective, it may be best to leave the area as it is. (City of Cockburn)	Contrary to this submission, Dr Mike Bamford did not identify the severely degraded areas within the buffer area being of high value to fauna. The completely degraded areas adjacent to South Lake were shown as D (cleared and severely degraded habitat) on Figure 9 of the PER (page 56). Rehabilitation of these areas will increase their ability to support fauna.  The high value fauna area was that which contained some remnant vegetation mostly in a good to very good condition adjacent to South Lake and good to degraded condition in the northern 'pan-handle' area of Lot 502.

	Submission	Response
397.	<p>Appendix 3</p> <p>The Fauna List is comprehensive and based more on considered opinion rather than observation, the list is surprisingly large given that only Area A on Figure 9 is the "high value" habitat on the site.</p> <p>(City of Cockburn)</p>	<p>The fauna list was a result of desktop review and a brief field search. It is mainly a list of the maximum number of expected species to occur and it is possible many of these species do not actually occur. The high value fauna habitat (Area A) shown on Figure 9 has been shown to indicate an area of relatively highest importance to fauna local and regional values. It does not mean that the remainder of the Lot is of low value to fauna, just relatively lower than this area A.</p>
398.	<p>It is a pity that the alternative locations for displaced fauna are not identified as part of this research.</p> <p>(City of Cockburn)</p>	<p>The PER does describe the presence of Beeliar Regional Park adjacent to Lot 502, which is expected to adsorb a proportion of the fauna displaced by the proposal. LandCorp has acknowledged that there will be some losses associated with the proposal that may be a result of the inability of the surrounding areas to support all of the fauna displaced by the proposal. These potential losses will be reduced by rehabilitation programs, retention of upland vegetation in the buffer, and establishment of native gardens in the estate, the benefits of which are described in General Responses 4.10, 4.11, and 4.12 respectively.</p> <p>CALM would identify alternative locations for relocated fauna as part of a LandCorp funded relocation program if deemed feasible by CALM.</p>
399.	<p>Page 1 Appendix 3 confirms that the adverse impact on the fauna by the extensive removal of the existing habitat is unlikely to be satisfactorily replaced, despite the best intentions, because of the complex interrelationship of the many variables that support the existence of the local fauna.</p> <p>There is also a suggestion that the existing degraded areas may not be the best habitat on the site except for a very narrow band of terrestrial fauna, which is at odds with Figure 9, Area A.</p> <p>(City of Cockburn)</p>	<p>LandCorp assumes the submitter is referring to Page 1 of Appendix 4 here, an opinion of the benefits of rehabilitation. LandCorp agrees that it is unlikely that the existing habitat will be completely replaced and it has been upfront that there are likely to be losses in the number of fauna in the local area as a result of this proposal (see section 7.5.1 of PER). Dr Mike Bamford states in Appendix 4 of the PER, that this loss will not be as great if rehabilitation is undertaken and that designing it appropriately can enhance the value of the rehabilitated habitat. The retention of upland areas in the buffer will further reduce the potential impacts (see General Response 4.11)</p> <p>Contrary to the submission, the suggestion that the degraded areas may not be the best habitat is not at odds with Figure 9 of the PER, as Figure 9 (page 56) shows these areas as D (cleared and severely degraded habitat) not A (high value fauna habitat).</p>
400.	<p>It is clear that the recreation of habitat around the western and south-western sides of South Lake need to be implemented and managed by specialists. The Management Plan will need to be comprehensive and specific.</p> <p>(City of Cockburn)</p>	<p>In the case of the buffer, appropriate consultants appointed by LandCorp will administer the rehabilitation program. In the case of the collaborative rehabilitation program for the southern area of South Lake, CALM will administer the program. This will ensure the programs are implemented by specialists and that the rehabilitation management plans are comprehensive and specific to this area. CALM has already put out the rehabilitation management plan for the southern area to tender to specialised consultants.</p>

	Submission	Response
401.	<p>Insufficient Tall Bushland</p> <p>The tall Tuart forest on this site was nominated under the Bush Forever process by a number of groups and individuals. There is insufficient protected tall bushland left to provide nesting sites for birds that frequent the wetland system. At least five little eagles are nesting in this site.</p> <p>I predict that removing this remaining Tuart forest will cause significant losses to the fauna of the Beeliar Wetland suite.</p> <p>(Jim Scott MLC)</p>	<p>There is no Tuart forest on the site. There are some scattered Tuart trees in amongst the Jarrah-Banksia woodland and a number of these are being retained in the POS in the south-western corner of the proposed subdivision.</p> <p>LandCorp is unaware of the Little Eagle nesting sites and the species was not recorded during a brief bird census of the site conducted by Dr Mike Bamford. However, Dr Bamford did identify the Little Eagle as potentially utilising the site. Section 7.5.1 of the PER addresses the potential impact on birds frequenting the area</p>
402.	<p>7.1.2 Reptiles</p> <p>The reference of the text 'No reptiles expected to occur in Lot 502 are listed rare or threatened under Commonwealth or State legislation or listed as priority species by CALM (2001)' to; CALM (2001) is incorrect. The Beeliar Regional Park Draft management Plan (2001) does not make specific reference to Lot 502. This reference should be removed.</p> <p>(CALM)</p>	<p>The reference to CALM (2001) refers to CALM's Priority Fauna list as of 2001, not the Beeliar Regional Park Management Plan. The reference to the Priority list was inadvertently omitted from the reference list of the PER document.</p>

### 12.3 VISUAL AMENITY

	Submission	Response
403.	<p>pp64 para 6</p> <p>It will not only be the 150 m incline westward from South Lake that will provide a visual screen to the industrial development, but also the 3 m bund proposed in front of the estate road closest to the lake. This is the purpose of the bund.</p> <p>(City of Cockburn)</p>	<p>LandCorp agrees.</p>
404.	<p>If industrial development was attractive, screening would not be necessary.</p> <p>(City of Cockburn)</p>	<p>LandCorp proposed to screen the appearance of the industrial estate as much as possible from viewing from Beeliar Regional Park to maintain CALM natural landscape values and retain the natural amenity of the South Lake environs. LandCorp notes the City of Cockburn's opinion.</p>
405.	<p>pp67 para 2</p> <p>To control building heights, scheme provisions will be necessary. This is a statutory matter to be decided by others.</p> <p>(City of Cockburn)</p>	<p>LandCorp can also control building heights by putting building height restrictions in the contract of sales.</p>

	Submission	Response
406.	<p>pp67 para 3</p> <p>The greenbelt entry statement is a linear strip adjoining North Lake Road, which is only to be 960 m2 in area. This is likely to only have a minimal "greening" effect, but is better than none at all. It is noted that a similar strip previously proposed on the other side of the entry road has been deleted.</p> <p>(City of Cockburn)</p>	<p>The greenbelt entry statement will be provided on either side on the entry road as originally proposed. LandCorp notes that the northern strip has been unintentionally omitted from Figure 3 and 4.</p>
407.	<p>pp50 para 2</p> <p>The removal of 1.6 million cubic metres of soil is a major excavation to facilitate subdivision. The proponent has not given consideration to retaining the landscape and the associated native vegetation, and instead intends to reinstate native landscaping in an endeavour to restore conservation value.</p> <p>(City of Cockburn)</p>	<p>LandCorp disagrees that it hasn't considered retaining the landscape and associated vegetation. Section of 3.1.3 of the PER document describes the alternatives examined for the proposal, which includes investigating the retention of larger areas of bushland and restricting levelling from further back from South Lake. The current proposal does include the retention of some remnant bushland.</p>

## 12.4 SOUTH LAKE, BEELIAR WETLANDS AND WATER QUALITY

### Impact on South Lake

	Submission	Response
408.	<p>pp105 para 6</p> <p>The benefits gained by the implementation of this proposal are doubtful. The rehabilitation of the degraded land around South Lake, already part of the Beelihar Regional Park wetland chain, could have occurred without this proposal.</p> <p>(City of Cockburn)</p>	<p>LandCorp disagrees. Lot 502 abuts the western side of South Lake. Rehabilitation of the land to the west of South Lake would not have occurred independent of this proposal as it is within freehold land owned by LandCorp and not managed by CALM and hence would not be subject to CALM or local community group rehabilitation efforts.</p> <p>LandCorp acknowledges that some replanting has already taken place to the south of the lake. CALM indeed would be eventually rehabilitating all of the southern area of South Lake but the rehabilitation would be expedited as a result of this proposal. LandCorp assistance will ensure the success of rehabilitation.</p>

**Wetland Buffer**

	<b>Submission</b>	<b>Response</b>
409.	<p>The proposed 150 metre wetland buffer shall be taken from the extent of the wetland as contained within the Water and Rivers Commission (WRC) Geomorphic Wetland Database, not the high water mark of the wetland. This is the Water and Rivers Commission's standard policy regarding buffers, as outlined in the Wetlands Position Statement.</p> <p>(Water and Rivers Commission)</p>	<p>The adequacy of the buffer and adherence to WRC guidelines is addressed in General Response 4.9 of this document.</p>
410.	<p>Approval of the subdivision does not pre-empt approval for groundwater abstraction within the proposal area. Groundwater abstraction approval must be sought from Water and Rivers Commission, and consideration will be given to the potential for abstraction to have impacts upon South Lake's hydrological regime and local vegetation including the Bush Forever site.</p> <p>(Water and Rivers Commission)</p>	<p>Groundwater abstraction is not part of this proposal.</p>
411.	<p>pp49 para 1</p> <p>The proposal for a 150 metre buffer to South Lake needs to be put into perspective, in that the buffer includes approximately 6.5 ha of the developers land. The remainder is contained in the Beeliiar Regional Park. Of the buffer area, 1.5 ha (23%) is in Very Good to Good condition, 1 ha (16%) is Good to Degraded condition and 4 ha (61%) is completely degraded.</p> <p>While it does provide a separation between South Lake and the proposal, the area has limited conservation value. The establishment of the wetland buffer should be considered to be obligatory and not to be seen as a "trade off" for the removal of the 64 ha of upland vegetation.</p> <p>(City of Cockburn)</p>	<p>LandCorp disagrees that the area has limited conservation value:</p> <ul style="list-style-type: none"> <li>• A large proportion of the buffer area was identified by Mike Bamford as being of higher value to fauna relative to the remainder to bushland in Lot 502;</li> <li>• The area is potentially utilised by fauna associated with the lake such as the Long-necked Tortoise, frogs, the Rakali and Quenda.</li> <li>• The area contains an Aboriginal site (campsite).</li> </ul> <p>LandCorp has not attempted to offer the wetland buffer as a 'trade-off', but the rehabilitation of vegetation within the buffer does provide some offset to the removal of habitat within Lot 502.</p> <p>In addition, in response to public concern over the size of the development, and in consultation with the EPA, LandCorp has increased the size of the buffer area to further address environmental concerns. An additional 5 ha of predominantly upland vegetation will not be developed and now retained in the buffer strip, which is now up to 214 m wide. See Section 2 for details of change and General Response 4.11 for the additional offset provided by the increased retention of woodland.</p>

	Submission	Response
412.	<p>pp59 para 7</p> <p>Reference is made to the 150m setback to South Lake. The Council was of the opinion that this line should be the ridgeline some 200m from South Lake as this provided a natural edge to the South Lake catchment. This proposal formed the basis to the Council submission on Bushplan. To date this remains the Council position. It is not clear on what basis the 150m setback was selected or agreed to.</p> <p>The Council has never been a party to these negotiations between LandCorp and DEWCP.</p> <p>(City of Cockburn)</p>	<p>LandCorp has noted the City of Cockburn's position on the location of the buffer boundary.</p> <p>The setback was based on the protection of South Lake and its associated fauna and Aboriginal heritage and agreed to between DEP, LandCorp and Aboriginal elders consulted with during site acquisition.</p> <p>The Council's position on the location of the buffer boundary was known, and LandCorp views the setback of the subdivision, up to 214 m instead of the original 50 m proposed during project inception, as a move towards the City's preferred line.</p>
413.	<p>The wetland revegetation work carried out by conservation groups already suffers damage from sand blowing from existing cleared industrial sites due to the lack of a vegetation buffer and the destruction of the limestone ridge that runs parallel to the coast. The Tuart forest is an important buffer.</p> <p>(Jim Scott MLC)</p>	<p>The issue of wind blown dust is addressed in relation to South Lake in Section 11.5 (page 87) of the PER document. Dust management will minimise the generation of dust during development and the retention of vegetation along the western extremes of the buffer area should further minimise the potential for windblown dust to impact on rehabilitation.</p> <p>There is no Tuart forest in Lot 502. Tuarts are found scattered in low densities through the bushland with the exception of the south-western corner in proximity to the proposed POS</p>
414.	<p>With the northern expansion of the Kwinana industrial area and the development of the marine industrial estate at Henderson the retention of bushland buffers is of great importance to maintain comfortable living standards and the aesthetic values of this area of Cockburn.</p> <p>(Jim Scott MLC)</p>	<p>A bushland buffer is being provided for the protection of South Lake.</p> <p>The establishment of Beelir Regional Park has ensured there is a permanent large bushland buffer and 'green' belt between residential areas to the east and industrial areas to the west.</p>



**Drainage/hydrology**

	<b>Submission</b>	<b>Response</b>
415.	<p>Stormwater management issues are only mentioned briefly in the document and referral is made to a Sinclair Knight Mertz (SKM) engineering report, which was not included in the PER. There is a commitment to deal with stormwater by the preparation of a Stormwater Management Plan as part of the detailed design phase.</p> <p>There is no mention of Water Sensitive Urban Design (WSUD) Principles or of exploring opportunities for water reuse/conservation in the development of a 'Total Water Cycle' concept. Of concern is the Modified Subdivision layout shown in Figure 3 that depicts a "Drainage Sump Site". This would appear to confirm that WSUD principles have not been considered in developing the proposal submitted in the PER.</p> <p>The Commission requires the proponent to commit to and modify the proposal to incorporate total water cycle management concepts i.e. Water Sensitive Urban Design principles, prior to the development proceeding any further.</p> <p>(Water and Rivers Commission)</p>	<p>The SKM engineering report was a preliminary investigation into the development of a stormwater drainage system in the subdivision. The report confirmed that drainage could be managed such that no surface runoff from the estate would reach South Lake.</p> <p>The detailed design of the drainage system has not yet been prepared. LandCorp is committed to incorporating WSUD principles into the final design of the drainage systems and able to modify the subdivision layout if required. The WRC will be consulted during the final drainage design and preparation of the Stormwater Management Plan (Component of Drainage and Groundwater Management Plan).</p>
416.	<p>9.6 Proponent Commitments for South lake</p> <p>In relation to the second bullet point, the Department of Conservation and Land Management (CALM) should be consulted during the preparation of the Drainage and Groundwater Management Plan, particularly regarding the affects of the bund (to be constructed within the buffer zone) on surface water runoff. This would then be consistent, with section 8.5.2 of the Public Environmental Review where it is stated 'LandCorp will prepare die final design of the bund in consultation with CALM.'</p> <p>(CALM)</p>	<p>LandCorp will consult with CALM during the preparation of the Drainage and Groundwater Management Plan.</p>

**12.5 SITE CONTAMINATION (SOIL AND GROUNDWATER)**

	<b>Submission</b>	<b>Response</b>
417.	<p>The remediation of the contaminated site should occur as a matter of course. The Paper Mill Agreement Act requires all waste effluent to be disposed of on the mill site. An argument could be mounted that the sale of Lot 502 to LandCorp should have resulted in the wastewater disposal ceasing and being confined to Lot 501 (now 503), and the contaminated site remediated by AMCOR.</p> <p>(City of Cockburn)</p>	<p>The contaminated land will be remediated as described in the Section 10.5.1 of the PER document regardless of the proposal going ahead. Should the proposal be approved, LandCorp shall oversee the removal of contaminated material (funded by Amcor); however should the proposal not go ahead it is the responsibility of Amcor to remove the contaminated material.</p> <p>Amcor came to a contractual agreement with LandCorp to continue using the effluent ponds prior to the estate being developed.</p>
418.	<p>pp20 Figure 3</p> <p>The drainage sump and sewer pump station should not be included in the public open space provision as indicated on the plan.</p> <p>(City of Cockburn)</p>	<p>The drainage sump and sewer pump station will not be POS. They are shown in the same colour as POS and ROS on Figure 3, but are not labelled as such.</p>
419.	<p>The Council has already informally indicated that the plan is generally acceptable as an industrial subdivision, however, the Council is highly unlikely to accept responsibility for the POS over the AMCOR waste disposal site, a position already conveyed to the proponent.</p> <p>Given this, the 3.3 ha that the proponent is prepared to provide as open space should be removed from the contaminated site and added to the area of region open space proposed on the western side of South Lake. Alternatively, the 3.3 ha could be used to retain an area of the good quality upland vegetation. This would be of greater value than proposing to give the community a contaminated site. This is unacceptable.</p> <p>(City of Cockburn)</p>	<p>LandCorp notes the City of Cockburn's position on the POS that is currently a landfill site.</p> <p>The site will remain as POS at this time under the responsibility of LandCorp.</p>
420.	<p>pp29 para 5</p> <p>The operations of AMCOR are provided for under the Paper Mill Agreement Act 1960. Mention is made of converting the landfill area into Public Open Space. The landfill is contaminated with copper and may potentially affect the long-term health of any vegetation planted on it, as well as pose potential health risk. There is a need to make the proponent aware that it may become the indefinite owner of the land.</p> <p>(City of Cockburn)</p>	<p>Copper is the only contaminant of concern in the existing landfill site. It is highly unlikely that the elevated levels of copper in the landfill site will affect the health of vegetation planted on it. Plants naturally absorb and use copper in their physiological processes and the levels present are unlikely to cause copper toxicity. The area will be covered with a deep layer of soil for plant establishment.</p> <p>There is no health risk posed by the copper contamination in the landfill site as it will be capped with a layer of soil. The concentrations of copper in groundwater are not expected to exceed guideline levels in the future as a result of material staying in-situ.</p> <p>LandCorp notes the City of Cockburn's position on the tenure of the land.</p>

	Submission	Response
421.	<p>Ground Pollution Buffer</p> <p>Over the years of occupation by Amcor significant amounts of liquid pollution from the factory processes has been poured on the site. I am concerned that removing the deep root systems of the Tuart forest will allow larger quantities of this material to migrate into the lakes and wetland areas.</p> <p>The massive amounts of earthwork proposed by LandCorp is likely to increase the migration of this material and see some of the polluted soil transported to other sites around the metropolitan area. I do not believe sufficient work has been done to identify the risks entailed in freeing up this material.</p> <p>It may cause significant reductions in the water quality of the surrounding lakes and the Jandakot water mound.</p> <p>(Jim Scott MLC)</p>	<p>The regional groundwater flow is to the west and will prevent any pollutants that do reach the groundwater from affecting the nearby lakes and wetlands to the east.</p> <p>A contaminated site assessment (summarised in Section 10.1 and 10.5.1 of the PER document) has found that the only potential significant groundwater contamination will be from the effluent ponds in the form of a plume of effluent with a high chemical oxygen demand and with elevated total dissolve salt levels. This plume will travel west and decrease in concentration to insignificant levels within 320 m of the site boundary (see Figure 15 of PER, page 84). Following cessation of the effluent disposal, the plume is expected to self remediate within three years. There are no wetlands in proximity to the western boundary of Lot 502 and hence there is little chance of wetlands being affected.</p> <p>The site is on the western edge of the Jandakot Mound and has no potential to affect public water supply.</p>

## 12.6 TRAFFIC AND SAFETY

	Submission	Response
422.	<p>pp105 para 6</p> <p>The opinion that traffic volumes on Phoenix Road will reduce is speculation, and made in isolation of other network proposals currently being considered. With the possible deletion of the Fremantle Eastern Bypass and Roe Stage 8 from the MRS, Phoenix Road, together with South Street are likely to become the defacto Roe Highway for traffic moving east-west in the northern sector of the district.</p> <p>(City of Cockburn)</p>	<p>The predicted reduction in traffic volumes is not speculation and was a finding of the Sinclair Knight Mertz site access and traffic studies (SKM 2000). LandCorp notes that it was based on the presence of Roe Highway to the north of the estate and agrees the figures will have to be corrected if Roe Highway does not proceed.</p>
423.	<p>Access onto Spearwood Avenue also has to be resolved.</p> <p>(City of Cockburn)</p>	<p>LandCorp commits to working with the City of Cockburn to resolve any issues it has with the proposed access to Spearwood Avenue.</p>

**12.7 ABORIGINAL HERITAGE**

	<b>Submission</b>	<b>Response</b>
424.	The proponent is in compliance with the Aboriginal Heritage Act 1972. (Department of Indigenous Affairs)	LandCorp reaffirms its commitment to remaining in compliance and fulfilling its commitments for aboriginal heritage.
425.	<p>The PER indicates the intent to devise a contingency plan for discovery of new material. The following advice may be of assistance.</p> <p>During construction:</p> <p>If during project construction an Aboriginal site is uncovered, work must cease, and the proponent should apply for an exemption under S. 18 of the Act, to use the site upon which the site is located.</p> <p>It is sometimes recommended that an archaeologist be employed to monitor the project during ground disturbance and earth moving activities, along with an Aboriginal community representative(s). This archaeologist should be issued with a S. 16 permit under the AH ACT, to assess the significance of a site and determine the next course of action, in accordance with the wishes of the Aboriginal community. This may include removal for further study or relocation.</p> <p>Skeletal remains:</p> <p>If skeletal material is found the Site Manager must report to both the Police and local DIA Office simultaneously. The Site Manager should arrange for a meeting on-site with the local DIA Office, an Aboriginal community representative(s), and the archaeologist engaged to monitor the project. Once it is confirmed that the remains are of an Aboriginal person, the site should be registered as an Aboriginal site.</p> <p>It is also a legal requirement under the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Section 20(1)) to notify the Commonwealth Minister for Aboriginal Affairs of any discovery of skeletal remains. Where skeletal material of Aboriginal origin has not been disturbed, or disturbance has been minimal, every attempt should be made to leave the remains undisturbed and in situ. A plaque should be erected to reduce the chances of inadvertent interference with the site. However, if the burial site has already been disturbed but the remains moved only accidentally (not removed) and the development can be halted, the remains should be reburied at the same site, if that is the preference of the local Aboriginal community. If skeletal material of Aboriginal origin is located and the development will disturb those remains, the developer will need to seek approval for development under S.18 of the Act.</p>	LandCorp will incorporate the described measures into its contingency plan for the uncovering of Aboriginal archaeological and skeletal material during development.

	Submission	Response
425 (cont.)	In cases where it is not possible to rebury the remains in the location they were discovered, the preferred option is to rebury them as near as practicable to their place of discovery. This should involve the local Aboriginal community and a plaque erected at the reburial site to reduce the likelihood of interference. If however, development of the whole area is unavoidable, or if it is the choice of the local Aboriginal community, skeletal material may need to be removed from the site entirely. This should only be done under the supervision of local Aboriginal leaders. The fate of the material is then at their discretion.  (Department of Indigenous Affairs)	

### 13. OTHER ISSUES

#### 13.1 ENVIRONMENTAL MANAGEMENT

	Submission	Response
426.	Approval shall be sought from the Bush Forever Office for the proposal, in relation to the proposed rehabilitation works within the adjoining Bush Forever Site (Site number 254). (Water and Rivers Commission)	The rehabilitation in Bush Forever site 254 will be administered by CALM, who will seek all appropriate approvals. LandCorp understands that CALM is the manager of the land.
427.	The proponent has offered to undertake the enhancement of the degraded area through a number of different techniques used in the mining industry, but has not stated whether it has been used in the Perth area. (City of Cockburn)	The rehabilitation plan is a concept plan only at this stage. LandCorp will investigate the most appropriate techniques and finalise the rehabilitation plan through the use of a consultant and in consultation CALM.
428.	pp106 para 2 The environmental management commitments contained in the PER are expressed differently from those contained in the EPA Bulletin 999 dated November 2000. (City of Cockburn)	LandCorp is aware there are some small changes and additions to the commitments and the way they appear. It has been done so in close consultation with the EPA.

	Submission	Response
429.	<p>The collaborative rehabilitation with CALM is supported, but there is little evidence of the extent of the commitments by the proponent and CALM to revegetate the southern area of South Lake. A firm commitment to the scope of works is necessary before it is possible to decide the environmental enhancement value of the proposal. The same applies to the proposal to revegetate the degraded western side.</p> <p>(City of Cockburn)</p>	<p>An in-principle agreement has been reached between LandCorp and CALM regarding the collaborative rehabilitation program. CALM has already put the Rehabilitation Management Plan for the area out for tender. It will incorporate a 10 ha area along the southern side of South lake with bush Forever site 254.</p> <p>The rehabilitation of the degraded western side is a commitment of the proposal, which will be legally binding once Ministerial conditions are set. The rehabilitation will be required to be completed to the satisfaction of the DEP.</p>
430.	<p>If the proposal is accepted, the Rehabilitation Plan, Dieback and Weed Management Plan and the Landscape Protection and Management Plan would be provided at a later date. At this point the proponent would seek advice from the City of Cockburn, Department of Environment, Water and Catchment Protection Commission and CALM. As a result, the City cannot comment on whether the enhancement of South Lake is sufficient to offset some of the environmental losses associated with this proposal.</p> <p>Ultimately the revegetation within the South Lake reserve would have to be of a high standard to make up for the loss of upland vegetation, and to achieve the outcomes by the City of Cockburn and CALM within their respective conservation areas.</p> <p>(City of Cockburn)</p>	<p>LandCorp intends the revegetation to be of a very high standard and will choose the most qualified specialists to plan the work in consultation with CALM. LandCorp intends for the subdivision and the associated rehabilitation and management to be a benchmark for land developers in environmental, aesthetic and social outcomes.</p>
431.	<p>pp19 para 3</p> <p>It is unclear how the landscaping will be required to be maintained at a level that will create suitable habitat. Based on other industrial estates in the district, landscaping is a low priority for most industrialists.</p> <p>(City of Cockburn)</p>	<p>As part of the contract of sale, LandCorp will require enterprises to undertake appropriate landscaping of their lots. A caveat or restrictive covenant can be registered on title to enforce conditions relating to buildings and landscaping. The caveat can remain on title until the conditions are met. LandCorp standard industrial conditions prevent a purchaser on-selling land prior to development. Each buyer will be supplied with a copy of the Landscape and Protection Management Plan, which will guide land owners on appropriate landscaping and planting to undertake.</p> <p>The Landscape and Protection Management Plan will be prepared with advice from Dr Mike Bamford (Consulting Ecologist) to maximise benefits of native gardens to fauna.</p>

	Submission	Response
432.	<p>pp101 para 1</p> <p>The proponent has suggested topsoil translocation. The City has had experience with a Kings Park Botanical Park Board supervised project. The project involved removal of topsoil from a nearby local good quality bushland area to a site at Bibra Lake. The project was considered a failure as large numbers of weeds germinated, but very few native plants did. The proponent will need to undertake further research to assess the feasibility of this method before attempting the procedure.</p> <p>The proponent has proposed direct seeding the wetland buffer areas with local seeds collected from the areas before clearing. This is an acceptable strategy which should be supplemented with seedlings. Direct seeding has a low success rate. Also the planting of seedlings ensures the establishment of vegetation structure more rapidly than direct seeding alone. The proponent should undertake a combination of both methods.</p> <p>The salvaging of materials and translocating small trees and shrub species is supported. (City of Cockburn)</p>	<p>LandCorp agrees that further development of the rehabilitation techniques proposed in the concept rehabilitation plan (Section 15.3) is required.</p> <p>LandCorp is grateful for the advice on rehabilitation provided by the submitter.</p>
433.	<p>The report states that there will be in place a 10 year monitoring plan of the rehabilitation. It is unclear whether the proponent will be the responsible agency to manage the rehabilitation work, together with the penalties that may apply for non-compliance. (City of Cockburn)</p>	<p>The monitoring plan will be the responsibility of LandCorp. Non-compliance will be matter for the DEP.</p>
434.	<p>Revegetation of South Lake</p> <p>While the Department of Conservation and Land Management is pleased with LandCorp's commitment to enter into a collaborative rehabilitation program to assist in the rehabilitation of South Lake, it is important for the Environmental Protection Authority (EPA) to recognise that a defined rehabilitation program and funding for the area is still to be confirmed.</p> <p>Figure 7 (page 38) illustrates the potential area for a collaborative rehabilitation program with CALM and the Executive Summary (Page x) states that the collaborative rehabilitation program with CALM is for an area up to 10 hectares on the south side of South Lake. Given the collaborative rehabilitation program with the Department of Conservation and Land Management is considered a significant component of the project, a firm commitment by LandCorp regarding the area to be rehabilitated plus the quality of rehabilitation should be sought by the EPA. The expectation of this Department and the community is that all of the 10 hectares should be rehabilitated to a high quality. (CALM)</p>	<p>Since this submission was received, an in-principle agreement has been reached between LandCorp and CALM regarding the collaborative rehabilitation program. CALM has already put the Rehabilitation Management Plan for the area out for tender. It will incorporate a 10 ha area along the southern side of South Lake with Bush Forever site 254.</p> <p>LandCorp intends the revegetation to be of a very high standard and will assist in choosing the most qualified specialists to plan the work in consultation with CALM.</p>

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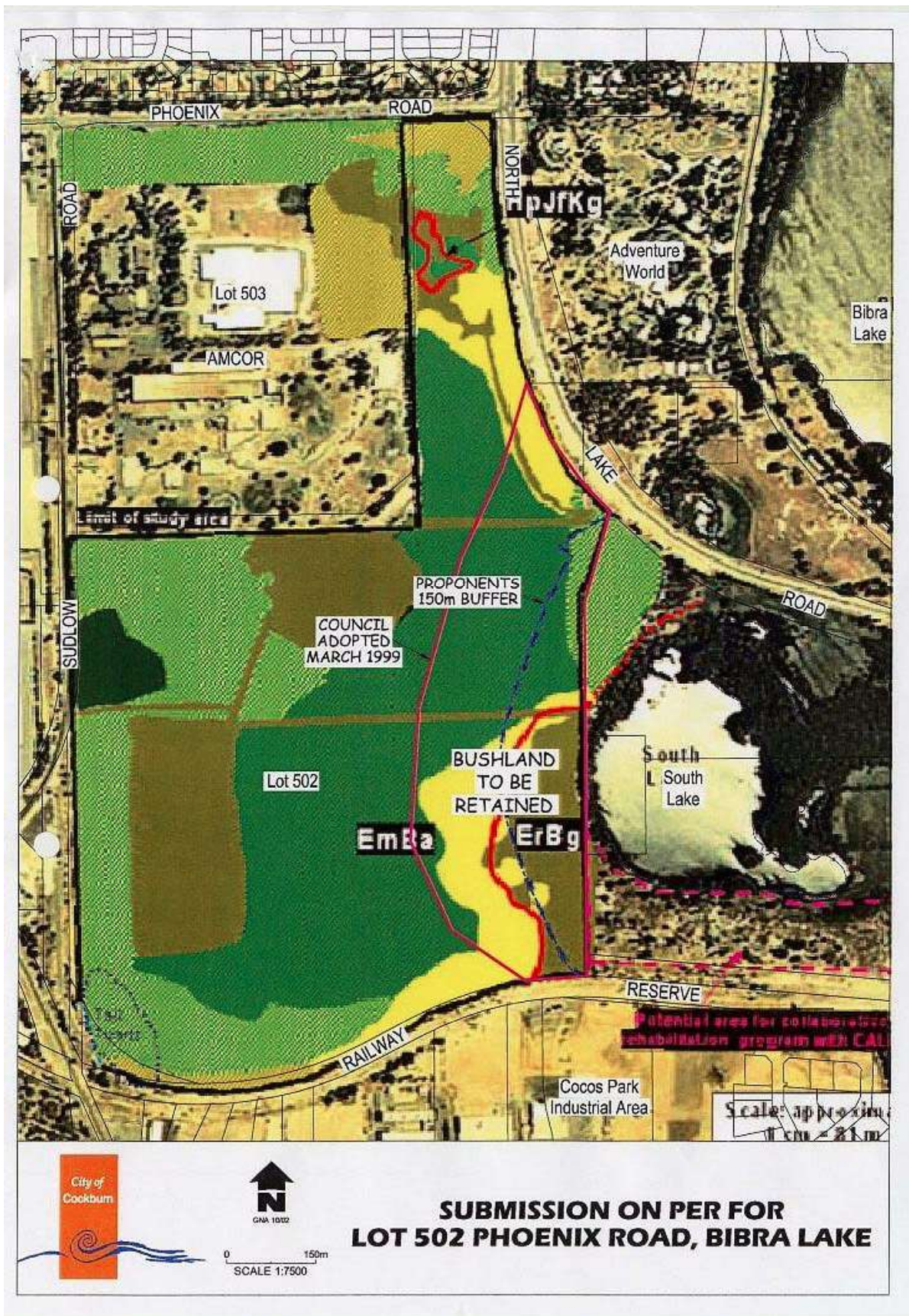
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# **APPENDIX 1**

## **CITY OF COCKBURN'S PREFERRED LOCATION AND EXTENT OF WETLAND BUFFER.**







City of Cockburn’s preferred location and extent of wetland buffer.