



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 7115/1
Permit Holder:	Juceda Investments Pty Ltd
Duration of Permit:	17 December 2016 – 17 December 2018

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 road construction.

2. Land on which clearing is to be done

Clifford Street road reserve, PIN 1315353, Maddington

3. Area of Clearing

The Permit Holder must not clear more than 0.32 hectares of native vegetation within the area hatched yellow on attached Plan 7115/1.

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.

PART II – MANAGEMENT CONDITIONS

5. 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:

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

6. Dieback and weed control

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* and *dieback*:

- clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

7. Vegetation management – water quality

- (a) the Permit Holder shall fence the The Permit Holder shall maintain the existing surface flow through the invert of culverts under Clifford Street; and
- (b) the Permit Holder shall ensure that no surface water is directed towards Bush Forever site 53.
- (c) the Permit Holder shall installing temporary sediment fences and controls at the base of batters within 10 metres proximity to edge of natural drainage line.

8. Vegetation management – fencing

- (a) Within 1 month of clearing commencing, the Permit Holder shall fence the Bush Forever site 53 adjacent to Clifford Street.

9. Vegetation buffer

The Permit Holder shall reinstate a 1.5 to 2 metre vegetated buffer adjacent to Bush Forever Site 53.

DEFINITIONS

dieback means the effect of *Phytophthora* species on native vegetation;

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

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;

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

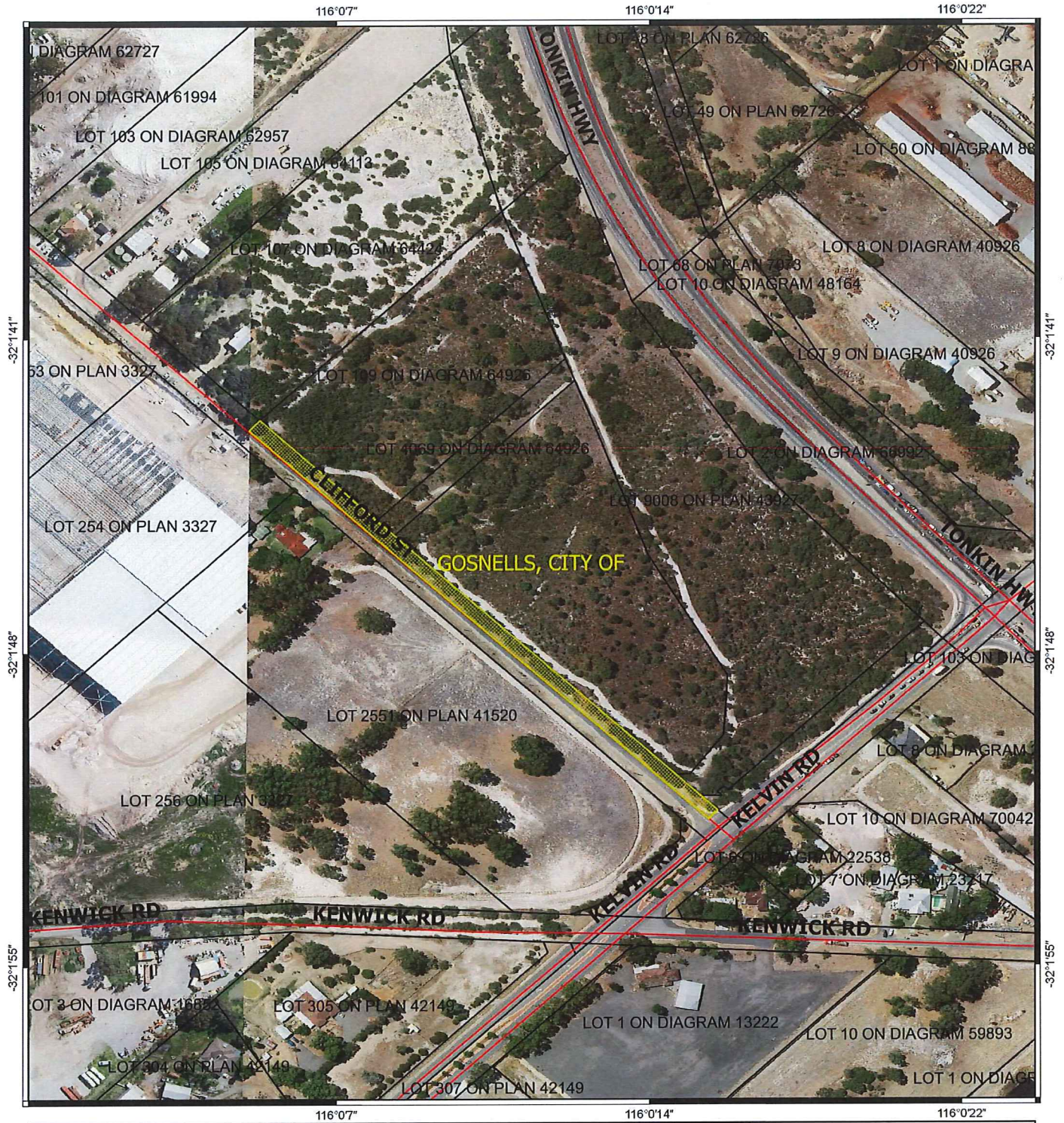


Kelly Faulkner
EXECUTIVE DIRECTOR
LICENSING AND APPROVALS





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

17 November 2016

Plan 7115/1



Legend

-  Areas approved to clear
-  Roads
-  LGA
-  Cadastre



1:2,500

MGA 94

Geocentric Datum of Australia 1994

Kelly Faulkner Date 17/11/16

Kelly Faulkner

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



GOVERNMENT OF
WESTERN AUSTRALIA



1. Application details

1.1. Permit application details

Permit application No.: 7115/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Juceda Investments Pty Ltd

1.3. Property details

Property: Clifford Street road reserve (1315353), Maddington
Colloquial name:
Local Government Authority: GOSNELLS, CITY OF
DER Region: Greater Swan
DPaW District: SWAN COASTAL
Localities: KENWICK and MADDINGTON

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.32		Mechanical Removal	Road construction or upgrades

1.5. Decision on application

Decision on Permit Application: Granted

Decision Date: 17 November 2016

Reasons for Decision: The clearing permit application was received on 5 July 2016 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*, and it has been concluded that the proposed clearing is at variance to Principles (d) and (f), may be at variance to Principles (a), (e) and (h) and is not likely to be at variance to the remaining clearing Principles.

The Delegated Officer determined that the proposed clearing will impact on wetland vegetation and directly clear 0.13 hectares of a threatened ecological community. The Delegated Officer had regard to the mitigation and avoidance measures proposed by the applicant and the overall extent of impact on the wetland and ecological community.

The Delegated Officer considers potential impacts to the ecological community can be managed through actions including reinstating a vegetation buffer, water flow management and fencing. Potential impacts to the wetland values can be adequately managed management actions via weed and sediment and erosion control measures.

State policies and other relevant policies have been taken into consideration in the decision to grant a clearing permit.

Site Information

1.6. Existing environment and information

1.6.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Mapped Beard vegetation association 968 is described as medium woodland; jarrah, marri & wandoo (Shepherd et al., 2001).	The application is for clearing 0.32 hectares of native vegetation within Clifford Street road reserve (PIN: 1315353), Maddington, for the purpose of road construction.	Degraded; Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).	The condition and description of the vegetation within the application area was determined by a site inspection undertaken by Department of Environment Regulation (DER) officers on 4 July 2016 (DER, 2016), Department of Parks and Wildlife (Parks and Wildlife) staff on 29 September 2016 and from the flora and vegetation surveys undertaken by Strategen Environmental Consultants Pty Ltd (Strategen) in March and September 2016 (Strategen, 2016a and 2016b).
Mapped Heddle vegetation 'Guildford' complex is comprised of a mixture of open forest to tall open forest of <i>Corymbia calophylla</i> (marri) - <i>Eucalyptus wandoo</i> (wandoo) - <i>Eucalyptus marginata</i> (jarrah) and woodland of <i>Eucalyptus wandoo</i> (wandoo) (with rare occurrences of <i>Eucalyptus lane-poolei</i> (salmon white gum)). Minor components include		To Good; Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).	

Eucalyptus rudis (flooded gum) - *Melaleuca raphiophylla* (swamp paperbark). (Heddle et al., 1980).

Mapped Heddle Forrestfield Complex is comprised of open forest of *Corymbia calophylla* (marri) - *Eucalyptus wandoo* (wandoo) - *Eucalyptus marginata* (jarrah) to open forest of *Eucalyptus marginata* (jarrah) - *Corymbia calophylla* (marri) - *Allocasuarina fraseriana* (sheoak) - *Banksia* species. Fringing woodland of *Eucalyptus rudis* (flooded gum) in the gullies that dissect this landform (Heddle et al., 1980).

Mapped Mattiske vegetation complex Fo consists of mosaic of open forest of *Corymbia calophylla*-*Eucalyptus wandoo*-*Eucalyptus marginata* subsp. *elegantella* and open forest of *Eucalyptus marginata* subsp. *marginata* - *Corymbia calophylla* - *Allocasuarina fraseriana* - *Banksia* spp. on the erosional spurs off the Darling Scarp to woodland of *Eucalyptus rudis* on the dissecting gullies in humid to semiarid zones. (Mattiske and Havel, 1998).

DER site inspection identified that the application area is in a degraded to good (Keighery, 1994) condition, with the overall condition considered to be in a good (Keighery, 1994) condition. There were some weedy patches throughout the application area. However, overall the understorey is in a very good (Keighery, 1994) condition (DER, 2016).

Parks and Wildlife identified approximately 0.13 hectares of the application in a good to excellent (Keighery, 1994) condition (Parks and Wildlife, 2016d).

Two flora surveys undertaken within March and September 2016 identified two vegetation types within the application area being:

- *Corymbia calophylla* open woodland over *Xanthorrhoea preissii*, *Allocasuarina humilis*, *Mesomelaena pseudostygia*, *Banksia dallanneyi* and exotic grasses in white sandy clay soils in a degraded (Keighery, 1994) condition.

- *Leptospermum laevigatum* thicket over *Xanthorrhoea preissii*, *Mesomelaena pseudostygia*, *Banksia dallanneyi*, *Allocasuarina humilis*, *Haemodorum spicatum* and exotic grasses in white sandy clay soils in good to degraded (Keighery, 1994) condition (Strategen, 2016a and 2016b).

2. Assessment of application against clearing principles

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

Comments Proposed clearing may be at variance to this Principle

The application is for clearing 0.32 hectares of native vegetation within Clifford Street road reserve (PIN 1315353), Maddington, for the purpose of road construction. The applicant intends to widen the existing road up to five metres on either side.

Strategen Environmental Consultants Pty Ltd (Strategen) undertook a flora and vegetation survey in March 2016 and identified that the application area primarily consists of *Corymbia calophylla* and *Leptospermum laevigatum* over sparse native shrubs and exotic grasses in a degraded to good (Keighery, 1994) condition (Strategen, 2016a). An additional flora survey was undertaken by Strategen in September 2016 which identified two vegetation types within the application area being:

- *Corymbia calophylla* open woodland over *Xanthorrhoea preissii*, *Allocasuarina humilis*, *Mesomelaena pseudostygia*, *Banksia dallanneyi* and exotic grasses in white sandy clay soils in a degraded (Keighery 1994) condition; and
- *Leptospermum laevigatum* thicket over *Xanthorrhoea preissii*, *Mesomelaena pseudostygia*, *Banksia dallanneyi*, *Allocasuarina humilis*, *Haemodorum spicatum* and exotic grasses in white sandy clay soils in good to degraded (Keighery, 1994) condition (Strategen, 2016a and 2016b).

The Strategen surveys identified 0.14 and 0.075 hectares of the application area being in a good (Keighery, 1994) condition (Strategen, 2016a and 2016b). A DER site inspection identified that the vegetation within the application area ranges from a degraded to good (Keighery, 1994) condition. The areas in a good (Keighery, 1994) condition predominately contained an understorey in very good (Keighery, 1994) condition, with some weedy patches throughout (DER, 2016). A Parks and Wildlife site inspection identified approximately 0.13 hectares of the application in a good to excellent (Keighery, 1994) condition (Parks and Wildlife, 2016d).

Sixty nine priority flora and 21 rare flora species have been recorded within the local area (10 kilometre radius). One rare flora species has been recorded within the adjacent Bush Forever Site and is approximately 50 metres from the application area. Flora and vegetation surveys undertaken within the application area in March and September 2016 did not identify any rare or priority flora species (Strategen, 2016a and 2016b). Therefore the proposed clearing is not likely to impact on any rare or priority flora species.

Thirteen fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* have been recorded within the local area (Parks and Wildlife, 2007-). The application area is relatively small (0.32 hectares), linear in shape and contains vegetation in a degraded to excellent (Keighery, 1994) condition and therefore, is not likely to contain significant habitat for fauna indigenous to Western Australia.

Two threatened ecological communities (TECs) '*Banksia attenuata* woodland over species rich dense shrublands (FCT20a)' and 'Shrublands and woodlands of the eastern side of the Swan Coastal Plain (FCT20c)' are mapped within the application area (0.118 hectares and 0.038 hectares, respectively). One TEC '*Corymbia calophylla - Eucalyptus marginata* woodlands on sandy clay soils of the southern Swan Coastal Plain (FCT3b)' is mapped within 10 metres of the application.

Parks and Wildlife advised that the application area encompasses areas currently mapped as '*Banksia attenuata* woodland over species rich dense shrublands', and therefore the vegetation identified to be in good (Keighery, 1994) condition is considered to contain this TEC (Parks and Wildlife, 2016b and 2016d). Parks and Wildlife advised that the buffer on Clifford Street road reserve is narrow (approximately five metres wide) and the removal of this buffer is considered likely to have an impact on the adjacent TECs and Bush Forever Site through increased rubbish, hydrological changes, dust and weed encroachment further into the bushland (Parks and Wildlife, 2016d).

A small portion of the application area (0.012 hectares) is located within a mapped conservation category wetland. The majority of the application area is located 34 metres from this wetland. Conservation category wetlands support a high level of attributes and functions and are the highest priority for protection (Water and Rivers Commission, 2001). A minimum 50 metre buffer is recommended to conservation category wetlands.

Noting that part of the application area is located within a mapped conservation category wetland and is considered a TEC, it is considered that the application area may comprise a high level of biodiversity.

The applicant provided supplementary information including a Bushland and Wetland Management Plan which includes the actions outlined below:

- reinstating a vegetation buffer of 1.5 – 2 metres in width within the road reserve, adjacent to the Bush Forever Site;
- removal of all tea trees within the road reserve and within the Bush Forever Site 53, up to 20 metres from the site boundary adjacent to the project area;
- the spread of weeds and dieback during construction will be managed by employing best practice techniques to prevent the intrusion of cleared vegetation or soil into Bush Forever Site 53;
- drainage approaches that maintain the current hydrological processes that support the wetland have been adopted. The invert of culverts under Clifford Street will be maintained at the current level and drainage will not be directed into Bush Forever Site 53;
- a street drainage system will be installed in Clifford Street to collect surface water from the road, this flow will be directed away from Bush Forever Site 53; and
- sediment and erosion control measures will be implemented during the construction phase (Strategen, 2016c).

Parks and Wildlife advise that the proposed management measures will still result in the direct impact to a TEC (0.13 hectares) and to vegetation necessary for the maintenance of a TEC, and will impact the adjacent vegetation through increase weeds and dieback, alterations to hydrology, blown rubbish and impacts of recreational users will be expected to increase (Parks and Wildlife, 2016d). Clearing the vegetation under application would remove approximately 0.022 per cent of the known FCT20a TEC vegetation and 2.4 per cent of the occurrence.

Taking into account the applicant's proposed management measures, the additional advice provided by Parks and Wildlife and noting that the application area is located within a mapped conservation category wetland and contains a TEC, it is considered that the application area may comprise a high level of biodiversity.

Given the above, the proposed clearing may be at variance to this Principle.

Methodology References:
DER (2016)
Keighery (1994)
Parks and Wildlife (2007-)
Parks and Wildlife (2016b)
Parks and Wildlife (2016d)
Strategen (2016a)
Strategen (2016b)
Water and Rivers Commission (2001)

GIS Datasets:

(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 Proposed clearing is not likely to be at variance to this Principle

Thirteen fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* have been recorded within the local area (10 kilometre radius), being: woylie (*Bettongia penicillata* subsp. *ogilbyi*), curlew sandpiper (*Calidris ferruginea*), Australasian Bittern (*Botaurus poiciloptilus*), great knot (*Calidris tenuirostris*), forest red-tailed black-cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*), chuditch (*Dasyurus geoffroi*), bee (*Leioproctus douglasiellus*), numbat (*Myrmecobius fasciatus*), bee (*Neopasiphae simplicior*), southern brush-tailed phascogale (*Phascogale tapoatafa* subsp. *tapoatafa*) and quokka (*Setonix brachyurus*) (Parks and Wildlife, 2007-).

Black cockatoos breed in large hollow-bearing trees, generally within woodlands or forests or in isolated trees. These species nest in hollows in live or dead trees of karri, marri, wandoo, tuart, salmon gum, jarrah, flooded gum, York gum, powderbark, bullich and blackbutt. Black cockatoos have a preference for feeding habitat that includes jarrah and marri woodlands and forest heathland and woodland dominated by proteaceous plant species such as *Banksia* sp. *Hakea* sp. and *Grevillea* sp. (Commonwealth of Australia, 2012). Two *Corymbia calophylla* trees were identified in a flora and vegetation survey undertaken within the application area, however, no suitable black cockatoo nesting hollows were identified (Strategen, 2016a). The vegetation within the application area may provide foraging habitat for the black cockatoo species, however it is unlikely to be significant given the relatively small size of the application area and the condition of the vegetation. The application area is relatively small, linear in shape and contains vegetation in a degraded to excellent (Keighery, 1994) condition. It is noted that Bush Forever Site 53 is located adjacent to the application area and contains a larger intact remnant in similar or better condition than the application area.

Given the above, the application area is considered unlikely to contain significant habitat for fauna indigenous to Western Australia and the proposed clearing is not likely to be at variance to this Principle.

Methodology

References:
Commonwealth (2012)
DER (2016)
Keighery (1994)
Parks and Wildlife (2007-)
Strategen (2016a)

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

Comments Proposed clearing is not likely to be at variance to this Principle

Twenty one rare flora species have been recorded within the local area (10 kilometre radius). One rare flora species has been recorded within the adjacent Bush Forever Site and nearby properties and has been recorded approximately 50 metres from the application area. This species grows on sand and sandy clay soils, often over laterite, on flat or gently sloping sites, and usually inhabits *Banksia* and *Eucalyptus* woodlands over heath, often with *Isopogon drummondii*, *Hakea conchifolia* and *Lambertia multiflora* (Brown et al., 1998). The vegetation within the application area is contiguous with the adjacent Bush Forever Site and contains areas of vegetation in good and excellent (Keighery, 1994) condition that may provide suitable habitat for this species.

The flora and vegetation surveys undertaken within the application area in March 2016 and September 2016 did not identify any rare flora (Strategen, 2016a and 2016b). On this basis it is considered that the application area is unlikely to include or be necessary for the continued existence of rare flora.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

References:
Brown et al. (1998)
Strategen (2016a)
Strategen (2016b)

GIS Datasets:
SAC Bio Datasets – accessed August 2016

(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

Proposed clearing is at variance to this Principle

Eleven threatened ecological communities (TEC) have been recorded within the local area (10 kilometre radius). Two TECs '*Banksia attenuata* woodland over species rich dense shrublands (FCT20a)' and 'Shrublands and woodlands of the eastern side of the Swan Coastal Plain (FCT20c)' are mapped within the application area (0.118 hectares and 0.038 hectares respectively). One TEC '*Corymbia calophylla* - *Eucalyptus marginata* woodlands on sandy clay soils of the southern Swan Coastal Plain (FCT3b)' is mapped within 10 metres of the application.

Strategen undertook a flora and vegetation survey in March 2016 and September 2016 and identified that the application area is in a degraded to good (Keighery, 1994) condition (Strategen, 2016a and 2016b). Strategen advised that no TECs are inferred to occur within the proposed clearing area due to the degraded condition of vegetation and extremely low number of native species recorded (Strategen, 2016a).

Strategen advised that the vegetation was not representative of FCT20a due to the absence of key indicator species including *Banksia* spp. and the typical species rich understorey associated with this community type and that the area is mapped as either multiple use or conservation category wetland which are not normally associated with FCT20a (Strategen, 2016b).

Parks and Wildlife advised that the method described by Strategen in their letter to DER dated 21 September 2016 to determine if TEC FCT20a occurs is not adequate to determine the presence of the TEC and that wetland mapping is quite broad scale and areas mapped as wetland can include areas of FCT20a (Parks and Wildlife, 2016d).

Parks and Wildlife advised that the threshold applied for 'extant' areas of TECs is good (Keighery, 1994) condition vegetation, with vegetation in poorer condition not considered to be 'extant' TECs (Parks and Wildlife, 2016b). A site inspection conducted by Parks and Wildlife TEC specialist staff on 29 September 2016 identified portions of the application area to be in excellent condition. Additional flora species not recorded in Strategen's March and September 2016 flora and vegetation surveys were identified, including key indicators or combinations of key taxa that occur in FCT20a/20c. The FCT20a was found to be intact and in good to excellent (Keighery, 1994) condition in the central portion (approximately 0.13 hectares) of the road reserve (Parks and Wildlife, 2016d).

FCT20a is mapped across a range of approximately 62 kilometres north south, a total of approximately 584 hectares with an average patch size of approximately 8.5 hectares. The occurrence within the application area is the southernmost occurrence and is mapped with an area of approximately five hectares. Clearing the vegetation under application would remove approximately 0.022 per cent of the TEC vegetation and 2.4 per cent of the occurrence.

Parks and Wildlife advised that the proposed clearing is likely to involve direct clearing of TECs and the full removal of the buffer between Clifford Street and the TECs located within Bush Forever Site 53. The road reserve vegetation is quite dense and likely to provide a reasonably significant level of protection from impacts including increased weeds, dust, drying hydrological changes, rubbish, disease and human usage (Parks and Wildlife, 2016a). Parks and Wildlife advise that fencing will mitigate the potential impacts of rubbish and human usage via unauthorised access (Parks and Wildlife, 2016d).

The remaining vegetated buffer on Clifford Street road reserve is narrow (approximately 5-10 metres wide) and is one of two areas that remain as buffers for the TECs and the removal of this buffer may have a substantial impact on the adjacent TECs and Bush Forever Site through rubbish, hydrological changes, weed encroachment further into the bushland and potentially disease (Parks and Wildlife, 2016d).

On the basis of the above, it is considered that the application area comprises part of a TEC and is necessary for the maintenance of nearby TECs.

Parks and Wildlife advise that the proposed management measures will still result in the direct impact to a TEC (0.13 hectares) and to vegetation necessary for the maintenance of a TEC, and will impact the adjacent vegetation through increased weeds and dieback, alterations to hydrology, blown rubbish and impacts of recreational users will be expected to increase (Parks and Wildlife, 2016d).

Taking into account the applicant's proposed management measures, the additional advice provided by Parks and Wildlife and noting the scale of clearing in relation to the TEC's overall size, the proposed clearing is not considered to have a significantly impact on a TEC.

Given the above, the proposed clearing is at variance to this Principle.

Methodology

References:
Keighery (1994)
Parks and Wildlife (2016a)
Parks and Wildlife (2016b)
Parks and Wildlife (2016d)
Strategen (2016a)

Strategen (2016b)
Strategen (2016c)

GIS Datasets:
SAC Bio Datasets – accessed August 2016

(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 Proposed clearing may be at variance to this Principle

The application area is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion has approximately 39 per cent of its pre-European vegetation extent remaining (Government of Western Australia, 2015).

The vegetation within the application area is mapped as Beard association 968, Heddle complexes Guildford and Forrestfield, and Mattiske complex Fo, which retain approximately 7, 5, 12 and 12 per cent respectively of their pre-European extents within the Swan Coastal Plain bioregion (Government of Western Australia, 2015).

The application area is located within the City of Gosnells, within which there is approximately 28 per cent pre-European vegetation extent remaining (Government of Western Australia, 2015). The local area (10 kilometre radius) retains approximately 15 per cent vegetation.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 percent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). Within constrained areas (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 per cent (EPA, 2008).

The mapped Beard vegetation association and Heddle vegetation complex 'Guildford' retain less than the recommended 10 per cent threshold. The application area is located within mapped conservation category and multiple use wetlands and contains a mapped TEC.

On this basis, it is considered that the application area may be significant as a remnant.

Given the above, the proposed clearing may be at variance to this Principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Swan Coastal Plain	1,501,222	579,162	39	37
Shire*				
City Of Gosnells	12,715	3,580	28	17
Beard Vegetation Association in Bioregion*				
968	136,188	9,052	7	19
Heddle vegetation complex in Bioregion**				
Guildford complex	92,497	4,963	5	0.4
Forrestfield Complex	20,168	2,337	12	1
Mattiske Vegetation Complex in Bioregion**				
Fo	11,594	1,445	12	2

Methodology References:
Commonwealth of Australia (2001)
*Government of Western Australia (2015)
** Parks and Wildlife (2015)

GIS Datasets:
Pre-European Vegetation

(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 Proposed clearing is at variance to this Principle

No watercourses are located within the application area. A multiple use wetland is mapped within the application area. Multiple use wetlands have few important ecological attributes and functions remaining (Water and Rivers Commission, 2001).

A portion of the application area (0.012 hectares) is located within a mapped conservation category wetland. This conservation category wetland is approximately six hectares in size. The majority of the application area is

located 34 metres from the mapped conservation category wetland. Conservation category wetlands support a high level of attributes and functions and are the highest priority for protection (Water and Rivers Commission, 2001). Wetlands that are to be conserved require a buffer to protect them from potential adverse impacts and maintain ecological processes and function with the wetland. The width of the buffer should be determined based on the values of the wetland to be protected and the threats posed by the adjacent land use. A minimum 50 metre buffer is recommended to conservation category wetlands.

Supporting information provided by Strategen including a flora and vegetation survey identified that the application area is mapped within a multiple use wetland (Strategen, 2016a). Strategen advised that the flora species present and vegetation condition within the subject lot are not representative of a typical wetland within the area (Strategen, 2016a).

Parks and Wildlife advised that the boundary of the conservation category wetland appears to be mapped incorrectly. Aerial imagery and the vegetation description/condition provided suggest that the boundary of the conservation category wetland should be aligned with the extent of remnant vegetation along Clifford Street, which is also consistent with the TEC boundaries (Parks and Wildlife, 2016c). Parks and Wildlife advised that the wetland within the application area is identified in the Mungala consanguineous suite (natural wetland group). Only 4.1 per cent of the palusplain area within the Mungala suite retains conservation category wetland values. Palusplain wetland within the Mungala suite has been significantly degraded or lost, and the cumulative impact from incremental clearing will exacerbate the loss of wetland function and values (Parks and Wildlife, 2016c).

Although limited in terms of area relative to the overall area of wetland within Bush Forever Site 53, the proposal will add to the cumulative impacts to wetlands in the Maddington/Kenwick area from development and clearing. The proposed clearing will result in the removal of vegetation that is currently providing a buffer between the road and the core of the wetland. As such, impacts like edge effects will encroach further into the wetland and increase degradation (Parks and Wildlife, 2016c).

Noting that the application area is mapped within a multiple use wetland and conservation category wetland, it is considered that the application area contains vegetation growing in association with a wetland.

Given the above, the proposed clearing is at variance to this Principle. Considering the limited size of the proposed clearing and the proposed management actions to control weed and sedimentation issues the proposed clearing is considered unlikely to have a significant impact on the wetland values.

Methodology References:
DER (2016)
Keighery (1994)
Parks and Wildlife (2016c)
Strategen (2016)
Water and Rivers Commission (2001)

GIS Databases:
Hydrology, linear

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

Comments **Proposed clearing is not likely to be at variance to this Principle**
Mapped soil type Wd6 is described as: plain: chief soils are sandy acidic yellow mottled soils, some of which contain ironstone gravel, and in some deeper varieties soils are now forming. Associated are acid yellow earths (Northcote et al., 1960-68).

No watercourses have been mapped within the application area, however, the application area is mapped within a conservation category and multiple use wetland. Given the sandy soils and relatively flat topography of the application area the proposed clearing is not likely to cause land degradation in the form of water erosion.

The sandy soils within the application area may cause land degradation in the form of wind erosion. Noting that the application area is relatively small, linear in shape and located adjacent to an existing road, it is considered that the proposed clearing is unlikely to cause appreciable land degradation in the form of wind erosion.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
DER (2016)
Northcote et al., (1960-68)

GIS Datasets:
Soils, statewide
Hydrology, linear
Geomorphoc Wetlands, (Mgt Categories)
Topographic contours

(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 Proposed clearing may be at variance to this Principle

A number of conservation areas have been recorded within the local area (10 kilometre radius), the closest being Bush Forever Site 53 located adjacent to the application area.

The proposed clearing may indirectly impact this conservation area through the spread of weed and dieback. Weed and dieback management practices will help mitigate this risk. As the application area forms part of the edge of a larger remnant, no ecological linkages are expected to be severed.

Given the above, the proposed clearing may be at variance to this Principle.

Methodology GIS Datasets:
Bushforever
Parks and Wildlife Tenure

(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 Proposed clearing is not likely to be at variance to this Principle

No watercourses are located within the application area. A multiple use wetland is mapped within the application area. Multiple use wetlands have few important ecological attributes and functions remaining (Water and Rivers Commission, 2001).

A small portion of the application area (0.012 hectares) is mapped within a conservation category wetland. This conservation category wetland is approximately six hectares in size. The majority of the application area is located 34 metres from the mapped conservation category wetland. The proposed clearing may cause sedimentation and runoff into this conservation category wetland. Conservation category wetlands support a high level of attributes and functions and are the highest priority for protection (Water and Rivers Commission, 2001). Wetlands that are to be conserved require a buffer to protect them from potential adverse impacts and maintain ecological processes and function with the wetland. The width of the buffer should be determined based on the values of the wetland to be protected and the threats posed by the adjacent land use. A minimum 50 metre buffer is recommended to conservation category wetlands.

Parks and Wildlife advised that the boundary of the Conservation category wetland appears to be mapped incorrectly. Aerial imagery and the vegetation description/condition provided suggest that the boundary of the Conservation category wetland should be aligned with the extent of remnant vegetation along Clifford Street, which is also consistent with the TEC boundaries (Parks and Wildlife, 2016c).

Although limited in terms of area relative to the overall area of wetland within Bush Forever Site 53, the proposal will add to the cumulative impacts to wetlands in the Maddington/Kenwick area from development and clearing. The proposed clearing will result in the removal of vegetation that is currently providing a buffer between the road and the core of the wetland. As such, impacts like edge effects will encroach further into the wetland and increase degradation (Parks and Wildlife, 2016c).

Groundwater salinity is mapped between 500-1000 total dissolved solids (milligrams per litres). Given the relatively small application area (0.32 hectares) in a linear shape located adjacent to an existing road the proposed clearing is not likely to cause deterioration in the quality of underground water.

The proposed clearing may cause deterioration in the quality of surface water within the abovementioned conservation category wetland. However, considering the limited size of the proposed clearing and the proposed management actions to control weed and sedimentation issues the proposed clearing is considered unlikely to have a significant impact on the wetland values.

The proposed clearing is not likely to be at variance to this principle.

Methodology References:
Keighery (1994)
Parks and Wildlife (2016c)
Water and Rivers Commission (2001)
GIS Datasets:
Geomorphic Wetlands, (Mgt Categories)
Groundwater Salinity Statewide
Hydrography linear

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

Comments Proposed clearing is not likely to be at variance to this Principle

Given the absence of watercourses, the relatively flat profile of the local landscape and the predominance of well drained sandy soils, the proposed clearing is not likely to cause, or exacerbate, the incidence or intensity of flooding.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Databases:
Soils, statewide
Hydrology, linear
Geomorphic Wetlands, (Mgt Categories)

Planning instruments and other relevant matters.

Comments The applicant has two other clearing permit applications within the immediate vicinity. Clearing permit CPS 6410/1 granted on 7 January 2016 authorising clearing up to 3.06 hectares. This clearing required an offset to mitigate the significant environment impacts to TECs (SCP3a) and wetlands. Clearing permit application CPS 7063/1 preliminary assessment identified a number of significant potential impacts associated with the proposed clearing and the applicant subsequently reduced the application area to avoid potential impacts and a permit was granted authorising clearing up to 0.36 hectares on 22 September 2016.

There are no mapped Aboriginal Sites of Significance within the application area.

The City of Gosnells notes that the application area adjoins an area mapped as Bush Forever Site 53, and that the entire application area is listed as an environmentally sensitive area. The City of Gosnells notes that a record of rare flora is located within the adjacent Bush Forever Site and that the application area adjoins areas which are mapped as containing three TECs (City of Gosnells, 2016).

The City of Gosnells advised that an existing development approval (DAP/15/00952) applies (City of Gosnells, 2016). The development assessment panel's approval on 10 March 2016, included Condition 14(i) which requires the upgrading of Clifford Street, Maddington to an industrial standard. The application area is in accordance with the approval's conditions as clearing of vegetation will be required to facilitate the upgrade of Clifford Street. The Clifford Street road reserve is vested in the City of Gosnells. The City of Gosnells provided its consent to the applicant to undertake clearing within the road reserve on 1 June 2016 (City of Gosnells, 2016).

The City of Gosnells notes that condition 16 of the development assessment panel's approval required 'prior to the lodgement of a building permit application and engineering drawings, a bushland and wetland management plan to be prepared (as appropriate) to identify and address the protection and management of Bush Forever Site 53 and, potentially remnant vegetation on Lot 5 Bickley Road, and thereafter implemented to the satisfaction of the City and Parks and Wildlife.' The City has requested a targeted flora survey be undertaken to identify the presence of rare flora and requested that all *Leptospermum laevigatum* outside of any proposed clearing area within the road reserve to remove the threat it poses to Bush Forever Site 53 (City of Gosnells, 2016).

Parks and Wildlife advised that if the proposed widening proceeds, that stormwater is managed appropriately through road design and construction to maintain the existing hydrological regime of the wetland and reduce the potential for contaminants to flow into the wetland. Stormwater management should be in accordance with Department of Water's *Decision Process for Stormwater Management in WA* (draft released for consultation in August 2016) (Parks and Wildlife, 2016c).

During site inspections conducted by the City of Gosnells and Parks and Wildlife, it was reported that the road reserve had recently been partially or fully cleared in places. Parks and Wildlife advised that a substantial Marri tree had been felled and rubbish dumped in the norther end of the Bush Forever Site (Parks and Wildlife 2016d). This matter will be dealt with as a separate issue.

The application was advertised in *The West Australian* newspaper on 11 July 2016 for a 21 day submission period. No submissions have been received in relation to this application.

The applicant provided supplementary information including a Bushland and Wetland Management Plan which includes the actions outlined below:

- reinstating a vegetation buffer of 1.5 – 2 metres in width within the road reserve, adjacent to the Bush Forever Site;
- removal of all tea trees within the road reserve and within the Bush Forever Site 53, up to 20 metres from the site boundary adjacent to the project area;
- the spread of weeds and dieback during construction will be managed by employing best practice techniques to prevent the intrusion of cleared vegetation or soil into Bush Forever Site 53;
- drainage approaches that maintain the current hydrological processes that support the wetland have been adopted. The invert of culverts under Clifford Street will be maintained at the current level and drainage will not be directed into Bush Forever Site 53;
- a street drainage system will be installed in Clifford Street to collect surface water from the road, this flow will be directed away from Bush Forever Site 53; and
- sediment and erosion control measures will be implemented during the construction phase including:

installing temporary sediment fences and controls around stormwater drainage infrastructure, at the base of batters within 10 metres proximity to edge of natural drainage line and at the interface of lots and the constructed road network, delineating designated construction transport routes, and implementing single transport entry points with shake down grids (Strategen, 2016c).

The applicant has proposed to undertake a baseline survey of Bush Forever Site 53 to determine vegetation condition and presence of weed species. The applicant also proposes to undertake monitoring to determine if the environmental objectives of the management plan are being achieved and proposed contingency measures to be undertaken if necessary (Strategen, 2016c).

Methodology References:
City of Gosnells (2016)
Parks and Wildlife (2016c)
Strategen (2016c)

GIS Databases:
Aboriginal Sites of Significance

3. References

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- Strategen Environmental Consultants Pty Ltd (Strategen) (2016a) Native vegetation clearing permit application (purpose permit) – supporting documentation. Western Australia. (DER Ref: A1111923)
- Strategen Environmental Consultants Pty Ltd (Strategen) (2016b) Supplementary Information CPS 7115/1. Western Australia. (DER Ref: A1178845)
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