Australian Government
Department of the Environment

Referral of proposed action

Project title: Residential subdivision – Lot 1 DP 588912 1-41 Marsh Road, Silverdale, NSW (Former African Lion Safari Park)

1 Summary of proposed action

1.1 **Short description**

The proposed development will involve the subdivision of the study area located at 1-41 Marsh Road, Silverdale, NSW (Figure 1) into 447 residential lots including associated roads and infrastructure as well as a BioBank (offset) site (Figure 2).

The proponent, Simba Developments Pty Ltd and their planning advisors SitePlus, propose to offset losses to biodiversity values through the retention of the land zoned E2 Environmental Conservation under the Wollondilly Local Environment Plan (2011) within a proposed BioBank site (Figure 2) and through the retirement of Biobanking Credits.

1.2 **Latitude and longitude**

Location Point (Figure 2)	Latitude (decimal degrees)	Longitude (decimal degrees)
1	-33.895	150.6003
2	-33.8953	150.6027
3	-33.8956	150.6026
4	-33.8961	150.6029
5	-33.8968	150.6032
6	-33.897	150.6036
7	-33.8978	150.6043
8	-33.8986	150.6046
9	-33.8994	150.6048
10	-33.8997	150.6048
11	-33.9001	150.6048
12	-33.9002	150.6058
13	-33.9017	150.6055
14	-33.9034	150.6052
15	-33.9033	150.6032
16	-33.9032	150.6013
17	-33.9021	150.6004
18	-33.9011	150.5995
19	-33.8997	150.5997
20	-33.8982	150.5999
21	-33.8965	150.6001

1.3 **Locality and property description**

The study area is located approximately 800 metres south-east of Warragamba, and approximately seventy three (73) kilometres west-south-west of the Sydney Central Business District (Figure 1). The study area is currently zoned R2 Low Density Residential under the Wollondilly Local Environment Plan 2011 (LEP). The proposed BioBank site is zoned E2 Environmental Conservation.

Previously, the study area formed part of the Lion Safari Park which operated as a tourist facility between 1968 and 1991. During this period the study area was subject to extensive and ongoing clearing and maintenance of vegetation. The Lion Safari Park closed in 1991. Since the last animals were removed in 1995, the study area has been largely unmanaged.

1.4	**Size of the development footprint or work area (hectares)**	The property encompasses 42.27 hectares of private land with 37.60 hectares located within the development site (Figure 2).
1.5	**Street address of the site**	1-41 Marsh Road, Silverdale, NSW

1.6 **Lot description**

Lot 1 DP 588912

1.7 **Local Government Area and Council contact (if known)**

A development application has been lodged with Wollondilly Shire Council under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The relevant contact person is:
Andre Vernez
Development Assessment Planner
Wollondilly Shire Council
PO Box 21 Picton NSW 2571
Phone – (02) 4677 9573
Email – andre.vernez@wollondilly.nsw.gov.au
WSC Reference: 010.2015.00000935.001

1.8 **Time frame**

The proposed development will be undertaken over nine stages depending on demand, with staging according construction and demand for housing. It is anticipated the site will take six years to be developed. Vegetation will be cleared in stages as the construction occurs. The clearing for each stage will also incorporate an asset protection zone (APZ) for each stage of construction.

1.9	**Alternatives to proposed action** Were any feasible alternatives to taking the proposed action (including not taking the action) considered but are not proposed?		No
		X	Yes, refer to section 2.2
1.10	**Alternative time frames etc** Does the proposed action include alternative time frames, locations or activities?	X	No
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	**State assessment** Is the action subject to a state or territory environmental impact assessment?		No
		X	Yes, refer to Section 2.5

1.12	**Component of larger action** Is the proposed action a component of a larger action?	X 	No Yes, you must also complete Section 2.7
1.13	**Related actions/proposals** Is the proposed action related to other actions or proposals in the region (if known)?	X 	No Yes, provide details:
1.14	**Australian Government funding** Has the person proposing to take the action received any Australian Government grant funding to undertake this project?	X 	No Yes, provide details:
1.15	**Great Barrier Reef Marine Park** Is the proposed action inside the Great Barrier Reef Marine Park?	X 	No Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

2.1 Description of proposed action

The proposed development will involve the subdivision of the study area (Figure 2) into 447 residential lots, on the land zoned as R2 Low Density Residential and located within an urban release area within the *Wollondilly Local Environment Plan 2011* (WLEP). APZs will be maintained within the proposed development footprint. An area of land zoned E2 Environmental Conservation will be used to partially offset impacts to biodiversity associated with this proposed development (Figure 3).

As part of the proposed residential subdivision, a number of roads will be constructed providing access. Two roads will be constructed from Marsh Road providing access to the site. One of these roads will be constructed to be capable of servicing a bus route through the site (Road No 2 – the southern road).

One access road is also provided from Production Avenue. The bus route travels between Production Avenue and the southern access on Marsh Road. An additional emergency access is also provided for NSW Rural Bush Fire Service from Production Avenue if the need arises.

Provision is made on site for the management of stormwater arising from the development both as it is constructed in stages and at the completion of the development. This incorporates a series of water quality management solutions with the primary drainage corridor. The existing dam will be strengthened for retention as a detention pond.

The development will contribute to the economy of the area through the provision of construction jobs as the subdivision and future homes are developed. The estimated value of the land subdivision project is $165 M, and with completed housing $360 Million. Similarly, as new residents move into the area, they will support the local economy by using existing businesses within the area.

The site has also been identified as an Urban Release Area under the provisions of the WLEP and as an outcome of this, two Voluntary Planning Agreement (VPA) have been negotiated for the development site to ensure a range of infrastructure will be provided that benefits the local community and improves State infrastructure in the locality.

Some drainage works will be required within land zoned E2 Environmental Conservation. These works will be approved and will be managed as a Council asset by Wollondilly Shire Council. These works have an impact of 0.38 hectares in area and are proposed to be dedicated as two drainage reserves (proposed Lots 1302 and 1303).

Some earthworks to improve the flow and quality of stormwater drainage from the development site will be required; however works involving vegetation clearance for strengthening the dam wall in the Managed Reserve containing the CEEC will be temporary. These areas will be located around existing waterbodies (Figure 3). In accordance with the *Threatened Species Conservation (Biodiversity Banking) Regulation* 2008 (the BioBanking Regulation), the portion of the drainage reserve occurring in the E2 Environmental Conservation zoned lands cannot form part of a the BioBanking Statement for the development as it is subject to approval under the *Native Vegetation Act 2003*, nor can it be assessed as part of the BioBank site, as the proposed development approval will require the ongoing management of biodiversity in accordance with the VPA and a Vegetation Management Plan (VMP) will control all future activities.

Therefore, within in the E2 zone 0.38 hectares of *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed critically endangered ecological community (CEEC) *Shale Sandstone Transition Forest of the Sydney Basin Bioregion* (Shale Sandstone Transition Forest) has

been assessed separately through a flora and fauna assessment incorporated within the Biodiversity Assessment Report (Biosis 2016) (Attachment 1).

It is proposed to offset losses in biodiversity values through the retention of the majority of land zoned E2 Environmental Conservation within a proposed BioBank site under the NSW BioBanking scheme. Establishment of the proposed BioBank site will maintain connectivity through to Megarritys Creek and will be used to partially offset losses of vegetation and fauna habitat (Figure 3). The applicant will meet their offset obligations also through the retirement of BioBanking Credits with direct offsets (*Shale Sandstone Transition Forest)* in accordance with the requirements of the EPBC Act environmental offsets policy (Commonwealth of Australia 2012).

2.2 Alternatives to taking the proposed action

The study area has been subject to a previous planning proposal for the rezoning of the land under the Wollondilly LEP. The design of the development during the planning proposal phase sought to avoid and minimise impacts to areas of greatest ecological value identified by EcoLogical (2005), whilst siting residential development in the most modified locations and adjacent to existing residential areas. This resulted in the rezoning of the study area to R2 Low Density Residential while maintaining vegetation connectivity to Megarritys Creek in the north-east by zoning of this land to E2 Environmental Conservation. The proposed development is now being planned within areas zoned for residential.

Since the closure of the Safari Park in 1991 and the subsequent rezoning, the property has been left unmanaged. Vegetation located within the areas zoned R2 Low Density Residential has started to regenerate into the Shale Sandstone Transition Forest CEEC. The Marsh Road frontage of the property adjoins existing residential development. There is also proposed residential development connecting the site immediately to the south. Although fences have recently been repaired, the site is subject to ongoing disturbance including rubbish dumping, tracking, firewood collection and vandalism.

In 2011, a Shire wide LEP review was completed and identified the property as an Urban Release Area. The E2 Environmental Conservation area was also confirmed. The property is included in Volume 2 of the Wollondilly Development Control Plan 2016 (DCP).

A total of 13.61 hectares of EPBC Act listed CEEC; Shale Sandstone Transition Forest is present within the development footprint. Of this, 1.53 hectares will be partially retained within the Managed Reserve and the Managed APZ (Figure 3). The removal of the remaining 12.08 hectares however would result in a significant effect to this CEEC.

Whilst the development of the subdivision plan has sought to avoid and minimise impact to identified biodiversity values (detailed in Section 5 of the referral), resulting in minor modifications to the proposed residential subdivision, the following two additional alternatives were considered:

- Further avoid areas of regenerating CEEC, Shale Sandstone Transition Forest.
- Do nothing.

The 'further avoidance of the CEEC' option was considered as part of the proposal and included the retention of vegetation extending along the eastern boundary. Due to the services required to support the proposed subdivision including roads, bus routes, asset protection zones, water and electricity, the retention of additional CEEC would result in a decrease in lot yield to the extent that the proposal would not be financially feasible. Given the current condition of the CEEC along with ongoing land uses and associated disturbance, it is unlikely that the retention of this vegetation would result in an improvement in the viability or connectivity of vegetation throughout the landscape without significant management of the site and associated high costs.

Therefore the only alternative to the proposed action would be the 'do nothing' option whereby the land would be left undeveloped and unmanaged. The land is zoned R2 Low Density Residential and is within the Silverdale township and an Urban Release Area, where it is adjacent to existing residential and industrial developments. Development of the land as a residential subdivision is consistent with the neighbourhood amenity and aligns with the strategic growth plans of the Wollondilly LGA.

2.3 Alternative locations, time frames or activities that form part of the referred action

Not applicable.

2.4 Context, planning framework and state/local government requirements

The proposed subdivision is being assessed under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). A Development Application has been lodged with Wollondilly Shire Council.

The proposed residential subdivision is also subject to an application to the NSW Office of Environment and Heritage (OEH) under Part 7A of the NSW *Threatened Species Conservation act 1995* (TSC Act). This includes an application for a BioBanking statement to offset biodiversity losses under the NSW BioBanking scheme. A Biodiversity Assessment Report (Biosis 2016) has been prepared and is attached to this Referral (Attachment 1). The BioBanking statement application was lodged with OEH on 3 February 2016 and Simba Developments Pty Ltd are awaiting a reply as to who the regional assessment officer will be.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

As outlined above, the proposed residential subdivision is subject to an application under Part 7A of the TSC Act for a BioBanking statement. Under the TSC Act, development for which a BioBanking statement is issued is taken to be development that is not likely to significantly affect any threatened species, population or ecological community under this Act, or its habitat. The NSW BioBanking scheme has been accredited under the bilateral agreement between the Commonwealth of Australia and the State of New South Wales relating to environmental assessment (the assessment bilateral agreement).

The application, including the Biodiversity Assessment Report (Biosis 2016) has been submitted to Wollondilly Shire Council for provision to OEH. A copy of the Biodiversity Assessment Report is provided at Attachment 1.

2.6 Public consultation (including with Indigenous stakeholders)

The Development Application will be exhibited in accordance with the requirements of Wollondilly Shire Council.

An Aboriginal heritage assessment has been undertaken by Kayandel Archaeological Services (2015). A small artefact scatter site had been identified in a previous study undertaken within the property however this site could not be identified and two additional sites were found.

An informal and formal consultation process was undertaken by Kayandel with 7 representative groups being notified. Notification was also provided in the newspaper of the proposed assessment.

One response was received from the Cubbitch Barta Native Titles Claimants Aboriginal Corporation (CBNTCAC). The CBNTCAC agreed that the recommendations made were consistent with the recommendations regarding artefact scatters within a development. It appeared that one of the sites might be located within the E2 Conservation Zoned land and if so, it should be left intact or if it is very close then could the concept plan be rejigged to include it within the Conservation Land.

The site is not located in the E2 land and it was considered that given the site was assessed as having low significance, and that no comment was made on this finding, that any review of the zoning was not warranted or feasible.

The recommendations of the Assessment are that:

1. No further assessment of the Aboriginal heritage within the study area is required to inform the development application.
2. This Aboriginal Cultural Heritage Assessment report should be read in conjunction with the addendum, which will be prepared, once comments have been received from the Aboriginal stakeholders.
3. Further investigation, in the form of subsurface test excavation, will be required.
4. The requirement for the Proponent to seek an Aboriginal Heritage Impact Permit (AHIP) under Part 6 of the *National Parks and Wildlife Act, 1974* should be included as a condition of any consent resulting from this assessment. The seeking of AHIP should be undertaken prior to the commencement of works associated with the residential subdivision within those portions of the Aboriginal sites identified.
5. Further investigations may result in the identification of additional Aboriginal sites and/or amendments to the extents of sites identified in Kayandel Archaeological Services (2015). It is recommended that any further investigation should also provide updated recommendations for the proposed works.
6. As a result of Recommendations 3 and 4 a process of consultation with Aboriginal stakeholders will be required to be undertaken in accordance with the specifications of *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010).
7. A copy of the final report should be sent to the Registered Aboriginal Parties.

2.7 A staged development or component of a larger project

Not applicable

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

3.1 (a) World Heritage Properties

Description

One World Heritage Property was identified during a search of the Protected Matters Search Tool, including a five kilometre buffer around a centrepoint from the study area (Attachment 2).

The identified World Heritage Property, Greater Blue Mountains Area is located approximately 1.7 kilometres to the northwest of the study area.

Nature and extent of likely impact

No impacts to the Greater Blue Mountains Area or its ecological values are predicted to result from the proposed residential subdivision.

3.1 (b) National Heritage Places

Description

One National Heritage Place was identified during a search of the Protected Matters Search Tool, including a five kilometre buffer around a centrepoint from the study area (Attachment 2).

The National Heritage Place, Greater Blue Mountains Area is located approximately 1.7 kilometres to the northwest of the study area.

Nature and extent of likely impact

No impacts to the Greater Blue Mountains Area or its ecological values are predicted to result from the proposed residential subdivision.

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

No wetlands of international importance were identified during a search of the Protected Matters Search Tool, including a five kilometre buffer around a centrepoint from the study area (Attachment 2).

Nature and extent of likely impact

No impacts to wetlands of international importance are predicted to result from the proposed residential subdivision.

3.1 (d) Listed threatened species and ecological communities

Description

Seven threatened ecological communities and 36 threatened species were identified during a search of the Protected Matters Search Tool, including a five kilometre buffer around a centrepoint from the study area (Attachment 2.

Plot/transect surveys and targeted surveys for threatened species have been undertaken across the property by EcoLogical (2005), Biosis (2015) and Biosis (2016) and are detailed in the Biodiversity Assessment reporting in Attachment 1. Recent surveys were completed in accordance with the NSW BioBanking Assessment Methodology (OEH 2014) and included the following effort:

- Threatened flora surveys and plot/transect surveys (90 person hours).
- Tree assessment for evidence of Koala and hollow-dependent fauna (32 person hours).
- Searching at the base of trees for Koala scat and Cumberland Plain Land Snail (15 person hours).
- Nocturnal spotlight surveys for Green and Golden Bell Frog and Giant Burrowing Frog (48 person hours).
- Call playback (8 person hours).
- Remote cameras for Spotted-tailed Quoll and Koala (336 trap nights).

13.61 hectares of CEEC, Shale Sandstone Transition Forest was mapped within the study area. Shale Sandstone Transition Forest within the study area shows moderate to high levels of disturbance, with varying weed cover and regeneration. Disturbance has resulted from clearing of vegetation and use of the study area by recreational vehicles and dumping of rubbish. Areas of clearing and a number of tracks occur within this vegetation community showing evidence of the past Safari Park management regimes (Figure 3). 12.08 hectares of this vegetation will be permanently removed as a part of the proposed residential subdivision (Section 4 of Biosis 2016) (Attachment 1).

No EPBC Act threatened species or populations were recorded within the study area (Section 5 of Biosis 2016). No threatened species were recorded however given the large range and foraging distances negotiated by the Grey-headed Flying-fox, the species is considered to have a medium likelihood of occurrence within the property for foraging purposes. Although the species may forage in the study area on occasion, and has been recorded adjacent, the study area does not support a known camp and the extent of impacts to occasional foraging habitat is considered to be negligible. Likelihood of occurrence has been assessed and provided in Attachment 2 and Attachment 3.

Nature and extent of likely impact

The proposed residential subdivision will result in the permanent removal of 12.08 hectares of the CEEC Shale Sandstone Transition Forest in the following condition:

- 6.26 ha medium supporting canopy species with some midstorey species and groundcover species.
- 2.49 ha simplified form of HN556 which has been previously cleared however now contains evidence of regeneration.
- 0.41 ha poor with some canopy species however the groundcover is dominated by *Lantana camara*.
- 2.92 ha shrubland with a modified canopy up to five metres.

The subdivision will also partial remove of an additional 1.53 hectares within the Managed Reserve and the Managed APZ locations. Despite the condition of the vegetation throughout the study area, the removal is still considered to result in a significant effect on this CEEC and as such offsetting through the NSW BioBanking scheme has been proposed to ensure that the proposed development will result in no net loss of vegetation.

3.1 (e) Listed migratory species

Description

Sixteen listed migratory species were identified during a search of the Protected Matters Search Tool, including a five kilometre buffer around a centrepoint from the study area (Attachment 2).

The study area does not provide important habitat for an ecologically significant proportion of any of these species.

Nature and extent of likely impact

No impacts to any listed migratory species are predicted to result from the proposed residential subdivision.

3.1 (f) Commonwealth marine area
(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

Description

No Commonwealth Marine Areas were identified during a search of the Protected Matters Search Tool, including a five kilometre buffer around a centrepoint from the study area (Attachment 2).

Nature and extent of likely impact

No impacts to any Commonwealth Marine Areas are predicted to result from the proposed residential subdivision.

3.1 (g) Commonwealth land
(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

Description

The proposed residential subdivision will not be undertaken within or adjacent to Commonwealth land.

Nature and extent of likely impact

No impacts to Commonwealth land are predicted to result from the proposed residential subdivision.

3.1 (h) The Great Barrier Reef Marine Park

Description

The proposed residential subdivision will not impact on the Greater Barrier Reef Marine Park.

Nature and extent of likely impact

No impacts to the Greater Barrier Reef Marine Park are predicted to result from the proposed residential subdivision.

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

The proposed action is not a coal seam gas or large coal mining development.

Nature and extent of likely impact

Not applicable.

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

3.2 (a)	**Is the proposed action a nuclear action?**	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		

3.2 (b)	**Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?**	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment		

3.2 (c)	**Is the proposed action to be taken in a Commonwealth marine area?**	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))		

3.2 (d)	**Is the proposed action to be taken on Commonwealth land?**	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))		

3.2 (e)	**Is the proposed action to be taken in the Great Barrier Reef Marine Park?**	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))

3.3 Other important features of the environment

3.3 (a) Flora and fauna

The flora and fauna of the study area is described by Biosis (2016) (Attachment 1) and includes a variety of species endemic to the transitional zone between the Wianamatta shale and the underlying Hawkesbury sandstone in southwest Sydney.

3.3 (b) Hydrology, including water flows

The study area is located within the Hawkesbury-Nepean River catchment. Two first order tributaries are located within and adjacent to the study area (Figure 3). One tributary, located in the northern portion of the study area, forms in the study area and runs east through the adjoining BioBank site. This tributary flows out of the property to the north-west into Megarritys Creek and eventually joins with the Warragamba River approximately 2.5 kilometres north. The upper reaches of this tributary will be partially impacted by the proposed development. The second tributary flows east through the centre of the study area in the section proposed to form a Managed Reserve (Figure 3). The tributary has been largely modified and connects a series of dams before ending within the adjoining BioBank site at a dam occupying approximately 0.24 hectares. This tributary will be modified for the purpose of drainage works with a series of bio-retention basins. The area will also be maintained as a Managed Reserve including a vegetated corridor providing water sensitive urban design features and long term water quality treatment.

3.3 (c) Soil and Vegetation characteristics

The study area is located on the outskirts of the Cumberland Plain, in areas where the gently undulating rises associated with the Wianamatta shales become dissected, eroding into the underlying Hawkesbury sandstone. The Blacktown soil landscape occurs across the entire study area with the Faulconbridge soil landscape dropping down to Lake Burragorang in the west and the Gymea soil landscape associated with Megarritys Creek to the east (NSW Soil and Land Information System, 2015).

Previously, the study area formed part of the Lion Safari Park which operated as a tourist facility between 1968 and 1991. During this period the study area was subject to extensive and ongoing clearing and maintenance of vegetation. Since the closure of the park in 1991 and the removal of the animals in 1995, the study area has been largely unmanaged, with native vegetation allowed to regenerate across the study area.

3.3 (d) Outstanding natural features

Nil.

3.3 (e) Remnant native vegetation

The study area supports a mix of regenerating vegetation and cleared land (Figure 4). Two native vegetation communities, in varying degrees of condition and fragmentation, were recorded and mapped within the study area. Shale Sandstone Transition Forest CEEC was mapped across the middle and southern half of the study area, whilst Sydney Hinterland Transition Woodland was mapped across the northern half of the study area (Figure 4).

Shale Sandstone Transition Forest CEEC within the study area is highly patchy, with areas through the centre and southern sections of the study area showing a high degree of disturbance and low species diversity. These areas are also subject to significant weed invasion. Shale Sandstone Transition Forest occurring along the western property boundary and in linear strips through the centre of the property was considered to be in better condition with a lower degree of weed invasion and higher species diversity. These patches are connected with areas of medium condition Sydney Hinterland Transition Woodland to the north.

Sydney Hinterland Transition Woodland was recorded across the northern section of the study area. The majority of Sydney Hinterland Transition Woodland shows signs of deterioration and a high degree of weed invasion. Sydney Hinterland Transition Woodland along the eastern boundary is in better condition, with a high diversity of species and growth forms and a low weed cover. This area is contiguous with moderate to good condition Shale Sandstone Transition Forest. Sydney Hinterland Transition Forest is not a threatened ecological community (TEC).

Vegetation communities are shown in Figure 4.

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

The study area varies between approximately 190 metres Above Sea Level (ASL) along the western boundaries to 168 metres ASL along the downstream extent of the southern tributary running through the property.

3.3 (g) Current state of the environment

The study area has been modified by long-term disturbance from previous management practices associated with the Lion Safari Park and recent use of the site for unauthorised recreational purposes and illegal rubbish dumping by local residents. Although regeneration of native vegetation is evident in some areas, clearing of vegetation including the collection of firewood and the use by recreational vehicles has reduced the viability and successful regeneration of the Shale Sandstone Transition Forest CEEC and Sydney Hinterland Transition Woodland. Vegetation is also subject to edge effects both from the road reserve and through the dumping of rubbish and garden clippings. This will be exacerbated by the further spread of urban development in the surrounding area including to the immediate south of the property.

Several dams are present throughout the study area, mainly associated with the existing drainage lines running west to east across the property. Although these dams don't provide habitat for threatened species, they provide a valuable resource for general fauna species.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

Nil.

3.3 (i) Indigenous heritage values

An Aboriginal Cultural Heritage Assessment Report (CHAR) has been undertaken by Kayandel Archaeological Services (December2015). A total of three Aboriginal sites were recorded within the

area with two of these being previously unrecorded. The statement of archaeological potential and significance for each of these sites was low. An AHIP will be applied for regarding these sites.

3.3 (j) Other important or unique values of the environment

Nil.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

The land is private land.

3.3 (l) Existing land / marine uses of area

There is no current formal use of the land. However, there is informal use of the land by recreational vehicles and for illegal rubbish dumping.

3.3 (m) Any proposed land / marine uses of area

The land is zoned under the Wollondilly LEP for future residential l development. A portion of the site is also zoned E2 Environmental Conservation.

4 Environmental outcomes

Throughout the preparation of this biodiversity assessment SitePlus, Simba Developments Pty Ltd and Biosis have worked together to design a project that, where possible, avoid impacts to significant biodiversity features. Following this process, and the subsequent implementation of the recommendations outlined in Section 6.1.2 of Biosis (2016) (Attachment 1) and outlined below, the residual impacts to biodiversity include:

- The permanent removal of approximately 12.08 hectares of EPBC Act listed Shale Sandstone Transition Forest CEEC in the following condition:
  - 6.27 hectares in medium condition supporting canopy species with some midstorey species and groundcover species.
  - 2.49 hectares simplified form which has been previously cleared however now contains evidence of regeneration.
  - 0.41 hectares in poor condition with some canopy species however the groundcover is dominated by Lantana.
  - 2.91 hectares of a shrubland with a modified canopy up to five metres.
- The permanent removal of approximately 0.38 hectares of non-EPBC Act listed Shale Sandstone Transition Forest CEEC in the form of derived grassland.
- The permanent removal of approximately 9.49 hectares of Sydney Hinterland Transition Woodland.

Residual impacts to biodiversity will be offset under the NSW BioBanking scheme, with the retention of 4.05 hectares of native vegetation within the proposed Biobank site, including 0.76 hectares of Shale Sandstone Transition Forest CEEC and 3.29 hectares of Sydney Hinterland Transition Woodland. This will also result in the retention and protection of habitat connectivity from the Warragamba Catchment Area to Megarritys Creek. The ongoing management of the proposed BioBank site will be funded under the NSW BioBanking scheme. Additional credits will be sourced off-site under the NSW BioBanking scheme.

Data used to determine condition within the development site and the potential gains from any proposed offset have been determined using the NSW BioBanking Assessment Methodology (OEH 2014). This methodology has been accredited under the bilateral agreement between the Commonwealth of Australia and the State of New South Wales relating to environmental assessment (the assessment bilateral agreement).

Overall, the proposed development will result in no net loss of vegetation, through implementation of the proposed Biobank site and through the retirement of Biobanking Credits for identical vegetation to the CEEC.

5 Measures to avoid or reduce impacts

Potential impacts arising from the proposed residential subdivision and measures to avoid and minimise these impacts are outlined in Section 6 of Biosis (2016) (Attachment 1) and summarised below where relevant to Matters of National Environmental Significance.

This section outlined potential impacts (without controls), measures implemented to avoid and minimise impacts and then residual impacts based on the implementation of the controls. Residual impacts will be offset in accordance with the NSW BioBanking Scheme.

Potential impacts prior to avoidance and minimisation

Prior to considering impact avoidance and minimisation measures, the proposed development would have resulted in the following potential direct and indirect impacts:

Direct impacts:

- Prior to the planning proposal and re-designing the subdivision, removal of 21.95 hectares of native vegetation across the development site as well as 1.91 hectares located in the proposed Managed APZ and Managed Reserve, and the 4.05 hectares located within the E2 Environmental Conservation area.
- Removal of vegetation leading to loss, fragmentation and degradation of breeding, sheltering and foraging habitat of ecosystem species and the Cumberland Plain Land Snail.
- Loss of the connectivity values provided by the vegetative link between Megarritys Creek and the Warragamba Special Area.

Indirect impacts to adjoining bushland:

- Decreased viability due to edge effects leading to disturbance and degradation of habitat including erosion and/or compaction of soils, as well as damage to seedlings and new growth.
- Sedimentation and pollution of dams from the proposed development, leading to a reduction in water quality for aquatic fauna.
- Increased impacts by residents including collection of firewood, dumping rubbish and garden clippings and the creation of tracks.
- Encroachment of invasive exotic weeds species, leading to loss of habitat and suppression of native seedling establishment resulting in changes to vegetation communities over time.
- Temporary increased noise levels from construction equipment, leading to disturbance of fauna, especially during breeding seasons.
- Permanent increased noise levels from residential development (resulting in more vehicle movements and household noise), leading to disturbance of fauna, especially during breeding seasons.
- Increased levels of light between dusk and dawn, leading to disturbance of nocturnal fauna including forging and breeding behaviour and disturbance to diurnal fauna including sheltering behaviour.

Process of impact avoidance and minimisation

Step 1: Planning proposal

The design of the proposed development during the Planning Proposal phase sought to avoid and minimise impacts to sensitive ecological features identified by EcoLogical (2005), whilst siting residential development within the proposed urban release area (Wollondilly LEP 2011) and adjacent to existing residential areas. This resulted in the rezoning of the study area to R2 Low Density Residential with the protection of higher quality bushland along the north-eastern boundary through the zoning of this land to E2 Environmental Conservation.

The rezoning was completed on 23 February 2007 through the gazetting of Amendment No 71 to Wollondilly Local Environmental Plan 1991 (LEP). The rezoning applied to Lots 1 & 2 DP 588912 and zoning of the E2 area reflects the findings of EcoLogical (2005) report.

Step 2: Development of preliminary layout

The preliminary development layout considered the rezoning, akin to the site selection phase outlined in the NSW BioBanking Assessment Methodology (OEH 2014), and resulted in:

- Siting of residential development adjacent to areas of existing residential development, in areas of lower quality vegetation previously cleared and subject to ongoing disturbance such as access by recreational vehicles and rubbish dumping.
- Retention of high quality native vegetation along the north-eastern boundary of the study area in accordance with the EcoLogical (2005) mapping.
- Inclusion of environmental protection works, including the following drainage works to avoid sedimentation in important bushland located within the Warragamba Special Area:
  - Contouring of the site so that stormwater drains east to the existing urban catchment.
  - Drainage works to comply with Model for Urban Stormwater Improvement Conceptualisation (MUSIC) model by eWater.

Step 3: Revision of preliminary design

Following this, Biosis completed a due diligence report which revised vegetation mapping (Figure 4) and recommended additional measures to avoid and minimise removal of native vegetation and fauna habitat within the proposed development site (Biosis 2015). The resulting additional measures undertaken to avoid and minimise impacts to biodiversity include:

- Retention of a connective link between the Warragamba Special Area (south of Warragamba Dam) and vegetation located along Megarritys Creek through a Managed Reserve.
- Minimisation of impacts to aquatic environments through retention of a riparian buffer of vegetation located within the Managed Reserve and the retention of a large habitat pond in the E2 zone.
- Siting of infrastructure, including roads and asset protection zones, outside of areas in higher condition within the E2 zone. Temporary drainage works will still be required surrounding the dams within the E2 zone; however, once complete, the vegetation will be left to regenerate.
- Retention of trees within the Managed Reserve and the Managed APZ along the western boundary. The mid-storey and ground cover vegetation in these areas will be managed through slashing and mowing.

Step 4: Current assessment recommendations

Additional measures to mitigate any residual indirect impacts arising from the proposed development include:

During construction

- Installation of appropriate exclusion fencing to the boundary of the retained vegetation and any construction areas where there is some potential for accidental encroachment. This would include appropriate signage such as 'No Go Zone' or 'Environmental Protection Area'.
- Identification of any 'No Go Zones' in site inductions and a Construction Environmental Management Plan.
- Restriction of construction impacts within the development site, and ensuring no encroachment into retained vegetation results from the development. All material stockpiles, vehicle parking and machinery storage should be located within the areas proposed for clearing, and not in areas of native vegetation that are to be retained.
- Development and implementation of a Construction Environmental Management Plan.
- Wetting down of exposed soil to reduce dust generation during construction.
- Development of an Ecological Management Plan, for inclusion in a Construction Environmental Management Plan. This Ecological Management Plan should outline measures for staged vegetation clearing to manage fauna species during tree removal, including having a spotter / catcher present. Staged removal involves clearing of understorey vegetation and non-hollow-bearing trees in Stage 1, with removal of hollow-bearing trees in Stage 2. There should be a minimum of 24 to 48 hours between Stage 1 and Stage 2.

- Control of sediment and erosion through the implementation prior to works commencing within the study area (e.g. silt fences, sediment traps), to protect terrestrial and aquatic habitats downstream. These should conform to relevant guidelines, should be maintained throughout the construction period and should be carefully removed following the completion of works.
- Stabilisation of exposed soil through the mulching and re-use of native vegetation cleared for the development.
- Implementation of appropriate hygiene protocols including cleaning down work boots, machinery and equipment prior to entering the site, and before being transferred to another site, to minimise the risk of transferring soil-borne pathogens and fungi.
- Relocation of hollows (all sizes) and large branches (>30cm) removed from trees to be placed in areas of retained vegetation for reuse as either hollows attached to trees or logs to be placed on the ground as habitat for ground-dwelling fauna.

Ongoing

- Ongoing funding and management of the BioBank site in accordance with the BioBanking Agreement for the site.
- Development and maintenance of designated walking tracks within areas of retained vegetation. Tracks should be made of natural material and avoid removal of canopy, mid-storey or shrub layer vegetation.
- Implementation of stormwater controls within a drainage reserve to minimise impacts to aquatic environments from stormwater run-off.
- Restriction of vegetation clearing within E2 zone for drainage works.
- Improvement of retained vegetation within the proposed BioBank site (see management recommendations in Biosis 2016).
- Retention and maintenance of vegetation within the proposed Managed Reserve and the Managed APZ along the western boundary site through the management actions including:
  - Weed removal.
  - Rehabilitation of existing tracks to natural vegetation.
  - Increasing large woody debris ground cover.
  - Maintenance native plant species at benchmark of Shale Sandstone Transition Forest CEEC by retaining a minimum of four native species.
  - Allowing the overstorey species to regenerate.
  - Avoiding the removing shrubs (plants at an approximate height to 30 cm to 2 metres in height).
  - Management of vegetation through a Vegetation Management Plan.
- Permanent establishment of fencing surrounding all retained vegetation within the proposed BioBank site, Managed Reserve and the Managed APZ along the western boundary to prevent vehicles and discourage residents from disturbing vegetation.
- Informing residents of ecological values within areas of retained vegetation.

The final project footprint (impact area) is shown in Figure 2.

Residual impacts

Throughout the preparation of this biodiversity assessment, the proponent Simba Developments Pty Ltd, SitePlus (planning consultant) and Biosis (ecology consultant) have worked together to design a residential subdivision that, where possible, avoids impacts to significant biodiversity features. Following this process, and the subsequent implementation of the recommendations outlined above, the residual impacts to matters of national environmental significance include:

- The permanent removal of approximately 12.08 hectares of EPBC Act listed Shale Sandstone Transition Forest CEEC.

- The permanent removal of approximately 9.49 hectares of Sydney Hinterland Transition Woodland.

Offsets

An application for a BioBank statement to offset residual impacts to identified biodiversity values under the NSW BioBanking scheme has been made under Part 7A of the NSW TSC Act. This application has been prepared and lodged to OEH in accordance with the NSW BioBanking Assessment Methodology (OEH 2014).

Section 7 of Biosis (2016) (Attachment 1) provides a summary of biodiversity credits required, based on impacts to biodiversity values within the study area, following consideration of measures to avoid, minimise and mitigate impacts. This includes a requirement for 492 *Narrow-leaved Ironbark - Broad-leaved Ironbark - Grey Gum open forest of the edges of the Cumberland Plain, Sydney Basin Bioregion* (equivalent to Shale Sandstone Transition Forest CEEC) credits.

Offsets for Shale Sandstone Transition Forest CEEC will directly contribute to the ongoing viability of the Matters of national environmental significance by purchasing like-for-like credits to align with the Commonwealth requirements.

6 Conclusion on the likelihood of significant impacts

6.1 Do you THINK your proposed action is a controlled action?

	No, complete section 6.2
X	Yes, complete section 6.3

6.2 Proposed action IS NOT a controlled action.

Not applicable.

6.3 Proposed action IS a controlled action

	Matters likely to be impacted
	World Heritage values (sections 12 and 15A)
	National Heritage places (sections 15B and 15C)
	Wetlands of international importance (sections 16 and 17B)
X	Listed threatened species and communities (sections 18 and 18A)
	Listed migratory species (sections 20 and 20A)
	Protection of the environment from nuclear actions (sections 21 and 22A)
	Commonwealth marine environment (sections 23 and 24A)
	Great Barrier Reef Marine Park (sections 24B and 24C)
	A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
	Protection of the environment from Commonwealth actions (section 28)
	Commonwealth Heritage places overseas (sections 27B and 27C)

The proposed residential subdivision will result in the permanent removal of 12.08 hectares of Shale Sandstone Transition Forest CEEC and the partial removal of an additional 1.53 hectares of Shale Sandstone Transition Forest CEEC as part of the Managed Reserves and Managed APZs.

Shale Sandstone Transition Forest within the study area was assessed against the Condition thresholds listed in Threatened Species Scientific Committee (2014). The patch size is 13.61 hectares, with this vegetation being part of a larger patch of vegetation of greater than 1,000 hectares. More than 50% of the perennial understorey vegetation cover made up of native species. Shale Sandstone Transition Forest within the study area is assessed as being in moderate condition. Survey effort, including structure, condition, floristics and CEEC diagnostics and thus the vegetation community identification, can be found in Attachment 1.

The proposed residential subdivision would have a significant adverse impact on an area of Shale Sandstone Transition Forest CEEC that is in moderate condition. For this reason, the proposed action is being referred to the Australian Government Minister for the Environment for consideration.

7 Environmental record of the responsible party

		Yes	No
7.1	**Does the party taking the action have a satisfactory record of responsible environmental management?** **Provide details** The proponent, Simba Developments Pty Ltd is a part of Allam Property Group land and housing development company. The Allam Property Group which was founded 1991 and is Sydney's most reputable and progressive medium size residential development group. The current and recent projects include: • Ardennes Edmondson Park • Bellerive Rise Kellyville • Parrington Riverstone • Hillview Rise North Kellyville • Talana Rise Edmondson Park • Skybrook Middleton Grange • Kalina The Ponds • Tatton Park Kellyville • Fairway Drive Kellyville • Fernlea Marsden Park • Oaklands The Ridge Schofields • Eden Fields Pitt Town • Tullimbar Green Tullimbar • Castle Ridge • Forresters Beach In undertaking these works the company complies with all state and local approvals, and management plans.	X	
7.2	**Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?** **If yes, provide details** Not applicable.		X
7.3	**If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?**	X	

If yes, provide details of environmental policy and planning framework

The proposed residential subdivision is subject to a Development Application under Part 4 of the NSW EP&A Act. Simba Developments Pty Ltd will undertake all works in accordance with the conditions outlined in the Development Consent granted by Wollondilly Shire Council, and parent company Allam Property Group's environmental policy.

Allam Property Group Environmental Policy dated 1st January 2015 outlines that its intention to eliminate or reduce and control any threat to the environment that may result from our operations. We are committed to sustainable development that meets the needs of the present without compromising the ability of future generations to meet their own. We shall critically focus on the relationship between environmental change, socio-economic impact, political process and our own organisation. In doing so, we shall

- Identify and comply with legislation relevant to Environmental Management in order to minimize any pollutant or waste that may impact on the environment
- Investigate mutually beneficial programs of environmental management with relevant stakeholders
- Ensure our Environmental Management System is documented, implemented and communicated to all workers through induction and training processes
- Set targets and objectives for continuous improvement, with the view to eliminate waste and pollutants that have been identified as detrimental, deriving from our operations
- Manage our diverse operations by improving resource consumption efficiency and minimising waste generations in our operations and through the life cycle of our process
- Monitor, review and evaluate our Environmental Management System so as to ensure it remains relevant and appropriate to our organisation having being measured against our set objectives and targets.

This policy is based upon the requirements of the Protection of the NSW Environment Operations Act (1987) and associated Regulations.

It shall be the responsibility of management to ensure that this policy is effectively implemented.

It is the responsibility of workers to respond to the environmental concerns of our customers and the communities in which we operate.

To this end management in consultation with workers will review this policy at least every two years.

7.4	**Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?**		X

Provide name of proposal and EPBC reference number (if known)

Not applicable.

8 Information sources and attachments

(For the information provided above)

8.1 References

References used in preparing this referral and the associated Biodiversity Assessment Report (Biosis 2016) are outlined in Attachment 1. Additional references include:

Biosis 2015. Former Lion Safari Park, Marsh Road, Silverdale – Due Diligence Ecological Assessment. Report to Allam Property Group. Author: N Garvey & A Aguiar, Biosis Pty Ltd. Project no. 20179.

Biosis 2016. Lot 1 DP 588912 1 – 41 Marsh Road, Silverdale. Development Site Biodiversity Assessment Report. Report for Simba Developments Pty Ltd. Authors: N Garvey & K Reed, Biosis Pty Ltd, Wollongong. Project no. 20680.

DECC 2010. Aboriginal cultural heritage consultation requirements for proponents 2010. Now Office of Environment and Heritage, Hurstville, NSW.

EcoLogical 2005. Former Lion Safari Park Rezoning Ecological Assessment - Figure 5, Figure 12 and Figure 13.

WSC 2016. Wollondilly Development Control Plan 2011: Volume 2 – Urban Release Areas. Wollondilly Shire Council, Picton.

Kayandel Archaeological Services 2015. Proposed Residential Subdivision, 1-41 Marsh Road, Silverdale, Wollondilly Shire LGA, NSW Cultural Heritage Assessment Report name. Prepared for SitePlus on behalf of Simba Developments Pty Ltd.

8.2 Reliability and date of information

Data was sourced from a variety of reports and documents outlined in the References section of Biodiversity Assessment Report (Biosis 2016). A search of the Protected Matters Search Tool was undertaken on the 2 September 2015. Database searches, and associated conclusions on the likelihood of species to occur within the study area, are reliant upon external data sources and information managed by third parties.

The biodiversity values within the study area were assessed during field assessments, with surveys undertaken in June 2015 and again, between 3 September 2015 and 7 October 2015 (Biosis 2016). Ecological surveys provide a sampling of flora and fauna at a given time and season. There are a number of reasons why not all species will be detected at a site during survey, such as species dormancy, seasonal conditions, ephemeral status of waterbodies and migration and breeding behaviours of some fauna. In many cases these factors do not present a significant limitation to assessing the overall biodiversity values of a site. The current flora and fauna assessment was conducted in spring which is considered to be an optimal survey season for species targeted. Surveys have been deemed sufficient to assess the ecological values of the study area.

8.3 Attachments

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	Figure 1 Location map for 1-41 Marsh Road, Silverdale, NSW. Figure 2 Proposed development layout. Figure 3 Proposed development and offset locations.
	GIS file delineating the boundary of the referral area (section 1)	✓	20680_Study_Area.shp 20680_APZ_Reserve.shp 20680_Lats_Longs.shp
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	Figure 4 Biosis mapped vegetation including EPBC Act listed CEEC.
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)		
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)		
	copies of any flora and fauna investigations and surveys (section 3)	✓	Attachment 1: Biosis 2016. Lot 1 DP 588912 1 – 41 Marsh Road, Silverdale Development Site Biodiversity Assessment Report. Report for Simba Developments Pty Ltd. Authors: N Garvey & K Reed, Biosis Pty Ltd, Wollongong. Project no. 20680
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	Attachment 2: PMST search undertaken on 2 September 2015 Attachment 3: Likelihood of occurrence tables for EPBC Act listed threatened species.

	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)		

9 Contacts, signatures and declarations

Project title: Proposed subdivision of Lot 1 DP 588912 1-41 Marsh Road, Silverdale, NSW

9.1 Person proposing to take action

1. Name and Title:	Mr Ben Allam – Director
2. Organisation (if applicable):	Simba Developments Pty Ltd
3. EPBC Referral Number (if known):	Unknown
4: ACN / ABN (if applicable):	ABN – 73 603 799 220/ ACN 603 799 220
5. Postal address	PO Box 332 Penrith NSW 2751
6. Telephone:	02 47 322 422
7. Email:	ben@allam.com.au
8. Name of designated proponent (if not the same person at item 1 above and if applicable):	Not applicable
9. ACN/ABN of designated proponent (if not the same person named at item 1 above):	Not applicable
I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:	□ an individual; OR □ a small business entity (within the meaning given by section 328-110 (other than subsection 328-119(4)) of the *Income Tax Assessment Act 1997*); OR ✓ not applicable.
If you are small business entity you must provide the Date/Income Year that you became a small business entity:	Not applicable
I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations. Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made:	✓ not applicable.
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence. I agree to be the proponent for this action. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature [signature] Date 4-4-16

9.2 Person preparing the referral information (if different from 9.1)

Name	Kylie Reed
Title	Senior Zoologist
Organisation	Biosis Pty Ltd
ACN / ABN (if applicable)	65 006 175 097 / 006 175 097
Postal address	8 Tate Street, Wollongong NSW 2500
Telephone	(02) 4201 1060
Email	kreed@biosis.com.au
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence.
Signature	[signature] Date 4/4/16