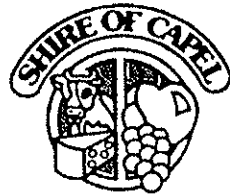


THOMPSON McROBERT EDGELOE

# SHIRE OF CAPEL



## TOWN PLANNING SCHEME No. 7

## AMENDMENT No. 12



99104P

AUGUST 2001

**3.0 KEY ISSUES AND FINDINGS RELEVANT TO THE SITE**

**3.1 Environmental Assessment**

The Greater Bunbury Structure Plan identifies that 'Areas Under Consideration for Conservation, Scenic Protection and Open Space' require further assessment to determine if areas are required for conservation. In response to the classification of Lot 164 in the Greater Bunbury Structure Plan, an environmental assessment has been prepared over the site by *ATA Environmental*. The assessment is included in *Appendix 4*.

*3.1.1 Vegetation*

The assessment describes that the eastern portion of Lot 164 is generally cleared and disturbed and these findings are associated with its current land use being grazing. The western portion of the site contains more extensive areas of remnant vegetation including dryland and wetland vegetation.

Dryland vegetation within the western section of Lot 164 consists of Jarrah, Marri, and Banksia woodland in good to very good condition. Spearwood, Woody Pear and Native Peppermint are also prominent. The vegetation is described as showing signs of past disturbances including tree removal, grazing, isolated clearing, and weed invasion by predominantly Blowfly Grass.

Vegetation in the southwestern corner of Lot 164 comprises Jarrah, Marri, and Candle Banksia woodland and is described as being in good condition. The understorey is described as being highly disturbed with a lower coverage and species diversity.

Wetland vegetation and vegetation within the drainage lines (which occurs along the Five Mile Brook Drain Reserve) varies in condition from degraded to completely degraded. The wetland vegetation found along the southern boundary of the lot adjacent to the EPP wetland, is described as being mostly in good condition.

*3.1.2 Significance of the Vegetation*

The vegetation on Lot 164 has not been identified in the Environmental Protection Authorities System 6 Study, which identifies areas of regional environmental significance.

The Environmental Assessment confirms that the vegetation, which occurs on Lot 164, is contained within the Karratha Complex Central and South and the Bassendean Complex Central and South and that the vegetation, which occurs within these complexes, is well represented outside the Perth Metropolitan Region (30% and 12%) and on the Swan Coastal Plain (24% and 19%).

The assessment concludes that the vegetation on Lot 164 is not considered to be regionally significant and that the lot does not appear to be strategically located to form an important regional wildlife corridor. In view of this the environmental assessment provides recommendations and management strategies to assist in maintaining the environmental value of the wetland and bushland in the context of special rural development for the whole of lot 164. As the whole of the lot is not the subject of rezoning, some matters raised are not issues requiring attention.

*Yes if clear - wetland*

The management strategies raised for vegetation preservation include:

- Sensitive planning to minimise clearing.
- Designation of building envelopes and limits of clearing.
- Restriction on livestock.
- Careful fire management planning.

### 3.1.3 Wetlands

The assessment identifies that the wetland along the southern boundary of the lot is protected under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 (EPP). The wetland area forms a more linear wetland that is aligned along the Five Mile Brook Drain Reserve. These wetlands are classified as 'sumplands'. The assessment states that these areas did not originally support wetlands and may have been created specifically for drainage purposes. The assessment treats all these areas which are presently expected to experience inundation or waterlogging on a seasonal or periodic basis as wetland areas.

The wetlands are described as not being in pristine condition, however, retain some natural attributes and serve an important drainage function that requires maintaining. The assessment concludes that ideally all of the wetland areas should be retained and protected by a 50 metre buffer and the wetlands be retained within one single rural or special rural lot where possible to avoid fragmentation and possible hydrological changes.

### 3.1.4 Drainage and Effluent Disposal

The assessment suggests that onsite effluent disposal systems such as Alternative Treatment Units (ATU's) or Ecomax, should be considered within the special rural development rather than conventional septic systems to offer greater protection from addition of nutrients to the groundwater, and nearby wetlands.

The assessment also recommends that any drainage design prepared for the special rural subdivision encourage on site disposal and infiltration in sufficiently elevated areas and that no drainage be directed to the wetlands.

## 4.0 DEVELOPMENT PROPOSAL AND KEY ISSUES

### 4.1 Proposal

It is proposed to rezone the western portion of Lot 164 to 'Special Rural' to facilitate special rural subdivision and development and to retain the eastern portion in the 'Rural' zone.

### 4.2 Development Philosophy

The philosophy behind the development of this locality is listed below

- Fulfilment of the Shire of Capel's objectives as set out in its TPS No. 7 and the 'BU8 Beridup Planning Unit' of its Land Use Strategy.
- To provide for a special rural zone, which is an extension of the nearby special rural developments and is a rounding off of the Gelorup special rural area by the rezoning of the western portion of lot 164 only.
- Subdivision design to be based on site opportunities and constraints and giving regard to the recommendations and management strategies raised in the environmental assessment.

### 4.3 Subdivision Guide Plan Design

Subdivision Guide Plan No. 3 (*Figure 2*) demonstrates the subdivision of the land into 7 special rural lots, ranging in size from 2.1 ha to 2.9 ha, and one balance rural lot with an area of 29.4 ha which includes the wetland areas, the Five Mile Brook Drain Reserve and the cleared grazing land. The balance lot (29.4 ha) will retain its 'Rural' zoning and at the time of subdivision of the special rural lots, will be amalgamated with an adjoining lot which has constructed road frontage (Lot 168). The balance rural land will continue to be utilised for grazing by the existing landowners.

The Subdivision Guide Plan and rezoning do not propose any major road works or the creation of any internal subdivision roads as the development area has frontage to a

THOMPSON McROBERT EDGELOE

# SHIRE OF CAPEL



## TOWN PLANNING SCHEME No. 7

## AMENDMENT No. 13



99116P

NOVEMBER 2001

protected by the EPA Swan Coastal Plains Lakes Policy. The Commission assigns the wetlands as 'Multiple Use' which is the lowest category in terms of environmental and conservation value.

The Waters and Rivers Commission wetland experts have advised that development should seek to protect the wetland areas on the site by:

- Maintaining vegetated buffers of a minimum of 50 metres around the wetlands and the fencing of the wetlands and their buffers if livestock is to be permitted on lots which include areas of the wetland.
- Minimise clearing of native vegetation by the use of building envelopes. The use of building envelopes to restrict the area cleared for development should be considered.
- To prevent further fragmentation of the wetlands and preferably incorporate the wetlands into single lots.

### **3.0 KEY ISSUES AND FINDINGS RELEVANT TO THE SITE**

#### **3.1 Environmental Assessment**

The Greater Bunbury Structure Plan identifies that 'Areas Under Consideration for Conservation, Scenic Protection and Open Space' require further assessment to determine if areas are required for conservation. In response to the classification of the south eastern portion of Lot 167 in the Greater Bunbury Structure Plan, an environmental assessment has been prepared over the site by *ATA Environmental*. The assessment is included in *Appendix 3*.

##### *3.1.1 Vegetation*

The assessment describes that the western portion of Lot 167 supports remnant Eucalypt/Banksia woodland. The southern and eastern areas contain wetlands and also support some associated vegetation.

Dryland vegetation within the lot consists of Jarrah, Marri and Banksia. The vegetation shows signs of past disturbances including tree removal, grazing, isolated clearing and weed invasion by predominantly Blowfly grass.

The assessment describes the vegetation as generally in good to very good condition with some more disturbed areas, which are rated as Degraded, being located toward the centre of the property near the residence and the southern wetland area. Larger cleared areas with only occasional native trees occur closer to the eastern boundary of the lot.

Vegetation surrounding the southern wetland is classified in the Environmental Assessment as Degraded as a result of clearing and grazing. The wetland areas within the eastern section of the lot are described as being significantly disturbed with fragmented sections of remaining wetland vegetation.

The Environmental Assessment identifies an additional wetland area located to the north of the existing house at the base of the ridgeline. The wetland is surrounded by a relatively large transition zone, which contains vegetation in a Degraded to Good condition.

##### *3.1.2 Significance of the Vegetation*

The vegetation on Lot 167 has not been identified in the Environmental Protection Authorities System 6 Study, which identifies areas of regional environmental significance.

The Environmental Assessment confirms that the vegetation, which occurs on Lot 167, is contained within the Karratha Complex Central and South and the Bassendean Complex Central and South and that the vegetation, which occurs within these complexes, is well

represented outside the Perth Metropolitan Region (30% and 12%) and on the Swan Coastal Plain (24% and 19%).

The assessment concludes that the vegetation on Lot 167 is not considered to be regionally significant and that the lot does not appear to be strategically located to form an important regional wildlife corridor. In view of this the environmental assessment provides recommendations and management strategies to assist in maintaining the environmental value of the wetland and bushland in the context of special rural development for the whole of Lot 167. The management strategies raised for vegetation preservation include:

- Sensitive planning to minimise clearing.
- Designation of building envelopes and limits of clearing.
- Restriction on livestock.
- Careful fire management planning.

### 3.1.3 Wetlands

The Environmental Assessment identifies that the wetland along the southern boundary of the lot is protected under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 (EPP). The assessment also identifies wetlands or portions of wetlands in the south east, central and eastern portion of Lot 167 and classifies these as 'sumplands'. The sumpland area forms a more linear wetland that is aligned along the Five Mile Brook Drain Reserve. The assessment states that the sumpland areas did not originally support wetlands and may have been created specifically for drainage purposes. The assessment treats all these areas which are presently expected to experience inundation or waterlogging on a seasonal or periodic basis as wetland areas.

The Environmental Assessment identifies that the condition of the wetland areas varies depending on the level of disturbance. The wetlands are not considered to be in pristine condition however, retain environmental values, some natural attributes and serve an important drainage function. For these reasons the Assessment recommends that the wetlands be retained and maintained.

The assessment concludes that ideally all of the wetland areas should be retained and protected by a 50 metre buffer. The assessment further recommends that the wetlands be retained within a single rural or special rural lot where possible to avoid fragmentation and possible hydrological changes.

Additional advice received from ATA Environmental (*Appendix 4*) supports the attached Subdivision Guide Plan and advises that the area mapped as wetland along the northern boundary includes an area of low relief supporting species indicating wetland conditions. A portion of the area is clearly identifiable as a wetland from the wetland vegetation however, much of the western portion is a transition zone. The additional advice states that future development could have a reduced buffer of 25 metres to the wetland. The Environmental advice is based on the fact that the wetland is not permanently inundated, that the land rises from the edge of the wetland and because the lot (which will contain the wetland) will only be used for a single dwelling.

The ATA Environmental advice also recognises that road access from Jilley Road into the property must traverse the wetland at some point (as does the current driveway access into Lot 167) however; further dissection of the wetland should be avoided. ATA suggests that road access should be located along the northern boundary of Lot 167 or in another location to minimise separation of areas of the wetland and removal of wetland vegetation.

In determining the location of the subdivisional road, the ATA advice has been taken into account. It is proposed to extend the road westwards from Jilley Road into Lot 167

approximately 60 metres from the northern boundary. The road alignment extends over the existing driveway access. The existing access is considered to be the best alignment and will not result in the removal of the stand of mature trees that are along the northern boundary of the lot. To align the road access any further northwards would require that trees be removed. Also by utilising the existing access no further dissection of the wetland will be required.

#### *3.1.4 Drainage and Effluent Disposal*

The Environmental Assessment suggests that onsite effluent disposal systems such as Alternative Treatment Units (ATU's) or Ecomax Units should be utilised in low lying areas near to the wetlands rather than utilising conventional septic systems. The use of ATU's would offer greater protection from the addition of nutrients to the groundwater and nearby wetlands.

The assessment also recommends that any drainage design prepared for the special rural subdivision should encourage on site disposal and infiltration in sufficiently elevated areas and that no drainage be directed to the wetlands.

### **3.2 Adjoining Extractive Industry-Lot 2 Calinup Road**

As discussed earlier in this report Lot 2, which adjoins Lot 167 on its western boundary contains a sand extraction pit. Giacci Holdings Pty. Ltd. own Lot 2 and are currently extracting sand from within the lot. Based on discussions with Giacci's Environmental Consultants it is understood that sand extraction is complete where Lot 2 adjoins Lot 167.

Council and the EPA have recently granted an extension to the Extractive Industry Licence over Lot 2. This permits Giacci Holdings Pty. Ltd to extract sand from within the existing Calinup Road Reserve and to continue with extraction of sand in the central and southern portions of Lot 2.

Depending on the timing of sand extraction on Lot 2, a portion of Lot 167 could be impacted by EPA buffer requirements to the sand quarry. To illustrate this a notional 500 metre buffer is identified on the Subdivision Guide Plan however, exact dimensions of the buffer will need to be confirmed depending on the extent of extraction and the proximity of this to Lot 167 at the subdivision stage.

### **3.3 Realignment of Calinup Road**

The Capel Shire Council has recently resolved to commence road closure procedures to close Calinup Road where it traverses Lot 2. Concurrent with this the Council has also recommended to the Western Australian Planning Commission that a subdivision/amalgamation application over Lot 2, which realigns Calinup Road northwards, be approved. The realignment of Calinup Road will result in the new Calinup Road reserve extending to the western boundary of Lot 167.

It is understood that the closure and realignment of Calinup Road will be finalised by the end of 2001 and that the landowners of Lot 2 will construct Calinup Road or a portion of the road and will continue to use it for sand haulage.

### **3.4 Future District Road Hierarchy Proposals**

Main Roads Western Australia is in the process of confirming the Bunbury Outer Ring Road proposals. If implemented, the Outer Ring Road will impact the existing road system and access points onto the highway. It is understood that road access points to Bussell Highway will be reduced and all traffic from the Gelorup Special Rural Area will be directed to Woods Road, Brockway Drive and then onto Calinup Road. In recognition of this, access to Lot 167 from the Highway will be achievable from both Jilley Road and Calinup Road in the future.

5 July 2000

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Gemma Basley  
Thompson McRobert Edgeloe  
PO Box 733  
BUNBURY WA 6231

Dear Gemma

**RE: LOT 167 JILLEY ROAD, GELORUP - ENVIRONMENTAL ASSESSMENT**

In accordance with the scope of work, ATA Environmental (formerly Alan Tingay & Associates) has undertaken an assessment of the environmental characteristics and values of Lot 167 Jilley Road, Gelorup with particular emphasis on wetlands and remnant vegetation. The assessment is based on site investigations of the property together with a review of relevant literature and resource material.

**SITE DESCRIPTION**

**Location & Land Use**

Lot 167 Jilley Road is located approximately 2km east of Bussell Highway at Gelorup in the Shire of Capel, about 7km south of the City of Bunbury. The property occupies approximately 67ha.

The lot has been partially cleared and presently supports low intensity agricultural activities such as sheep grazing. The property includes areas of remnant vegetation in varying condition and an established residence and associated outbuildings.

Cadastral information for the property indicates a drainage reserve traverses the lot. The drainage line flows from areas to the south of Lot 167 and discharges to adjoining properties to the north-east.

The property is presently zoned "Rural" under the Shire of Capel's Town Planning Scheme. It is understood the landowners propose to rezone the property to enable subdivision suitable for development of special rural properties ranging in size from 2ha to 4ha. Special rural development of Lot 167 is compatible with adjoining areas north of the property. Lot 167 has been previously identified as a potential development area for Rural Residential development in the Shire of Capel Land Use Strategy..

The area surrounding the lot generally supports rural based lifestyles. A large sand quarry is located immediately west of the property.

The site assessment of the property confirmed the presence of wetland areas that are expected to be seasonally or periodically inundated or waterlogged within the property (Figure 1). These areas include additional areas not identified in the Water & Rivers Commission wetland mapping. The wetland areas have been highly disturbed or modified as a result of past and present land uses including clearing and grazing. Areas of the wetlands presently retain some remnant vegetation and native species, although these pockets are highly disturbed and fragmented.

Portions of the wetland areas correspond to the drainage line that conveys water to the north and eventually to Five Mile Brook. Some of these areas have been modified specifically for drainage purposes. This assessment refers to all areas that are presently expected to experience inundation or waterlogging on a seasonal or periodic as wetland areas.

## Vegetation

### Description

Lot 167 largely supports remnant Eucalypt/*Banksia* woodland in the western portion of the property and wetlands in the southern and eastern section of the lot (Figure 1). The condition of vegetation within the lot is also indicated in Figure 1. The condition indicated is based on the rating system used in Perth's Bushplan (see Attachment 1).

Dryland vegetation within the lot consists of Jarrah (*Eucalyptus marginata*), Marri (*Corymbia calophylla*), and *Banksia* (comprising Candle *Banksia* (*Banksia attenuata*), Bull *Banksia* (*B. grandis*) and Holly-Leaf *Banksia* (*B. ilicifolia*)) woodland. Spearwood (*Kunzea ericifolia*), Woody Pear (*Xylomelum occidentale*) and Native Peppermint (*Agonis flexuosa*) are also prominent. Other species include Christmas Tree (*Nuytsia floribunda*), Upright Snottygobble (*Persoonia longifolia*), Prickly Moses (*Acacia pulchella*), *Macrozamia fraseri*, *Hibbertia* sp., *Kennedia* sp., *Hardenbergia comptoniana* and *Billardiera* sp.. The vegetation showed signs of past disturbances including tree removal, grazing, isolated clearing, and weed invasion by predominantly Blowfly Grass (*Briza maxima*).

The vegetation is generally in Good to Very Good condition with more disturbed areas, rated as Degraded, located toward the centre of the property toward the residence and the southern wetland area, and along the southern boundary. Large cleared areas with only occasional native trees occur closer to the eastern boundary of the lot.

Wetland areas encompass the south-eastern portion of Lot 167 and include a drainage line that traverses the property and connects with the drainage reserves to the north-east. Most of the wetland areas have been modified through clearing and grazing. Based on the vegetation and advice from the property owners, much of the south-western section of the lot is prone to waterlogging or becomes inundated on a seasonal or periodic basis (Figure 1).

The southern wetland includes the area protected by the Environmental Protection Policy for lakes. The central section of the wetland lacks this vegetation and appears as if the area has been cleared in the past perhaps to facilitate summer grazing. The vegetation fringing the cleared area typically consists of Flooded Gum, *Melaleuca preissiana* and *Melaleuca raphiophylla* trees with Swamp *Banksia* (*Banksia littoralis*), various sedges and Dodder (*Cassytha* sp.) also present. The vegetation in this location is classified as Degraded.

## Soils & Landform

Soil unit mapping information indicates the property largely consists of soils associated with the Bassendean Dune System with areas of swamp and alluvial deposits (Geological Survey of Western Australia, 1981).

Lot 167 consists predominantly of low rounded dunes of Bassendean Sand (Qpb). The eastern margin of the property comprises the Guildford Formation, which is characterised by mainly alluvial sandy clay (Qpa). Areas of Swamp deposits of mainly peaty sand (Qhw) occur towards the southern boundary and in the south-eastern and north-eastern corners of the lot.

Bassendean soils are typically relatively infertile and have poor ability to retain nutrients or pollutants. Land uses therefore have the potential to impact on groundwater and waterbodies in the region without sensitive planning and management. Areas comprising Guildford Formation soils are often associated with low-lying areas and due to the higher clay content in the soil profile these areas may be susceptible to a high watertable and waterlogging.

Land within Lot 167 reaches roughly 30mAHD along the western boundary and lies at about 20mAHD in the central portion of the lot. The eastern portion of the lot is generally flat and low-lying with an elevation of less than 20mAHD and reaching at least as low as 16mAHD.

## Wetlands

Regional wetland mapping indicates several wetlands occur on the property. (Hill *et al.*, 1996). An update and further evaluation of the wetland mapping to assign interim management categories in the region has recently been undertaken (M. Allen, Water & Rivers Commission, pers. comm., April 2000).

Wetlands, or portions of wetlands, are mapped in the south-eastern portion of Lot 167 and the north-eastern corner with larger wetlands extending to the south and south-east of the property. Wetlands on the property are classified as "sumplands". The wetlands have been assigned interim management categories of "Resource Enhancement" and "Multiple Use". Resource Enhancement wetlands have been partly modified but retain a substantial level of attributes and functions with an emphasis for management to restore wetlands through maintaining and enhancing values.

One wetland on the property is afforded protection under the Environmental Protection (Swan Coastal Plain Lakes) Policy, 1992 (EPP). This comprises part of the Resource Enhancement wetland area near the southern boundary of Lot 167 (Figure 1). This protection policy prohibits filling, mining, drainage into or out of, and effluent discharge into the 'lakes' without prior authorisation from the Environmental Protection Authority.

The EPP was recently reviewed by the Environmental Protection Authority to appraise the effectiveness of the Policy and the status of wetlands on the Swan Coastal Plain. The review, released for public comment in November 1999, stated that the EPP be re-drafted to also protect seasonal wetlands (ie, sumplands and damplands) of conservation significance (EPA, 1999). The provisions of the policy still apply and also include the clearing or damaging of wetland vegetation without permission from the relevant government authorities. The reviewed EPP for wetlands has not yet been adopted.

The wetland areas within the western section of the lot have been significantly disturbed with fragmented sections of remaining wetland vegetation occurring toward the southern boundary of the property and closer to the northern boundary. Common species in the wetland area include Flooded Gum, *Melaleuca preissiana* and *Melaleuca raphiophylla* and *Melaleuca laterita* in combination with various sedges and other shrubs. These areas of wetland vegetation are considered to be Degraded to Completely Degraded.

Another wetland area that is expected to be seasonally inundated is located to the north of existing house and outbuildings at the base of the dunal ridge. The area is dominated by Bare Twigrush (*Baumea juncea*) and fringing *Melaleuca preissiana* trees. The wetland is surrounded by a relatively wide transition zone that includes Flooded Gum, Marri, Spearwood, Native Peppermint, Swamp Banksia, *Dasypogon bromeliifolius* and *Xanthorrhoea* sp. in association with Bare Twigrush and *Melaleuca preissiana*. This wetland area is considered to be in Degraded to Good condition.

### **Significance**

Vegetation on the property has not been identified in the System 6 Study that identified areas of regional environmental significance and specified recommendations for conservation and protection of these areas (Department of Conservation & Environment, 1983).

The System 6 Study has recently been revised and updated for the Perth Metropolitan Region in Perth's Bushplan (Government of WA, 1998). Perth's Bushplan identifies vegetation considered to be of regional significance. One of the key aims of the project is to ensure protection of at least 10% of the original extent of each vegetation complex as described in Heddle, *et. al.* (1980). This criterion therefore provides a basis for assessing the significance of vegetation within the property.

Broad scale vegetation mapping indicates that the western section of the property contains vegetation of the Karrakatta Complex Central & South and the eastern portion of the lot comprises Bassendean Complex Central & South vegetation complex (Heddle *et al.*, 1980).

According to information from the Department of Environmental Protection (DEP), a total of about 4630ha of the Karrakatta Complex Central & South and about 4920ha of the Bassendean Complex Central & South remain on the Swan Coastal Plain outside the Perth Metropolitan Region. These areas represent 30% and 12% of the original extent of these complexes occurring outside the Perth Metropolitan Region, and 24% and 19% in total on the Swan Coastal Plain respectively.

### **Fauna**

The remaining vegetation within the site is expected to support a variety of native fauna species. The property includes habitats suitable for a range of fauna including wetland and terrestrial species as well as those that require both types of habitat. The wetland areas contain surface water on a seasonal basis and many wetland dependent fauna species may therefore only occur when conditions are suitable.

Disturbance of the understorey and clearing throughout the property has however, reduced the quality of the habitats for native fauna. Fragmentation through clearing of sections of

the property and throughout the Gelorup region is likely to have resulted in local extinctions of susceptible species.

## **ENVIRONMENTAL ISSUES & MANAGEMENT**

Based on the assessment of environmental attributes and values undertaken the main issues which should be addressed in any development plan are the presence of remnant vegetation and wetlands on the property, sewerage disposal and management of stormwater and drainage, and surrounding land use.

### **Wetland Protection & Management**

One wetland area within the property is protected through the EPP for lakes on the Swan Coastal Plain. The policy prohibits certain unauthorised activities and modifications of these areas. The boundaries of this EPP wetland as delineated in the policy have not been shown on the figure as the boundaries are provided at a poor level of detail and are to some extent considered inappropriate given that the wetlands are interconnected with adjoining wetland areas.

The property includes areas other than the EPP wetland that are also expected to be subject to seasonal or periodic inundation or waterlogging and considered to be wetlands. The condition of the wetland areas varies depending on the level of disturbance, particularly through clearing and grazing. While not in pristine condition the wetland areas retain environmental values and some natural attributes and serve an important drainage function that requires maintaining.

Ideally, all of the wetland areas should be retained and the level of impacts and disturbance minimised particularly in sections that are in reasonable condition. Most of the wetlands contained within the lot are linked with the drainage line that passes through a series of properties and connects with Five Mile Brook. Any modification to the wetland areas and drainage line could therefore impact on the water quality entering other properties and have detrimental impacts on Five Mile Brook. Adequate protection and setback from these areas is therefore important.

The management categories recently assigned to the wetlands mapped by the Water & Rivers Commission on Lot 167 however, suggest there may be potential for some modification to these areas provided drainage flows and water quality are not compromised, and preferably are improved.

Furthermore, the mapping does not recognise a large portion of the Completely Degraded section of wetland on Lot 167 that was identified as part of the assessment. This area is expected to be prone to high water table conditions and is not considered suitable for development without earthworks or importation of fill. Drainage and potential impacts on the adjoining wetland sections would need to be managed appropriately if these areas are to be considered for subdivision or development.

As a general guide, the Environmental Protection Authority recommends that the environmental values of wetlands be protected by the provision of a buffer around the periphery of the wetland. The EPA usually supports a buffer of at least 50m or 1mAHD higher than the furthest extent of the wetland dependant vegetation, although depending on

the nature and condition of the wetland reduced buffer distances and modification to wetlands may be considered acceptable.

It is recommended that a minimum buffer distance of 50m from the edge of the wetland dependent vegetation or area expected to be seasonally inundated (as shown in Figure 1) be provided adjacent to all wetland areas. Most sections of buffer are highly disturbed or have been cleared of vegetation although some portions retain native vegetation in reasonable condition.

Given the condition of the wetlands and buffers in some sections however, it may be considered acceptable by the various agencies for a reduced buffer distance of 30m to be maintained with further separation provided within the special rural lot. A total separation of 50m could therefore be achieved partly through provision of a buffer and partly within private lots provided houses, sewage disposal and activities are setback sufficiently from the lot boundary.

The wetland areas and buffers should be incorporated into a single rural or special rural lot where possible to avoid fragmentation and possible hydrological changes. Stock access should be prohibited or minimised. The wetland areas including buffers should be separated from other lots using fencing to limit access, particularly of stock, and further degradation.

Maintenance and reduction in weeds and pasture grasses in the cleared buffer areas, which may present a fire hazard, will be the responsibility of the owner of the relevant land. This could preferably be achieved through revegetation and rehabilitation of the area, or alternatively by controlled, low intensity grazing as required.

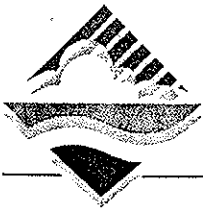
### **Vegetation Management**

Large portions of the property comprise uncleared native vegetation. The retention of native vegetation is desirable for the conservation of environmental values including the retention of wildlife habitat or linkages.

Although the vegetation may not be considered regionally significant based on the percentage of original vegetation complexes reported to be remaining, clearing should be minimised as much as possible within any proposed subdivision and development of the lot. This may be achieved through sensitive structure plan design to maximise the use of cleared or degraded areas for houses and associated buildings or structures. Furthermore, building envelopes should be delineated for each of the special rural lots and maximum clearing limits should be prescribed for each lot as part of the subdivision design process.

Strategic fire breaks will be required to protect properties and remnant bushland from the impact of fire. Planning for the special rural lots should consider the compartmentalisation of the bushland areas together with lot boundaries and required accesses to avoid additional clearing. Fire breaks should be strategically located to utilise subdivision roads and driveways.

Horses should be prohibited from the special rural lots and wetland areas. Livestock should also be discouraged and the number permitted within each of the special rural lots should be restricted to less than the carrying capacity of the vegetation and specified in covenants on the lot titles.



Mr P Dillon  
Lot 167  
Jilley Road  
GELORUP WA 6230

**Head Office:**  
8th Floor, Westralia Square  
141 St Georges Terrace  
Perth, Western Australia 6000  
Tel (09) 222 7000 Fax (09) 322 1598

**Waste Management Division:**  
Ground Floor, 32 St Georges Terrace  
Perth, Western Australia 6000  
Tel (09) 222 0422 Fax (09) 222 0455  
or PO Box Y3030, East, St Georges Terrace  
Perth, Western Australia 6832

**Regional Offices:**  
Bunbury • Karratha • Kaigoorlie • Kwinana

Your Ref

Our Ref

Enquiries

67/91

N Thorning

Dear Mr Dillon

### SYSTEM SIX UPDATE PROGRAMME - FLORA SURVEY INFORMATION

Thank you for providing permission for our botanical team to survey the bushland on your property. As arranged between yourself and Bronwen Keighery of this Department, the bushland on your property (Lot 167) was visited on 16 October 1995.

The botanical survey provides us with information on the natural plant communities found in the area, and their condition. This information is needed to assist the Department of Environmental Protection in its programme to update the conservation recommendations for System 6 and the coastal plain portion of System 1. The main objective of the programme is to ensure that the proposed conservation estate is representative of the ecological communities extant in the region.

As part of this programme the Department has advertised for the public to submit areas of bushland that they consider to be of regional significance. Our botanical team is surveying these submitted areas as well as those it considers may be important based on other factors such as their location and soil type etc. The botanical survey provides us with information on the natural plant communities found in the area, and their condition. Please note that the area is one of many sites that we have surveyed. The fact that we visited and surveyed the site does not indicate that it will necessarily be included in the updated System Six Recommendations.

The update programme has employed the botanical survey methodology used in Gibson et al. (1994), 'A Floristic Survey of the Southern Swan Coastal Plain', to provide the main information base upon which to review the adequacy of the existing System recommendations and to assess other bushland areas.

One survey site was located on the property and metal fence droppers were left in each corner of the 10 metres by 10 metres square survey site. We may wish to revisit this site at a later date, if so, we will contact you prior to our visit. A general description of the vegetation and an assessment of its condition was also completed.

The information collected during the visits will be used to assess the relative conservation values of the bushland areas. The final selections for inclusion in the updated System Six Recommendations will be the best possible examples of bushland containing plant community types that are either unrepresented or poorly represented in the current and proposed conservation system.

If you are interested in the information we have collected, the location of the survey sites or any other additional information on the System Six Update Programme please don't hesitate to contact Miss Natalie Thorning (222 7051) or Mr Kevin McAlpine (222 7055).

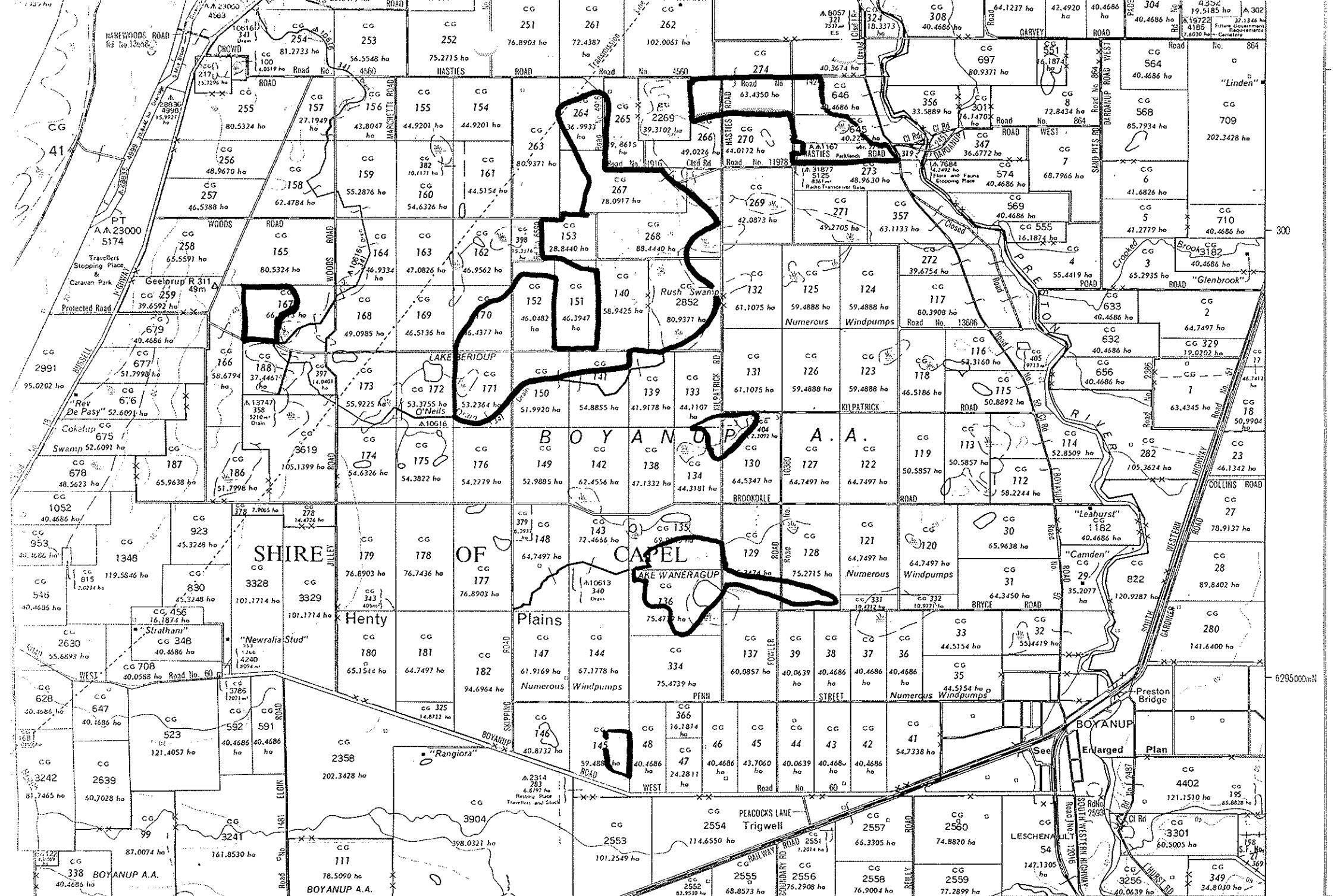
Once again, thank you very much for your support for this programme.

Yours sincerely

A handwritten signature in black ink, appearing to be 'CS', written in a cursive style.

Colin Sanders  
DIRECTOR  
POLICY AND STRATEGIC STUDIES

15 November 1995



SHIRE OF BOYANUP

CAPTEL

"Newralia Stud"

Plains

"Leahurst"

"Camden"

"Rangiora"

Enlarged Plan



DOE/  
CALM  
plots

DILLØ Ø1