

Department of Environment and Conservation
Native Vegetation Conservation Branch
Locked Bag 104
Bentley Delivery Centre
BENTLEY WA 6983

31 October 2012

Dear Sir/Madam,

RE: CLEARING PERMIT (AREA) APPLICATION – PORTION OF LOT 9014 BARTRAM ROAD, SUCCESS

This letter report contains background information including a description of the vegetation and an analysis of the proposed clearing and earthworking activities with respect to the 10 native vegetation clearing principles and is submitted in support of a Clearing Permit application for a portion of Lot 9014 Bartram Road, Success.

1. Background Information

1.1 Location

Gold Estates Australia (1903) Ltd (the proponent) is proposing to develop Stage 10 of their Thomsons Lake Estate comprising Lots 9012 Wentworth Parade and 9014 Bartram Road, Success (the site). The site is located approximately 21 km south of the Perth CBD and 14 km south-east of Fremantle and is situated in the City of Cockburn (**Figure 1**).

The site comprises approximately 31.39 ha and is bounded to the north by Steiner Avenue, to the west by residential development, to the east by Wentworth Parade and to the south by Bartram Road (**Figure 1**).

The clearing application area, identified on **Figure 2**, comprises approximately 8.05 ha and is located in the southern portion of Lot 9014 Bartram Road and is the portion of the site that the Stage 10 residential development will be constructed upon.

1.2 Planning Context

The site is currently zoned 'Urban' under the Western Australian Planning Commission's Metropolitan Region Scheme (MRS) and 'Residential' under the City of Cockburn's Town Planning Scheme No. 3.

The development of Thomsons Lake Estate commenced in approximately 1996 following the adoption of the Thomsons Lake Urban Structure Plan in 1986 by the Western Australian Planning Commission (WAPC). Stage 10 is the final stage of a continuing program of subdivision and development of Thomsons Lake Estate and is being developed in accordance with the approved Structure Plan.

In June 2012, the proponent lodged an application with the City of Cockburn for the purpose of rezoning the site to 'Development Zone' (Amendment No. 93) to facilitate the opportunity for some increased residential density within the 8.05 ha developable area located to the south of the Twin Bartram Swamp wetland, while at the same time preserving the environmental values associated with the wetland and its surrounds through the provision of additional areas of public open space (POS) being provided to finalise the POS contributions for the Thomsons Lake estate.

At the proponent's request, the rezoning application has been placed in abeyance by the City of Cockburn awaiting the finalisation of the Local Structure Plan (LSP) that is currently being prepared for the proposed Stage 10 development.

1.3 Purpose for Clearing Permit Application

The proponent proposes to clear areas of existing native vegetation comprising approximately 5.3 ha of the 8.05 ha clearing application area located on the southern portion of Lot 9014 Bartram Road to the south of the Twin Bartram Swamp wetland and its associated 50m buffer (**Figure 2**). The proposed clearing comprises the first stage of the construction of Stage 10 and will enable cut to fill bulk earthworks to proceed following the cessation of the City of Cockburn's earthworks embargo period (i.e. post 31 March 2013).

An Application for Approval to Commence Development (DA) has been prepared by GHD Pty Ltd and will be lodged with the City of Cockburn. The DA and associated Earthworks DA Plan are included as **Attachment 1**.

An aerial photograph overlay identifying the current state of the environment and the clearing application area is shown on **Figure 2**.

1.4 Site Description

1.4.1 Topography and Soils

The site exhibits a gradual fall from approximately 36m in the centre of the site to 28.5m along the northern (Steiner Avenue) boundary adjacent to the wetland buffer and 34m along the southern boundary adjacent to Bartram Road.

Soil and landscape mapping identifies the site as being within the Bassendean System (Department of Agriculture and Food Western Australia, 2007). The clearing application area is representative of the Bassendean B1 phase which is described as extremely low to very low relief dunes, undulating sandplain and discrete sand rises with deep bleached grey sands sometimes with a pale yellow B horizon or a weak iron-organic hardpan at depths generally greater than 2m (Department of Agriculture and Food Western Australia, 2007).

1.4.2 Wetlands

The site contains two wetlands mapped in the Department of Environment and Conservation (DEC) *Swan Coastal Plains Geomorphic Wetlands dataset*: a conservation category sumpland (Twin Bartram Swamp, UFI 13841) that encompasses most of the mapped wetland area, and a resource enhancement category sumpland (UFI 15297) on the eastern edge of the landholding. In addition, two Environmental Protection (Swan Coastal Plain Lakes) Policy wetlands occur almost entirely within the mapped extent of the Twin Bartram Swamp (**Figure 3**).

1.4.3 Vegetation and Flora

In January 2010, a vegetation survey of the site was undertaken by Ecoscape (Australia) Pty Ltd (Ecoscape) resulting in the majority of the vegetation mapping being completed (**Attachment 2**). A targeted flora and vegetation survey of the site was undertaken in September and November 2011 as part of a more comprehensive environmental assessment of the site (**Attachment 3**). The survey included a systematic grid survey of all areas of native bushland was undertaken to search for conservation significant flora species conducted in September 2011. In December 2011, systematic sampling of floristic quadrats was undertaken.

The flora and vegetation assessment methodology used by Ecoscape during the 2011 survey was developed to comply with a Level 1 survey according to the EPA's *Guidance for the Assessment of Environmental Factors No 51: Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (2004a) and *Terrestrial Biological surveys as an Element of Biodiversity Protection Position Statement No. 3* (2002).

No Threatened Flora (TF), Priority Flora (PF) or Threatened Ecological Communities (TEC) were identified during the 2011 spring survey (Ecoscape, 2012).

Flora:

A total of 75 vascular plant taxa from 29 families and 64 genera were recorded from the site during the 2011 survey. Approximately 27 species (or 36% of the species) recorded within the site from floristic quadrats were introduced species (Ecoscape, 2012). The families with the greatest representation were Poaceae (12 taxa, all non-natives), Fabaceae (10 taxa, 3 non-native), Myrtaceae (9 taxa) and Asteraceae (6 taxa, all non-native).

Vegetation:

A standard vegetation classification and description system was utilised during the vegetation survey. Descriptions were defined using the height and estimated cover of dominant species of each stratum using the framework of Keighery (1994). The vegetation condition was determined using the vegetation condition rating scale described by Keighery (1994) and published within the Bush Forever Strategy (Government of Western Australia, 2000) as outlined in **Table 1**.

TABLE 1: VEGETATION CONDITION RATING SCALE

Vegetation Condition Rating Scale (Government of Western Australia, 2000)	
P	Pristine Pristine or nearly so, no obvious signs of disturbance
Ex	Excellent Vegetation Structure intact, disturbance affecting individual species and weeds are non-aggressive species
VG	Very Good Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing
G	Good Vegetation structure significantly altered with very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing
Deg	Degraded Basic vegetation structure severely impacted by disturbances. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing
CD	Completely Degraded The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often referred to as Parkland Cleared with the flora composing weed or crop species with isolated native trees or shrubs

Only one vegetation type, *Banksia menziesii* and *Banksia attenuata* Low Woodland (BmBaLW) covering approximately 5.3 ha, was found within the clearing application area (**Figure 4**). The remaining 2.75 ha had previously been cleared for firebreaks (Ecoscape, 2012). This vegetation type also included some emergent *Eucalyptus marginata*, *B. illicifolia* and *Allocasuarina fraseriana* within the upper storey. Typical mid-storey species included *Hibbertia hypericoides*, *Melaleuca thymoides* and *Phlebocarya ciliata* (refer to **Plate 1**).



Plate 1: Typical *Banksia menziesii* and *B. attenuata* Low Woodland (BmBaLW) Vegetation

In terms of vegetation condition, approximately 0.83 ha of the clearing application area was found to be in *good* condition and approximately 2.88 ha found to be in *very good* condition (**Figure 4**).

The remaining 1.59 ha of vegetation that had been burnt during a bushfire in 2010, was not assessed during the 2011 spring survey as it was not possible to accurately describe the vegetation or assess its condition (Ecoscape, 2012). Refer to **Plates 2 and 3** for 2010 and 2011 photographs of this area.



Plate 2: Vegetation type BmBaLW following the 2010 bushfire.



Plate 3: Recovery of BmBaLW following 2010 bushfire (taken December 2011)

1.4.4 Fauna

Two Level 1 Fauna assessments of the site were undertaken to identify and assess areas of potential fauna habitat (Ecoscape, 2010; 2012). The fauna assessment methodologies were undertaken in accordance with the Environmental Protection Authority's (EPA) (2003) *Guidance Statement 10: Level of Assessment for Natural Areas within the System 6 Region and Swan Coastal Plain System 1 Regions*, EPA (2004b) *Guidance Statement 56: Terrestrial Fauna Surveys for Environmental Impact Assessments in Western Australia* and EPA (2002) *Terrestrial Biological Surveys as an Element of Biodiversity Protection Position Statement No. 3*. Both surveys included a desktop assessment of the major State and Commonwealth databases and a reconnaissance survey (Ecoscape, 2010; 2012).

The two reconnaissance surveys that were undertaken on foot, identified that while the fauna habitat value of the clearing application area (i.e. *Banksia* woodland) is prospective for providing foraging habitat for Carnaby's and Forest Red-tailed Black Cockatoos, no evidence of foraging, in the form of beak scrapes on nuts, was found across the site.

2. Application of the Ten Clearing Principles

2.1 Principle 1

Vegetation should not be cleared if it comprises a high level of biological diversity.

On the basis of the one floristic quadrat that was assessed from the 2.8 ha of *very good* condition vegetation within the clearing application area, 24 native and seven introduced (weed) species were observed. Ecoscape (2012) noted that approximately 1.59 ha had been burnt and is highly disturbed with those areas of regrowth having limited species diversity. No TF, PF or TECs were identified by Ecoscape (2012) during their site survey. No Threatened or Priority species of fauna were observed within the clearing application area during either of the fauna surveys undertaken (Ecoscape, 2010; 2012).

Therefore clearing is not at variance with this principle.

2.2 Principle 2

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.

Habitat values of the clearing application area are limited due to the disturbed and fragmented nature of the vegetation that is a result of clearing for firebreaks (approximately 2.75 ha) and burning of approximately 1.59 ha of the woodland. While the remaining 3.71 ha of the clearing application area comprises *Banksia* woodland in *good to very good* condition, the area does not constitute significant habitat for indigenous fauna. Given the extensive areas of equal or better than quality habitat found in Bush Forever sites are regionally significant areas of natural vegetation within the Perth Metropolitan Region (Government of Western Australia, 2000).

Extensive areas of better quality fauna habitat are found in Bush Forever sites 263, 391, 392 and 492 all of which are located within 2 km of the site, therefore clearing is not at variance with this principle.

2.3 Principle 3

Vegetation should not be cleared if it includes, or is necessary for the continued existence of rare flora.

No TF or PF species listed under the Western Australian *Wildlife Conservation Act (1950)* or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* were identified during the Ecoscape survey of the site (2012).

The clearing application area is highly unlikely to contain any TF or PF therefore clearing is not at variance with this principle.

2.4 Principle 4

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.

No TECs were identified during the spring 2011 survey of the site and the inferred Floristic Community Type (SCP23a – Central *Banksia attenuata* – *B. menziesii* woodlands) of the site is considered to be Well Reserved and Low Risk (Ecoscape, 2012).

The vegetation within the clearing application area is not a TEC therefore clearing is not at variance with this principle.

2.5 Principle 5

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

According to Heddle *et al.* (1980) the Bassendean – Central and South Vegetation Complex occurs across the site which is listed in EPA *Guidance Statement No. 10* (2006) as having 27 % remaining on the Swan Coastal Plain (in 2002), with 0.7% in secure reserves. The complex is described as ranging from woodland of *Eucalyptus marginata* – *Allocasuarina fraseriana* – *Banksia* spp. to low woodland of *Melaleuca* spp. and sedgelands on moister sites.

While the EPA (2000) has the objective to seek to:

- Retain at least 30% of the pre-clearing extent of the ecological community, where >30% of an ecological community remains; and
- Preferentially located developments in cleared areas, particularly where 30% or <30% of the pre-clearing extent of the ecological community remains,

These retention areas may be modified in 'Constrained Areas' within the Swan Coastal Plain portion of the Perth Metropolitan Region and may include, Urban, Urban Deferred and Industrial zoned lands and lands with development approvals. The EPA's (2006) modified objective for 'Constrained Areas' is to seek to:

- Retain at least 10% of the pre-clearing extent of the ecological community where >10% of the ecological community remains, or
- Retain all remaining areas of each ecological community where <10% of this ecological community remains.

The site is currently zoned 'Urban' under the WAPC Metropolitan Region Scheme (1985) and the Bassendean Complex – Central and South has in excess of 10% of its original extent on the Swan Coastal Plain remaining, therefore clearing is not at variance with this principle.

2.6 Principle 6

Vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

The proposed clearing area is located on the southern side of the Twin Bartram Swamp wetland (UFI 12980). The wetland is a conservation category wetland classified as a sumpland which is defined as 'basins that are seasonally inundated'. The clearing application area is setback a minimum of 50 m from the DEC's *Geomorphic Wetlands Swan Coastal Plain* dataset boundary for the wetland. In addition, the clearing application area is isolated in relation to the wetland and its buffer as there is no surface runoff to or from the wetland in this area of the site.

The vegetation within the clearing application area is upland vegetation that is not typically associated with the wetland vegetation found on-site therefore clearing is not at variance with this principle.

2.7 Principle 7

Vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Within the clearing application area there are already extensive areas of the native vegetation that have previously been cleared of vegetation for firebreaks (2.75 ha) or have been severely degraded due to a bushfire in 2010 (1.59 ha).

In addition, as part of the DA approval, it is anticipated that appropriate management measures (e.g. dust suppression and hydro-mulching of sand stockpiles and surfaces) will be put in place following completion of bulk earthworks that will prevent land degradation occurring, therefore clearing is not at variance with this principle.

2.8 Principle 8

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.

The clearing of the 5.3 ha of native vegetation within the clearing application area will not have an impact on any conservation values of the Twin Bartram Swamp wetland. As stated earlier, the northern boundary of the clearing application area is located on the southern side of the wetland's 50m buffer which is assessed as being in a *completely degraded* condition (Ecoscape, 2012).

Therefore clearing is not at variance with this principle.

2.9 Principle 9

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

There are no existing surface water flows across the clearing application area and during pre-development monitoring, the underlying groundwater was found to be between 22.22 mAHD and 23.92 mAHD. Monitoring identified that groundwater beneath the site has a low hydraulic gradient will levels in all bores generally at a similar relative height on each sampling occasion. Depth to groundwater within the site is largely a function of topography: in the northern part of the site groundwater ranges from ponding within the wetland, to 2 m below surface level and close to 7 m separation along the southern boundary (Hyd2o, 2011). No dewatering is proposed to be undertaken during the bulk earthworks associated with the Development Approval and the surface water level within the wetlands will not be adversely impacted.

Removing vegetation and undertaking bulk earthworks within the clearing application area is not likely to impact on either surface water flows or the underlying groundwater table, therefore clearing is not at variance with this principle.

2.10 Principle 10

Vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

The proposal to clear the vegetation and undertake bulk earthworks within the clearing application area is not expected to cause, or exacerbate the incidence of flooding due to the gradient of the clearing application area and highly permeable nature of the underlying Bassendean soils.

Therefore clearing is not at variance with this principle.

3. Conclusion

Approximately 5.3 ha of the Thomsons Lake Estate Stage 10 development area located on Lot 9014 Bartram Road Success are proposed to be cleared. The clearing is required to enable bulk earthworks to be undertaken. A DA prepared by GHD Pty Ltd is to be submitted to the City of Cockburn requesting permission for bulk earthworks to be undertaken followed by stabilising of the earth worked area with hydromulch.

In *EndPlan Environmental's* opinion the clearing of the vegetation within the clearing application area does not contravene any of the ten clearing principles as discussed in this report. If any further information is required please do not hesitate to contact the undersigned on 0447 366 460.

Yours sincerely



BERNADETTE VAN DER WIELE
Director

REFERENCES

Department of Agriculture and Food, Western Australia (2007). *Agricultural and Related Resources Protection Act 1976*, Department of Agriculture and Food.

Department of Environment and Conservation (2012). *Geomorphologic Wetlands Swan Coastal Plain (electronic) dataset*.

Ecoscape (Australia) Pty Ltd (2010). Wentworth Avenue Vegetation and Fauna Survey. Report 7084-2426-09R prepared for Gold Estates Australia (1903) Ltd, January 2010.

Ecoscape (Australia) Pty Ltd (2012). Thomsons Lake Stage 10 – Environmental Assessment. Report 7765-2649-11R final rev 1 prepared for Gold Estates Australia (1903) Ltd, January 2012.

Environmental Protection Authority (1992). 'Environmental Protection (Swan Coastal Plain Lakes) Policy 1992'. Environmental Protection Authority, Perth, Western Australia.

Environmental Protection Authority (2000). *Position Statement No. 2 – Environmental Protection of Native Vegetation in Western Australia, Clearing of Native Vegetation with Particular Reference to the Agricultural Area*, Environmental Protection Authority, Perth.

Environmental Protection Authority (2002). *Position Statement No. 3 – Terrestrial Biological Surveys as an Element of Biodiversity Protection*, Environmental Protection Authority, Perth.

Environmental Protection Authority (2004a). *Guidance for the Assessment of Environmental Factors No. 51 – Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia*, Environmental Protection Authority, Perth.

Environmental Protection Authority (2004b). *Guidance for the Assessment of Environmental Factors No. 56 – Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia*, Environmental Protection Authority, Perth.

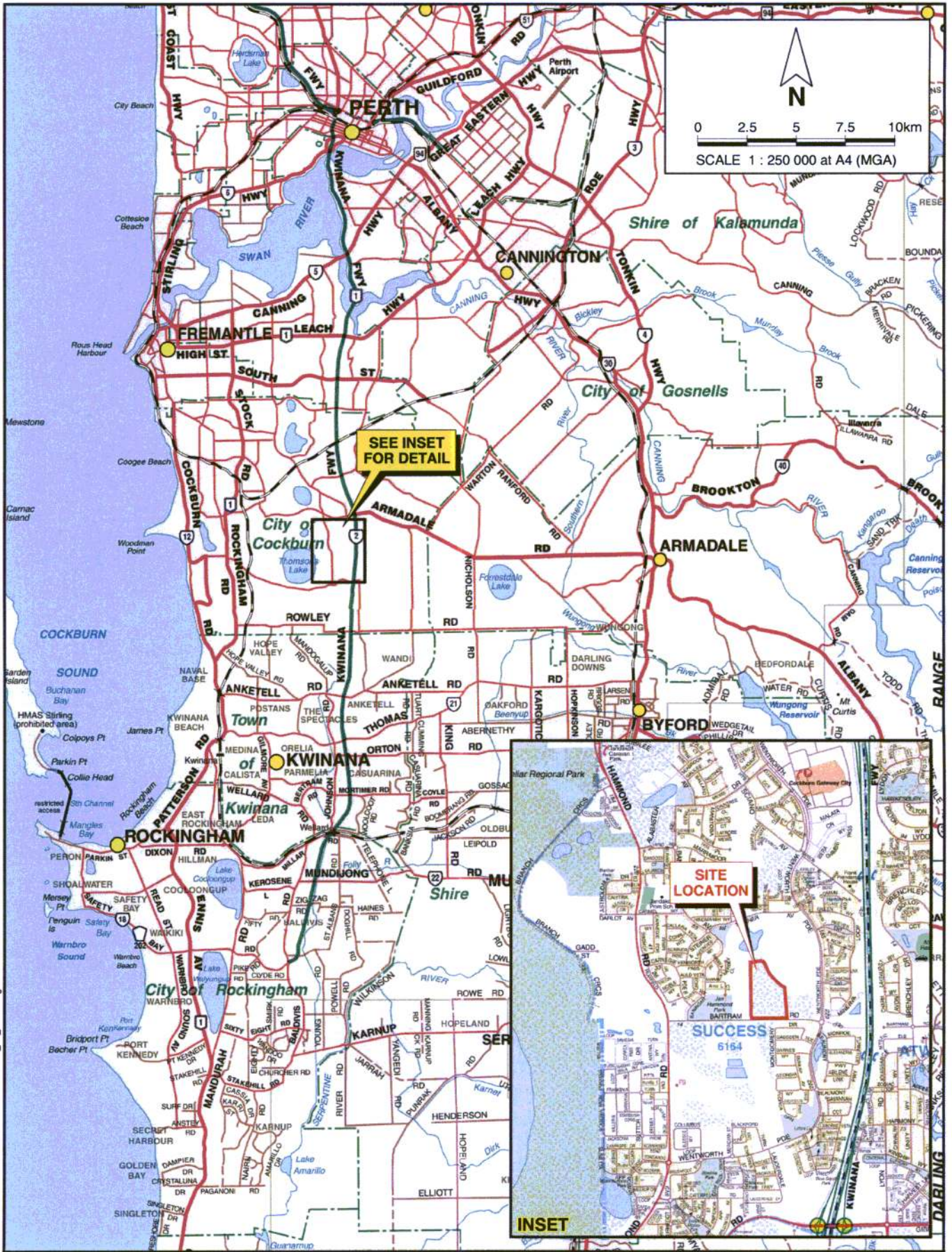
Environmental Protection Authority (2006). *Guidance for the Assessment of Environmental Factors No. 10 – Level of assessment for proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of System 1 region*, Environmental Protection Authority, Perth.

Government of Western Australia (2000). *Bush Forever – Keeping the Bush in the City. Volume 1: Policies, Principles and Processes*, Western Australian Planning Commission, Perth, Western Australia.

Hedde, E.M., Loneragan, O.W. and Havel, J.J. (1980). 'Vegetation complexes of the Darling System, Western Australia, in *Atlas of Natural Resources, Darling System, Western Australia, Soil and Landforms.*, ed. DoCaL Management. Department of Conservation and Land Management, Perth, pp. 37-72.

Keighery B.J. (1994). *Bushland Plant Survey – A Guide to Plant Community Survey for the Community*, Wildflower Society of WA (Inc.), Nedlands, Western Australia.

FIGURES



GEA212_07_V1-401.dgn

PINPOINT CARTOGRAPHICS (08) 9562 7136

EndPlan
Environmental

Gold Estates Australia (1903) Ltd
CLEARING PERMIT APPLICATION
PORTION OF LOT 9014 BARTRAM ROAD, SUCCESS

Date: 30 Oct 2012
Drawn: B. Van der Wiele

REGIONAL LOCATION

Figure 1

Report No. GEA212_07_V1



Gold Estates Australia (1909) Ltd
 CLEARING PERMIT APPLICATION
 PORTION OF LOT 9014 BARTRAM ROAD, SUCCESS

Environmental
EndPlan


EXISTING ENVIRONMENT

Date: 30 Oct 2012
 Drawn: B. Van der Wiele

Figure 2

Report No. GE4212_07_V1



 N
 0 50 100 150 200 250m
 SCALE 1 : 5 000 at A3 (MGA)
Legend
 --- Clearing Application Area

Legend

- Study Area
- Ramsar Wetlands
- EPP (1992) SCP Lakes Boundaries
- DEC Geomorphic SCP Wetlands Dataset
 - Conservation
 - Resource Enhancement
 - Multiple Use
- Perth Drinking Water Source Areas
 - Priority One
 - Priority Two
 - Priority Three
 - Priority Not Assigned



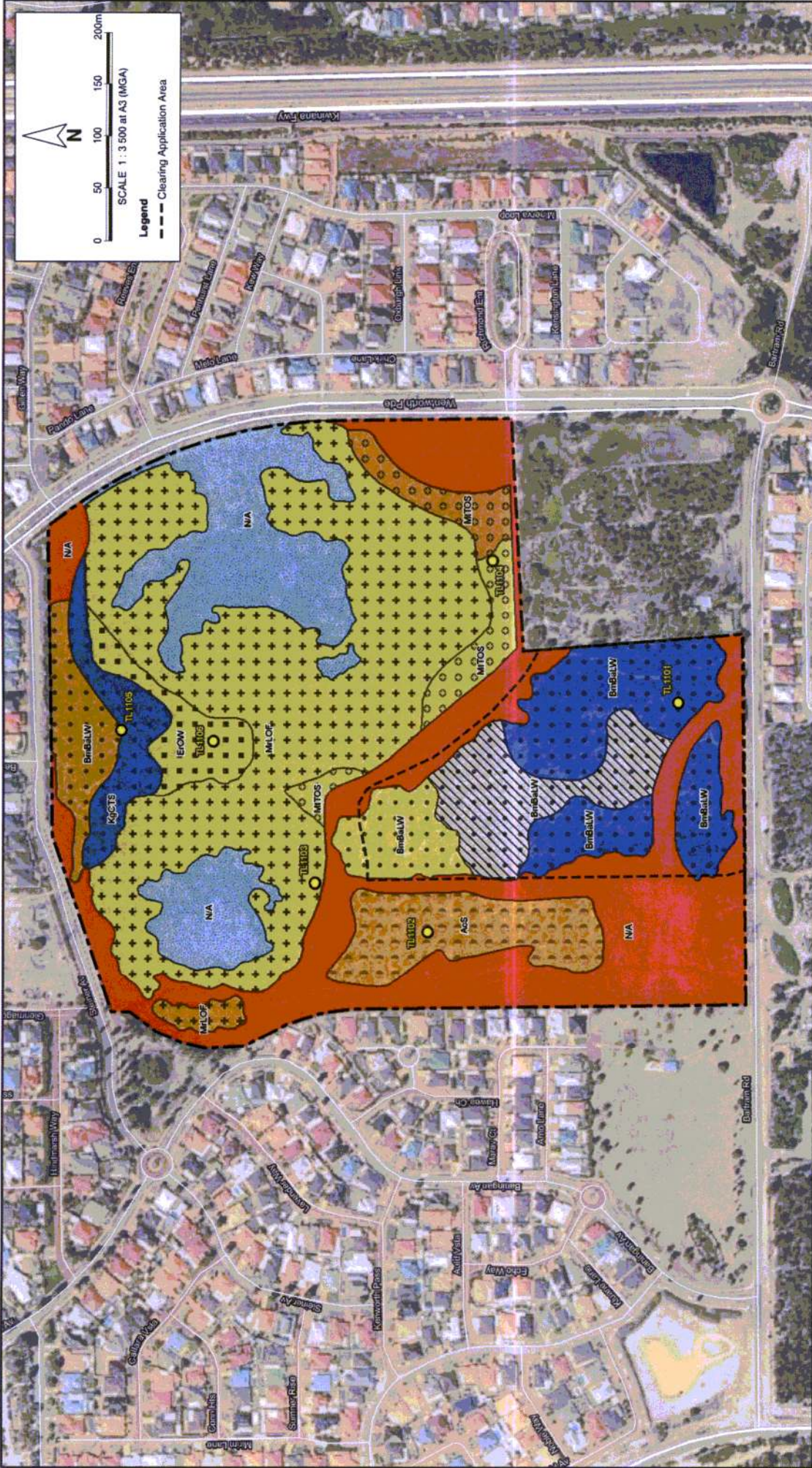
SOURCE: Ecoscope, Project No. 2848-11.

EndPlan
Environmental

Figure 3
SCP GEOMORPHIC WETLANDS

Date: 30 Oct 2012
 Drawn: B. Van der Wiele
 Report No: GE4212_07_V1

Gold Estates Australia (1903) Ltd
 CLEARING PERMIT APPLICATION
 PORTION OF LOT 9014 BARTRAM ROAD, SUCCESS



Legend

Quadrats
 Study Area

Vegetation Types
 ACS: *Adiantum cygnum* and *Bankia merriamii* Shrubland
 BinBALW: *Bankia merriamii* and *B. attenuata* Low Woodland
 EOW: *Eucalyptus rudis* Open Woodland over *Kunzea glabrescens* Tall Open Scrub
 KGCIS: *Kunzea glabrescens* Tall Closed Scrub
 MLOF: *Melaleuca ripariophylla* Low Open Forest
 MITOS: *Melaleuca nevillei* Tall Open Scrub

Vegetation Condition
 Keighery (1994) Scale
 Phaline (n/a) Excellent (n/a) Very Good Good Degraded
 Completely Degraded Open Water Burnt 2010

EndPlan
 Environmental

Gold Estates Australia (1903) Ltd
 CLEARING PERMIT APPLICATION
 PORTION OF LOT 9014 BARTRAM ROAD, SUCCESS

Date: 30 Oct 2012
 Drawn: B. Van der Wiele

Figure 4

VEGETATION CONDITION

Report No. GE012_07_V1

ecoscope

SOURCE: Ecoscope, Project No. 2848-11.