



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 3349/2
Permit Holder:	City of Cockburn
Duration of Permit:	11 January 2010 – 11 January 2015

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of construction of an Integrated Community Facility.

2. Land on which clearing is to be done

LOT 172 ON PLAN 93642 (POWELL ROAD, COOGEE 6166)

LOT 304 ON PLAN 50276 (MUNSTER 6166)

RAILWAY RESERVE ((PIN 293242) MUNSTER 6166)

3. Area of Clearing

The Permit Holder must not clear more than 1.81 hectares of native vegetation within the area hatched yellow on attached Plan 3349/2.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for activities to the extent that the Permit Holder has the power to clear native vegetation for those activities under the *Local Government Act 1995* or any other written law.

6. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

7. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

8. Weed control

- (a) When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:
 - (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
 - (ii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
 - (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.
- (b) At least once in each 12 month period for the *term* of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas cleared under this Permit.
- (c) Prior to leaving the area(s) cross-hatched yellow on attached Plan 3349/2, the Permit Holder must clean earth-moving machinery of soil and vegetation.

9. Wind erosion management

The Permit Holder shall not clear native vegetation under condition 1, 2 and 3 on this Permit unless construction for the facility begins within one month of the clearing being undertaken.

10. Offsets

Where clearing authorised under this Permit impacts on the threatened ecological community 30a (*Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands) or Bush Forever Site 341 (Woodman Point, Coogee/Munster), the Permit Holder must implement an *offset* in accordance with conditions 10 (a) and 10 (b) of this Permit with respect to that clearing.

- (a) Determination of *offsets*:
 - (i) in determining the *offset* to be implemented with respect to a particular area of native vegetation proposed to be cleared under this Permit, the Permit Holder must have regard to the *offset* principles contained in condition 10(b) of this Permit;
 - (ii) once the Permit Holder has developed an *offset proposal*, the Permit Holder must provide that *offset proposal* to the CEO for the CEO's approval prior to undertaking any clearing to which the *offset* relates, and prior to implementing the *offset*;
 - (iii) clearing may not commence until and unless the CEO has approved the *offset proposal* to which the clearing relates;
 - (iv) the Permit Holder shall implement the *offset proposal* approved under condition 10(a)(iii); and
 - (v) each *offset proposal* shall include a *direct offset*, timing for implementation of the *offset proposal* and may additionally include *contributing offsets*.
- (b) For the purpose of this condition, the *offset* principles are as follows:
 - (i) *direct offsets* should directly counterbalance the loss of the native vegetation;
 - (ii) *contributing offsets* should complement and enhance the *direct offset*;
 - (iii) *offsets* are implemented only once all avenues to avoid, minimise, rectify or reduce environmental impacts have been exhausted;

- (iv) the environmental values, habitat, species, *ecological community*, physical area, ecosystem, landscape, and hydrology of the *offset* should be the same as, or better than, that of the area of native vegetation being *offset*;
- (v) a ratio greater than 2:1 should be applied to the size of the area of native vegetation that is offset to compensate for the risk that the *offset* may fail;
- (vi) *offsets* must entail a robust and consistent assessment process;
- (vii) in determining an appropriate *offset*, consideration should be given to ecosystem function, rarity and type of *ecological community*, vegetation *condition*, habitat quality and area of native vegetation cleared;
- (viii) the *offset* should either result in no net loss of native vegetation, or lead to a net gain in native vegetation and improve the *condition* of the natural environment;
- (ix) *offsets* must satisfy all statutory requirements;
- (x) *offsets* must be clearly defined, documented and audited;
- (xi) *offsets* must ensure a long-term (10-30 year) benefit; and
- (xii) an *environmental specialist* must be involved in the design, assessment and monitoring of *offsets*.

PART III - RECORD KEEPING AND REPORTING

11. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit in relation to the clearing of native vegetation authorised under this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the species composition, structure and density of the cleared area;
 - (ii) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).
- (b) In relation to the offset of areas pursuant to condition 10:
 - (i) the location of any area of *offsets* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) a description of the *offset* activities undertaken; and
 - (iii) the size of the *offset* area (in hectares).

12. Reporting

- (a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 11 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
- (b) Prior to 11 October 2014, the Permit Holder must provide to the CEO a written report of records required under condition 11 of this Permit where these records have not already been provided under condition 12(a) of this Permit.

Definitions

The following meanings are given to terms used in this Permit:

condition means the rating given to native vegetation using the *Keighery scale* and refers to the degree of change in the structure, density and species present in the particular vegetation in comparison to undisturbed vegetation of the same type;

contributing offset/s has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9: Environmental Offsets*, January 2006;

direct offset/s has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9: Environmental Offsets*, January 2006;

ecological community/ies means a naturally occurring biological assemblage that occurs in a particular type of habitat (English and Blythe, 1997; 1999);

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

fill means material used to increase the ground level, or fill a hollow;

Keighery scale means the vegetation condition scale described in *Bushland Plant Survey: A Guide to Plant Community Survey for the Community (1994)* as developed by B.J. Keighery and published by the Wildflower Society of WA (Inc). Nedlands, Western Australia;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

offset/s means an offset required to be implemented under condition 10 of this Permit;

offset proposal means an *offset* determined by the Permit Holder in accordance with condition 10 of this Permit;

term means the duration of this Permit, including as amended or renewed;

weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*.

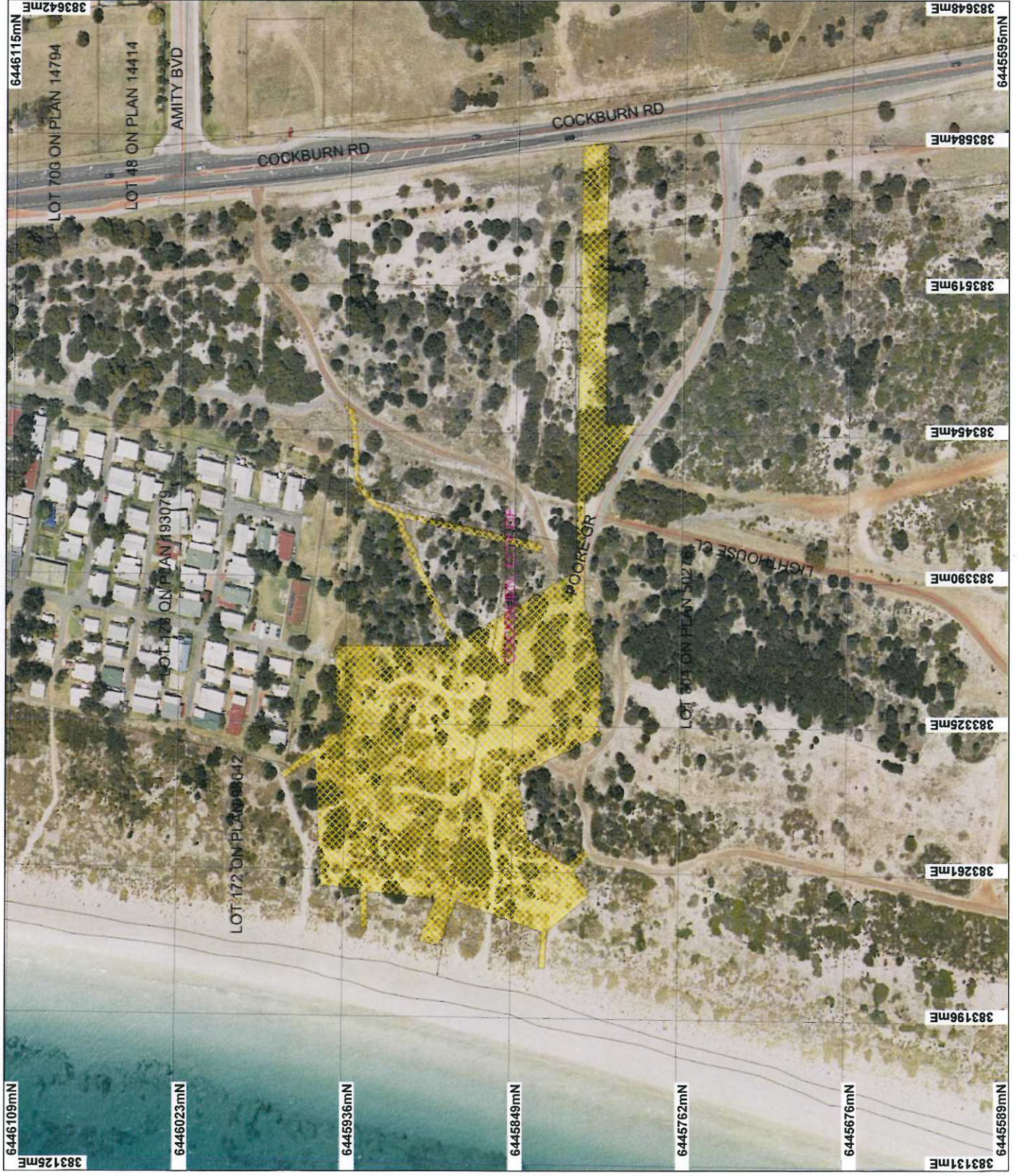


KELLY FAULKNER
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

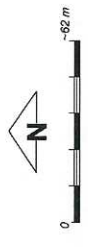
*Officer delegated under Section 20
of the Environmental Protection Act 1986*

5 August 2010

Plan 3349/2



- LEGEND**
- Areas Approved to Clear
 - Road Centrelines
 - Cadastre_1
 - Swan Coastal Plain Orthomosaic - Lint
 - Local Government J



Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

K Faulkner Date *5/12/13*

K Faulkner
 Officer with delegated authority under Section 20 of the Environmental Protection Act 1986



Department of Environment and Conservation
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Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



1. Application details

1.1. Permit application details

Permit application No.: 3349/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: City of Cockburn

1.3. Property details

Property: LOT 172 ON PLAN 93642 (POWELL ROAD, COOGEE 6166)
LOT 304 ON PLAN 50276 (MUNSTER 6166)
RAILWAY RESERVE ((PIN 293242) MUNSTER 6166)
Local Government Area: CITY OF COCKBURN

1.4. Application

Clearing Area (ha)	Method of Clearing	For the purpose of:
1.81	Mechanical Removal	Building or Structure

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Association - 998: Medium woodland; Tuart. (Hopkins et al, 2001)	The vegetation under application comprises 1.81ha of the Woodman Point Regional Park and is proposed to be cleared for the purposes of construction of the Coogee Beach Integrated Community Facility. The vegetation consists of <i>Callitris preissii</i> , <i>Agonis flexuosa</i> (believed to have been planted due to occurrences of this species being predominantly near the existing car park) and <i>Eucalyptus gomphocephala</i> (near the eastern end of the service corridor) over <i>Rhagodia baccata</i> , <i>Phyllanthus calycinus</i> , <i>Acanthocarpus preissii</i> , <i>Leucopogon</i> sp. and <i>Lepidosperma gladiatum</i> and weed species. On the coastal dunes the vegetation consists of <i>Acacia rostellifera</i> over <i>Scaevola crassifolia</i> and <i>Spinifex hirsutus</i> and weed species <i>Tetragonia decumbens</i> , <i>Pelargonium</i> sp., <i>Avena</i> sp. and <i>Bromus</i> sp. (DEC, 2009a). The vegetation ranges in condition from 'degraded' to 'very good' according to Keighery (1994) condition scales. There is evidence of previous disturbance at the site including introduced animals, human and vehicle impacts, small amounts of rubbish dumping and small amounts of clearing for beach access tracks and car parks (DEC, 2009a).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The condition of the vegetation was confirmed during a site visit undertaken by DEC Officers on the 11 November 2009 (DEC, 2009a).
Hedde Vegetation Complex - Cottesloe Complex - Central and South: Mosaic of woodland of <i>Eucalyptus gomphocephala</i> (Tuart) and open forest of <i>Eucalyptus gomphocephala</i> (Tuart) - <i>Eucalyptus marginata</i> (Jarrah) - <i>Corymbia calophylla</i> (Marri); closed heath on the Limestone outcrops. (Hedde et al, 1980).	As above.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	As above.

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposal is at variance to this Principle

The application to amend clearing permit CPS 3349/1 for the Coogee Beach Integrated Community Facility is to increase the clearing of 1.7ha to 1.81ha. This is for the purposes of increasing the width of the proposed service corridor from 5m to 14m to accommodate for the installation of the necessary utilities cables (City of Cockburn, 2010a).

The area under application consists of 1.81ha comprising *Callitris preissii*, *Agonis flexuosa* and *Eucalyptus gomphocephala* (near the eastern end of the service corridor) over *Rhagodia baccata*, *Phyllanthus calycinus*, *Acanthocarpus preissii*, *Leucopogon* sp. and *Lepidosperma gladiatum* and weed species. On the coastal dunes the vegetation consists of *Acacia cyclops*, *Acacia rostellifera* over *Scaevola crassifolia* and *Spinifex hirsutus* and weed species *Tetragonia decumbens*, *Pelargonium* sp., *Avena* sp. and *Bromus* sp. (DEC, 2009a).

The vegetation under application ranges from 'degraded' to 'very good' (Keighery, 1994) condition (Coffey Environments, 2008 & DEC, 2009a). There is evidence of disturbance throughout the site attributed to small areas of historic clearing for beach access tracks and car parks, small amounts of rubbish dumping, human and vehicle disturbance, weed invasion and introduced herbivores (rabbits) (DEC, 2009a).

The vegetation across the extent of the proposed development site, with the exception of the primary dunes, comprises the floristic community type 30a '*Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands' (DEC, 2009a & DEC, 2009b). This community is a threatened ecological community classed as 'Vulnerable' under Western Australian threat criteria with only approximately 530ha of this community type remaining and only 73ha of this on the mainland (DEC, 2009b). The majority of this community type under application is in 'degraded' or 'good' (Keighery, 1994) condition (Coffey Environments, 2008 & DEC, 2009a) however, the proposed clearing will also impact upon some 'very good' (Keighery, 1994) condition (Coffey Environments, 2008 & DEC, 2009a) areas. As the vegetation under application is representative of a TEC which is poorly reserved, the vegetation is considered to comprise a high level of biodiversity.

The proposed development site lies within a number of designated conservation areas including Bush Forever Site 341 (Woodman Point, Coogee/Munster), a System 6 (M90) Conservation Reserve and the southern portion lies within the Woodman Point Regional Park and the Woodman Point Natural Area registered under the Register of National Estate. This vegetation is a portion of a remnant in a significantly cleared area due predominantly to residential and industrial development in the local area and has been recognised as being part of a 'Potential Regionally Significant Bushland/Wetland Linkage' (Government of Western Australia, 2000).

Carnaby's black cockatoos (*Calyptorhynchus latirostris*) have been seen foraging within the Rottneest cypress directly adjacent to the applied clearing area (Coffey Environments, 2008 & DEC, 2009a). The site may be visited by or provide habitat for a number of priority and threatened fauna including the Australian Lesser Noddy (*Anous tenuirostris melanops*, Vulnerable), Southern Giant Petrel (*Macronectes giganteus*, Endangered), Lined skink (*Lerista lineata*, Priority 3) and Quenda (*Isodon obesulus fusciventer*, Priority 5) and the removal of the coastal vegetation at this site will fragment the Woodman Point Area which may inhibit fauna movement along the coast.

Given the reasons above it is concluded that the vegetation under application comprises a high level of biological diversity and is therefore at variance to this principle.

Methodology

References:

- City of Cockburn (2010a)
- Coffey Environments (2008)
- DEC (2009a)
- DEC (2009b)
- Government of Western Australia (2000)
- Keighery (1994)

GIS Databases:

- Bush Forever - MFP
- DEC Tenure - DEC
- Perth Metropolitan Area Central 20cm Orthomosaic - Landgate 2007
- Register of National Estate - EA
- SAC Biodatasets - Accessed 19/10/2009
- System 6 Conservation Reserves - DEC

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments

Proposal may be at variance to this Principle

The applied clearing area lies within the Woodman Point Regional Park (WPRP) which provides habitat for fauna in an area that has been extensively cleared predominantly for residential development.

Nineteen threatened and priority fauna species have been recorded within the local area (10km radius) on the mainland, with the closest record being the Lined skink (*Lerista lineata*), approximately 120m south of the applied clearing area.

Lerista lineata (Priority 3) is known to occur within areas of "shrubs and heath atop pale sands" inhabiting "loose soil and leaf litter at the base of shrubs" (Nevill et al, 2005). This species has been recorded within the WPRP. The preferred habitat type is also found within the applied clearing area and therefore this species may occur within the proposed development site.

Coffey Environments (2008) have noted that Quenda (*Isoodon obesulus fusciventer*, Priority 5) may occur within the proposed development site. Quenda have been recorded approximately 1.4km from the applied clearing area and are known to occupy the inland area of the Woodman Point reserve (How et al, 1996). They prefer habitat of dense scrubby vegetation with dense cover up to one metre high with feeding grounds in adjacent forest and woodland or pasture with dense cover. Quenda also inhabit swampy areas or areas adjacent to watercourses (DEC, 2007).

Carnaby's black cockatoo (*Calyptorhynchus latirostris*, Endangered) has been recorded within the local area (10km radius) and have been seen by a City of Cockburn staff member foraging on *Callitris preissii* directly adjacent to the applied clearing area. Carnaby's have a significant portion of their diet made up of "seeds of hakeas, banksias, grevilleas and eucalypts" (Burbidge, 2004) and are known to flock to coastal areas, particularly pine plantations, during the non-breeding season (Johnstone & Storr, 1998). The vegetation under application comprises *Callitris preissii* woodland which would provide feeding habitat for the Carnaby's black cockatoos.

A number of bird species may frequent the site as How et al. recorded 38 bird species at Woodman Point during their surveys in 1996. It was also noted by How et al (1996) that relatively high numbers of "small, insectivorous, habitat specialist bird species" which are known to be affected by habitat fragmentation and bushland disturbance were recorded at Woodman Point. Due to the close proximity of the development location to Woodman Point some of the species recorded are likely to visit the area under application. Coffey Environments have also noted that the Australian Lesser Noddy (*Anous tenuirostris melanops*, Vulnerable) and Southern Giant Petrel (*Macronectes giganteus*, Endangered) may visit the site (Coffey Environments, 2008).

In 1996, How et al also recorded a single specimen of the Gallieniellidae spider family which was the first record of this family on the Swan Coastal Plain and one of the first for Western Australia. This Woodman Point area may therefore be significant habitat for this family.

Fauna surveys undertaken by Coffey Environments on the 15th and 22nd August recorded no mammal species but rabbit droppings and diggings were recorded (Coffey Environments, 2008). Two bird species, Silver Gulls (*Larus novaehollandiae*) and black cockatoos, and one reptile species, Bobtail Lizard (*Tiliqua rugosa*), were recorded during the survey. The bird species were in the vicinity of but not recorded within the study area.

Coffey Environments have concluded that the fragmented nature, small size of the site and the presence of introduced species means that the site is unlikely to contain rich species assemblages (Coffey Environments, 2008). The area proposed for development, although ranges from 'degraded' to 'very good' (Keighery, 1994) condition (Coffey Environments, 2008 & DEC, 2009a) is recognised as one of the more degraded areas of vegetation within the Woodman Point Regional Park. Despite this, the vegetation at this site is considered to comprise a part of significant habitat for indigenous fauna and the clearing for this proposal will fragment the vegetation along the coastal dunes and therefore may impact upon fauna movement throughout this area.

It is therefore concluded that the proposal may be at variance to this principle.

Methodology

References:

- Burbidge (2004)
- Coffey Environments (2008)
- DEC (2007)
- DEC (2009a)
- Johnstone & Storr (1998)
- How et al (1996)
- Keighery (1994)
- Nevill et al (2005)

GIS Databases:

- DEC Tenure - DEC
- Perth Metropolitan Area Central 20cm Orthomosaic - Landgate 2007
- SAC Biodatasets - Accessed 19/10/2009

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposal is not likely to be at variance to this Principle

Two declared rare flora species have been recorded within the local area (10km radius) of the applied clearing area, *Caladenia huegelii*, with the closest record approximately 6.3km east of the applied clearing area and *Verticordia plumosa* var. *anneotes*, recorded within the Cockburn Sound area.

Verticordia plumosa var. *anneotes* is known from only one record within the local area from 1900. This species inhabits sandy soils in open *Eucalyptus marginata* (jarrah) woodland and sandy plains (Brown et al, 1998). *Caladenia huegelii* inhabits areas of deep sandy soil below *Eucalyptus marginata* (jarrah) and *Banksia* woodland and tends to favour areas of lush undergrowth (Brown et al, 1998).

The vegetation under application consists predominantly of *Callitris preissii* woodlands with *Agonis flexuosa* (possibly planted at this site) over a fairly sparse understorey, with the exception of the vegetation on the primary dunes, consisting of relatively few taxa, which is typical of floristic community type 30a (Gibson et al, 1994). The records of *Caladenia huegelii* within the local area are within different vegetation and soil types to that within the proposed development site.

A flora and vegetation survey was undertaken by Coffey Environments on the 22 August 2007. The survey did not record any rare or priority flora species within the applied clearing area. The consultant has recognised that the timing of the survey may not have been suitable to identify some annual and ephemeral species such as orchid species, however, given that the two rare species in the local area inhabit vastly different vegetation and soil types to that of the applied clearing area it is not likely that the proposal will contain habitat for declared rare flora species.

Methodology

References:

- Brown et al (1998)
- Coffey Environments (2008)
- Gibson et al (1994)

GIS Databases:

- SAC Biodatasets - Accessed 19/10/2009
- Soils, Statewide - DA

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments Proposal is at variance to this Principle

The floristic community type (FCT) 30a, '*Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain,' exists throughout the proposed development site (DEC, 2009c). FCT 30a is a threatened ecological community (TEC) classed as 'Vulnerable' and is poorly reserved (Gibson et al, 1994). This TEC is known from only 7 locations including the largest communities on Garden and Rottnest Islands and this particular site, Woodman Point. There is only approximately 530ha of this TEC remaining with approximately 73ha being on the mainland (DEC, 2009b).

Coffey Environments (2008) have noted that some of the vegetation within the development area may be of the FCT 29 (Coastal shrublands on shallow sands). *Callitris preissii* was recorded across the extent of the development site with the exception being the primary dunes (DEC, 2009a) and the boundary for this TEC occurrence contains the proposed development site (DEC, 2009c). This species is indicative of the floristic community type 30a - *Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands and its presence at a site distinguishes the 30a community type from other communities, such as FCT 29 (Coastal shrublands on shallow sands) (Gibson et al, 1994). There is good regeneration of this species within the proposed development site and in the adjacent areas (DEC, 2009a).

The vegetation ranges from 'degraded' to 'very good' (Keighery, 1994) condition (DEC, 2009a). The clearing will result in approximately 1.5ha, predominantly in 'degraded' to 'good' (Keighery, 1994) condition, of the existing 54ha threatened ecological community at Woodman Point being cleared (DEC, 2009a & DEC, 2009b).

Proposed management from Coffey Environments (2008) has stated that every effort should be made to retain *Callitris preissii* and that the City should undertake consolidated planting of the Rottnest cypress elsewhere in the reserve to compensate for the losses as a result of the construction of the community facility and associated development.

Given that the proposed clearing will result in the loss of a portion of a threatened ecological community classed as 'Vulnerable,' it is concluded that the proposed clearing is at variance to this principle.

For this reason, an offset condition has been placed on the permit in order to mitigate the loss of this portion of TEC.

Methodology

References:

- Coffey Environments (2008)

- DEC (2009a)
- DEC (2009b)
- DEC (2009c)
- Gibson et al (1994)
- Keighery (1994)
- GIS Databases:
 - Perth Metropolitan Area Central 20cm Orthomosaic - Landgate 2007
 - SAC Biosdatasets - Accessed 19/10/2009

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal may be at variance to this Principle

The vegetation has been mapped as the Beard Vegetation Association 998 - Medium woodland; Tuart of which there is 41.7% of the pre-European extent remaining within the Swan Coastal Plain IBRA region (Shepherd, 2007).

The area under application is also mapped as the Heddle Vegetation Complex - Cottesloe Complex Central and South with vegetation consisting of a mosaic of woodland of *Eucalyptus gomphocephala* (Tuart) and open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri); closed heath on the Limestone outcrops (DEC, 2009a & Heddle et al, 1980).

The property lies within the City of Cockburn in the Swan Coastal Plain IBRA region which have 33.7% and 38.8% of their pre-European extent remaining respectively (Shepherd, 2007).

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level. Within constrained areas (i.e. areas of urban development in cities and major towns) on the Swan Coastal Plain, the target for representation of the pre-clearing extent of a particular native vegetation complex is 10% (Commonwealth of Australia, 2001). According to 1998 Bush Forever (BF) data, 35.9% of the Cottesloe Complex Central and South remains within the Perth Metropolitan Region Scheme (PMRS) constrained area (Government of Western Australia, 2000), however, due to increased development within this area, this value is likely to have decreased within the last 11 years.

The vegetation complexes under consideration are all above the 30% threshold.

The vegetation on site however, more closely resembles and has been verified as the floristic community type 30a - 'Callitris preissii (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain' (DEC, 2009a & DEC, 2009b) The community type is a threatened ecological community, classed as Vulnerable of which approximately 530ha of this community type remains with only approximately 73ha of this being on the mainland of Western Australia (DEC, 2009b).

In addition, the area under application is surrounded by a significant amount of residential and industrial development. Based on remnants of vegetation recorded in the National Land and Water Resources Audit as well as from aerial photography of the local area (10km radius) only approximately 17.3% of vegetation is remaining within the local area on the mainland. Much of the vegetation in larger remnants is retained in a few conservation parks and nature reserves managed by DEC including, but not limited to, Woodman Point Regional Park, Thomsons Lake Nature Reserve and Harry Waring Marsupial Reserve. For these reasons the vegetation under application may be considered a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain	1,501,209	583,141	38.8	32.55
Shire*				
City of Cockburn	17,088	5,753	33.7	14.55
Beard vegetation type*				
998 (within Swan Coastal Plain)	50,867	21,226	41.7	38.10
Heddle vegetation complex**				
Cottesloe Complex				
Central and South	44,995	18,474	41.1	8.80
Heddle vegetation complex*				
Cottesloe Complex				
Central and South (within MRS)	34,439	12,362	35.9	15.40

Local Area (10km Radius) ~19,235 ~3,329 ~17.3
(Area on Mainland)

Methodology References:

- Commonwealth of Australia (2001)
- DEC (2009a)
- DEC (2009b)
- Government of Western Australia (2000)
- Heddle et al (1980)
- Shepherd (2007)

GIS Databases:

- Heddle Vegetation Complexes - DEP
- NLWRA, Current Extent of Native Vegetation - DA & CALM
- Perth Metropolitan Area Central 20cm Orthomosaic - Landgate 2007
- SAC Biodatasets - Accessed 19/10/2009

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments **Proposal is not likely to be at variance to this Principle**

The closest watercourse to the applied clearing area is the Swan River, a major, perennial watercourse approximately 8.3km north of the applied clearing area.

A number of wetlands occur within the local area with the closest being a sumpland, Market Garden Swamp, under the management category 'Resource Enhancement' but is also mapped as an EPP Lake. All of the wetlands and areas subject to inundation are approximately 1km from applied clearing area and area separated from the proposed development site by residential development.

Given the distance of the applied clearing area to watercourses and wetlands within the local area (10km radius), it is unlikely that the proposed clearing is growing in association with an environment associated with a watercourse or wetland and therefore it is concluded that the proposal is not likely to be at variance to this principle.

Methodology GIS Databases:

- Geomorphic wetlands (Mgmt categories) - Swan Coastal Plain - DEC
- Hydrography, linear - DoW
- Hydrography, linear (hierarchy) - Dow
- Perth Metropolitan Area Central 20cm Orthomosaic - Landgate 2007

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments **Proposal may be at variance to this Principle**

The chief soils within the applied clearing area have been mapped by Northcote et al (1960-68) as being siliceous white sands within an undulating dune landscape. The site comprises sand overlying limestone at a relatively shallow depth (Coffey Environments, 2008).

The majority of this site is mapped as having a low salinity risk with some patches towards the south of the site mapped as high. The groundwater salinity ranges between 500 -1000mg/L total dissolved solids. The area under application ranges in topography from just above 0m - approximately 5m AHD and is of a low relief within the dune system.

Coastal environments are highly susceptible to degradation and destabilisation through wind and water erosion and human and vehicle disturbance.

Given the high likelihood of wind erosion being exacerbated at the site as a result of the clearing, without proper management, the clearing may cause appreciable land degradation and it is therefore concluded that the proposal may be at variance to this principle.

Methodology References:

- Coffey Environments (2008)
- Northcote et al (1960-68)

GIS Databases:

- Groundwater Salinity - DoW
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide - DA
- Topographic Contours, Statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments Proposal is at variance to this Principle

The applied clearing area is part of the Bush Forever Site 341 (Woodman Point, Coogee/Munster) and System 6 (M90) Conservation Reserve. The southern portion of the applied clearing area also lies within the Woodman Point Natural Area, registered on Register of National Estate list and is within the Woodman Point Regional Park (WPRP) a Conservation Park vested with the Conservation Commission. The northern portion of the development is within an A class Reserve, Crown Reserve 24306, managed by the City of Cockburn (Coffey Environments, 2008).

Bush Forever Site 341 (Woodman Point, Coogee/Munster) has been included for special protection due to its representation of ecological communities, rarity, general criteria for the protection of wetland, streamline and estuarine fringing vegetation and coastal vegetation (Government of Western Australia, 2000). The removal of the vegetation under application will result in the clearing of a portion of a threatened ecological community (SCP30a) as well as areas of conservation significance.

The applied clearing area has been recognised as being part of a 'Potential Regionally Significant Bushland/Wetland Linkage' by Government of Western Australia, 2000. Bush Forever advice states that the Draft State Planning Policy 2.8 notes that proposals or decision making are to support a general presumption against the clearing of regionally significant bushland and that "reasonable mitigation strategies are secured to offset any loss" of such bushland where appropriate and practical. Therefore, an offset package should be prepared and implemented prior to commencement of site works which should be based on a ratio of 2:1 and 'like for like, or better' is recommended (DoP, 2009).

Given that the applied clearing area will result in a loss of approximately 1.81ha of vegetation within Bush Forever Site 341 and a System 6 Conservation Reserve, of which approximately 0.93ha of vegetation is within the Woodman Point Regional Park (Conservation Park), in 'degraded' to 'very good' (Keighery, 1994) condition (DEC, 2009a), it is concluded that the proposed clearing is at variance to this principle. For these reasons, an offset condition has been placed on the permit to mitigate the loss of the vegetation within the conservation areas.

Methodology

References:

- Coffey Environments (2008)
 - DEC (2009a)
 - DoP (2009)
 - Government of Western Australia (2000)
 - Keighery (1994)
- GIS Databases:**
- Bushforever - MFP
 - DEC Tenure - DEC
 - Perth Metropolitan Area Central 20cm Orthomosaic - Landgate 2007
 - Register of National Estate - EA

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments Proposal is not likely to be at variance to this Principle

The vegetation under application lies within the Coastal Hydrographic Catchment within the Murray River Basin.

The closest watercourse to the applied clearing area is the Swan River, a major, perennial watercourse approximately 8.3km north of the applied clearing area.

A number of wetlands occur within the local area with the closest being a sumpland, Market Garden Swamp, under the management category 'Resource Enhancement' but is also gazetted as an EPP Lake. All of the wetlands and areas subject to inundation are approximately 1km from the applied clearing area and are separated from the proposed development site by residential development.

The chief soils within the applied clearing area have been mapped by Northcote et al (1960-68) as being siliceous white sands within an undulating dune landscape. The site comprises sand overlying limestone at a relatively shallow depth (Coffey Environments, 2008). These soils have a high permeability and groundwater flows at this location flow towards the ocean.

The majority of this site is mapped as having a low salinity risk with some patches towards the south of the site mapped as high. The groundwater salinity ranges between 500 -1000mg/L total dissolved solids. The area under application ranges in topography from just above 0m - approximately 5m AHD and is of a low relief within the dune system.

The Perth Groundwater Atlas has recorded the site under application as lying within a 'Development Risk' area meaning that there may be groundwater quality or quantity concerns should water be drawn from the superficial

aquifer at this site (DoE, 2004). The City does not intend to source water from groundwater sources from this site specifically but will be obtaining water from an existing bore accessing the Leederville Aquifer at an existing park across Cockburn Road as well as accessing scheme water (DEC, 2009a).

Coffey Environments (2008) have reported from DoW data that "According to the Perth Groundwater Atlas (DoW, 2007b), to the east of the site the groundwater is considered brackish, having total dissolved solids (TDS) of 1500-3000mg/L" while "closer to the shore the level of TDS increases to 3000-7000mg/L and the groundwater is considered saline (over 5000mg/L)."

Although there is likely to be some nutrients released as a result of the clearing of the vegetation from this site, given the high permeability of the soils at this site, the relatively small scale of the proposed clearing and the fairly sparse nature of the vegetation communities across the majority of the proposed development site, it is concluded that the proposal is not likely to cause further deterioration in the quality of surface or underground watersources and therefore is not likely to be at variance to this principle.

- Methodology** **References:**
- Coffey Environments (2008)
 - DEC (2009a)
 - DoE (2004)
 - Northcote et al (1960-68)
- GIS Databases:**
- Geomorphic wetlands (Mgmt Categories) - Swan Coastal Plain - DEC
 - Groundwater Salinity - DoW
 - Hydrography, linear - DoW
 - Hydrography, linear (hierarchy) - DoW
 - Salinity Risk LM 25m - DOLA 00
 - Soils, Statewide - DA
 - Topographic Contours, Statewide

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments Proposal is not likely to be at variance to this Principle

The closest watercourse to the applied clearing area is the Swan River approximately 8.3km north of the applied clearing area. Perennial lakes, areas subject to inundation and Market Garden Swamp (EPP Lake) occur approximately 1.0km east of the applied clearing area however, they are separated from the applied clearing area by residential development.

Given the proximity of the applied clearing area to watercourses and wetlands in the local area, it is concluded that the proposal is not likely to cause, or exacerbate, the incidence or intensity of flooding and is therefore not likely to be at variance to this principle.

- Methodology** **GIS Databases:**
- Cadastre - DLI
 - Geomorphic wetlands (Mgmt categories), Swan Coastal Plain
 - Hydrography, linear - DoW
 - Hydrography, linear (hierarchy) - DoW

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

On the 28 May 2010, the City of Cockburn applied to amend their clearing permit CPS 3349/1 for the Coogee Beach Integrated Community Facility from 1.7ha to 1.81ha. This is for the purposes of increasing the width of the proposed service corridor from 5m to 14m to accommodate for the installation of the necessary utilities cables (City of Cockburn, 2010a).

Additional Bush Forever advice was received in relation to the proposed amendment which stated that State Strategic Policy do not believe that there is enough justification for the proposed service corridor as Poore Grove appears to provide a satisfactory route (DoP, 2010). However, if the works are to be approved that fencing to prevent access to the service corridor and a 2:1 offset or 'like for like' or better be implemented to the satisfaction of DEC and DoP (DoP, 2010). The area adjacent to Poore Grove also has native vegetation which would be required to be cleared in order to allow for the service corridor should it had been located along the existing road. Timber bollard fencing is already in place along Cockburn Road for the extent of the site, which prevents vehicle access from the road into the service corridor (City of Cockburn, 2010b). An offset proposal to mitigate the loss of vegetation within Bush Forever site 341 and TEC 30a was approved by DEC on the 28 January 2010. The approved offset involves the rehabilitation of approximately 5.2 hectares of land within the Woodman Point Regional Park including the area currently considered as part of this amendment.

The applied clearing area lies across two zones under the Metropolitan Region Scheme 'Parks and Recreation' and 'Railways.'

The City of Cockburn received a notification of the presence of the threatened ecological community 30a 'Callitris preissii (or Melaleuca lanceolata) forests and woodlands,' including within the proposed development site, from CALM in February 2006 (CALM, 2006).

A Management Order exists for the property vested to the Conservation Commission which states that the land is "to be utilised for the designated purpose of 'Conservation Park' only." A letter dated 14th October 2009 from Department of Regional Development and Lands was sent to the City of Cockburn advising the City that a Reserves Bill will need to be prepared by the DEC in order to change and formalise the boundary of their Conservation Park through Parliament (DORDAL, 2009).

The Conservation Commission on the 16th February 2009 wrote to the City supporting the development application for the proposed Coogee Beach Surf Life Saving Club and the transfer of the portion of Reserve 49220 which is affected by the development to the City for amalgamation into the City's existing land holdings within Woodman Point Regional Park (Conservation Commission, 2009). At a meeting held on the 9 November 2009, the Conservation Commission also agreed to the excision of a further 0.7ha (the area north of Poore Grove and subject to this amendment) for inclusion with the City's landholdings (DEC, 2009d).

An Approval to Commence Development was granted by the WAPC on the 16th July 2009 (Development Application 23-50262-2) subject to conditions (WAPC, 2009). The WAPC Development Approval excluded the proposed development of land under Public Transport Authority ownership. On the 13th August 2009 the Public Transport Authority agreed to City of Cockburn's request to excise land from railway for level crossing of the service corridor (PTA, 2009).

A public submission was received on the 27 October 2009 for CPS3349/1 which supported the application to clear for the Coogee Beach Surf Life Saving Club. The submission raised the following issues:

1. the area to be cleared is in a highly degraded area of the Woodman Point Regional Park
2. there has been extensive consultation with the public and various management plans developed to reduce environmental impact and
3. the program includes the rehabilitation and revegetation of some 4.5ha of highly degraded regional park, with revegetation of the eastern and western zones substantially complete.

An ethnographic heritage survey was undertaken from the 12th to the 14th September 2007 of the proposed Coogee Beach Surf Life Saving Club by Australian Interaction Consultants with Aboriginal representatives of the Native Title Claimants (AIC, 2007). Although there were no sites identified in close proximity to the planned project and no known site is likely to be impacted upon by the undertaking, there is evidence that the Cockburn coast has a history of Aboriginal occupation and movement through this area and therefore "there is the potential for further archaeological material to be uncovered during excavation work including ground clearing" (AIC, 2007).

Methodology

References:

- AIC (2007)
 - City of Cockburn (2010a)
 - City of Cockburn (2010b)
 - Conservation Commission (2009)
 - DEC (2009d)
 - DoP (2010)
 - DORDAL (2009)
 - PTA (2009)
 - Submission (2009)
 - WAPC (2009)
- ##### GIS Databases:
- Metropolitan Region Scheme

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5. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management (now DEC)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment (now DEC)
DoW	Department of Water
DMP	Department of Mines and Petroleum (ex DoIR)
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DoW)