Mount Gilead Residential Development
Construction Environmental Management Plan
EPBC 2015/7599

Lendlease Communities (Mt Gilead) Pty Ltd ACN 605 278 331

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Acknowledgements

This document has been prepared by Eco Logical Australia Pty Ltd

Template 2.8.1

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Declaration of Accuracy

I declare that:

1. To the best of my knowledge, all the information contained in, or accompanying this Management Plan (*Mount Gilead Residential Development Construction Environmental Management Plan EPBC 2015/7599*) is complete, current and correct.

2. I am duly authorised to sign this declaration on behalf of the approval holder.

3. I am aware that:

a. Section 490 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence for an approval holder to provide information in response to an approval condition where the person is reckless as to whether the information is false or misleading.
b. Section 491 of the EPBC Act makes it an offence for a person to provide information or documents to specified persons who are known by the person to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth) where the person knows the information or document is false or misleading.
c. The above offences are punishable on conviction by imprisonment, a fine or both.

Signed

_____

Full name

Robert Keir Humphries, Eco Logical Australia Pty Ltd

Signed

_____

Full name

Mark Iain Anderson, Lendlease Communities (Mt Gilead) Pty Ltd

Report Version: Eco Logical Australia 2019. *Mount Gilead CEMP*. Prepared for Lendlease Communities (Mt Gilead) Pty Ltd. Version 5, dated 21/11/2019.

1. Introduction and purpose of the plan

Eco Logical Australia (ELA) has been commissioned by Lendlease Communities (Mount Gilead) Pty Ltd (Lendlease), the approval holder, to prepare a Construction Environmental Management Plan (CEMP). The CEMP is required to avoid and mitigate potential direct and indirect impacts on EPBC Act Protected Matters in the on-site offset areas as a result of 'construction' (as defined in Part C of the approval) for the Mount Gilead residential development at Gilead, NSW as required by condition 8 of the approval.

The approval requires this CEMP to apply to the interim period between commencement of construction of the 'action' and the commencement of bushland management works within the Council Reserve and offset areas.

The approved action is located within the Campbelltown City Council (CCC) Local Government Area (LGA) approximately 5 km south of Campbelltown city centre comprising the following lots (Lot 61 DP 752042, Part Lot 2 DP1218887 and Lots 1, 2, 3, 4 and 5 DP 1240836).

1.1 Project description and planning background

In 2015, Lendlease proposed a residential development of approximately 1,700 lots at Gilead (Figure 1).

The proposal (EPBC 2015/7599) was referred to the Department of the Environment and Energy (DotEE) in October 2015 and was determined to be a Controlled Action in relation to Matters of National Environmental Significance (MNES), including for impacts to the critically endangered ecological communities Cumberland Plain Woodland (CPW) and Shale Sandstone Transition Forest (SSTF), and the vulnerable Koala.

A Preliminary Documentation Environmental Assessment Report was submitted and was placed on public exhibition between 20 December 2017 and 2 February 2018. Following updates to the report to reflect responses to public submissions in August 2018, DotEE granted approval to the action on 21 December 2018 (**Appendix A**) with Conditions of Approval 8, 9 and 10 relating to preparation of a CEMP.

This CEMP has been prepared to meet approval condition 8, 9 and 10 and is in addition to the Koala Management Plan required by Condition 7 which is included as **Appendix B** to this CEMP.

Table 1 provides a summary of where and how conditions 8, 9 and 10 of the EPBC 2015/7599 approval requirements have been addressed in this CEMP.

In addition, Sections 7.2 and 7.3 of the Preliminary Documentation Environmental Assessment Report outlines management of potential indirect impacts to areas of retained native vegetation including buffers to retained CPW and SSTF vegetation, water sensitive urban design features, stormwater management and the preparation of a CEMP to address pre and post construction mitigation measures. A summary of these commitments are provided in **Appendix C**.

The Mount Gilead 'Study Area' (**Figure 1**) consists of:

- The Development Area
- On-site Conservation Areas (two registered and one proposed Biobank site/Council Reserve)
- Retained Land (Rural Land and Open Space)

This CEMP applies to the management and mitigation of the potential indirect effects of 'construction' in the Development Area to Protected Matters (CPW, SSTF and Koala habitat) in the on-site offset areas shown in **Figure 1**.

This CEMP covers construction works in all areas associated with the development.

Following construction, the on-going management of the offset areas will be addressed by the implementation of the in perpetuity management plans that form part of the Biobank Agreements as outlined in Section 1.2.2.

1.2 Site description

The study area (Figure 1), covers a total area of approximately 210 hectares. The site has historically been used for agricultural purposes and contains cleared paddocks with improved pastures. Pockets of residual vegetation are located along drainage lines and steeper slopes.

1.2.1 Development Area

The Development Area (Figure 1) consists of residential development with approximately 1,700 lots. It also includes the development of:

- Recreation and active Open Space areas, with some landscaping consistent with local native vegetation;
- Services, including water, sewer and electricity infrastructure;
- A street network of roads, access ways and parking;
- Bushfire Asset Protection Zones (APZ);
- Detention basins to capture and treat run-off water captured by road curbs and gutters;
- Protection and maintenance of existing riparian corridors and rural areas.
- The construction phase is expected to be undertaken in stages over an expected timeframe of 3-5 years commencing in November 2019.

1.2.1.1 Construction timeframe and duration

The construction phase is expected to commence in November 2019 and the project the completion date is expected to be in late 2024.

1.2.1.2 Construction work hours

All work on site will only occur between the following hours (as per Campbelltown Council conditions of approval for DA 2017/3868):

Monday to Friday	7.00am to 6.00pm,
Saturday	8.00am to 5.00pm
Sundays or Public Holidays	No work

1.2.2 Long term management arrangements for the offset areas

The study area contains three on-site offset areas that are registered as biobank sites under the NSW *Biodiversity Conservation Act* 2016 (Figure 2).

These biobank sites offset the impacts to Protected Matters including critically endangered Cumberland Plain Woodland (CPW), Shale Sandstone Transition Forest (SSTF) and Koala habitat as required by Conditions of Approval 2, 3 and 4 (**Appendix A**).

These on-site offset areas are:

- The Macarthur Onslow - Mt Gilead Biobank Site (BA 208 comprising 11.99 ha including 8 ha of EPBC Act quality SSTF, and 11.99 ha of Koala habitat);
- The Noorumba-Mount Gilead Biobank Site (BA 209 comprising 6.90 ha including 4.11 ha of EPBC Act quality CPW and 6.9 ha of Koala habitat); and
- The Council Reserve (Hillsborough Biobank site) (not yet registered, application for registration will be submitted in November 2019, comprising 3.61 ha containing 1.89 ha of EPBC Act quality SSTF).

The ongoing management of biodiversity values within the on-site offset areas is addressed by the conservation management requirements of the Biobanking Agreements (BA208 Macarthur-Onslow Mt Gilead (**Appendix D**), BA209 Noorumba Mt Gilead (**Appendix E**) and proposed Hillsborough Biobank (**Appendix F**)).

Each of these biobank sites is required to be managed for biodiversity conservation in perpetuity with funds for this management held in a trust account held by the NSW Biodiversity Conservation Trust (BCT). Each biobank site is subject to an annual report and compliance audit by the BCT which allows for any inadvertent damage to be rectified and thus will continue to apply after the cessation of this construction environmental management plan as provided for in condition 28.

This CEMP does not repeat the management actions required in the biobank sites after the completion of construction other than to summarise this management as:-

- erection and maintenance of permanent fencing and signage
- retaining all native vegetation, dead trees and rocks
- revegetation of degraded areas via bush regeneration techniques (weeding) and supplementary planting (where and if required)
- salvage and re-use of fauna habitat from the development areas (logs and hollows)
- feral animal (fox, rabbit) control

- maintenance of natural flow regimes in creek lines
- implementation of an ecological burning regime
- monitoring and annual reporting of vegetation condition

Full details of the management and reporting requirements of these biobank sites can be found in **Appendices D, E & F**).

Preliminary management of the biobanks sites commenced in 2018 with fencing to exclude stock and weed control. Active management of the biobank sites commenced in October 2019 following the retirement of biodiversity credits as summarised in **Appendix N**. Annual reports that document the implementation of management actions and the health of the biobank sites will be provided each October.

Figure 1: Development Layout showing open space and biodiversity offset areas as per EPBC Act decision 2015/7599 dated 21 December 2018

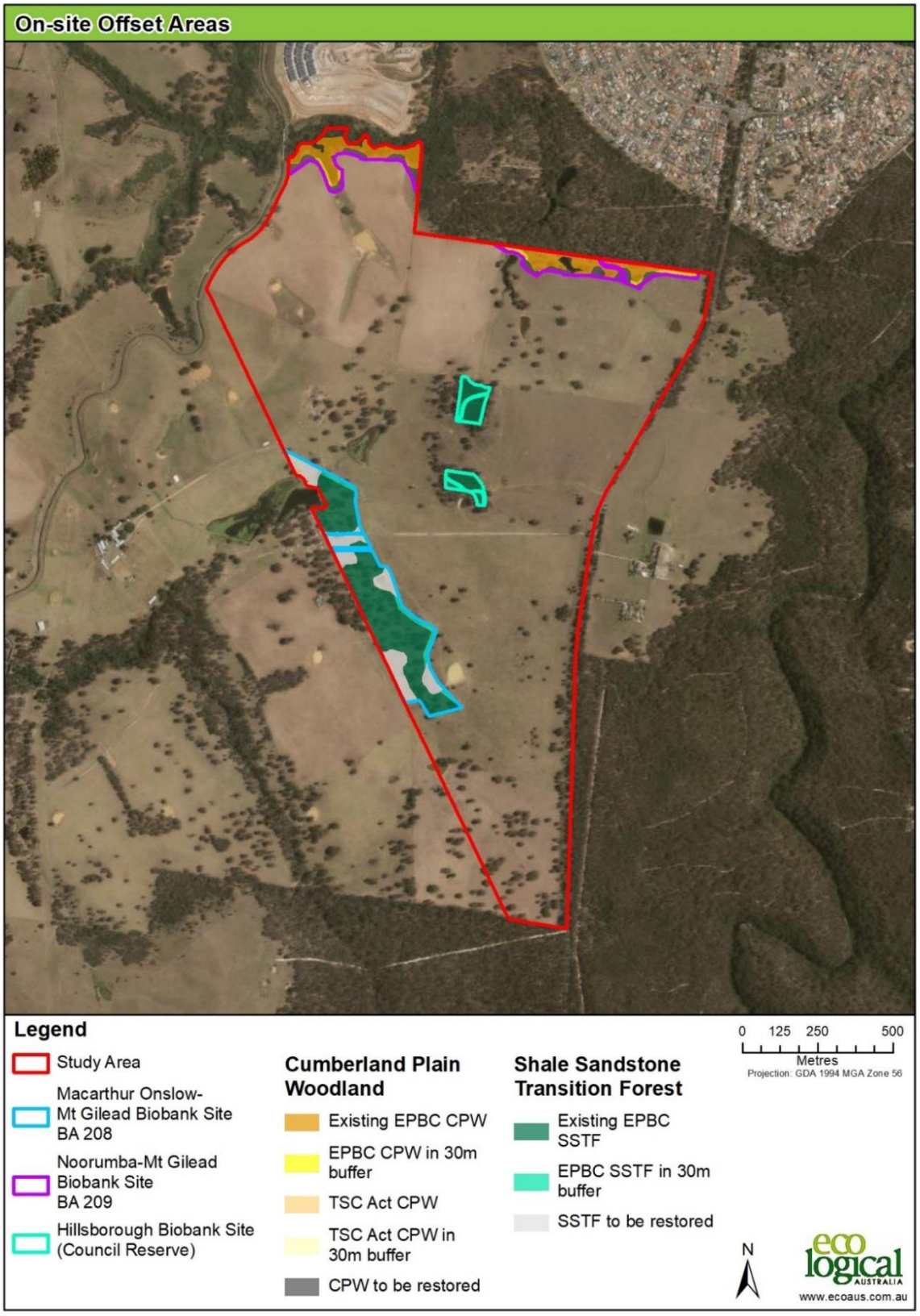

Figure 2: Environmental Control Map showing the Protected Matters to be protected as per EPBC Act decision 2015/7599 dated 21 December 2018

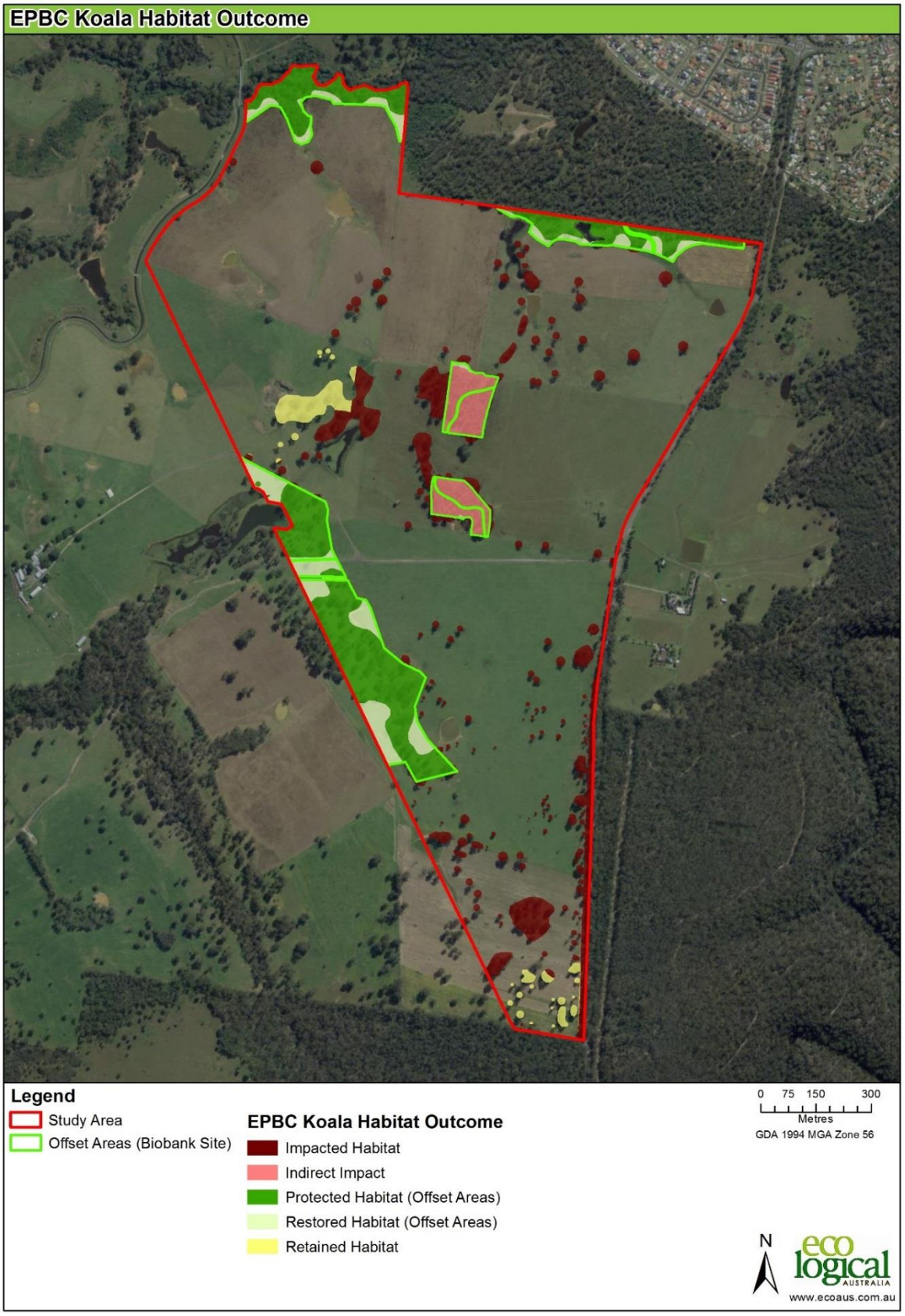

Figure 3: Impacted and protected Koala habitat as per EPBC Act decision 2015/7599 dated 21 December 2018

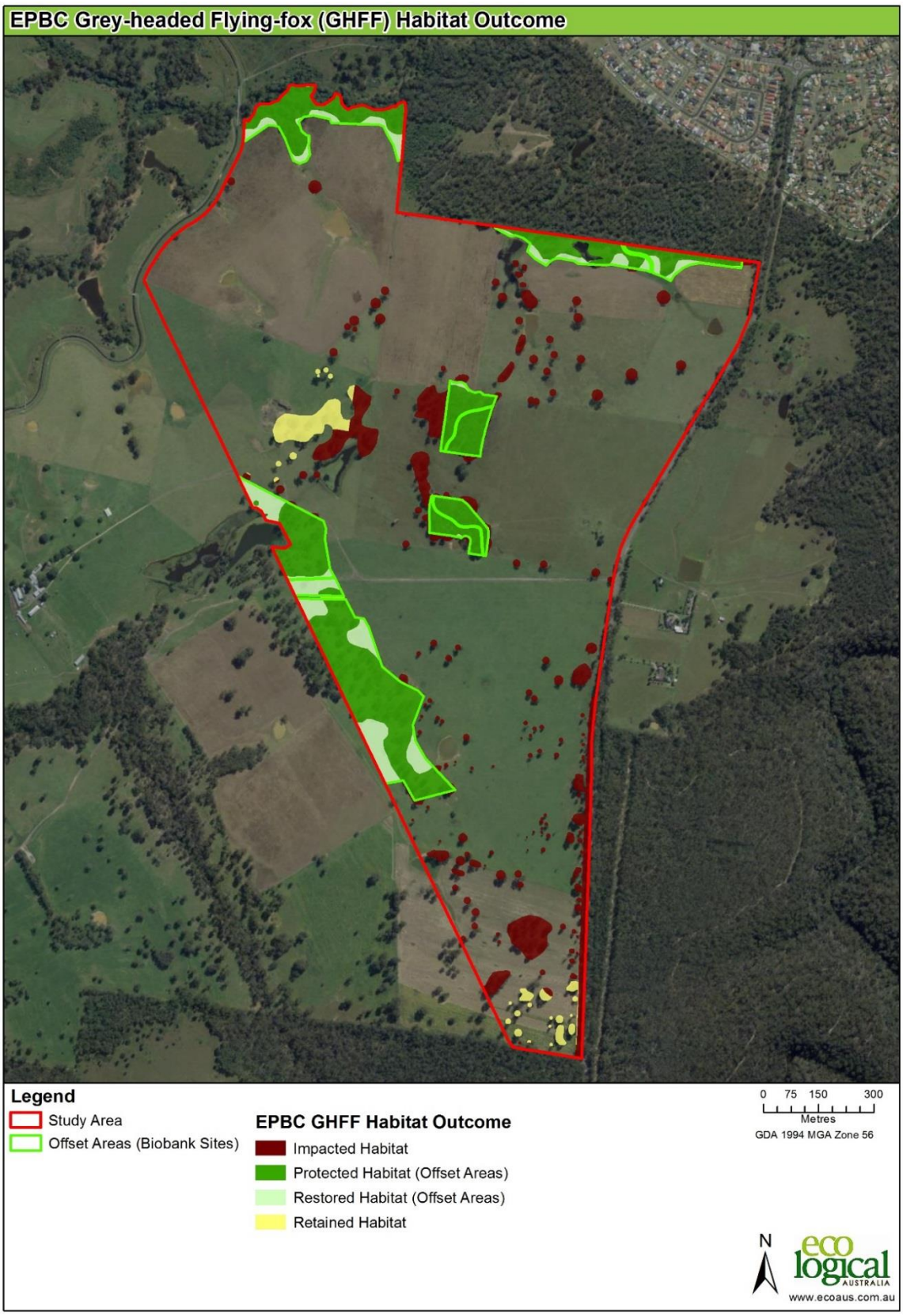

Figure 4: Impacted and protected Grey-headed Flying-fox habitat as per EPBC Act decision 2015/7599 dated 21 Dec 2018

2. Conditions of approval reference table

Table 1 provides a summary of the Conditions of Approval and where and how they have been addressed in this CEMP. The commitments made in the final Preliminary Documentation report are summarised in **Appendix C**.

This CEMP must also be consistent with the Department's Environmental Management Plan Guidelines (DoE 2014) and must include (Condition 10):

a. The CEMP environmental objectives, relevant to protected matters and a reference to EPBC Act approval conditions to which the CEMP refers;
b. A table of commitments made in the CEMP to achieve the objectives, and a reference to where the commitments are detailed in the CEMP;
c. Details of the parties responsible for undertaking management actions;
d. A description of management actions that will be implemented pre, during and post construction, including for stormwater discharge and road runoff, sediment and erosion control, invasion by exotic species and weeds, and fencing and access;
e. Hygiene protocols to minimise the risk of spread of Phytophthora cinnamomi;
f. Reporting and review mechanisms, and documentation standards to demonstrate compliance with the CEMP;
g. An assessment of risks to achieving the CEMP environmental objectives and risk management strategies that will be applied;
h. Impact avoidance, mitigation and/or repair measures, and their timing; and
i. A monitoring program, which must include:
    i measurable performance indicators;
    ii trigger values for corrective actions;
    iii the timing and frequency of monitoring to detect changes in the performance indicators and timely detection of trigger values; and
    iv proposed corrective actions, if trigger values are reached

Table 1: Relevant conditions of EPBC 2015/7599 approval and where addressed in this CEMP

Condition	Condition requirement	Plan reference	How plan addresses condition and commitments made in CEMP to address condition
8	At least three months prior to the commencement of the action, the approval holder must submit a construction environmental management plan (CEMP) for the Minister's approval to avoid and mitigate potential indirect impacts on protected matters in the onsite offset areas and the Council Reserve as a result of construction. If the Minister approves the CEMP, then the approved CEMP must be implemented.	This CEMP	Action expected to commence in November 2019 Draft CEMP submitted to DoTEE Post Approval Team for review on August 2019
9	The approval holder must not commence the action unless the Minister has approved the CEMP in writing.		Date CEMP approved by Minister to be entered here
10	The CEMP must be consistent with the Department's Environmental Management Plan Guidelines, and must include:-		
	a. The CEMP environmental objectives, relevant to protected matters and a reference to EPBC Act approval conditions to which the CEMP refers;	Section 4.3 and Table 5 of CEMP	Table 5 outlines objectives, performance targets and performance indicators to protect protected maters within on-site offset areas
	b. A table of commitments made in the CEMP to achieve the objectives, and a reference to where the commitments are detailed in the CEMP;	Table 6	Table 6 provides the mitigation measures (commitments) designed to avoid and minimise impacts to protected matters
	c. Details of the parties responsible for undertaking management actions;	Section 7 and Table 8	Table 8 identifies the responsible parties and their respective roles in implementing this CEMP
	d. A description of management actions that will be implemented pre, during and post construction, including for stormwater discharge and road runoff, sediment and erosion control, invasion by exotic species and weeds, and fencing and access;	Table 6	Table 6 provides the mitigation measures (commitments) designed to avoid and minimise impacts to protected matters before and during construction activities. Management of on-site offset areas post construction is via the implementation and annual reporting of the three Biobank Agreements (Appendices C, D & E)
	e. Hygiene protocols to minimise the risk of spread of Phytophthora cinnamomi;	Table 6 and **Appendix I**	Table 6 provides a commitment to ensuring that all vehicles and machinery entering/leaving the site will be cleaned of soil and plant material. Appendix I provides measures for preventing the introduction and spread of Phytophthora in the study area (i.e. a designated vehicle and machinery wash down and disinfection area)

Condition	Condition requirement	Plan reference	How plan addresses condition and commitments made in CEMP to address condition
	f. Reporting and review mechanisms, and documentation standards to demonstrate compliance with the CEMP;	Sections 6 & 9	Section 6.2 requires the approval holder to maintain accurate records of all staff training and site induction records, pre-clearance records and daily, weekly & monthly inspection records and any necessary corrective action reports Section 6.3 requires the approval holder to prepare an annual compliance report (if requested by the Minister) Section 9 requires the approval holder to review and update the CEMP if necessary or if directed by the Minister
	g. An assessment of risks to achieving the CEMP environmental objectives and risk management strategies that will be applied;	Section 4 and Table 5	Potential adverse impacts to protected matters during construction are identified in Section 4.1 Table 5 provides the mitigation measures (strategies) designed to avoid and minimise these risks from occurring
	h. Impact avoidance, mitigation and/or repair measures, and their timing	Table 6 Appendix M	Table 6 provides the mitigation measures designed to avoid and minimise impacts to protected matters before and during construction activities. The daily/weekly/monthly site inspection checklist (Appendix M) includes provision for specifying corrective actions (if required) and responsibility and timeframes for their implementation
	i. A monitoring program, which must include: i. measurable performance indicators; ii. trigger values for corrective actions; iii. the timing and frequency of monitoring to detect changes in the performance indicators and timely detection of trigger values; and iv. proposed corrective actions, if trigger values are reached.	Section 6 and Tables 5 & 6	Section 6 and Appendix M provides for daily, weekly and monthly site inspections and audits of the implementation of this CEMP Tables 5 and 6 provide performance targets and performance indicators for each environmental objective and management action respectively Table 6 provides for the frequency of monitoring of each action The checklist in Appendix M provides for an evaluation of compliance/non-compliance with each measure and if required, identification of corrective actions, responsible party and timeframes to implement

3. Objectives and context of the project

The aim of this CEMP is to outline the measures to avoid and mitigate potential indirect impacts on Protected Matters in the on-site offset areas and the Council Reserve as a result of construction in accordance with Condition of Approval number 8.

3.1 Outline of the CEMP

This CEMP sets out:

- Construction and conservation areas
- A description of potential environmental impacts and risks
- Approvals to be obtained prior to commencement
- Environmental management measures for each potential risk
- Environmental monitoring and corrective actions
- Environmental management roles and responsibilities
- Environmental training and induction requirements
- Environmental incident and emergency procedures
- Internal and external reporting arrangements; and
- Audit and review of the CEMP.

4. Risk assessment

4.1 Potential impacts

Potential indirect impacts to Protected Matters in the on-site offset areas from construction of the project include:

- Threatened Ecological Communities
  - Clearing of remnant vegetation beyond approved development footprint
  - Weed dispersal and introduction throughout the project area
  - Erosion and sedimentation impacting offset areas
  - Introduction of plant pathogens such as Phytophthora cinnamomic into offset areas
  - Spread of litter and rubbish into offset areas
  - Construction dust inhibiting plant health and growth in offset areas
  - Increased access to / recreational use of offset areas (post construction)
- Threatened Fauna (including Koala)
  - Loss of fauna habitat beyond approved development footprint
  - Injury /death of threatened fauna in vegetation clearing
  - Indirect impacts to fauna associated with construction noise and light
  - Direct impact from vehicle collisions on residential streets adjacent to offset areas
  - Direct impacts from domestic animals entering offset areas
- Waterways (Menangle Creek and tributaries)
  - Contamination by hazardous material (fuels, chemicals, oils) spills
  - Contamination by rubbish / waste
  - Pollution through sedimentation (turbidity) and stormwater runoff.

4.2 Risk assessment for potential environmental impacts

A qualitative risk assessment methodology in accordance with *Environmental Management Plan Guidelines, Department of the Environment Commonwealth of Australia 2014* has been applied to the environmental risks associated with the proposed construction works.

Each environmental risk identified in Section 4.1 has been provided a rating in terms of likelihood of occurring and the consequence to the Protected Matter if it did occur using the criteria in Table 2 and Table 3. These ratings were then combined to generate a risk rating of low, medium, high or severe (Table 4).

Table 5 then lists the risk assessment for each of the potential environmental impacts described in section 4.1 before and after mitigation; describes the mitigation measures proposed to minimise each risk and assesses the residual risk levels after implementation of mitigation measures. Table 5 also identifies the risks to achieving the environmental objectives of the CEMP in terms of the scientific, ecological or budgetary uncertainties that may prevent the desired outcome from being achieved, how the desired outcome is being monitored/detected by trigger values and likely adaptive management measures if the desired outcome is not met.

4.3 Environmental objectives, performance targets and indicators

Table 6 provides the environmental objectives relevant to each protected matter and approval condition, the performance targets for each objective, the commitments (management actions) made to achieve each objective, the responsible party for undertaking the management action, the performance indicators for each management action, and the timing and frequency of each action.

4.4 Managing uncertainty and adaptive implementation

Table 5 identifies the risks to achieving the environmental objectives of the CEMP in terms of the scientific, ecological or budgetary uncertainties that may prevent the desired outcome from being achieved, how the desired outcome is being monitored/detected by trigger values and likely adaptive management measures if the desired outcome is not met.

The main area of uncertainty in achieving the objectives of the CEMP are:-

1. Insufficient funds provided by the approval holder to implement the management actions identified
2. Inadequate induction/training of project staff leading to miscommunications of the actions to be implemented and/or matters to be protected; and
3. Poor implementation of identified mitigation measures.

The risk of these uncertainties arising is reduced by the comprehensive monitoring program proposed (Section 6) that will ensure that staff training and induction programs are implemented, records of these programs are retained (Section 6.2), and daily, weekly, monthly monitoring and site audits against a checklist (Section 6.3 and **Appendix M**) are undertaken to detect any incidents of non-compliance with appropriate corrective actions identified and implemented through an adaptive management program.

4.5 Contingency response and corrective actions

The monitoring, inspection checklist provided at **Appendix M** provides the opportunity to identify appropriate corrective / adaptive management actions that are specific to the issue should an incident of non-compliance arise. Table 5 provides some indicative adaptive management measures for each of the potential impacts identified as project risks.

Table 2: Definitions of likelihood of occurrence

Likelihood	Definition
Highly likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project.
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances.

Table 3: Definitions of consequence

Consequence	Definition
Minor	Minor incident of environment damage that can be reversed.
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts.
High	Substantial instances of environmental damage that could be reversed with intensive efforts.
Major	Major loss of environmental amenity and real danger of continuing.
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage.

Table 4: Risk framework

		Consequence				
		Minor	**Moderate**	**High**	**Major**	**Critical**
Likelihood	**Highly Likely**	Medium	High	High	Severe	Severe
	Likely	Low	Medium	High	High	Severe
	Possible	Low	Medium	Medium	High	Severe
	Unlikely	Low	Low	Medium	High	High
	Rare	Low	Low	Low	Medium	High

Table 5: Potential impacts and proposed mitigation measures for protected matters during construction

Potential impact	Risk before mitigation measures			Management Objective / Desired Outcome	Scientific, Ecological and /or budgetary uncertainties that may prevent desired outcome	Management Action / Mitigation Measure Commitment	Residual Risk after mitigation	Trigger, detection / monitoring activity	Adaptive Implementation Program & Measures / corrective actions
	Likelihood	Consequence	Risk						
Protected Matter - Ecological Communities (Cumberland Plain Woodland and Shale Sandstone Transition Forest)									
Clearing of remnant vegetation beyond approval footprint (Condition 1)	Possible	High	Major	To ensure that no clearing occurs beyond the approved footprint	None	Ensure that all staff are inducted and aware of ecological sensitivities, including the location of all conservation areas and riparian zones (Figure 2). Temporary and permanent protective fencing and signage must be erected around all areas identified for retention (offset areas) prior to commencement (examples of the permanent fencing of offset areas required by Council is provided in **Appendix G**). Any trees in the clearing area identified for protection within Open Space areas to be clearly marked prior to clearing activities commencing. Any trees in the clearing area identified as 'to be retained' following project ecologist pre-clearing review, shall be included on an environmental control map (Figure 2) and clearly marked with an easily visible and removable means of identification. The Tree Clearing Protocol (**Appendix H**) is to be implemented for any tree clearing. Location and identification of 'trees to be retained' to be discussed during daily pre-start where relevant.	Low	Staff induction & training records Daily, weekly inspection of Biobank site fencing Incident reports	Repairs to fence (as/if required). Restoration of damaged vegetation/habitat.
Weed dispersal and introduction throughout the project area (Condition 10d)	Possible	Moderate	Medium	To prevent the introduction and spread of invasive weeds to offset areas	Not undertaking daily inspections and cleaning of vehicles/equipment	Prior to entering and leaving the site, all vehicles and equipment involved in clearing and weed removal works must be cleaned to remove soil and plant material (**Refer to Hygiene Protocol – Appendix I**) . During vegetation clearing and weed removal, weed species must be stockpiled separately and disposed of at an appropriate waste disposal facility.	Low	Pre-start checklists Daily checks of vehicles Weekly inspection records Incident reports Biobank site monitoring and annual reports	Weed control and monitoring of offset areas
Introduction of soil pathogens to offset areas (including Phytophthora spp.) (Condition 10e)	Possible	High	High	To prevent the introduction of soil pathogens to offset areas	Not undertaking daily inspections and cleaning of vehicles/equipment	Prior to entering and leaving the site, all vehicles and equipment involved in construction, clearing and weed removal works must be cleaned to remove soil and plant material (**Refer to Hygiene Protocol – Appendix I)**. Implementation of Erosion and Sediment Control Plan (ESCP – **Appendix J**). The ESCP will be approved by Campbelltown Council prior to the issue of a construction certificate as required by the conditions of consent for DA 2017/3868.	Low	Pre-start checklists Daily checks of vehicles Weekly inspection records Incident reports Biobank site monitoring and annual reports	Monitoring of offset areas and chemical treatment of any Phytophthora outbreaks
Erosion and sedimentation impacting offset areas (Condition 10d	Possible	High	High	To prevent erosion and sedimentation impacting offset areas	Not checking sedimentation traps on a regular basis, or after heavy rainfall, and repairing and ineffective barriers	Implementation of Erosion and Sediment Control Plan (ESCP – **Appendix J**)	Low	Post rainfall site inspections Weekly inspections Erosion and sediment control fences	Repair to sediment control fences Restoration of damaged vegetation/habitat

Potential impact	Risk before mitigation measures			Management Objective / Desired Outcome	Scientific, Ecological and /or budgetary uncertainties that may prevent desired outcome	Management Action / Mitigation Measure Commitment	Residual Risk after mitigation	Trigger, detection / monitoring activity	Adaptive Implementation Program & Measures / corrective actions
	Likelihood	Consequence	Risk						
								Biobank site monitoring and annual reports	
Deposition of dust inhibiting growth / health of plants in offset areas (Condition 10d)	Possible	Moderate	Medium	To prevent high levels of dust that may inhibit growth/health of vegetation	Not implementing Dust Control Plan	Implementation of Dust Management Control Plan (**Appendix K**). The Dust Management Plan will be approved by Campbelltown Council prior to the issue of a construction certificate as required by the conditions of consent for DA 2017/3868	Low-medium	Checks of water cart usage records Checks of haul vehicles being covered Monitoring of stockpiles Incident reports Biobank site monitoring and annual reports	Increase use of water cart Reduce/modify activity on windy days
Spread of litter and waste to offset areas (Condition 10d)	Possible	Moderate	Medium	To prevent the spread of litter and rubbish across development site and into offset areas and waterways	Not implementing management actions/commitments	The work site will be maintained free of rubbish and monitored daily to ensure compliance. Disposal containers are to be located away from riparian zones and regularly emptied	Low	Bins and waste storage units not exceeding 100% capacity Incident reports Weekly inspections Monthly audits Biobank site monitoring and annual reports	Increase number of rubbish bins, frequency of emptying bins
Increased access / recreational use of offset areas resulting in damage to vegetation (Post Construction (Condition 10d)	Highly Likely	High	High	To avoid recreational use of offset areas	Insufficient funds allocated to enforcement of Biobanking Agreements	Temporary and permanent protective fencing and signage must be erected around all areas identified for retention (offset areas) prior to commencement. Offset areas will be identified as “no go” areas during construction and included on the Environmental Control Map (Figure 2). Provision of active open space areas Signage at Biobank site access points requiring passive recreation to be restricted to provided walking paths A local resident education and awareness programs will be prepared and implemented for local residents following the completion of construction including information of the ecological significance and management of the offset areas, access restriction (other than designated walking paths) and opportunities to participate in habitat restoration and other management activities	Low	Attendance at community education days Biobank site annual reporting	Increase Council staff presence at Biobank sites to undertake enforcement action if required.
Protected Matter - Threatened Fauna Habitat - Koala, Grey-headed Flying Fox									
Loss of fauna habitat beyond approval (Condition 1)	Possible	High	Major	To ensure that no clearing occurs beyond the approved footprint	None	Ensure that all staff are inducted and aware of ecological sensitivities, including the location of all conservation areas and riparian zones (Figure 2). Temporary and permanent protective fencing and signage must be erected around all areas identified for retention (offset areas) prior to commencement (**Appendix G**). Any trees within the clearing area identified for protection within Open Space areas to be clearly marked prior to clearing activities commencing.	Low	Staff induction & training records Daily, weekly inspection of Biobank site fencing	Repair to fence Restoration of damaged vegetation/habitat

Potential impact	Risk before mitigation measures			Management Objective / Desired Outcome	Scientific, Ecological and /or budgetary uncertainties that may prevent desired outcome	Management Action / Mitigation Measure Commitment	Residual Risk after mitigation	Trigger, detection / monitoring activity	Adaptive Implementation Program & Measures / corrective actions
	Likelihood	Consequence	Risk						
						Any trees within the clearing area identified as "to be retained" following project ecologist pre-clearing review, shall be included on an environmental control map and clearly marked with an easily visible and removable means of identification. Any trees, or parts thereof, that would be appropriate for use as fauna habitat, is to be identified by a suitably experienced ecologist and salvaged for re-use within the Biobank sites in accordance with the Biobank Agreements.		Incident reports	
Injury /death of threatened fauna during clearing (Condition 1)	Likely	High	High	To avoid any direct death/injury to wildlife, in particular Koala during clearing activities	Insufficient funds allocated to pre-clearance surveys	Hollow-bearing trees within the study area that potentially contain roosting and breeding habitat for threatened microbats must be identified by a suitably qualified ecologist prior to clearing activities and, where possible, retained. Any trees identified as "to be retained" following project ecologist pre-clearing review, shall be included on an update environmental control map and clearly marked with an easily visible and removable means of identification (**Appendix H**). The Tree Clearing Protocol (**Appendix H**) is to be implemented for any tree clearing. Location and identification of 'trees to be retained' to be discussed during daily pre-start meetings where relevant. Any threatened species identified during the Project will be recorded in compliance and audit reports	Low	Staff induction & training records Pre-clearance survey reports Incident reports	Increase level of inspection of hollows prior to clearing Ensure slow/soft-drop technique of tree clearing is being followed
Disturbance due to lighting (during construction) Post Construction (Condition 10d)	Possible	Minor	Low	To avoid potential indirect impacts to fauna from lighting directed into offset areas	None	Work involving the use of machinery of any description will only be carried out from 7.00am to 6.00pm, Monday to Friday, 8.00am to 5.00pm Saturday, with no work to be carried out on Sundays or Public Holidays as required by Council conditions of approval for DA 2017/3868. Lighting to comply with Australian Standard 4282 – Control of the obtrusive effects of outdoor lighting Position and direct lights away from conservation zones; Biodiversity Stewardship sites and outside site boundaries	Low	Checking of position and angle of lights installation of street lighting	Adjust angle of lights
Disturbance from excessive construction noise (Condition 10d	Possible	Minor	Low	To avoid potential indirect impacts to fauna from excessive construction noise	None	Work involving the use of machinery of any description will only be carried out from 7.00am to 6.00pm, Monday to Friday, 8.00am to 5.00pm Saturday, with no work to be carried out on Sundays or Public Holidays as required by Council conditions of approval for DA 2017/3868. All plant and equipment to be maintained and operated as per manufacturer's specifications and to be inspected prior to work. Any faulty plant or equipment is be stood down until repaired Limit idling/ revving of engines on mobile and stationary machines and shut down any equipment not in use. Limit the use of horns or other audible signals on mobile equipment to the maximum practical extent. Promptly respond to complaints and modify practices.	Low	Pre-start checklists Maintenance log books Incident reports Random Checks	Any faulty plant or equipment is be stood down until repaired Promptly respond to complaints and modify practices
Road Kill (Condition 7	Possible	High	High	To avoid, reduce potential for road kill of Koala in action area (Mt Gilead Residential Estate)	Insufficient funds allocated to implement/install mitigation measures	**Construction Phase** Implementation of Koala Management Plan (**Appendix B**) to reduce potential traffic injuries or death Construction traffic to utilise clearly defined access and egress points to and from the development site that avoid retained Koala habitat areas (Figure 3) Construction traffic within the development site to keep to designated routes where possible Parking and equipment and material laydown areas to be located away from conservation areas	Low-medium	Training & induction records Pre-clearance surveys Monitoring of fencing Observations of Koalas in action area during	Cessation of construction activities if Koala are present in immediate work area as directed by Project Ecologist

Potential impact	Risk before mitigation measures			Management Objective / Desired Outcome	Scientific, Ecological and /or budgetary uncertainties that may prevent desired outcome	Management Action / Mitigation Measure Commitment	Residual Risk after mitigation	Trigger, detection / monitoring activity	Adaptive Implementation Program & Measures / corrective actions
	Likelihood	Consequence	Risk						
						Construction traffic is to adhere to construction zone speed limits across the site Exclusion fencing will be installed prior to site works commencing to delineate the limit of areas impacted by the works and accessible by construction traffic **Operational Phase** Local roads will have speed limit restrictions of 50km/h Perimeter roads and roads adjacent to Koala habitat areas will be signposted to alert road users to possible presence of Koalas 'Koala Warning Signs' dispersed throughout the Mount Gilead road network (Refer to Koala Management Plan (**Appendix B**) Roadside vegetation adjacent to conservation areas will be managed to minimise the height of ground cover and therefore increase the visibility of any roadside fauna		construction activities	
Disturbance from domestic animals (cats/dogs) Operational Phase (Condition 7)	Highly Likely	Moderate	High	To avoid, reduce potential for disturbance to Koala from domestic animals (dogs) in action area (Mt Gilead Residential Estate)		**Construction Phase** Implementation of Koala Management Plan (**Appendix B**) Dog proof fencing will be a design requirement for each residential lot in accordance with the Gilead Home Design Guidelines (Lendlease 2019 – **Appendix L**) – refer to Section 5.2.1 of Koala Management Plan **Appendix B** Prohibition of dogs within the offset areas Biobank sites will be fenced and have signage to prohibit dog-entry – (Refer to **Appendices D, E, F and G**) Designated areas within open space / recreation areas where dogs will be permitted to be off leash **Operational Phase** Ongoing implementation of Koala Management Plan (**Appendix B** In public open spaces, all dogs will be required to be kept under control by their owners, in accordance with Local Government and Companion Animal Act dog ownership regulations. Refer to Section 5.2.2 of Koala Management Plan (**Appendix B**) Dogs will be prohibited from entry into the offset areas. These areas will be actively managed and subject to enforcement powers under the Local Government Act All public areas will be effectively signposted regarding dog exercise provisions Education programs for residents regarding the requirements for dogs within the development	Low to medium	**Operational Phase** Routine inspection of open space areas and off leash areas by Council enforcement officers Records of Community Education Programs	Additional inspections of open space areas Additional Community Education programs
Protected Matter Waterways									
Contamination by rubbish / waste (Condition 10d)	Possible	Moderate	Medium	To prevent the spread of litter and rubbish into waterways	Not implementing management actions/commitments	The work site will be maintained free of rubbish and monitored daily to ensure compliance. Disposal containers are to be located away from riparian zones and regularly emptied	Low	Bins and waste storage units not exceeding 100% capacity Incident reports Weekly inspections Monthly audits	Increase number of rubbish bins, frequency of emptying bins
Contamination by hazardous material (fuels, chemicals, oils)	Possible	Moderate	Medium	To prevent the risk of spills of hazardous materials across development site and into offset areas and waterways	Not implementing management actions/commitments	All hazardous material, including hydrocarbons (fuels) will be securely stored in a designated storage area away from water bodies and riparian zones. Tanks and hazardous material containers will be selfbunded or bunded with an impervious surface and a capacity to contain 110% of the largest stage tank capacity.	Low	Safety data sheets on file	Increased training in handling of hazardous materials

Potential impact	Risk before mitigation measures			Management Objective / Desired Outcome	Scientific, Ecological and /or budgetary uncertainties that may prevent desired outcome	Management Action / Mitigation Measure Commitment	Residual Risk after mitigation	Trigger, detection / monitoring activity	Adaptive Implementation Program & Measures / corrective actions
	Likelihood	Consequence	Risk						
spills (Condition 10d)						Spill kits shall be provided, including in designated vehicles and all operators trained in their use. Visual monitoring will be undertaken during the works to detect any fuel or chemical spills. If any spills / turbidity plumes are observed, works will be stopped immediately; incident response plan implemented Vehicles will be refuelled and serviced off site wherever practical. Location of hazardous materials, storage locations and spills equipment is to be included within the Environmental Control Map Staff will be trained in incident response plan, including spills management.		Hazardous substances register Weekly inspection records Monthly audit reports	Increased inspections
Pollution through sedimentation (turbidity) and stormwater runoff (Condition 10d)	Likely	High	High	To prevent pollution through sedimentation and stormwater run-off impacting offset areas	Not checking sedimentation traps on a regular basis, or after heavy rainfall, and repairing and ineffective barriers	Implementation of Erosion and Sediment Control Plan (ESCP – **Appendix J**) Roads surrounding each part of the Conservation Area are to be fully curbed and guttered with piped stormwater management infrastructure to ensure that stormwater will not flow into the Conservation Area. Erosion and sediment control methods listed in the ESCP will be installed prior to construction commencing and will include: • Minimise areas of bare soil wherever possible through phasing of works and covering/ stabilising. • Create stabilised site access and egress with vehicle cleaning bay / rattle grids to reduce the likelihood of vehicles tracking soil materials onto public roads. • Install catch drains or staked straw bales upslope of the area to divert rain and surface waters from outside the site away from the site • Install sediment controls downslope at the site to capture sediments from the works from going offsite • Soil stockpiles and concrete washout are to be located away from waterways and drainage lines • Soil stockpiles are to be covered/ stabilised and to be protected from sediment runoff by a catch drain constructed along uphill sides and a suitable silt fence/sediment trap constructed on the downhill sides. • Rock wrapped in geofabric or straw bales to be installed in or around any stormwater drainage inlet • Monitor and maintenance of all erosion and sediment controls to be undertaken daily. • Concrete is to be washed-out in designated concrete wash-out area lined with suitable material and bunded to avoid release of washout materials. • Concrete washout bay is to be monitored regularly and washout to be disposed of to an appropriately licenced waste facility	Low - Medium	Weekly inspections of erosion and sediment control fences Post rainfall site inspections	Repair to sediment control fences Restoration of damaged vegetation/habitat

5. Environmental management measures and performance criteria

5.1 Implementation of management actions and performance measures

Table 6 details the requirements for implementation of the management measures to meet management objectives, performance targets and indicators, monitoring, the identification of responsibilities and timeframes for implementation of measures.

Table 6: Management actions to protect ecological communities, flora, fauna and waterways

Management Objective / Outcome	Performance Target and / or Completion Criteria	Management Action / Measure	Monitoring Activity	Performance Indicators	Responsibility	Timing and Frequency
To ensure that construction works are completed in accordance with project approvals to minimise negative impacts to retained Protected Matters	No disturbance to or clearing of any vegetation/ habitat beyond the approved project footprint as a result of construction activity	Ensure that all staff are inducted and aware of ecological sensitive areas (as indicated on Environmental Control Map), including the location of on-site offset areas and riparian zones and, for relevant staff, tree clearing protocol.	Daily, weekly inspection of fencing and any unauthorised disturbance of offset areas Incident reports	Staff training and induction undertaken & records retained Toolbox talks undertaken Pre-start meetings held Up to date Environmental Control Map Incident reports acted on Records of daily, weekly inspection of signage / fencing and issues rectified as necessary	Project Manager	At all times
To prevent any inadvertent damage to retained Protected Matters	Protective fencing around offset areas maintained at all times	Temporary and permanent protective fencing must be erected around all areas identified for conservation (on-site offset areas), Open Space areas and any trees identified for retention/salvage, prior to clearing activities commencing to minimise any inadvertent damage.	Daily, weekly inspection of fencing and any unauthorised disturbance of offset areas Incident reports	Staff training and induction undertaken & records retained Toolbox talks undertaken Pre-start meetings held Up to date Environmental Control Map Incident reports acted on Records of daily, weekly inspection of signage / fencing and issues rectified as necessary	Construction Manager Project Ecologist	Pre-construction
To prevent injury /death of threatened fauna during clearing	No death or injury of Koalas or other threatened fauna species during vegetation clearing as a result of construction activity	The Tree Clearing Protocol (**Appendix H**) is to be implemented for any tree clearing. Hollow-bearing trees within open space areas that potentially contain roosting and breeding habitat for threatened microbats must be identified by a suitably qualified ecologist and, where possible, retained All trees identified as “to be retained” within the clearing area following project ecologist pre-clearing review, shall be clearly identified on the environmental control map and clearly marked onsite, with an easily visible and removable means of identification	Pre clearing report Incident reports	Project ecologist present during all clearing works Daily tree clearing reports Incident reports acted on Trees to be retained identified on updated Environmental Control Map	Project Ecologist Project Manager All staff	Pre-clearing Pre-construction
To increase habitat values in offset areas	Fauna habitat features retained on-site or salvaged for reuse in on-site conservation areas	Any trees, or parts thereof, that would be appropriate for use as fauna habitat, is to be identified by a suitably experienced ecologist and salvaged for re-use within the on-site offset areas.	Pre-clearing reports	Woody material salvaged and relocated to offset areas in accordance with Biobank Agreements Biobank site monitoring and annual reports	Project ecologist / Project Manager / Construction Manager	During tree clearing

Management Objective / Outcome	Performance Target and / or Completion Criteria	Management Action / Measure	Monitoring Activity	Performance Indicators	Responsibility	Timing and Frequency
To prevent the introduction and spread of invasive weeds to offset areas	No weeds dispersed or introduced to offset areas as a result of construction activity	Prior to entering and leaving the site, all vehicles and equipment involved in clearing and weed removal works should be cleaned to remove soil and plant material (Refer to Hygiene Protocol **Appendix I**) During vegetation clearing and weed removal, weed species are to be stockpiled separately and disposed of at an appropriate waste disposal facility.	Daily checks of vehicles Weekly inspection records Incident reports Biobank site monitoring and annual reports that assess weed cover	Pre-start checklists completed Daily checks of vehicles undertaken as determined by retained records Incident reports acted on Biobank site monitoring and annual reports completed	All Staff	At all times
To prevent the introduction of soil pathogens to offset areas and Council Reserve	No soil pathogens introduced to offset areas as a result of construction activity	Prior to entering and leaving the site, all vehicles and equipment involved in construction, clearing and weed removal works must be cleaned to remove soil and plant material (**Refer to Hygiene Protocol – Appendix I)**. Implementation of Erosion and Sediment Control Plan (ESCP – **Appendix J**). The ESCP will be approved by Campbelltown Council prior to the issue of a construction certificate as required by the conditions of consent for DA 2017/3868.	Daily checks of vehicles Weekly inspection records Incident reports Biobank site monitoring and annual reports that assess weed cover	Pre-start checklists completed Daily checks of vehicles undertaken as determined by retained records Incident reports acted on Biobank site monitoring and annual reports completed	All Staff	At all times
To prevent erosion and sedimentation impacting offset areas and waterways	No erosion or sedimentation as a result of construction activity impacting offset areas. Any erosion in offset areas as a result of construction activity has an appropriate management plan at completion of construction activity	Erosion and sediment control methods listed in the ESCP will be installed prior to construction commencing and will include:- • Minimise areas of bare soil wherever possible through phasing of works and covering/ stabilising. • Create stabilised site access and egress with vehicle cleaning bay / rattle grids to reduce the likelihood of vehicles tracking soil materials onto public roads. • Install catch drains or staked straw bales upslope of the area to divert rain and surface waters from outside the site away from the site • Install sediment controls downslope at the site to capture sediments from the works from going offsite • Soil stockpiles and concrete washout are to be located away from waterways and drainage lines • Soil stockpiles are to be covered/ stabilised and to be protected from sediment runoff by a catch drain constructed along uphill sides and a suitable silt fence/sediment trap constructed on the downhill sides. • Rock wrapped in geofabric or straw bales to be installed in or around any stormwater drainage inlet • Monitor and maintenance of all erosion and sediment controls to be undertaken daily. • Concrete is to be washed-out in designated concrete wash-out area lined with suitable material and bunded to avoid release of washout materials. Roads surrounding each part of the on-sites offset areas are to be fully curbed and guttered with piped stormwater management infrastructure to ensure that stormwater will not flow into the Biobank sites.	Monitoring and maintenance of all erosion and Sediment controls to be undertaken daily Concrete washout bay and waste storage areas are to be monitored regularly and washout and waste to be disposed of to an appropriately licenced waste facility	Daily inspection records Weekly inspections Erosion and sediment control fences Post rainfall site inspection records	All staff	At all times

Management Objective / Outcome	Performance Target and / or Completion Criteria	Management Action / Measure	Monitoring Activity	Performance Indicators	Responsibility	Timing and Frequency
To prevent high levels of dust that may inhibit growth/health of vegetation	No deposits of dust affecting plant health in offset areas as a result of construction activity	Implementation of Dust Management Control Plan (DMCP) (**Appendix K**) Dust control methods listed in the DMCP include:- • Stabilised site access and egress routes • Minimise areas of bare soil (including stockpiles) wherever possible through phasing of works and covering/ stabilising with suitable materials.	Water cart usage records Covering of haul vehicles Monitoring of stockpiles Incident reports Biobank site monitoring and annual reports that assess vegetation health and condition	Staff training and induction records Toolbox talks records Pre-start meetings Weekly inspection records Incident reports	Construction Manager / All Staff	At all times
To prevent the spread of litter and waste to offset areas and waterways (Condition 10d)	No litter or waste in offset areas as a result of construction activity Offset areas are free of rubbish and waste at completion of construction	The work site will be maintained free of rubbish and monitored daily to ensure compliance. Disposal containers are to be located away from riparian zones and regularly emptied	Daily and weekly inspection of bins Incident reports Monthly audits	Daily and weekly inspections undertaken Bins and waste storage units not exceeding 100% capacity Incident reports acted on Monthly audits completed Biobank site monitoring and annual reports	Construction Manager / All Staff	At all times
To prevent the risk of spills of hazardous materials across development site and into offset areas and waterways	No oil, fuel or chemical spills affecting offset areas as a result of construction activity No pollution (including sedimentation) of water bodies and riparian areas as a result of construction activity	Staff will be trained in incident response plan, including spills management All hazardous material, including hydrocarbons (fuels) will be securely stored in a designated storage area away from water bodies and riparian zones. Spill kits shall be provided, including in designated vehicles and all operators trained in their use. Vehicles and plant will be refuelled and serviced off site wherever practical Location of hazardous materials, storage locations and spills equipment is to be included within the Environmental Control Map	Visual monitoring will be undertaken during the works to detect any fuel or chemical spills. If any spills / turbidity plumes are observed, works will be stopped immediately; incident response plan implemented	Incident response Plan training undertaken by all staff Hall hazardous materials stored in designated location Location of hazardous materials and spills equipment included on the Environmental Control Map	Construction Manager / All Staff	At all times
To avoid potential indirect impacts to fauna from lighting directed into offset areas	All street lighting complies with Australian Standard 4282 – Control of the obtrusive effects of outdoor lighting	Work involving the use of machinery of any description will only be carried out from 7.00am to 6.00pm, Monday to Friday, 8.00am to 5.00pm Saturday, with no work to be carried out on Sundays or Public Holidays as required by Council conditions of approval for DA 2017/3868. Lighting to comply with Australian Standard 4282 – Control of the obtrusive effects of outdoor lighting Position and direct lights away from conservation zones; Biodiversity Stewardship sites and outside site boundaries	Checking of position and angle of street light installation	Lighting complies with Australian Standard 4282 – Control of the obtrusive effects of outdoor lighting	Construction Manager	At all times
To avoid potential indirect impacts to fauna from excessive construction noise	All construction work carried out in accordance with approved time frames All plant and equipment maintained and operated as per manufacturer's specifications	Work involving the use of machinery of any description will only be carried out from 7.00am to 6.00pm, Monday to Friday, 8.00am to 5.00pm Saturday, with no work to be carried out on Sundays or Public Holidays as required by Council conditions of approval for DA 2017/3868. All plant and equipment to be maintained and operated as per manufacturer's specifications and to be inspected prior to work. Any faulty plant or equipment is be stood down until repaired Limit idling/ revving of engines on mobile and stationary machines and shut down any equipment not in use. Limit the use of horns or other audible signals on mobile equipment to the maximum practical extent. Promptly respond to complaints and modify practices.	Pre-start checklists Maintenance log books Incident reports Random Checks	Pre-start checklists completed Maintenance log books maintained Incident reports acted on Random Checks undertaken	Construction Manager / All Staff	At all times

Management Objective / Outcome	Performance Target and / or Completion Criteria	Management Action / Measure	Monitoring Activity	Performance Indicators	Responsibility	Timing and Frequency
To avoid, reduce potential for road kill of Koala in action area (Mt Gilead Residential Estate)	No road deaths or injuries in action area during construction	**Construction Phase** Implementation of Koala Management Plan (**Appendix B**) to reduce potential traffic injuries or death Construction traffic to utilise clearly defined access and egress points to and from the development site that avoid retained Koala habitat areas (Figure 3) Construction traffic within the development site to keep to designated routes where possible Parking and equipment and material laydown areas to be located away from conservation areas Construction traffic is to adhere to construction zone speed limits across the site Exclusion fencing will be installed prior to site works commencing to delineate the limit of areas impacted by the works and accessible by construction traffic **Operational Phase** Local roads will have speed limit restrictions of 50km/h Perimeter roads and roads adjacent to Koala habitat areas will be signposted to alert road users to possible presence of Koalas 'Koala Warning Signs' dispersed throughout the Mount Gilead road network (Refer to Koala Management Plan (**Appendix B**) Roadside vegetation adjacent to conservation areas will be managed to minimise the height of ground cover and therefore increase the visibility of any roadside fauna	Staff induction training to include recognition of Koala and other threatened fauna (Squirrel Glider) Daily inspection of work area for presence of Koala Daily /weekly inspection of offset area fencing Pre-clearance survey	Appointment of project Ecologist Records of staff training/induction Fence inspection reports Records of observations of Koalas in action area during construction activities	Construction Manager / Project Ecologist / All Staff	At all times
To avoid, reduce potential for disturbance to Koala from domestic animals (dogs) in action area (Mt Gilead Residential Estate) during construction	No dog attacks (dogs owned by construction staff) in action area during construction	**Construction Phase** Implementation of Koala Management Plan (**Appendix B**) Dog proof fencing will be a design requirement for each residential lot in accordance with the Gilead Home Design Guidelines (Lendlease 2019 – **Appendix L**) – refer to Section 5.2.1 of Koala Management Plan **Appendix B** Prohibition of dogs within Biobank areas/Council Reserve Biobank sites will be fenced and have signage to prohibit dog-entry – (Refer to **Appendices D, E, F and G**) Designated areas within open space / recreation areas where dogs will be permitted to be off leash **Operational Phase** In public open spaces, all dogs will be required to be kept under control by their owners, in accordance with Local Government and Companion Animal Act dog ownership regulations. Refer to Section 5.2.2 of Koala Management Plan (**Appendix B**) Dogs will be prohibited from entry into the Biobank sites. These areas will be actively managed and subject to enforcement powers under the Local Government Act All public areas will be effectively signposted regarding dog exercise provisions Education programs for residents regarding the requirements for dogs within the development	**Construction Phase** Daily inspections for presence of dogs Design of residential lot fencing complies with Design Guidelines **Operational Phase** Routine inspection of open space areas and off leash areas by Council enforcement officers Records of Community Education Programs	No dogs on site with project staff Rear yards of house lots are dog proof	Construction Manager / Project Ecologist / All Staff	At all times

6. Monitoring

This CEMP includes a comprehensive monitoring program to ensure that management commitments are effectively implemented and any incidents of non-compliance are detected and appropriate corrective actions developed and implemented as part of an adaptive management program.

The Project Manager will be responsible for ensuring that all staff induction and training programs are implemented and all monitoring requirements are undertaken (Section 7 Roles and Responsibilities).

The purpose of the monitoring program is to ensure that the CEMPs objectives and completion criteria as outlined in Tables 5 and 6 are met.

6.1 Monitoring and non-compliance

Regular environmental inspections are to be undertaken of all work activities being carried out at the project site in accordance with Table 6 and the checklist at **Appendix M**. Inspections shall be carried out in conjunction with personnel responsible for a particular work area and shall include the following:

- Daily and weekly Inspections of key environmental issues recorded on an Environmental Site Inspection Checklist (**Appendix M**) – site supervisory staff as part of their daily duties shall conduct daily inspections of the site (incl. all subcontractor activities), and issues noted in daily diaries if applicable. Near misses or non-compliances will be investigated, documented and reported with appropriate corrective action taken and documented.
- Regular Site Inspections – formal inspections by the Project Manager and Project Ecologist, recorded on an Environmental Site Inspection Checklist (**Appendix M**) will be undertaken. Near misses or non-compliances shall be investigated, documented and reported with appropriate corrective action taken and documented within clearly defined timeframes.
- Monthly audits – monthly audits by the Project Manager, recorded on a monthly audit Checklist will be undertaken. Near missis or non-compliances shall be investigated, documented and reported with appropriate corrective action taken and documented within clearly defined timeframes.

Where a site or operational condition that does not comply, a Corrective Action Report (CAR) is to be completed and actioned (**Appendix M**). A CAR for any non-compliance is to be actioned no later than within 3 working days of receiving confirmation of the noncompliance. In some instances, further investigation or monitoring may be required to establish whether the CEMP has been adequately implemented, or whether the work is compliant with relevant legislation, guidelines and statutes. In these instances, an independent party, such as an Environmental Auditor, may need to carry out the investigation or monitoring.

The notification to the relevant authority of any emergency or incident which results in the loss or damage to Protected Matters, the release of contaminants and subsequent pollution to water, air or land, should include the following information.

- The location of the emergency or incident;
- The name and telephone number of the designated contact person;
- The time of the release;

- The time the incident occurred;
- The suspected cause of the release;
- The environmental harm caused, threatened, or suspected to be caused by the release; and
- Actions taken to prevent any further release and mitigate any environmental harm caused by the release.

In addition to the inspections and monitoring undertaken by the approval holder described above, the approval holder will be implementing the management plans and monitoring/reporting program for the three registered Biobank Agreements.

The biobank assessments (ELA 2018 a & b and 2019a) provide the baseline data (permanent photo monitoring points and floristic/structural data) for the condition and health of the Protected Matters (endangered ecological communities and habitat for threatened species) in the offset areas. These monitoring sites are required to be assessed on an annual basis to provide an audit of vegetation health and condition, extent of exotic plant cover, presence/extent of feral animal species, presence of rubbish and erosion (refer to Annexure D for each of the Biobank Agreements in **Appendices D, E & F**) and adaptive management actions implemented (to the satisfaction of the regulator – the NSW Biodiversity Conservation Trust).

In addition to reporting on the condition/health of vegetation/habitat and the coverage of weeds and any other adverse events in the biobank sites (i.e. incidence of fire, introduction of pathogens), the Biobank Agreements requires the owners of the Biobank sites to undertake regular inspections of the presence of stock, condition of fencing, evidence of human disturbance, erosion and waste and provide these details in an annual report prior to the anniversary date of the commencement of active management (15 October each year).

The approval holder will provide the DoTEE with a copy of these annual reports for each year that construction is ongoing as part of the reporting requirements in Section 6.3.

6.2 Records management

In accordance with Condition of Approval 13, the approval holder must maintain accurate and complete compliance records.

To meet this requirement, the following records must be kept on-site:

- All environmental training records, including signed and dated:
  - Environmental inductions;
  - Environmental toolbox talks;
  - pre-start meetings;
- All fauna preclearing records;
- All daily, weekly and monthly environmental inspection reports;
- CEMP audit reports
- All compliance reports
- All non-conformances and incidents reports;

6.3 Annual Compliance Reporting

In accordance with Condition of Approval 16, the approval holder must prepare a compliance report for each 12 month period following the commencement of the action.

The approval holder must:-

a. publish each compliance report on its website within 60 business days following the relevant 12 month period;
b. notify the Department by email that a compliance report has been published on the website within five business days of the date of publication;
c. keep all compliance reports publicly available on the website until this approval expires;
d. exclude or redact sensitive ecological data from compliance reports published on the website; and
e. where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within 5 business days of publication.

This annual compliance report will include a copy of the annual Biobank management reports.

The approval holder must notify, as soon as practical, and no later than two business days of the Department in writing, of any incident, non-compliance with the conditions of approval or non-compliance with the commitments made in any plans.

This notification must provide the Department with the details of any incident, non-compliance with the conditions of approval or non-compliance with the commitments made in any plans as soon as practical, and no later than 10 business days specifying:

a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;
b. the potential impacts of the incident or non-compliance; and
c. the method and timing of any remedial action that will be undertaken by the approval holder.

7. Roles and Responsibilities

7.1 Approvals to be obtained

Key environmental approvals which are to be obtained before works can commence, are included in Table 7.

Table 7: Approvals

Approval requirement	By	When
Condition 2: Secure 8 ha of SSTF and 1.2 ha of CPW within on-site offset areas prior to commencement of action	Registration of Macarthur-Onslow and Noorumba -Mt Gilead Biobank sites	Biobank Agreements registered on 23 January 2019 Credits equivalent to 8ha of SSTF (80 HN556 credits) and 1.2 ha of CPW (10 HN528 credits) retired 15 October 2019 and DoTEE notified on 31 October 2019 (Refer to **Appendix N**)
Condition 3: Secure 4 ha of SSTF at the Fernhill Central West Biobank Site prior to commencement of action	Purchase of 34 HN556 credits from Fernhill Central West Biobank site BA117	34 HN556 credits purchased from BA117 in 2018 All credits retired 15 October 2019 and DoTEE notified 31 October 2019 (Refer to **Appendix N**)
Condition 4: Secure 0.85 ha of SSTF within Council Reserve prior to commencement of Stage 2 of the action	Registration of Hillsborough Biobank site	Application to register Hillsborough Biobank site to be submitted to OEH in August 2019 All credits retired 15 October 2019 and DoTEE notified 31 October 2019 (Refer to **Appendix N**)
Condition 5: Retire no less than 150 Koala credits from the Appin West offset site (BA 117) prior to commencement of action	Purchase of 150 Koala credits from Appin West offset site Biobank site BA215	150 Koala credits purchased from BA215 in May 2019 All credits retired 15 October 2019 and DoTEE notified 31 October 2019 (Refer to **Appendix N**)
Condition 6: Approval holder to provide Department with evidence when the offsets were secured within 10 days of securing	Credit retirement certificates	Credit retirement certificates for Conditions 1-5 provided to the Department on 31 October 2019 (Refer to **Appendix N**)
Condition 7: Prior to commencement of action, approval holder must prepare and implement a Koala Management Plan (KMP) to satisfaction of the Minister and provide evidence of the Koala Recovery Team's endorsement of the plan.	Preparation of KMP	Draft KMP submitted to DoTEE July 2019 for review Refer to **Appendix B**
Condition 8: Approval holder must prepare and submit a CEMP for Ministers approval 3 months prior to commencement of action	This Report	Draft CEMP submitted to DoTEE 6 August 2019 Action expected to commence in November 2019
Condition 9: Approval holder must not commence action unless Minister has approved this CEMP in writing	Minister	CEMP to be submitted for approval at least 3 months prior to commencement of action

7.2 Environmental management roles and responsibilities

Key environmental management roles and responsibilities for each role is described in Table 8.

Table 8: Environmental management roles and responsibilities

Role	Responsibilities	Reports to
Project Manager	Ensure all works comply with relevant regulatory and Project requirements Ensure the requirements of this CEMP are fully implemented Ensure all personnel and contractors have completed a site induction and orientation Ensure all approval reporting and review requirements are met Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of this CEMP Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements Liaise with government authorities as required Stop work immediately where there is an actual or potential risk of harm to the environment	Lendlease Management
Construction Manager	Plan construction works in a manner that avoids or minimises impact to environment Ensure the requirements of this CEMP are fully implemented Ensure construction personnel manage construction works in accordance with statutory and approval requirements Ensure environmental management procedures and protection measures are implemented Ensure all Project personnel attend an induction prior to commencing works Stop work immediately where there is an actual or potential risk of harm to the environment Implement corrective action reports	Project Manager
Environmental Manager	Conduct site environmental inspections Investigate and review nonconformances and identify, implement and monitor corrective and preventative actions for nonconformances Prepare written Corrective Action Reports Maintenance of training, nonconformance and complaints registers Undertake or coordinate environmental monitoring events Undertake scheduled and non-scheduled environmental audits.	Project Manager
Project ecologist	Manage fauna during tree clearing in accordance with the Tree Clearing Protocol (**Appendix H**) Possess suitable fauna licences and permits Provide tree clearing report	Project Manager
Project aquatic ecologist	Manage aquatic fauna during dewatering of dams in accordance with the Dam Dewatering Plan Possess suitable fauna licences and permits Notification of NSW Fisheries 48 hrs prior to fish relocation Provide fauna relocation report	Project Manager

7.3 Environmental training

To ensure that this CEMP is effectively implemented, each level of management is responsible for ensuring that all personnel reporting to them are aware of the requirements of this CEMP. The following environmental training will be undertaken.

7.3.1 Environmental Induction

All personnel, including sub-contractors, are required to attend a compulsory site induction that includes an environmental component prior to commencement on-site. The Project Manager (or delegate) will conduct the environmental component of the site induction. The environmental component will include an overview of:

- relevant details of the CEMP including purpose and objectives
- key environmental issues in the project area, i.e. protection of sensitive areas, erosion and sediment control, pre-clearance protocol, vehicle hygiene and fauna awareness
- conditions of environmental approvals
- specific environmental management requirements and responsibilities
- mitigation measures for the control of environmental issues
- environmental incident responses
- location of environmental sensitivities (Environmental Control Map (Figure 2)

A record of all environment inductions will be maintained and kept on-site.

7.3.2 Toolbox Talks

Toolbox talks will be used to raise awareness and educate personnel on construction related environmental issues. The toolbox talks will be used to ensure environmental awareness continues during construction.

Toolbox talks will be tailored to specific environmental issues including:

- vegetation clearing controls
- fauna management
- biodiversity values and conservation areas
- erosion and sedimentation control
- weed management
- Hygiene protocol
- concrete washout
- dam dewatering
- works in and near riparian areas
- noise
- housekeeping and waste
- dust control
- emergency and spill response
-

Toolbox attendance is mandatory, and attendees of toolbox talks are required to sign an attendance form and the records maintained.

7.3.3 Pre-Start meetings

The pre-start meeting is a tool for informing the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect the works, coordination issues with other trades, hazards and other information that may be relevant to the day's work.

The daily pre-start meeting will be conducted for the site workforce before the commencement of work each day (or shift) or where changes occur during a shift. Pre-start meetings may be project-wide and/or held for specific work areas. The environmental component of pre-starts will include any environmental issues that could potentially be impacted by, or impact on, the day's activities. All attendees will be required to sign on to the pre-start and acknowledge their understanding of the issues explained.

Pre-start topics, dates delivered, and a register of attendees will be recorded, and the records maintained.

8. Emergency / incident contacts and procedures

Emergency contacts are shown in Table 10.

Table 9: Emergency contacts

Issue	Staff/ organisation	Contact name	Contact number
Spills	Project Manager	To be appointed	To be appointed
	Construction Manager	To be appointed	to be appointed
Pollution incidents	Campbelltown City Council	-	4645 4000
Wildlife injury	Project Ecologist	To be appointed	To be appointed
	Aquatic Ecologist	To be appointed	To be appointed
	Wildlife Information Rescue & Education Service (WIRES)		1300 094 737
Fire and other emergencies	Fire and Rescue NSW, Ambulance, Police	-	000

The wildlife injury procedure is included in **Appendix O**.

9. Review and audit

In accordance with Condition of Approval 18, the approval holder must ensure that independent audits of compliance with the conditions or commitments made in plans are conducted if requested in writing by the Minister

Following any audit, the CEMP may be reviewed and updated where necessary. The CEMP will also be reviewed and updated after any significant changes to design or construction methods. A copy of the CEMP shall be kept in onsite at all times.

10. Glossary of terms

Abbreviation	Description
Action	As defined in the final decision notice for EPBC 2015/7599 Construction of a residential development including water and sewage infrastructure, community centre, small kiosk/store, internal roads and open space recreation areas on Lots 1-5 DP 1240836 and Lot 61 DP 752042, Gilead.
Approval Holder	Lendlease Communities (Mt Gilead) Pty Ltd
APZ	Asset Protection Zone
BCT	NSW Biodiversity Conservation Trust
CAR	Corrective Action Report
CCC	Campbelltown City Council
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
CPW	Cumberland Plain Woodland
Development Area	Development Areas as shown in Figures 1
DotE	Department of the Environment
DotEE	Department of the Environment and Energy
EEC	endangered ecological community
ELA	Eco Logical Australia
EMP	Environmental Management Plan
EPBC Act	Commonwealth Environment Protection & Biodiversity Conservation Act 1999
ESCP	Erosion and Sediment Control Plan
HBT	Hollow Bearing Tree
KMP	Koala Management Plan
MNES	Maters of National Environmental Significance
OEH	Office of the Environment and Heritage
On-site Offset Areas	Offset Areas as shown in Figure 1
Protected Matters	Listed threatened species and ecological communities under the EPOBC Act
RFEF	River-Flat Eucalypt Forest
SSTF	Shale Sandstone Transition Forest
SWMS	Safe Work Method Statement
TPZ	Tree Protection Zone

11. References

Commonwealth of Australia 2014. Environmental Management Plan Guidelines.

Commonwealth of Australia 2015. Arrive Clean, Leave Clean.

Eco Logical Australia 2018a. Biobank Agreement Credit Assessment Report – Macarthur-Onslow Mt Gilead Biobank Site. Report prepared for Mt Gilead Pty Ltd, April 2018.

Eco Logical Australia 2018b. *Biobank Agreement Credit Assessment Report – Noorumba-Mt Gilead-Biobank Site*. Report prepared for Mt Gilead Pty Ltd, April 2018.

Eco Logical Australia, 2018c. Mount Gilead Residential Development Biodiversity EPBC Preliminary Documentation Assessment Report (EPBC 2015/7599). Final Proposed Action. Report prepared for Lendlease Communities (Mt Gilead) Pty Ltd, 27 August 2018.

Eco Logical Australia 2019a. *Biobank Agreement Credit Assessment Report – Hillsborough Biobank Site*. Report prepared for Lendlease Communities (Mt Gilead No. 3) Pty Ltd, March 2019.

Eco Logical Australia, 2019b. Mount Gilead Residential Development Koala Management Plan. Report prepared for Lendlease Communities (Mt Gilead) Pty Ltd, 12 June 2019.

Landcom, 2004. Managing Urban Stormwater: Soils and Construction.

Lendlease 2019 Figtree Hill Home Design Guidelines, May 2019 draft.

Appendix A : Final decision notice for EPBC 2015/7599 and conditions of approval

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APPROVAL

Mt Gilead residential development, NSW (EPBC 2015/7599)

This decision is made under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth).* Note that section 134(1A) of the **EPBC Act** applies to this approval, which provides in general terms that if the approval holder authorises another person to undertake any part of the action, the approval holder must take all reasonable steps to ensure that the other person is informed of any conditions attached to this approval, and that the other person complies with any such condition.

Details

Person to whom the approval is granted (approval holder)	Lendlease Communities (Mt Gilead) Pty Ltd
ACN of approval holder	605 278 331
Action	Construction of a residential development including water and sewerage infrastructure, a community centre, a small kiosk / store, internal roads and two open space and recreation reserves on Lots 1-5 DP 1240836* and Lot 61 DP 752042 at Gilead, approximately 7 km south of Campbelltown city centre, New South Wales (as described in EPBC Act Referral 2015/7599 received 2 November 2015, and subject to the variations of the action accepted by the Minister under section 156B on Monday, 29 May 2017 and Thursday, 12 April 2018). * Note that prior to subdivision in May 2018, Lots 1-5 DP1240836 were collectively known as Lot 3 DP1218887.

Proposed Approval decision

My decision on whether or not to approve the taking of the action for the purposes of the controlling provision for the action is as follows.

Controlling Provisions

Listed Threatened Species and Communities	
Section 18	Approve
Section 18A	Approve

Period for which the approval has effect

This approval has effect until 30 November 2038

Decision-maker

Name and position	Kim Farrant Assistant Secretary of Assessments and Waste Branch Department of the Environment and Energy
Signature	
Date of decision	21. 12. 18

Conditions of approval

This approval is subject to the conditions under the EPBC Act as set out in ANNEXURE A.

ANNEXURE A – CONDITIONS OF APPROVAL

Part A – Conditions specific to the action

Impacts

1. The approval holder must ensure that clearing of **protected matters** within the **proposed action area** is limited to the area marked as 'development area' in **Attachment 1**.

Compensation measures

2. To offset the **impacts** on 3.3 ha of **SSTF** and 0.55 ha of **CPW**, the approval holder must ensure that 8 ha of **SSTF** and 1.2 ha of **CPW** is **secured** within **onsite offset areas** prior to the **commencement of the action**.

3. To offset the **impacts** on 1.79 ha of **SSTF**, the approval holder must **secure** a minimum of 4 ha of **SSTF** at the **Fernhill Central West biobanking site** prior to the **commencement of the action**.

4. To compensate for **impacts** on 0.85 ha of **SSTF** not compensated through offsetting through conditions 2 and 3, the approval holder must either:

   - **secure** 0.85 ha of **SSTF** within the **Council reserve** prior to the **commencement** of Stage 2 of the action; or (if the approval holder is unable to register the **Council reserve** as a BioBank site);

   - submit for the **Minister's** approval, an offset strategy in accordance with the **EPBC Act environmental offsets policy.** The offset strategy must outline how these impacts will be offset in perpetuity. The offset strategy should be submitted at least three months prior to the intended date of **commencement**. The approval holder must not **commence the action** unless the offset strategy has been approved by the **Minister**.

5. To compensate for impacts on **Koala**, the approval holder must acquire or **retire** no less than 150 **Biodiversity credits** for the **Koala** from the **Appin West offset site** prior to the **commencement of the action**.

6. Within 10 **business days** of **securing** the relevant offsets specified in conditions 2 - 5, the approval holder must provide the **Department** with **evidence** of when the offsets were **secured** and what mechanism was used to **secure** the offsets.

7. Prior to the **commencement of the action**, the approval holder must prepare and implement a Koala Management Plan for the proposed action area to the satisfaction of the **Minister**. This must include provisions for the approval holder to contribute at least $50,000 each year for five years to fund activities outlined in the plan. The approval holder must provide the **Department** with **evidence** of the Koala Recovery Team's endorsement of the Koala Management Plan prior to the **commencement of the action**. The first year's contribution must be made within 20 business days from the **commencement of the action**.

Construction environmental management plan

8. At least three months prior to the **commencement of the action**, the approval holder must submit a construction environmental management plan (CEMP) for the **Minister's** approval to avoid and mitigate potential indirect **impacts** on **protected matters** in the **onsite offset areas** and the **Council Reserve** as a result of **construction**. If the **Minister** approves the CEMP, then the approved CEMP must be implemented.

9. The approval holder must not **commence the action** unless the **Minister** has approved the CEMP in writing.

10. The CEMP must be consistent with the **Department's** *Environmental Management Plan Guidelines*, and must include:
    a. The CEMP environmental objectives, relevant to **protected matters** and a reference to **EPBC Act** approval conditions to which the CEMP refers;
    b. A table of commitments made in the CEMP to achieve the objectives, and a reference to where the commitments are detailed in the CEMP;
    c. Details of the parties responsible for undertaking management actions;
    d. A description of management actions that will be implemented pre, during and post construction, including for stormwater discharge and road runoff, sediment and erosion control, invasion by exotic species and weeds, and fencing and access;
    e. Hygiene protocols to minimise the risk of spread of *Phytophthora cinnamomi*;
    f. Reporting and review mechanisms, and documentation standards to demonstrate compliance with the CEMP;
    g. An assessment of risks to achieving the CEMP environmental objectives and risk management strategies that will be applied;
    h. **Impact** avoidance, mitigation and/or repair measures, and their timing; and
    i. A monitoring program, which must include:
        i. measurable performance indicators;
        ii. trigger values for corrective actions;
        iii. the timing and frequency of monitoring to detect changes in the performance indicators and timely detection of trigger values; and
        iv. proposed corrective actions, if trigger values are reached.

Part B – Standard administrative conditions

Notification of date of commencement of the action

11. The approval holder must notify the **Department** in writing of the date of **commencement of the action** and the date of **commencement** of each stage of the action within 10 **business days** after the date of **commencement of the action** or the relevant stage of the action.

12. If the **commencement of the action** does not occur within 5 years from the date of this approval, then the approval holder must not **commence the action** without the prior written agreement of the **Minister**.

Compliance records

13. The approval holder must maintain accurate and complete **compliance records**.

14. If the **Department** makes a request in writing, the approval holder must provide electronic copies of **compliance records** to the **Department** within the timeframe specified in the request.

Note: **Compliance records** may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the **Department**'s website or through the general media.

Preparation and publication of plans

15. The approval holder must:

    a. submit **plans** electronically to the **Department** for approval by the **Minister**;

    b. publish each **plan** on the **website** within 20 **business days** of the date the **plan** is approved by the **Minister** or of the date a revised action management plan is submitted to the **Minister**, unless otherwise agreed to in writing by the **Minister**;

    c. exclude or redact **sensitive ecological data** from **plans** published on the **website** or provided to a member of the public; and

    d. keep **plans** published on the **website** until the end date of this approval.

Annual compliance reporting

16. The approval holder must prepare a **compliance report** for each 12 month period following the date of **commencement of the action**, or as otherwise agreed to in writing by the **Minister**. The approval holder must:

    a. publish each **compliance report** on the **website** within 60 **business days** following the relevant 12 month period;

    b. notify the **Department** by email that a **compliance report** has been published on the **website** within five **business days** of the date of publication;

    c. keep all **compliance reports** publicly available on the **website** until this approval expires;

    d. exclude or redact **sensitive ecological data** from **compliance reports** published on the **website**; and

    e. where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **Department** within 5 **business days** of publication.

Note: **Compliance reports** may be published on the **Department**'s website.

Reporting non-compliance

17. The approval holder must notify the **Department** in writing of any: **incident;** non-compliance with the conditions; or non-compliance with the commitments made in **plans**. The notification

must be given as soon as practicable, and no later than two **business days** after becoming aware of the **incident** or non-compliance. The notification must specify:

a. the condition which is or may be in breach; and

b. a short description of the **incident** and/or non-compliance.

18. The approval holder must provide to the **Department** the details of any **incident** or non-compliance with the conditions or commitments made in **plans** as soon as practicable and no later than 10 **business days** after becoming aware of the **incident** or non-compliance, specifying:

a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;

b. the potential **impacts** of the **incident** or non-compliance; and

c. the method and timing of any remedial action that will be undertaken by the approval holder.

Independent audit

19. The approval holder must ensure that **independent audits** of compliance with the conditions are conducted as requested in writing by the **Minister**.

20. For each **independent audit**, the approval holder must:

a. provide the name and qualifications of the independent auditor and the draft audit criteria to the **Department**;

b. only commence the **independent audit** once the audit criteria have been approved in writing by the **Department**; and

c. submit an audit report to the **Department** within the timeframe specified in the approved audit criteria.

21. The approval holder must publish the audit report on the **website** within 10 **business days** of receiving the **Department's** approval of the audit report and keep the audit report published on the **website** until the end date of this approval.

Revision of action management plans

22. The approval holder may, at any time, apply to the **Minister** for a variation to an action management plan approved by the **Minister** under condition 9, or as subsequently revised in accordance with this condition, by submitting an application in accordance with the requirements of section 143A of the **EPBC Act**. If the **Minister** approves a revised action management plan (RAMP) then, from the date specified, the approval holder must implement the RAMP in place of the previous action management plan.

23. The approval holder may choose to revise an action management plan approved by the **Minister** under condition 9, or as subsequently revised in accordance with this condition, without submitting it for approval under section 143A of the **EPBC Act**, if the taking of the action in accordance with the RAMP would not be likely to have a **new or increased impact**.

24. If the approval holder makes the choice under condition 23 to revise an action management plan without submitting it for approval, the approval holder must:

    a. notify the **Department** in writing that the approved action management plan has been revised and provide the **Department** with:

        i. an electronic copy of the RAMP;

        ii. an electronic copy of the RAMP marked up with track changes to show the differences between the approved action management plan and the RAMP;

        iii. an explanation of the differences between the approved action management plan and the RAMP;

        iv. the reasons the approval holder considers that taking the action in accordance with the RAMP would not be likely to have a **new or increased impact**; and

        v. written notice of the date on which the approval holder will implement the RAMP (RAMP implementation date), being at least 20 **business days** after the date of providing notice of the revision of the action management plan, or a date agreed to in writing with the **Department**.

    b. subject to condition 26, implement the RAMP from the RAMP implementation date.

25. The approval holder may revoke its choice to implement a RAMP under condition 23 at any time by giving written notice to the **Department**. If the **approval holder** revokes the choice under condition 23, the **approval holder** must implement the previous action management plan approved by the **Minister**.

26. If the **Minister** gives a notice to the approval holder that the **Minister** is satisfied that the taking of the action in accordance with the RAMP would be likely to have a **new or increased impact**, then:

    a. condition 23 does not apply, or ceases to apply, in relation to the RAMP; and

    b. the approval holder must implement the action management plan specified by the **Minister** in the notice.

27. At the time of giving the notice under condition 26, the **Minister** may also notify that for a specified period of time, condition 23 does not apply for one or more specified action management plans.

Note: conditions 23, 24, 25 and 26 are not intended to limit the operation of section 143A of the **EPBC Act** which allows the approval holder to submit a revised action management plan, at any time, to the **Minister** for approval.

Completion of the action

28. Within 30 days after the **completion of the action**, the approval holder must notify the **Department** in writing and provide **completion data**.

Part C - Definitions

29. In these conditions, except where contrary intention is expressed, the following definitions are used:

a. **Appin West offset site** means the area marked as 'study area' on the map at **Attachment 7**.

b. **BioBanking** – the New South Wales Government's biodiversity credit and offset scheme of that name created under the *Threatened Species Conservation Act 1995* (NSW), as amended and repealed or an equivalent scheme under a **successor mechanism** under the Biodiversity Conservation Act 2016 (NSW).

c. **Biodiversity Credits** - has the meaning given under the under the Threatened Species Conservation Act 1995 (NSW), as amended and repealed, or an equivalent report under a **successor mechanism** under the Biodiversity Conservation Act 2016 (NSW).

d. **Business days** means a day that is not a Saturday, a Sunday or a public holiday in New South Wales.

e. **Cleared** means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of **SSTF** or **CPW**.

f. **Commencement/Commencement of the action/ Commence the action** means the first instance of any specified activity associated with the action including clearance of vegetation and **construction** of any infrastructure. Commencement does not include minor physical disturbance necessary to:

   i. undertake pre-clearance surveys or monitoring programs;

   ii. install signage and /or temporary fencing to prevent unapproved use of the **proposed action area**; and

   iii. protect environmental and property assets from fire, weeds and pests, including erection or **construction** of fencing and signage, and maintenance or use of existing surface access tracks, if agreed in writing by the **Department.**

g. **Completion data** means an environmental report and spatial data information clearly detailing how the conditions of this approval have been met. The **Department's** preferred spatial data format is ESRI shapefile, including containing '.shp, '.shx' and '.dbf' files and other files capturing attributes including at least the EPBC reference and a '.prj' file or specification of the projection/geographic coordinate system used.

h. **Completion of the action** means the time at which all approved conditions (except condition 28) have been fully met.

i. **Compliance records** means all documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the approval holder's possession or that are within the approval holder's power to obtain lawfully;

j. **Compliance reports** means written reports:

i. providing accurate and complete details of compliance, **incidents**, and non-compliance with the conditions and the **plans**;

ii. consistent with the **Department's** *Annual Compliance Report Guidelines* (2014)

iii. include a shapefile of any clearance of any **protected matters**, or their habitat, undertaken within the relevant 12 month period; and

iv. annexing a schedule of all **plans** prepared and in existence in relation to the conditions during the relevant 12 month period.

k. **Construction** means the creation and development of services (sewerage, electricity, water, stormwater), the use of heavy equipment for the purposes of breaking ground for buildings or infrastructure, and the building of infrastructure associated with the action. This does not include preparatory works such as the erection of signage or temporary fencing. In addition, for the **Council reserve**, construction refers to the interim period between the commencement of the action and the commencement of bushland management works within the reserve.

l. **Council reserve** means the area designated as **'Council Reserve (Proposed Biobanking Site)'** on the map at **Attachment 5.**

m. **CPW** means the Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest ecological community listed as critically endangered under the EPBC Act and shown on the map at **Attachment 2.**

n. **Department** means the Australian Government agency responsible for administering the **EPBC Act**.

o. **EPBC Act** means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

p. **EPBC Act environmental offset policy** means the document: Department of Sustainability, Environment, Water, Population and Communities (2012). *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy.* Commonwealth of Australia, Canberra.

q. **Evidence** means documentation from the relevant authority showing that the offset has been **secured**.

r. **Fernhill Central West biobanking site** means the area designated as 'Offset (4 ha)' in the map at **Attachment 6**.

s. **Grey-headed Flying-fox** means *Pteropus poliocephalus* listed as vulnerable under the **EPBC Act,** within habitat shown on the map at **Attachment 4**

t. **Impact/ Impacted** means any measureable direct or indirect disturbance/change that occurs as a result of any activity associated with the proposed action.

u. **Incident** means any event which has the potential to, or does, **impact** on **protected matters.**

v. **Independent audit**: means an audit conducted by an independent and **suitably qualified person** as detailed in the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines* (2015).

w. **like-for-like credits** has the meaning given under the *Threatened Species Conservation Act 1995* (NSW) (now repealed), or an equivalent biodiversity offsetting mechanism under the *Biodiversity Conservation Act 2016* (NSW) and includes the **retirement** of credits from the following plant community types:

SSTF (Shale SandstoneTranstion Forest in the Sydney Basin Bioregion)

i. *Narrow-leaved Ironbark – Broad-leaved Ironbark – Grey Gum open forest of the edges of the Cumberland Plain, Sydney Basin Bioregion*

ii. *Broad-leaved Ironbark – Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain, Sydney Basin Bioregion*

iii. *Turpentine – Grey Ironbark open forest on shale in the lower Blue Mountains, Sydney Basin Bioregion.*

CPW (Cumberland Plain Woodland)

i. *Shale Hills Woodland*

ii. *Cumberland Shale Hills Woodland*

iii. *Grey Box-Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin*

x. **Koala** means the combined populations of Queensland, New South Wales and the Australian Capital Territory) (*Phascolarctos cinereus (combined populations of Qld, NSW and the ACT*) listed as vulnerable under the **EPBC Act** within habitat shown on the map at **Attachment 3.**

y. **Minister** means the Australian Government Minister administering the EPBC Act including any delegate thereof.

z. **New or increased impact** means a new or increased environmental **impact** or risk relating to any **protected matter**, when compared to the likely **impact** of implementing the action management plan that has been approved by the **Minister** under condition 9, including any subsequent revisions approved by the **Minister,** as outlined in the *Guidance on 'New or Increased **Impact**' relating to changes to approved management plans under EPBC Act environmental approvals (2017).*

aa. **Offset attributes** – mean an '.xls' file capturing relevant attributes of the offset site, including the **EPBC Act** reference ID number, the physical address of the offset site, coordinates of the boundary points in decimal degrees, the **EPBC Act protected matters** that the offset compensates for, any additional **EPBC Act protected matters** that are benefiting from the offset, and the size of the offset in hectares.

bb. **Onsite offset areas** means the area designated 'Proposed BioBank Sites (Applications Submitted)' at **Attachment 5.**

cc. **Plan(s)** means any of the documents required to be prepared, approved by the **Minister**, and/or implemented by the approval holder and published on the **website** in accordance with these conditions (includes action management plans and/or strategies).

dd. **Proposed action area** means the area designated as 'Urban area, Detention Basin (Landscaped), Open Space- Landscape and Open Space'on the map at **Attachment 1**.**Protected matter(s)** means **protected fauna** and other matters protected by Part 3 of the EPBC Act, including **SSTF** and **CPW**.

ee. **Retirement** means a change in the status of a credit such that the credit can no longer be bought or sold.

ff. **Shapefiles** means an ESRI Shapefile containing '.shp', '.shx' and '.dbf' files and other files capturing attributes of the offset site, including the shape, EPBC Act reference ID number and **protected matters** present at the relevant site. **Shapefile** files must also include either a '.prj' file or specification of the projection/geographic coordinate system used.

i. Attributes should also be captured in '.xls' format.

gg. **Retire or retirement** means a change in the status of a credit such that the credit has been used to offset the development impact or achieve a conservation outcome, and can no longer be bought or sold.

hh. **Secure/secured** means long-term protection under a legal mechanism that is either:

i. **retirement** of sufficient **like-for-like credits** in accordance with the New South Wales Government's **BioBanking Scheme** created under the *Threatened Species Conservation Act 1995* (NSW), as amended and repealed or an equivalent biodiversity offsetting mechanism under the *Biodiversity Conservation Act 2016* (NSW); OR

ii. another legal mechanism that has been endorsed in writing by the **Minister**.

ii. **Sensitive ecological data** means data as defined in the Australian Government Department of the Environment (2016) Sensitive Ecological Data – Access and Management Policy V1.0.

jj. **Successor mechanism** means any biodiversity offsetting mechanism legislated and implemented by the New South Wales Government to replace, or as a successor to, BioBanking. Such a mechanism is only acceptable for the purposes of this approval if it:

i. is included in a bilateral agreement under the EPBC Act (either referenced directly in the agreement, or as part of a wider process that is adopted in a bilateral agreement) OR

ii. has been agreed by the Department in writing to the approval holder or the title holder as being an appropriate successor mechanism.

kk. **SSTF** means the Shale Sandstone Transition Forest of the Sydney Basin Bioregion ecological community listed as critically endangered under the **EPBC Act** and shown on the map at **Attachment 2.**

ll. **Suitably qualified person** means a person who has professional qualifications, training, skills and/or experience related to the nominated subject matter and can give authoritative

independent assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and/or literature.

mm. **website** means a set of related web pages located under a single domain name attributed to the approval holder and available to the public.

ATTACHMENTS

Attachment 1 – Map showing proposed action area

Attachment 2 – Map showing the extent of SSTF (Dark green) and CPW (Dark orange) within the proposed action area. Impacted areas are those areas outside the green lines.

Attachment 3 – Map showing the extent of Koala habitat within the proposed action area

Attachment 4 – Map showing the extent of Grey-headed Flying-fox habitat within the proposed action area

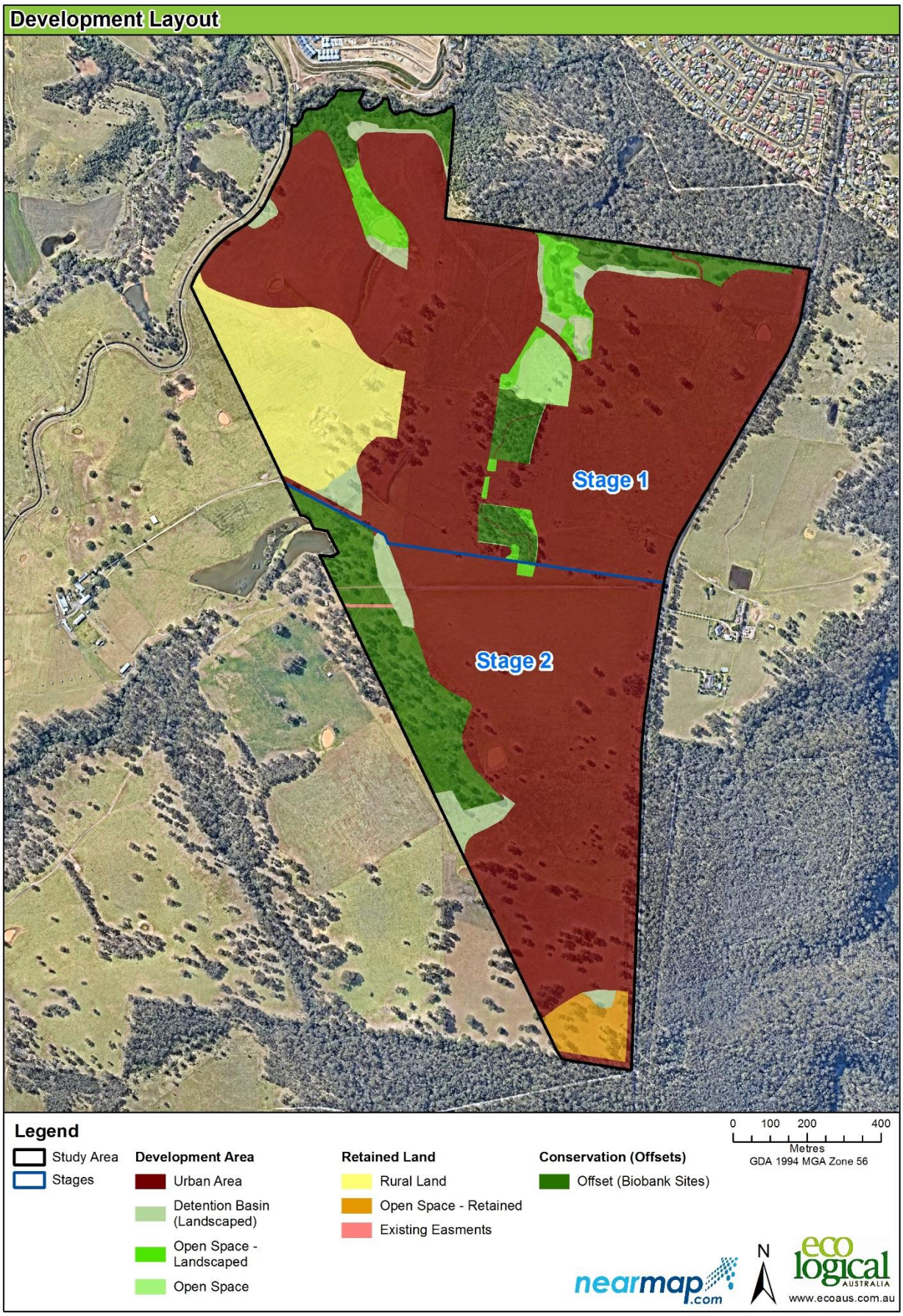
Attachment 5 – Map showing onsite offset areas and Council Reserve (Proposed BioBank site)

Attachment 6 – Map of Fernhill Central West Biobank site

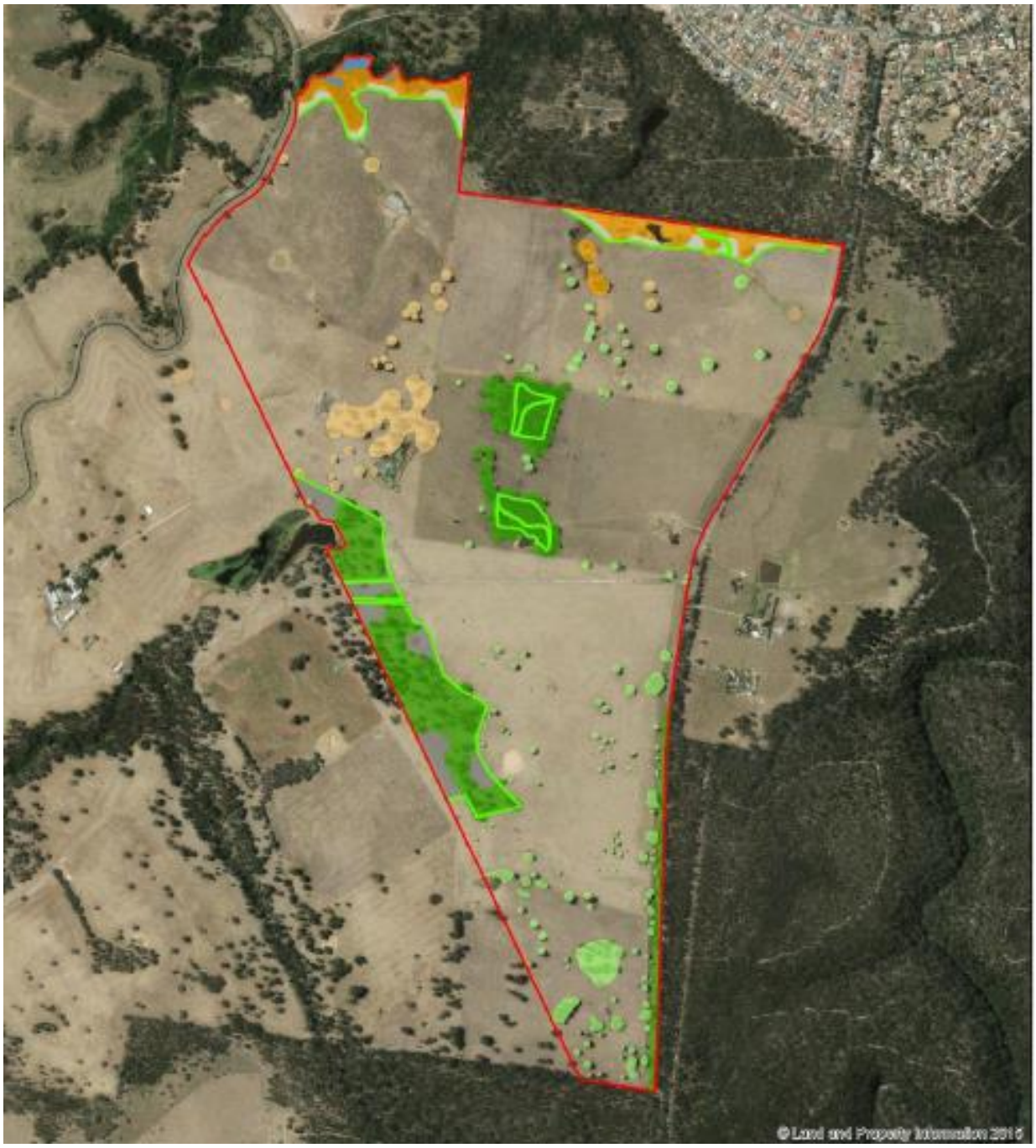
Attachment 7 – Map of Appin West offset site

ATTACHMENTS

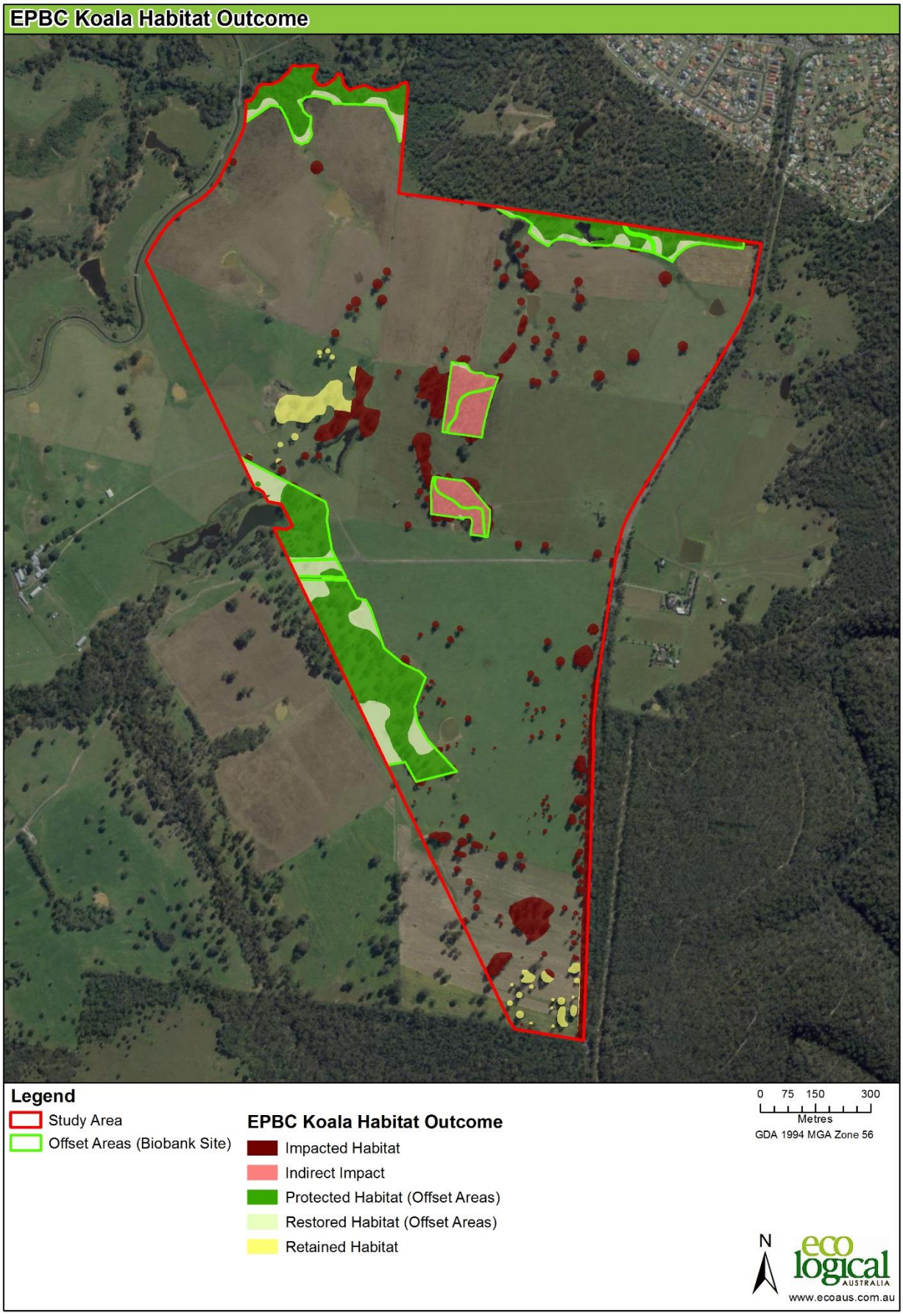
Attachment 1 – Map showing proposed action area (marked on the map as Urban areas, Detention Basin (Landscaped), Open Space -Landscaped and Open Space).



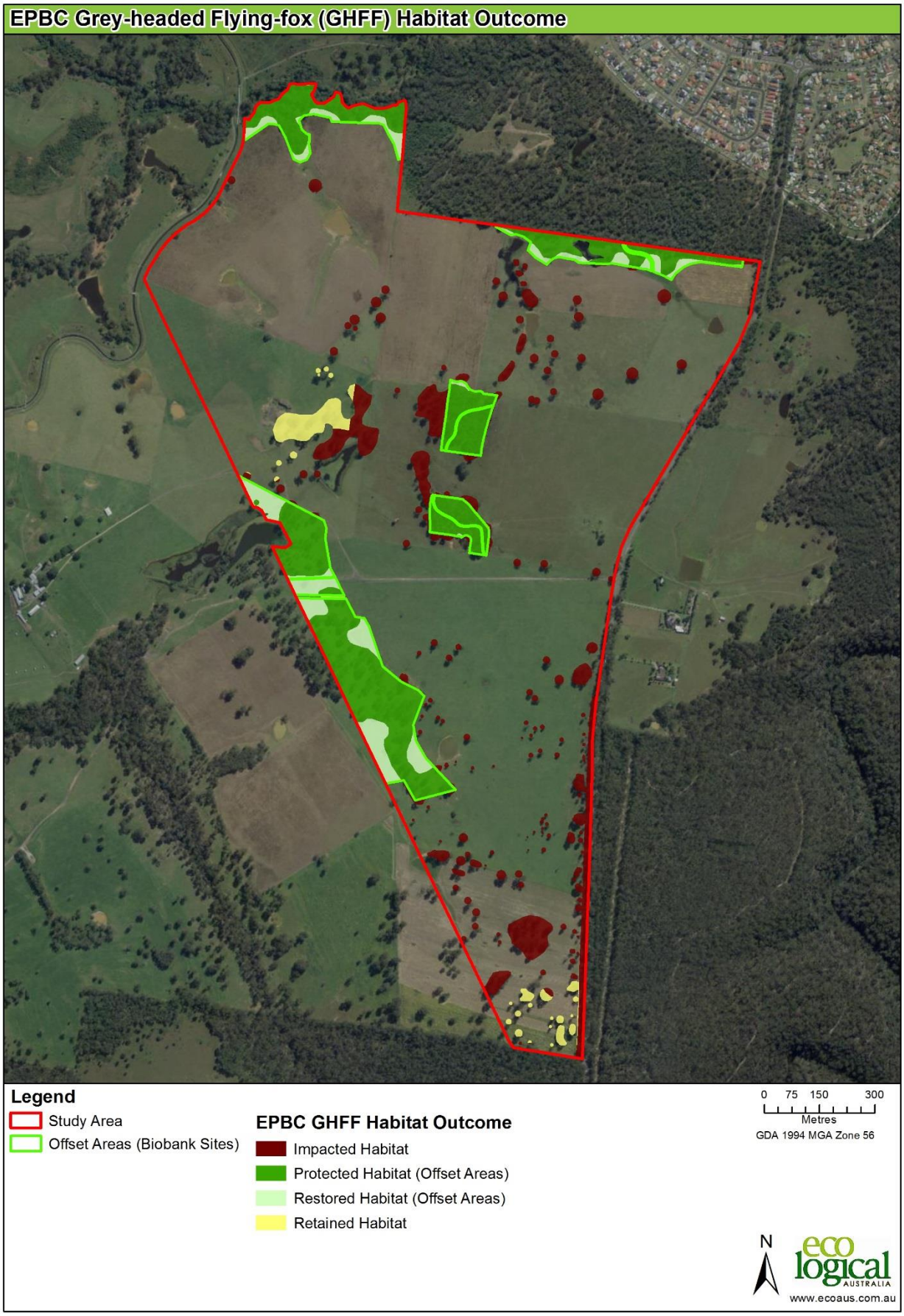
Attachment 2 – Map showing the extent of SSTF (Dark green) and CPW (Dark orange) within the proposed action area. Impacted areas are those areas outside the green lines.



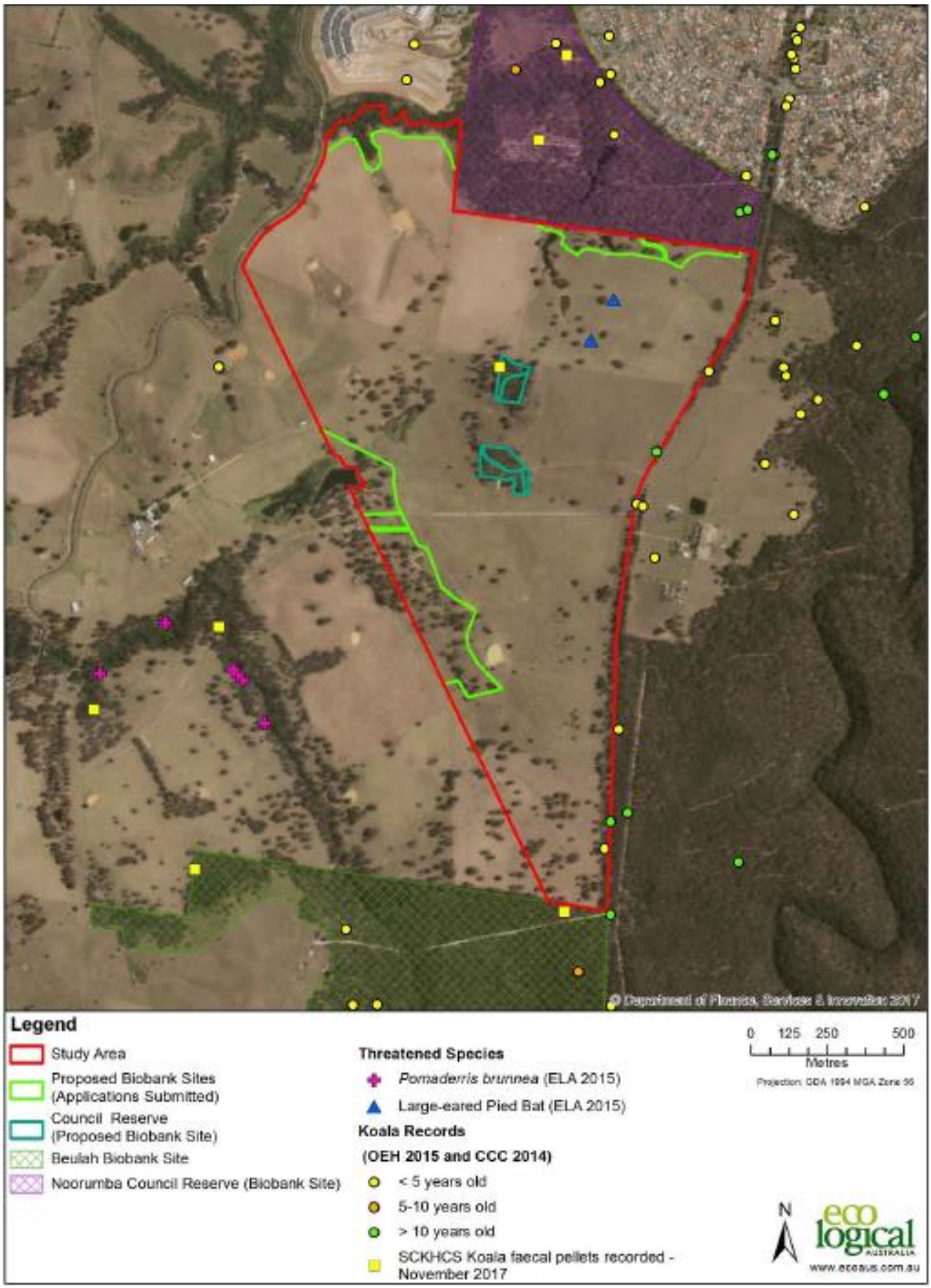
Attachment 3 – Map showing the **e**xtent of Koala habitat within the proposed action area.



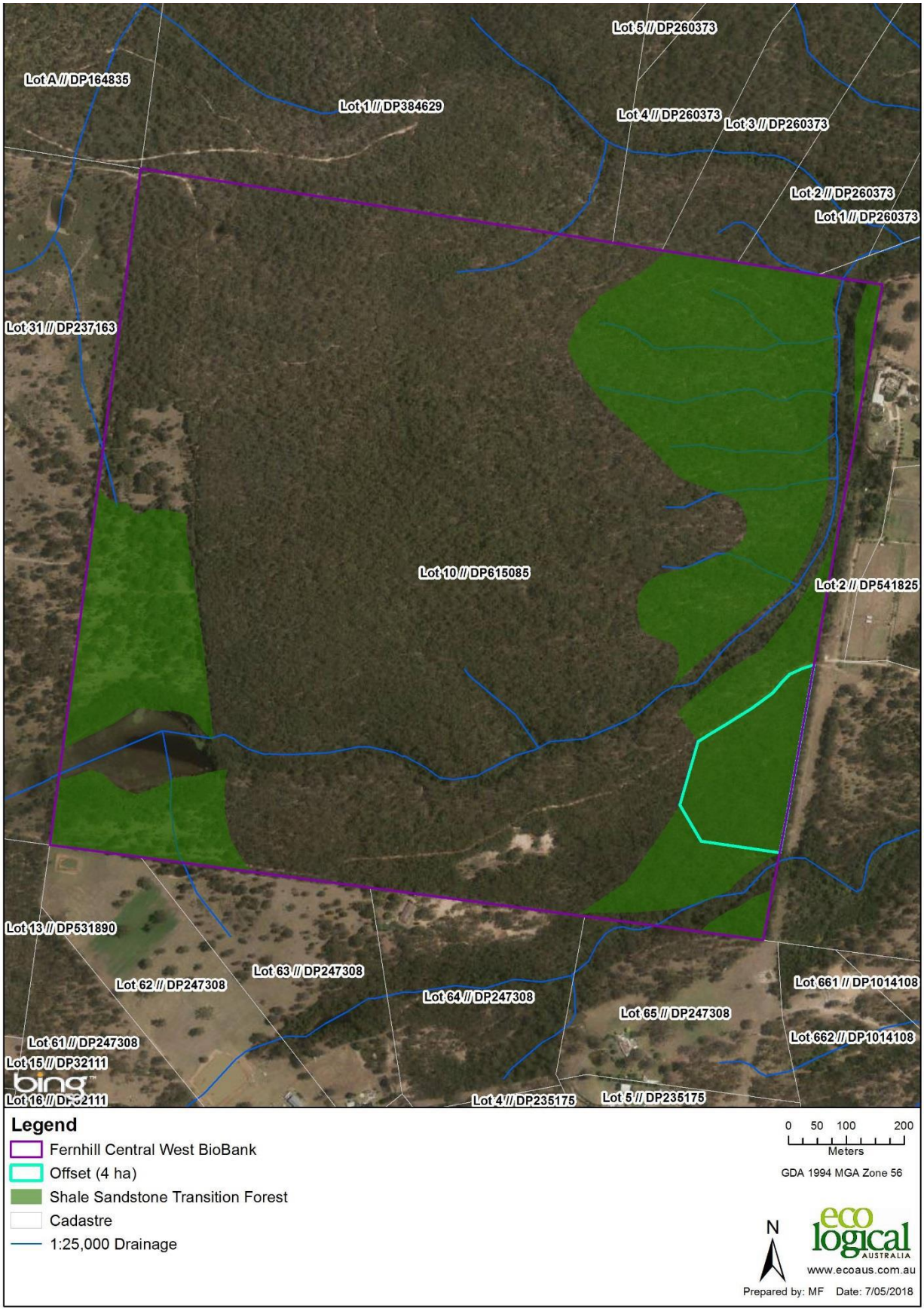
Attachment 4 – Map showing the extent of Grey-headed Flying-fox habitat within the proposed action area.



Attachment 5 – Map showing onsite offset areas and Council Reserve (Proposed BioBank site)



Attachment 6 – Map of Fernhill Central West biobank site



Attachment 7 – Map of Appin West offset site

Koala habitat polygon
The Appin West BioBank Site

niche Environment and Heritage

Appendix B Koala Management Plan (Condition 7)

Mount Gilead Residential Development

Koala Management Plan

Lendlease Communities (Mt Gilead) Pty Ltd

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DOCUMENT TRACKING

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ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd

Template 2.8.1

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Abbreviations

Abbreviation	Description
Action	Means construction of a residential development including water and sewerage infrastructure, roads and open space recreation areas as defined in EPBC decision 2015/7599
Action area	The areas marked as 'development area' in Figure 1 of this report
Approval Holder	Lendlease Communities (Mt Gilead) Pty Ltd
APZ	Asset Protection Zone
BC Act	NSW *Biodiversity Conservation Act 2016*
Biocertification	Biodiversity Certification
BMDB	Bell Miner Die Back
CAR	Corrective Action Report
CCC	Campbelltown City Council
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
CPW	Cumberland Plain Woodland
Dbh	Diameter at breast height
DEWHA	former Commonwealth Department of the Environment, Water, Heritage and Arts
DotE	former Commonwealth Department of the Environment
DotEE	Commonwealth Department of the Environment and Energy
EEC	endangered ecological community
ELA	Eco Logical Australia
EMP	Environmental Management Plan
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EPBC Act	Commonwealth *Environment Protection & Biodiversity Conservation Act 1999*
KMP	Koala Management Plan
Lendlease	Lendlease (Communities (Mt Gilead) Pty Ltd
LGA	Local Government Area
MDP	Metropolitan Development Program
MNES	Matters of National Environmental Significance
OEH	Office of the Environment and Heritage
RFEF	River-Flat Eucalypt Forest
SEPP	State Environmental Planning Policy
SSTF	Shale Sandstone Transition Forest
Study area	The area outlined in Figure 1 of this report
SWMS	Safe Work Method Statement
TPZ	Tree Protection Zone

Declaration of Accuracy

I declare that:

1. To the best of my knowledge, all the information contained in, or accompanying this Management Plan (*Mount Gilead Residential Development Construction Environmental Management Plan EPBC 2015/7599*) is complete, current and correct.

2. I am duly authorised to sign this declaration on behalf of the approval holder.

3. I am aware that:

a. Section 490 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence for an approval holder to provide information in response to an approval condition where the person is reckless as to whether the information is false or misleading.
b. Section 491 of the EPBC Act makes it an offence for a person to provide information or documents to specified persons who are known by the person to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth) where the person knows the information or document is false or misleading.
c. The above offences are punishable on conviction by imprisonment, a fine or both.

Signed

_____

Full name

Robert Keir Humphries, Eco Logical Australia Pty Ltd

_____

Full name

Mark Iain Anderson, Lendlease Communities (Mt Gilead) Pty Ltd

Report Version: Eco Logical Australia 2019. *Koala Management Plan*. Prepared for Lendlease Communities (Mt Gilead) Pty Ltd. Version 5, dated 21/11/2019.

1. Introduction

Eco Logical Australia (ELA) has been commissioned by Lendlease Communities (Mount Gilead) Pty Ltd (Lendlease) to prepare a Koala Management Plan (KMP) for the Mount Gilead Residential Development at Gilead, NSW, hereafter called 'the development'. Mount Gilead is located within the Campbelltown City Council (CCC) Local Government Area (LGA) approximately 5 km south of Campbelltown City centre on the following lots, Lot 61 DP 752042, Part Lot 2 DP1218887 and Lots 1, 2, 3, 4 and 5 DP 1240836.

1.1 Objectives of the KMP

The KMP is being prepared to meet the requirements of Condition 7 of the Environment Protection and Biodiversity Conservation (EPBC) Act approval EPBC 2015/7599 (see **Appendix A**).

The aims of this KMP are to: -

- identify potential threats to Koala within the 'action area' (i.e. the Mount Gilead Residential Development study area shown in Attachment 1 of the approval at **Appendix A**) during pre-construction, construction and operational phases of the project; and
- provide clear commitments/actions and procedures to minimise these impacts to any Koala found during pre-construction, construction and operational phases of the project.

1.2 Planning and approval background

In 2015, Lendlease proposed a residential development of approximately 1,700 lots at Gilead (Figure 1). The proposal (EPBC 2015/7599) was referred to the Department of the Environment and Energy (DotEE) in October 2015 and was determined to be a Controlled Action in relation to Matters of National Environmental Significance, (MNES) including for impacts to the vulnerable Koala and its habitat.

Accordingly, a Preliminary Documentation Environmental Assessment Report was submitted and was placed on public exhibition between 20 December 2017 and 2 February 2018. Following updates to the report to reflect responses to public submissions in August 2018, DotEE granted approval on 21 December 2018 (Appendix A) with Conditions of Approval 5 and 7 relating to the Koala, specifically.

This KMP has been prepared to meet approval condition 7 set by the DotEE and is in addition to the retirement of 150 Koala credits from the Appin West offset site (Condition 5). Table 1 provides a summary of where conditions 7 of the EPBC 2015/7599 approval requirements have been addressed in this KMP. It also shows how Condition 5 has been met.

Table 1: Conditions of the EPBC 2015/7599 approval

Condition	Condition Requirement	Where addressed in this KMP?
5	To compensate for impacts on Koala, the approval holder must acquire and retire no less than 150 Biodiversity credits for the Koala from the Appin West Offset Area (Biobank site ID 215) prior to the commencement of the action.	Lendlease has acquired 150 Koala credits from the Appin West Biobank site (BB ID 215) in the Appin West Offset Area. These credits equate to the permanent protection of 21.13 ha of Koala habitat representing the Campbelltown-Wollondilly Koala population. These credits were retired on 15 October 2019 and the DoTEE were notified on 30 October 2019 (**Appendix B**). In addition to these credit retirements, Lendlease has retired an additional 284 Koala credits from two biobank sites that have been registered within the development study area (equivalent to 22.25 ha of Koala habitat) and 151 credits (equivalent to 21.27 ha of Koala habitat) from the Noorumba Reserve Biobank site which is adjacent to the action area (**Appendix B**). The credits retired from these biobank sites will permanently protect and manage 64.65 ha of Koala habitat.
7	Prior to the commencement of the action, the approval holder must prepare and implement a KMP for the proposed 'action area'.	A draft of this report was submitted to the DoTEE for review on 9 July 2019.
7	The KMP must include provisions for the approval holder to contribute at least $50,000 each year for 5 years to fund activities outlined in the plan.	Table 4

1.3 Application

The Mount Gilead 'Study Area' (**Figure 1**) consists of:

- Conservation Areas (two registered and one proposed Biobank sites)
- Retained Land (Rural Land and Open Space)
- The Development Area.

This KMP applies to the construction and operation of the development within the areas marked as 'Development Area' in **Figure 1**.

1.4 Outline of the KMP

This KMP sets out:

- A description of the action area;
- a summary of research on the Koala in relation to the action area;
- potential impacts of the development on the Koala;
- Koala management actions during the following phases of the development:
  - Design;
  - Construction; and
  - Operation
- training, education and awareness;
- hold points;
- monitoring.

2. Development area description

The development area (**Figure 1**) covers a total area of approximately 210 hectares of zoned urban development located within a semi-urban area, the site has historically been used for agricultural purposes and contains cleared paddocks with improved pastures. Pockets of residual vegetation are located along drainage lines and steeper slopes. The site comprises remnant and degraded native vegetation and exotic pastures.

The development area consists of residential development with approximately 1,700 lots. It also includes the development of:

- Recreation and active Open Space areas, with some landscaping consistent with local native vegetation;
- Services, including water, sewer and electricity infrastructure;
- A street network of roads, access ways and parking;
- Bushfire Asset Protection Zones (APZ);
- Detention basins to capture and treat run-off water captured by road curbs and gutters;
- Protection and maintenance of existing riparian corridors and rural areas.

The construction phase is expected to be undertaken in stages over an expected timeframe of 3-5 years commencing in 2019.

Figure 2 shows the extent of koala habitat within the action area and which habitat areas have been approved for clearing and which comprise 'retained' habitat areas (rural land and Biobank sites – offset areas).

Figure 1: Approved Development are as per EPBC Act decision 2015/7599 dated 21 December 2018

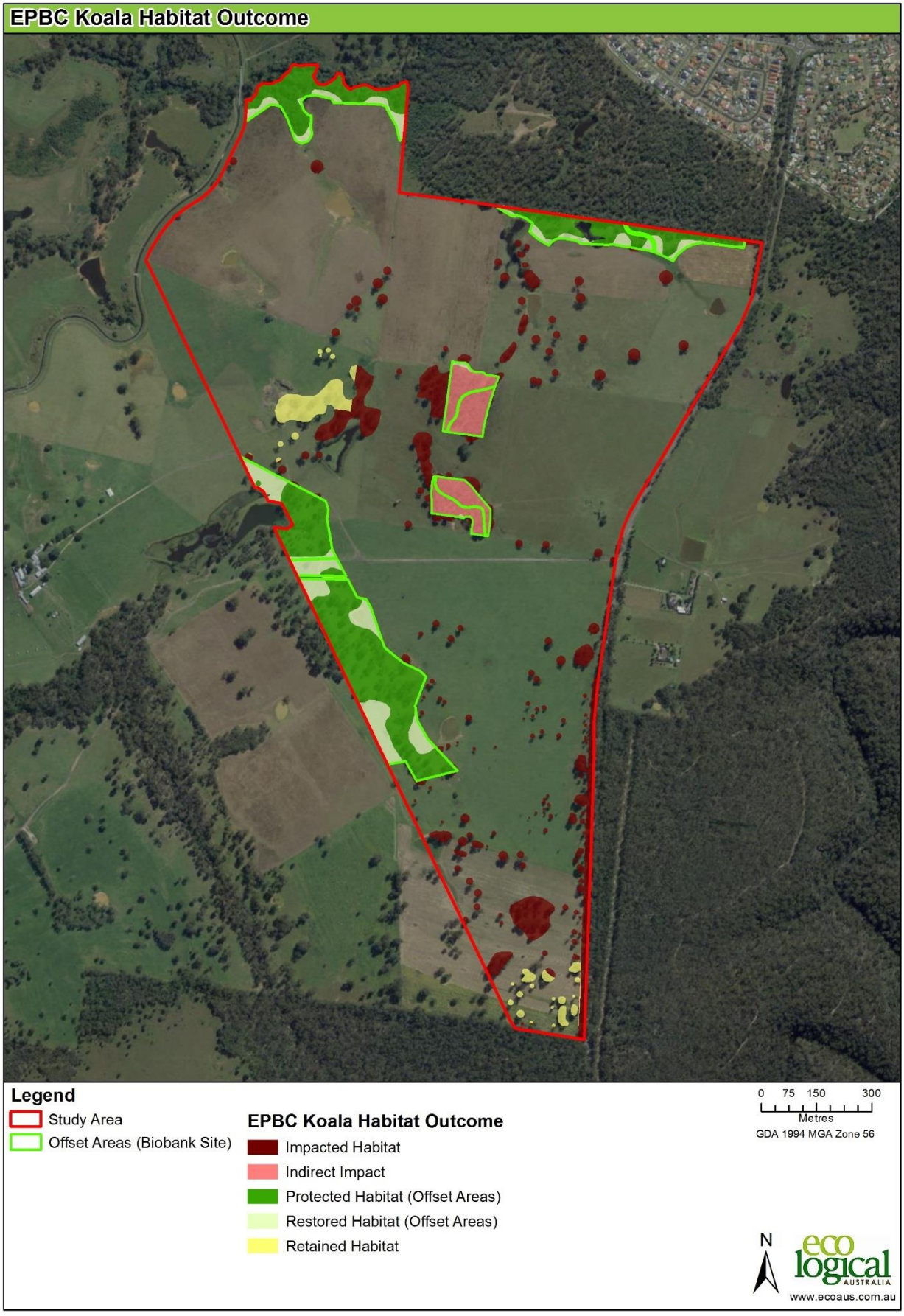

Figure 2: Impacted and protected Koala habitat as per EPBC Act decision 2015/7599 dated 21 December 2018

3. Koalas in the Study Area

3.1 Distribution and habitat

Numerous surveys and studies have been undertaken for the Study Area which contain information relating to the Koala, including the:

- Mt Gilead MDP Land Rezoning Ecological Assessment (ELA 2014);
- Mt Gilead MDP land Biodiversity Certification Assessment Report and Biocertification Strategy (ELA 2018a);
- South Campbelltown Koala Habitat Connectivity Study (Biolink 2018a); and
- revised Comprehensive Koala Plan of Management (CKPoM) for the Campbelltown LGA (Biolink 2018b).

The Campbelltown City Council (CCC) area is currently estimated to have a widely dispersed koala population of less than 200 animals, however, analyses of historical koala records and ongoing field assessments indicates that the koala population in the CCC LGA has shown some recovery over the last 20 years (Biolink; 2018b).

Biolink (2018a) working for CCC on the South Campbelltown Koala Habitat Connectivity Study, recorded evidence of Koala utilising a remnant vegetation patch in the centre of the Study Area (the proposed Hillsborough Biobank site) and in adjacent areas to the west of the Study Area (Figure 3), confirming utilisation of the study area by Koala and a likely resident Koala population.

In addition, there are several road kill records along Appin Road adjacent to the study area where Koalas are likely using habitat resources on both the eastern and western sides of Appin Road. These studies provide a consistent record of Koala from the broader locality over the past 20 years and activity within the action area.

3.2 Habitat

It has been found that Koala activity is greater in structurally diverse forest, with some groundcover vegetation and other features such as hollow logs, also useful to provide shelter while on the ground and refuge in extreme weather conditions (DECC 2008). However, the most important habitat factor influencing Koala occurrence is the suite of food tree species available. In any one area, the Koala relies primarily on regionally specific primary and/or secondary food tree species. If primary food tree species are not present or occur in low density, Koala will rely on secondary food tree species, but the carrying capacity of the habitat (i.e. number of animals per hectare) is inevitably lower (DECC 2008).

Nationally, Koalas have been observed feeding or resting in approximately 120 eucalypt species (66 in NSW) and 30 non-eucalypt (seven in NSW) species. The State Environmental Planning Policy (SEPP) No 44 (Koala Habitat Protection) identifies ten koala food tree species, and within the CCC LGA, the Comprehensive Koala Plan of Management (Biolink, 2018b) has further refined this list to eight primary; secondary and supplementary preferred food tree species, listed in Table 2.

Table 2: Koala Food Trees in the CCC LGA (Source Biolink 2018b)

Species Name	
Primary Food Tree	
Eucalyptus tereticornis	Forest Red Gum
Eucalyptus viminalis	Ribbon Gum
Secondary Food Tree	
Eucalyptus longifolia	Wollybutt
Eucalyptus moluccana	Grey Box
Eucalyptus punctata	Grey Gum
Supplementary Food Tree	
Eucalyptus agglomerata	Blue-leaved Stringybark
Eucalyptus consideniana	Yertchuk
Eucalyptus globoidea	White Stringybark

The Study Area contains remnant Cumberland Plain Woodland (CPW) and Shale Sandstone Transition Forest (SSTF), which are listed as critically endangered ecological communities (CEECs) under the NSW Biodiversity Conservation Act (BC Act) 2016 and EPBC Act 1999, and River-Flat Eucalypt Forest (RFEF) which is listed as an endangered ecological community (EEC) under the BC Act (Figure 4).

These vegetation communities provide habitat for Koala, including Koala Food Trees. The majority of the intact areas of these communities are protected within registered or proposed biobank sites (offset areas) as shown in Figure 2.

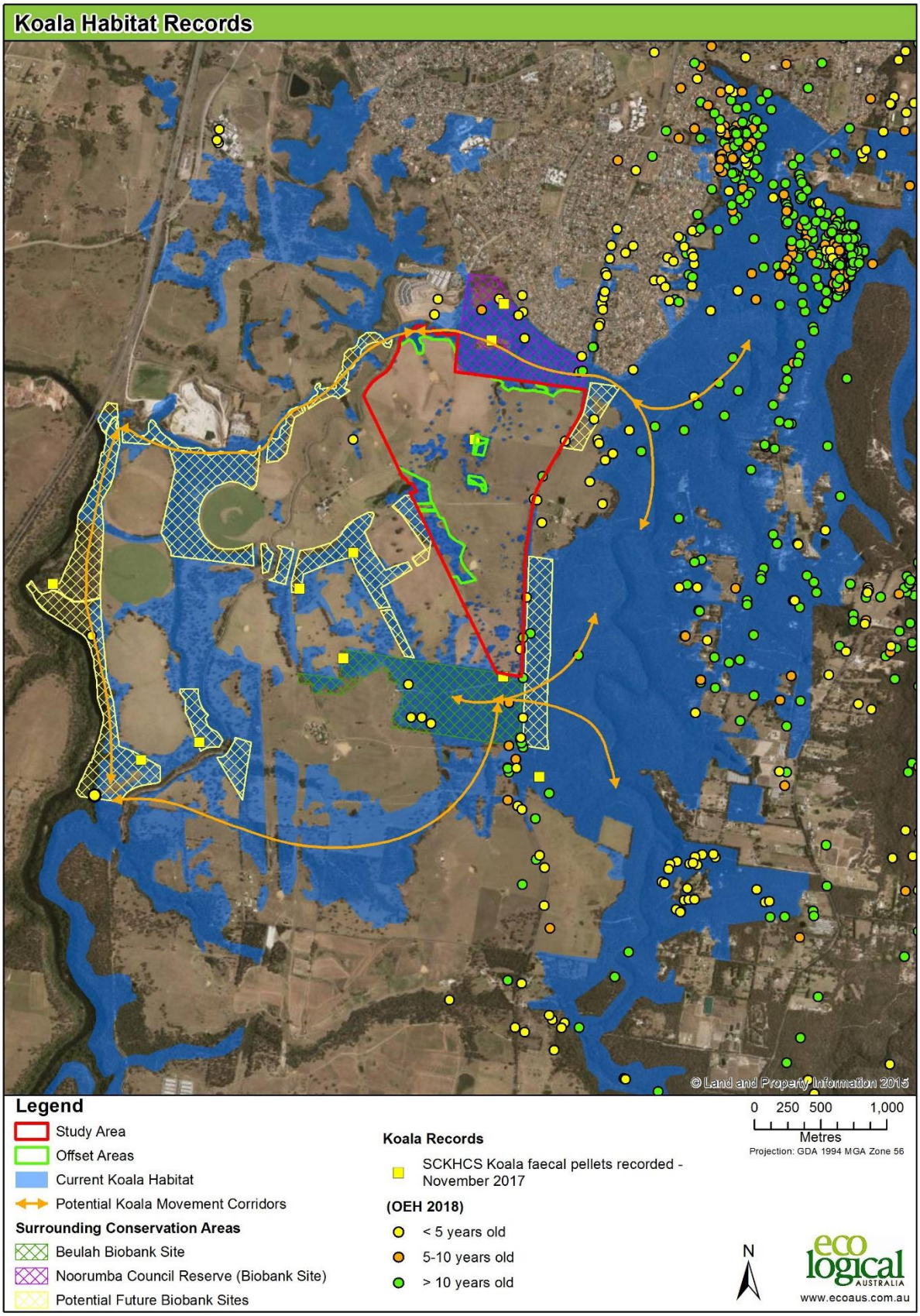

Figure 3: Koala habitat, records and likely movement corridors in the action site and wider area

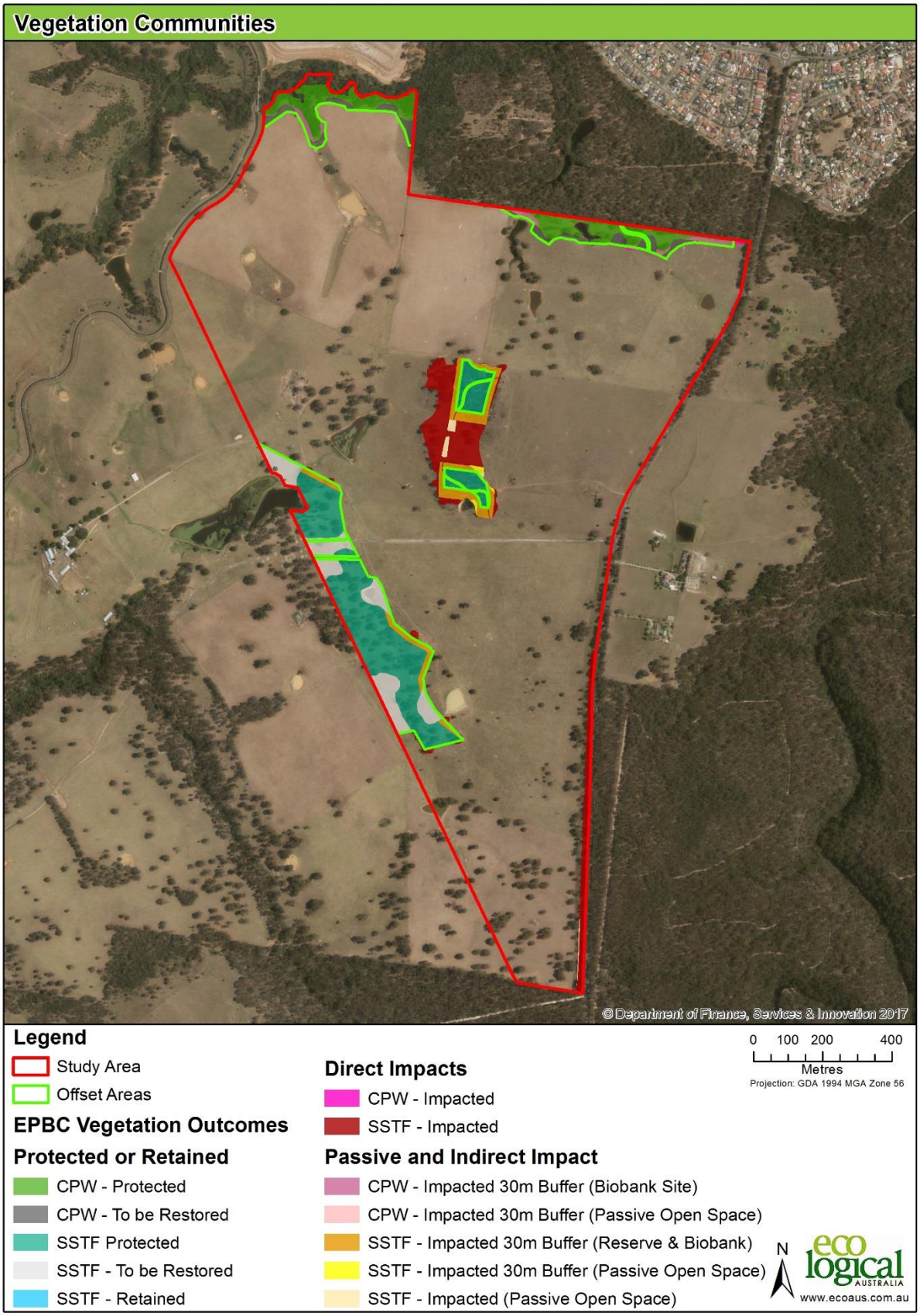

Figure 4: Vegetation within the study area to be impacted or retained

4. Threats to Koala

The NSW Office of Environment and Heritage (OEH, 2018), the Department of the Environment, Water, Heritage and the Arts 2009 (DEWHA) and Commonwealth Department of the Environment and Energy (DotEE, 2012 & 2018) identify a series of threats to Koala. Threats relevant to this development are:

- loss, modification and fragmentation of habitat
- predation by dogs
- traffic injury/ death
- pathogens and disease
- other threats to habitat (Bell Miner dieback)

4.1 Loss, modification and fragmentation of habitat

Land clearing has been a significant cause of direct Koala mortality and for limiting the movement of Koala within a sub-population. This effect is exacerbated in urban environments where the surrounding matrix is relative hostile with higher densities of roads and dogs exacerbating this effect (DotE 2014).

Small, fragmented or highly disturbed habitats are less likely to be able to support a Koala population in the long term due to edge effects, limited resource availability and increased predation. Although Koala do utilise scattered trees in largely cleared environments, travelling across open ground leaves them more vulnerable to threats such as predation. Vegetated links are important to support continued Koala movement; where dispersal and recruitment are impeded by barriers such as large areas of open ground and roads, populations would be expected to decline (DECC, 2008).

4.2 Attacks by feral and domestic dogs

Dog attacks are a threat to Koalas that are closely associated with urban expansion, with exposure to the threat increasing as land adjacent to Koala habitat is developed and occupied (DotE 2014). Additionally, attacks by dogs are likely to be more common during the koala breeding season as this is when koalas are more active and more likely to be moving through cleared areas (DECC, 2008).

4.3 Traffic injury/ death

Road-kill is a risk to Koalas at any location where a resident koala population and/or regularly used koala movement path is dissected by roads and traffic. There are several records of Koala road kill adjacent to the study area along Appin Road, where Koalas are likely using habitat resources on both the eastern and western sides of Appin Road.

Risks of koala road kill increases where (DECC, 2008):

- Road speed limits exceed 60 km/hour;
- Traffic volume is high;
- There is low visibility of road edges (such as due to vegetation or lack of lighting); and
- The koala breeding season is on (mid-August through to mid-summer).

In addition to direct impacts (i.e. koala death on roads), the construction of roads through koala habitat can also disrupt breeding and social interactions and isolates populations, reducing dispersal and immigration opportunities.

4.4 Disease

Koala populations in NSW carry the pathogen Chlamydia. Campbelltown is noted as having one of the last disease-free koala populations in the Sydney Region (Biolink, 2018b). However, Koalas are more likely to develop chlamydiosis infection when exposed to environmental stresses such as loss of habitat, harassment by predators, nutritional stress or overcrowding (DECC, 2008).

4.5 Other threats to Koala habitat such as Bell Miner associated dieback

Bell Miner associated dieback (BMAD) is listed as a key threatening process under the NSW Biodiversity Conservation Act 2016 and is known to directly impact vegetation communities and habitat for threatened fauna, including Koala (OEH 2018).

BMAD is a process whereby dense Bell Miner colonies (a native honeyeater) facilitate sustained psyllid infestations that lead to dieback. It is thought that habitat degradation that leads to increases in understory density, often via woody weed invasion, are heavily implicated in the process (Silver and Carnegie 2017).

BMAD has been observed in the Noorumba Reserve adjacent to the action area.

5. Koala management actions

This Koala PoM provides environmental management actions as outlined in the EPBC Preliminary Documentation Assessment Report for the action area (ELA 2018) and addresses mitigation measures listed in the Koala Recovery Plan (DECC, 2008) and CCC CKPoM (Biolink 2018b). Additionally, it details ongoing actions detailed in the management plans for the Biobank sites.

Koala management actions are detailed below, and include actions for the design, construction and operation phases where relevant.

5.1 Minimise impact on koala habitat

5.1.1 Design

Measures to avoid and/or reduce impacts to biodiversity values have been included during the design stages of the project, including:

- Identification and avoidance of high or higher conservation value areas during the rezoning process (2013-2017);
- the creation of a biodiversity overlay at rezoning to ensure that these areas were appropriately considered in subsequent development application stages;
- Permanent protection and management of these areas for conservation through registration as Biobank Sites.
- Design of subdivision layout, including perimeter roads, Asset Protection Zones and buffer zones to reduce impacts to and protect offset areas;

As a result of the avoidance and impact minimisation measures incorporated into the planning of the action, the final area of direct impact to Koala habitat is 10.85 ha, mainly loss of individual scattered paddock trees across the development area.

5.1.2 Pre-Construction Phase

All Project personnel and contractors will undergo environmental induction training before commencing work on site. Information to be addressed during this training will include: -

- Koala identification and location of habitat areas within the action area
- Procedures to be followed in the event that Koalas are found injured in the proximity of works areas

5.1.3 Construction Phase

The following mitigation measures will be implemented during construction of the development:

- Appointment of a Project Ecologist for the duration of clearing works to ensure conditions relating to biodiversity management of the site are fully implemented and complied with;
- Commitment to prepare and implement a Construction Environmental Management Plan;
- Temporary and permanent protective fencing to be erected around all areas identified for conservation within the development area, including within Open Space areas and Biobank Sites prior to clearing activities commencing to minimise any inadvertent damage. Protective Fencing details are shown in **Appendix C**. Any trees identified as “to be retained” following project ecologist

pre-clearing review, shall be included on an environmental control map and clearly marked with an easily visible and removable means of identification.

- A Koala Tree Felling Protocol (**Appendix D**) will be implemented to avoid any direct impacts to Koala that may be utilising trees to be cleared.

5.1.4 Operational Phase

5.1.4.1 Landscaping in Open space/recreation areas

Landscaping and revegetation within the Open Space/Recreation areas will include tree species which are part of the Endangered Ecological Communities recorded within the study area (Cumberland Plain Woodlands; Shale Sandstone Transition Forest and River-flat Eucalypt Forest) and which have been identified as primary or secondary Koala Tree Feed Species in the NSW Koala Recovery Plan (DECC 2008) and CCC CKPoM (Biolink 2018). Trees that will be used in landscape areas and that will supplement protected CPW and SSTF vegetation in offset areas are listed in Table 3. Areas subject to landscape plantings are shown in Figure 5.

Table 3: Koala Food Trees to be used in landscaping consistent with Cumberland Plain Woodland and Shale Sandstone Transition Forest characteristic species present in the study area

Species Name	
Primary Food Tree	
Eucalyptus tereticornis	Forest Red Gum
Secondary Food Tree	
Eucalyptus moluccana	Grey Box
Eucalyptus punctata	Grey Gum
Supplementary Food Tree	
Eucalyptus globoidea	White Stringybark

5.1.4.2 Management of Koala habitat in Biobank sites

Koala habitat within the Biobank sites will be managed in accordance with the approved Biobank Agreement Management Plans (refer to Mount Gilead Residential Development Construction Environmental Management Plan – ELA 2019, **Appendices D, E & F**).

This includes revegetation and supplementary planting of preferred Koala browse species in cleared areas, feral animal and weed control and access restrictions. Each biobank site is subject to annual reporting and audit and compliance requirements of OEH and the NSW Biodiversity Conservation Trust.

Figure 5: Open Space landscaping areas using local Koala browse species

5.2 Predation by dogs

5.2.1 Design

Increased koala injuries and fatalities from attacks by dogs are likely to occur with the increased proximity to urban areas. Design measures to mitigate predation by dogs included in the development include:

- Dog proof fencing will be a design requirement for each residential lot in accordance with the Gilead Home Design Guidelines (Lendlease 2019) and Campbelltown Council requirements – **Appendix E**
- Enforced prohibition of dogs within Biobank areas
- Designated dog-proof fenced areas within open space / recreation areas where dogs will be permitted to be off leash
- Public Open space areas and Biobanks will have fencing and site specific signage designed to outline prohibited activities and penalties which will apply. Example of typical Council Reserve fencing and signage is shown in **Appendix F**

5.2.2 Operational Phase

- In public open spaces, all dogs will be required to be kept under control by their owners, in accordance with Local Government Act 1993, failure to comply may lead to a penalty exceeding $110.
- Dogs will be prohibited from entry into the Biobank sites. These areas will be actively managed and subject to enforcement powers under the Local Government Act failure to comply may lead to a penalty exceeding $110
- All public areas will be effectively signposted with signs which outline permitted and prohibited activities and outline penalties which will apply for non-compliance. Example of typical signage is shown in **Appendix G**
- Multi-lingual education programs, community information packages, community information seminars and community education events will be held for residents regarding the requirements for dogs within the development. The programs will highlight increased risk of dog attacks during koala breeding season (mid-August through to mid-summer). These programs will be held onsite regularly over a 5 year period by the Developer.

5.3 Traffic injuries or death within the action area

5.3.1 Design

Increased koala fatalities from vehicle strike are likely to occur within the action area as a result of around 5,000 new residents and associated vehicles as there will be a significant increase in traffic volume in the area from population increase. Traffic calming measures proposed in the development include:

- Local roads will have speed limit restrictions of 50 km/h adjacent to open space areas
- Perimeter roads and roads adjacent to Koala habitat areas will be signposted in accordance with Austroads, RMS technical guidelines, Campbelltown City Council Guidelines and Australian Standards. (Indicative signage is shown in Figure 6)
- Traffic calming devices will be installed along perimeter roads adjacent to offset areas and Koala habitat
- Vegetation adjacent to roads will be managed to increase visibility of fauna (**Appendix F**)

Koala mitigation measures associated with the NSW Roads and Maritime Services proposal to upgrade Appin Rd, on the eastern boundary of the action area)(RMS 20018a and 2018b) are not addressed in this management plan as they are subject to a separate approval process. The environmental assessments for this project proposes Koala exclusion fencing and associated grids along the eastern side of Appin Road.

5.3.2 Construction

Traffic management measures to be implemented during construction, include:

- Construction traffic to utilise clearly defined access and egress points to and from the development site that avoid retained Koala habitat areas
- Construction traffic within the development site to keep to designated routes where possible
- Parking and equipment and material laydown areas to be positioned away from conservation areas
- Construction traffic is to adhere to construction zone speed limits of 20 km/h across the site
- Exclusion fencing will be installed prior to site works commencing to delineate the limit of areas impacted by the works and accessible by construction traffic

5.3.3 Operational Phase

Management strategies presented below aim to increase the application of a precautionary approach to reducing the potential for Koala road strike and to increase driver and community awareness:

- 'Koala Warning Signs' dispersed throughout the Mount Gilead road network (example signage shown in Figure 6)
- Roadside vegetation adjacent to conservation areas (1-2m) will be managed to minimise the height of ground cover and therefore increase the visibility of any roadside fauna. Turfed areas will be mown, low ground covers will be trimmed mechanically (example shown in **Appendix F**)

Figure 6: Indicative Koala Warning Signs to be erected on major urban streets adjacent to Koala habitat areas (Images courtesy Campbelltown City Council Koala Management Plan 2018)

5.4 Diseases and pathogens

5.4.1 Design, Construction and Operation:

As Koalas are more likely to develop chlamydiosis infection when exposed to environmental stresses such as loss of habitat and harassment by predators, mitigation measures described in section 5.1 and section 5.2 will also minimise the risk of chlamydiosis infection by minimising stress to animals through the design, construction and operational phases of the development.

5.4.2 Construction and Operation

Pathogens such as myrtle rust and *Phytophthora* root rot can be spread if carried on infected plant material, contaminated equipment, vehicles and clothing. The following hygiene measures will be put in place to limit the risk of introduction and spread of pathogens during construction of the development, and as part of the management and operation of the Biobank sites:

- all vehicles, machinery, maintenance equipment, tyres and work boots should be free of mud, soil and vegetation prior to entering and leaving the construction site (as outlined in the Mt Gilead CEMP (ELA 2019b))
- Follow the *Arrive Clean, Leave Clean: Guidelines* (Commonwealth of Australia 2015)

5.5 Bell Miner die back

5.5.1 Operational Phase

Biobank sites will be managed to maintain an open grassy woodland environment consistent with the typical form of Cumberland Plain Woodland and Shale Sandstone Transition Forest. This will include the active management of dense wood weed understory (Blackberry and Lantana) to reduce nesting opportunities for Bell Miner.

5.6 Education and awareness

Education has a key role to play towards ensuring the long-term survival of the Koala in the action area, and the following educational measures will be implemented for the development:

5.6.1 Design Phase

- Permanent signage will be installed adjacent to pathways and entry roads to the site, to raise awareness of the potential presence of koalas within and adjacent to the site.

5.6.2 Construction Phase

- All personnel, including sub-contractors, are required to attend a compulsory site induction. This will include a section on key environmental sensitivities, including the identification and potential presence of Koalas.
- Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impacts, including vegetation clearing controls.
- Toolbox talks will be used to raise awareness and educate personnel on construction related environmental issues, and to ensure environmental awareness continues during construction. Toolbox talks will be tailored to specific environmental issues including:
    - biodiversity values and conservation areas
    - Koala management
    - emergency and spill response
- The daily pre-start meeting will be conducted for the site workforce before the commencement of work each day (or shift) or where changes occur during a shift. The environmental component of pre-starts will include any environmental issues that could potentially be impacted by, or impact on, the day's activities, including vegetation clearing.

5.6.3 Operational Phase

Education programs are the principal means by which the community can gain a full appreciation of relevant issues and the actions which they can undertake to aid koala conservation within the action area.

A local resident education and awareness campaign will be carried out which will include information on:

- Potential Koala habitat and Koala presence within the Gilead community
- the need to drive with caution throughout the Mt Gilead community (refer to road signage and traffic calming devices in Section 5.3)

- process of managing injured Koalas, including contact details for WIRES;
- best practices for dog owners, including:
  - raising awareness of the impact of dogs on Koalas;
  - increased risk of dog attacks during koala breeding season (mid-August through to mid-summer);
  - use of on-leash and off-leash areas;
  - encouraging dog owners to restrain or confine their dog and notify WIRES if a Koala is found within their property.
- Opportunities to participate in Koala habitat restoration/tree planting days in Biobank sites and open space areas (Figure 7)

Education and awareness campaigns should recur during the koala breeding season (August to February), when koalas are more likely to be moving about and come into contact with the community.

Figure 7: Potential Community Involvement activities involving Koala habitat restoration (Image courtesy CCC)

6. Funding

Condition 7 requires that this KMP must include provisions for the approval holder to contribute at least $50,000 each year for 5 years to fund Koala management activities in the proposed 'action' area (Urban Area, Detention Basin, Open Space Landscape areas & Open Space areas) as shown in Figure 1.

Estimates of the cost to implement the management actions outlined in Section 5 within the action area are provided in Table 4. Total estimate of Koala management costs within the action area for 5 years is **$350,500**, representing an average funding of $70,100 each year.

Table 4: Estimate of Koala management costs – Action Area

Management Action	2019/20	2020/21	2021/22	2022/23	2023/24	Total
Contractor Awareness Training	10,000	5,000	2,500			**17,500**
Fencing of construction areas (fauna)	70,000	33,000	30,000	30,000	10,000	**173,000**
Landscape Planting in open space areas	$10,000	$15,000	$25,000	$35,000	$35,000	**120,000**
Community Education/Involvement Programs	$5,000	5,000	10,000	10,000	10,000	**$40,000**
Totals	**$95,000**	**$58,000**	**$67,500**	**$75,000**	**$55,000**	**$350,500**

Estimates of the cost to implement the management actions outlined in Section 5 within the conservation area are provided in Table 5. Total estimate of Koala management costs in the conservation area for 5 years is **$857,800**, representing an average funding of $171,560 each year.

Table 5: Estimate of Koala management costs – Conservation Areas

Management Action	2019/20	2020/21	2021/22	2022/23	2023/24	Total
Active management of dense wood weed understory/Bell Miner dieback control	$5,000	$5,000	$5,000	$2,000	$2,000	**$19,000**
Management of Koala habitat in Biobank sites (Amounts from registered Biobank Agreements Management Plans)	$280,950	$145,800	$211,400	$113,200	$87,450	**$838,800**
Totals	**$285,950**	**$150,800**	**$216,400**	**$115,200**	**$89,450**	**$857,800**

7. Responsibility

Responsibility for the implementation of the management actions during design, construction and operational phases that are described in section 5 are shown in Table 6.

Operational actions relating to the Biobank Sites will be undertaken by Mount Gilead Pty Ltd until 2025; thereafter by CCC.

Table 6: Environmental management roles and responsibilities

Role	Responsibilities
Project Manager	• Ensure all works comply with relevant regulatory and Project requirements • Ensure the requirements of this KMP are fully implemented • Ensure all personnel and contractors have completed a site induction and orientation • Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of this KMP • Ensure that all personnel receive appropriate induction training • Stop work immediately where there is an actual or potential risk of harm to Koalas.
Construction Manager	• Plan construction works in a manner that avoids or minimises impact to Koalas • Ensure the requirements of this KMP are fully implemented • Ensure construction personnel manage construction works in accordance with statutory and approval requirements • Ensure Koala management and protection measures are implemented • Ensure all Project personnel attend an induction prior to commencing works • Liaise with government authorities as required, • Stop work immediately where there is an actual or potential risk of harm to Koalas
Environmental Manager	• Conduct site environmental inspections • Investigate and review nonconformances and identify, implement and monitor corrective and preventative actions for nonconformances. • Prepare written Corrective Action Reports within 1 working day of the identification of a need for corrective actions to be taken (Appendix B); • Maintenance of training, nonconformance and complaints registers. • Undertake or coordinate environmental monitoring events. • Undertake scheduled and non-scheduled audits.
Project ecologist	• Manager Koalas during tree clearing in accordance with the Koala Tree Clearing Protocol (Appendix C) • Possess suitable fauna licences and permits • Provide Koala tree clearing report

8. Implementation

8.1 Hold points

Key environmental hold points to be satisfied before works can progress to the next phase, is included in Table 7.

Table 7: Hold points

Hold point	When
KMP endorsed by Minister	Prior to commencement of works

8.2 Monitoring

Regular environmental inspections are to be undertaken of all work activities relevant to this KMP being carried out during the construction phase as outlined in the Mt Gilead CEMP. Inspections shall be carried out in conjunction with personnel responsible for a particular work area and shall include the following:

- Daily Inspections – site supervisory staff as part of their daily duties shall conduct daily inspections of the site (incl. all subcontractor activities), and issues noted in daily diaries if applicable, and
- Regular Site Inspections – formal inspections recorded on the Environmental Site Inspection Checklists which shall include cover aspects which present significant risk to Koalas as described in this KMP. Corrective actions arising from inspection are to be managed and implemented within clearly defined timeframes.
- Where a site condition does not comply, a Corrective Action Report (CAR) is to be completed and actioned within one working day of being raised.

9. References

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Biolink 2018b. Comprehensive Koala Plan on Management. Prepared by Biolink for Campbelltown City Council, 2018.

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DoTE (Commonwealth Department of the Environment) 2014 EPBC Referral guidelines for the vulnerable Koala (combined populations of Queensland, New South Wales and Australian Capital Territory)

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Eco Logical Australia 2014. *Mt Gilead Rezoning: Ecological Assessment*. Report prepared for Mt Gilead Pty Ltd and S & A Dzwonnik

Eco Logical Australia 2017. *Biobank Agreement Credit Assessment Report - Noorumba Reserve Biobank site*. Report prepared for Campbelltown City Council, March 2017.

Eco Logical Australia 2018a. Mt Gilead – Biodiversity Certification Assessment Report and Biocertification Strategy, Final Report to Minister, July 2018.

Eco Logical Australia 2018b. Mt Gilead Residential Development– EPBC Preliminary Documentation Assessment Report (EPBC 2015/7599) Final Proposed Action. Report prepared for Lendlease Communities (Mt Gilead) Pty Ltd, 27 August 2018.

Eco Logical Australia 2018c. Biobank Agreement Credit Assessment Report – Macarthur-Onslow Mt Gilead Biobank Site. Report prepared for Mt Gilead Pty Ltd, April 2018.

Eco Logical Australia 2018d. *Biobank Agreement Credit Assessment Report – Noorumba-Mt Gilead-Biobank Site*. Report prepared for Mt Gilead Pty Ltd, April 2018.

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Eco Logical Australia 2019b. *Mount Gilead Construction Environmental Management Plan*. Report prepared for Lendlease Communities (Mt Gilead) Pty Ltd, June 2019.

Lendlease 2019. Figtree Hill Home Design Guidelines, May 2019 Draft.

OEH 2016. Forest eucalypt dieback associated with over abundant psyllids and Bell Miners – Key threatening process listing URL http://www.environment.nsw.gov.au/determintaions/bellminerfd.htm.

OEH 2018. Threatened species profile database, *Phascolarctos cinereus* (Koala).

OEH 2018. A review of Koala tree use across New South Wales. Report prepared by State of NSW and Office of Environment and Heritage.

Sharp, A., Phillips, S. 1997. *Koalas, Science and Conservation*. In: Saving Our Natural Heritage – The Role of Science in Managing Australia's Ecosystems. Halstead Press, Sydney.

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Appendix A Final decision notice for EPBC 2015/7599 and conditions of Approval

APPROVAL

Mt Gilead residential development, NSW (EPBC 2015/7599)

This decision is made under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth).* Note that section 134(1A) of the **EPBC Act** applies to this approval, which provides in general terms that if the approval holder authorises another person to undertake any part of the action, the approval holder must take all reasonable steps to ensure that the other person is informed of any conditions attached to this approval, and that the other person complies with any such condition.

Details

Person to whom the approval is granted (approval holder)	Lendlease Communities (Mt Gilead) Pty Ltd
ACN of approval holder	605 278 331
Action	Construction of a residential development including water and sewerage infrastructure, a community centre, a small kiosk / store, internal roads and two open space and recreation reserves on Lots 1-5 DP 1240836* and Lot 61 DP 752042 at Gilead, approximately 7 km south of Campbelltown city centre, New South Wales (as described in EPBC Act Referral 2015/7599 received 2 November 2015, and subject to the variations of the action accepted by the Minister under section 156B on Monday, 29 May 2017 and Thursday, 12 April 2018). * Note that prior to subdivision in May 2018, Lots 1-5 DP1240836 were collectively known as Lot 3 DP1218887.

Proposed Approval decision

My decision on whether or not to approve the taking of the action for the purposes of the controlling provision for the action is as follows.

Controlling Provisions

Listed Threatened Species and Communities	
Section 18	Approve
Section 18A	Approve

Period for which the approval has effect

This approval has effect until 30 November 2038

Decision-maker

Name and position	Kim Farrant Assistant Secretary of Assessments and Waste Branch Department of the Environment and Energy
Signature	
Date of decision	21. 12. 18

Conditions of approval

This approval is subject to the conditions under the EPBC Act as set out in ANNEXURE A.

ANNEXURE A – CONDITIONS OF APPROVAL

Part A – Conditions specific to the action

Impacts

1. The approval holder must ensure that clearing of **protected matters** within the **proposed action area** is limited to the area marked as 'development area' in **Attachment 1**.

Compensation measures

2. To offset the **impacts** on 3.3 ha of **SSTF** and 0.55 ha of **CPW**, the approval holder must ensure that 8 ha of **SSTF** and 1.2 ha of **CPW** is **secured** within **onsite offset areas** prior to the **commencement of the action**.

3. To offset the **impacts** on 1.79 ha of **SSTF**, the approval holder must **secure** a minimum of 4 ha of **SSTF** at the **Fernhill Central West biobanking site** prior to the **commencement of the action**.

4. To compensate for **impacts** on 0.85 ha of **SSTF** not compensated through offsetting through conditions 2 and 3, the approval holder must either:

   - **secure** 0.85 ha of **SSTF** within the **Council reserve** prior to the **commencement** of Stage 2 of the action; or (if the approval holder is unable to register the **Council reserve** as a BioBank site);

   - submit for the **Minister's** approval, an offset strategy in accordance with the **EPBC Act environmental offsets policy.** The offset strategy must outline how these impacts will be offset in perpetuity. The offset strategy should be submitted at least three months prior to the intended date of **commencement**. The approval holder must not **commence the action** unless the offset strategy has been approved by the **Minister**.

5. To compensate for impacts on **Koala**, the approval holder must acquire or **retire** no less than 150 **Biodiversity credits** for the **Koala** from the **Appin West offset site** prior to the **commencement of the action**.

6. Within 10 **business days** of **securing** the relevant offsets specified in conditions 2 - 5, the approval holder must provide the **Department** with **evidence** of when the offsets were **secured** and what mechanism was used to **secure** the offsets.

7. Prior to the **commencement of the action**, the approval holder must prepare and implement a Koala Management Plan for the proposed action area to the satisfaction of the **Minister**. This must include provisions for the approval holder to contribute at least $50,000 each year for five years to fund activities outlined in the plan. The approval holder must provide the **Department** with **evidence** of the Koala Recovery Team's endorsement of the Koala Management Plan prior to the **commencement of the action**. The first year's contribution must be made within 20 business days from the **commencement of the action**.

Construction environmental management plan

8. At least three months prior to the **commencement of the action**, the approval holder must submit a construction environmental management plan (CEMP) for the **Minister's** approval to avoid and mitigate potential indirect **impacts** on **protected matters** in the **onsite offset areas** and the **Council Reserve** as a result of **construction**. If the **Minister** approves the CEMP, then the approved CEMP must be implemented.

9. The approval holder must not **commence the action** unless the **Minister** has approved the CEMP in writing.

10. The CEMP must be consistent with the **Department's** *Environmental Management Plan Guidelines*, and must include:
    a. The CEMP environmental objectives, relevant to **protected matters** and a reference to **EPBC Act** approval conditions to which the CEMP refers;
    b. A table of commitments made in the CEMP to achieve the objectives, and a reference to where the commitments are detailed in the CEMP;
    c. Details of the parties responsible for undertaking management actions;
    d. A description of management actions that will be implemented pre, during and post construction, including for stormwater discharge and road runoff, sediment and erosion control, invasion by exotic species and weeds, and fencing and access;
    e. Hygiene protocols to minimise the risk of spread of *Phytophthora cinnamomi*;
    f. Reporting and review mechanisms, and documentation standards to demonstrate compliance with the CEMP;
    g. An assessment of risks to achieving the CEMP environmental objectives and risk management strategies that will be applied;
    h. **Impact** avoidance, mitigation and/or repair measures, and their timing; and
    i. A monitoring program, which must include:
        i. measurable performance indicators;
        ii. trigger values for corrective actions;
        iii. the timing and frequency of monitoring to detect changes in the performance indicators and timely detection of trigger values; and
        iv. proposed corrective actions, if trigger values are reached.

Part B – Standard administrative conditions

Notification of date of commencement of the action

11. The approval holder must notify the **Department** in writing of the date of **commencement of the action** and the date of **commencement** of each stage of the action within 10 **business days** after the date of **commencement of the action** or the relevant stage of the action.

12. If the **commencement of the action** does not occur within 5 years from the date of this approval, then the approval holder must not **commence the action** without the prior written agreement of the **Minister**.

Compliance records

13. The approval holder must maintain accurate and complete **compliance records**.

14. If the **Department** makes a request in writing, the approval holder must provide electronic copies of **compliance records** to the **Department** within the timeframe specified in the request.

Note: **Compliance records** may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the **Department**'s website or through the general media.

Preparation and publication of plans

15. The approval holder must:

    a. submit **plans** electronically to the **Department** for approval by the **Minister**;

    b. publish each **plan** on the **website** within 20 **business days** of the date the **plan** is approved by the **Minister** or of the date a revised action management plan is submitted to the **Minister**, unless otherwise agreed to in writing by the **Minister**;

    c. exclude or redact **sensitive ecological data** from **plans** published on the **website** or provided to a member of the public; and

    d. keep **plans** published on the **website** until the end date of this approval.

Annual compliance reporting

16. The approval holder must prepare a **compliance report** for each 12 month period following the date of **commencement of the action**, or as otherwise agreed to in writing by the **Minister**. The approval holder must:

    a. publish each **compliance report** on the **website** within 60 **business days** following the relevant 12 month period;

    b. notify the **Department** by email that a **compliance report** has been published on the **website** within five **business days** of the date of publication;

    c. keep all **compliance reports** publicly available on the **website** until this approval expires;

    d. exclude or redact **sensitive ecological data** from **compliance reports** published on the **website**; and

    e. where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **Department** within 5 **business days** of publication.

Note: **Compliance reports** may be published on the **Department**'s website.

Reporting non-compliance

17. The approval holder must notify the **Department** in writing of any: **incident;** non-compliance with the conditions; or non-compliance with the commitments made in **plans**. The notification

must be given as soon as practicable, and no later than two **business days** after becoming aware of the **incident** or non-compliance. The notification must specify:

a. the condition which is or may be in breach; and

b. a short description of the **incident** and/or non-compliance.

18. The approval holder must provide to the **Department** the details of any **incident** or non-compliance with the conditions or commitments made in **plans** as soon as practicable and no later than 10 **business days** after becoming aware of the **incident** or non-compliance, specifying:

a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;

b. the potential **impacts** of the **incident** or non-compliance; and

c. the method and timing of any remedial action that will be undertaken by the approval holder.

Independent audit

19. The approval holder must ensure that **independent audits** of compliance with the conditions are conducted as requested in writing by the **Minister**.

20. For each **independent audit**, the approval holder must:

a. provide the name and qualifications of the independent auditor and the draft audit criteria to the **Department**;

b. only commence the **independent audit** once the audit criteria have been approved in writing by the **Department**; and

c. submit an audit report to the **Department** within the timeframe specified in the approved audit criteria.

21. The approval holder must publish the audit report on the **website** within 10 **business days** of receiving the **Department's** approval of the audit report and keep the audit report published on the **website** until the end date of this approval.

Revision of action management plans

22. The approval holder may, at any time, apply to the **Minister** for a variation to an action management plan approved by the **Minister** under condition 9, or as subsequently revised in accordance with this condition, by submitting an application in accordance with the requirements of section 143A of the **EPBC Act**. If the **Minister** approves a revised action management plan (RAMP) then, from the date specified, the approval holder must implement the RAMP in place of the previous action management plan.

23. The approval holder may choose to revise an action management plan approved by the **Minister** under condition 9, or as subsequently revised in accordance with this condition, without submitting it for approval under section 143A of the **EPBC Act**, if the taking of the action in accordance with the RAMP would not be likely to have a **new or increased impact**.

24. If the approval holder makes the choice under condition 23 to revise an action management plan without submitting it for approval, the approval holder must:

    a. notify the **Department** in writing that the approved action management plan has been revised and provide the **Department** with:

        i. an electronic copy of the RAMP;

        ii. an electronic copy of the RAMP marked up with track changes to show the differences between the approved action management plan and the RAMP;

        iii. an explanation of the differences between the approved action management plan and the RAMP;

        iv. the reasons the approval holder considers that taking the action in accordance with the RAMP would not be likely to have a **new or increased impact**; and

        v. written notice of the date on which the approval holder will implement the RAMP (RAMP implementation date), being at least 20 **business days** after the date of providing notice of the revision of the action management plan, or a date agreed to in writing with the **Department**.

    b. subject to condition 26, implement the RAMP from the RAMP implementation date.

25. The approval holder may revoke its choice to implement a RAMP under condition 23 at any time by giving written notice to the **Department**. If the **approval holder** revokes the choice under condition 23, the **approval holder** must implement the previous action management plan approved by the **Minister**.

26. If the **Minister** gives a notice to the approval holder that the **Minister** is satisfied that the taking of the action in accordance with the RAMP would be likely to have a **new or increased impact**, then:

    a. condition 23 does not apply, or ceases to apply, in relation to the RAMP; and

    b. the approval holder must implement the action management plan specified by the **Minister** in the notice.

27. At the time of giving the notice under condition 26, the **Minister** may also notify that for a specified period of time, condition 23 does not apply for one or more specified action management plans.

Note: conditions 23, 24, 25 and 26 are not intended to limit the operation of section 143A of the **EPBC Act** which allows the approval holder to submit a revised action management plan, at any time, to the **Minister** for approval.

Completion of the action

28. Within 30 days after the **completion of the action**, the approval holder must notify the **Department** in writing and provide **completion data**.

Part C - Definitions

29. In these conditions, except where contrary intention is expressed, the following definitions are used:

a. **Appin West offset site** means the area marked as 'study area' on the map at **Attachment 7**.

b. **BioBanking** – the New South Wales Government's biodiversity credit and offset scheme of that name created under the *Threatened Species Conservation Act 1995* (NSW), as amended and repealed or an equivalent scheme under a **successor mechanism** under the Biodiversity Conservation Act 2016 (NSW).

c. **Biodiversity Credits** - has the meaning given under the under the Threatened Species Conservation Act 1995 (NSW), as amended and repealed, or an equivalent report under a **successor mechanism** under the Biodiversity Conservation Act 2016 (NSW).

d. **Business days** means a day that is not a Saturday, a Sunday or a public holiday in New South Wales.

e. **Cleared** means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of **SSTF** or **CPW**.

f. **Commencement/Commencement of the action/ Commence the action** means the first instance of any specified activity associated with the action including clearance of vegetation and **construction** of any infrastructure. Commencement does not include minor physical disturbance necessary to:

   i. undertake pre-clearance surveys or monitoring programs;

   ii. install signage and /or temporary fencing to prevent unapproved use of the **proposed action area**; and

   iii. protect environmental and property assets from fire, weeds and pests, including erection or **construction** of fencing and signage, and maintenance or use of existing surface access tracks, if agreed in writing by the **Department.**

g. **Completion data** means an environmental report and spatial data information clearly detailing how the conditions of this approval have been met. The **Department's** preferred spatial data format is ESRI shapefile, including containing '.shp, '.shx' and '.dbf' files and other files capturing attributes including at least the EPBC reference and a '.prj' file or specification of the projection/geographic coordinate system used.

h. **Completion of the action** means the time at which all approved conditions (except condition 28) have been fully met.

i. **Compliance records** means all documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the approval holder's possession or that are within the approval holder's power to obtain lawfully;

j. **Compliance reports** means written reports:

i. providing accurate and complete details of compliance, **incidents**, and non-compliance with the conditions and the **plans**;

ii. consistent with the **Department's** *Annual Compliance Report Guidelines* (2014)

iii. include a shapefile of any clearance of any **protected matters**, or their habitat, undertaken within the relevant 12 month period; and

iv. annexing a schedule of all **plans** prepared and in existence in relation to the conditions during the relevant 12 month period.

k. **Construction** means the creation and development of services (sewerage, electricity, water, stormwater), the use of heavy equipment for the purposes of breaking ground for buildings or infrastructure, and the building of infrastructure associated with the action. This does not include preparatory works such as the erection of signage or temporary fencing. In addition, for the **Council reserve**, construction refers to the interim period between the commencement of the action and the commencement of bushland management works within the reserve.

l. **Council reserve** means the area designated as **'Council Reserve (Proposed Biobanking Site)'** on the map at **Attachment 5.**

m. **CPW** means the Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest ecological community listed as critically endangered under the EPBC Act and shown on the map at **Attachment 2.**

n. **Department** means the Australian Government agency responsible for administering the **EPBC Act**.

o. **EPBC Act** means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

p. **EPBC Act environmental offset policy** means the document: Department of Sustainability, Environment, Water, Population and Communities (2012). *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy.* Commonwealth of Australia, Canberra.

q. **Evidence** means documentation from the relevant authority showing that the offset has been **secured**.

r. **Fernhill Central West biobanking site** means the area designated as 'Offset (4 ha)' in the map at **Attachment 6**.

s. **Grey-headed Flying-fox** means *Pteropus poliocephalus* listed as vulnerable under the **EPBC Act,** within habitat shown on the map at **Attachment 4**

t. **Impact/ Impacted** means any measureable direct or indirect disturbance/change that occurs as a result of any activity associated with the proposed action.

u. **Incident** means any event which has the potential to, or does, **impact** on **protected matters.**

v. **Independent audit**: means an audit conducted by an independent and **suitably qualified person** as detailed in the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines* (2015).

w. **like-for-like credits** has the meaning given under the *Threatened Species Conservation Act 1995* (NSW) (now repealed), or an equivalent biodiversity offsetting mechanism under the *Biodiversity Conservation Act 2016* (NSW) and includes the **retirement** of credits from the following plant community types:

SSTF (Shale SandstoneTranstion Forest in the Sydney Basin Bioregion)

i. *Narrow-leaved Ironbark – Broad-leaved Ironbark – Grey Gum open forest of the edges of the Cumberland Plain, Sydney Basin Bioregion*

ii. *Broad-leaved Ironbark – Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain, Sydney Basin Bioregion*

iii. *Turpentine – Grey Ironbark open forest on shale in the lower Blue Mountains, Sydney Basin Bioregion.*

CPW (Cumberland Plain Woodland)

i. *Shale Hills Woodland*

ii. *Cumberland Shale Hills Woodland*

iii. *Grey Box-Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin*

x. **Koala** means the combined populations of Queensland, New South Wales and the Australian Capital Territory) (*Phascolarctos cinereus (combined populations of Qld, NSW and the ACT*) listed as vulnerable under the **EPBC Act** within habitat shown on the map at **Attachment 3.**

y. **Minister** means the Australian Government Minister administering the EPBC Act including any delegate thereof.

z. **New or increased impact** means a new or increased environmental **impact** or risk relating to any **protected matter**, when compared to the likely **impact** of implementing the action management plan that has been approved by the **Minister** under condition 9, including any subsequent revisions approved by the **Minister,** as outlined in the *Guidance on 'New or Increased **Impact**' relating to changes to approved management plans under EPBC Act environmental approvals (2017).*

aa. **Offset attributes** – mean an '.xls' file capturing relevant attributes of the offset site, including the **EPBC Act** reference ID number, the physical address of the offset site, coordinates of the boundary points in decimal degrees, the **EPBC Act protected matters** that the offset compensates for, any additional **EPBC Act protected matters** that are benefiting from the offset, and the size of the offset in hectares.

bb. **Onsite offset areas** means the area designated 'Proposed BioBank Sites (Applications Submitted)' at **Attachment 5.**

cc. **Plan(s)** means any of the documents required to be prepared, approved by the **Minister**, and/or implemented by the approval holder and published on the **website** in accordance with these conditions (includes action management plans and/or strategies).

dd. **Proposed action area** means the area designated as 'Urban area, Detention Basin (Landscaped), Open Space- Landscape and Open Space'on the map at **Attachment 1**.**Protected matter(s)** means **protected fauna** and other matters protected by Part 3 of the EPBC Act, including **SSTF** and **CPW**.

ee. **Retirement** means a change in the status of a credit such that the credit can no longer be bought or sold.

ff. **Shapefiles** means an ESRI Shapefile containing '.shp', '.shx' and '.dbf' files and other files capturing attributes of the offset site, including the shape, EPBC Act reference ID number and **protected matters** present at the relevant site. **Shapefile** files must also include either a '.prj' file or specification of the projection/geographic coordinate system used.

i. Attributes should also be captured in '.xls' format.

gg. **Retire or retirement** means a change in the status of a credit such that the credit has been used to offset the development impact or achieve a conservation outcome, and can no longer be bought or sold.

hh. **Secure/secured** means long-term protection under a legal mechanism that is either:

i. **retirement** of sufficient **like-for-like credits** in accordance with the New South Wales Government's **BioBanking Scheme** created under the *Threatened Species Conservation Act 1995* (NSW), as amended and repealed or an equivalent biodiversity offsetting mechanism under the *Biodiversity Conservation Act 2016* (NSW); OR

ii. another legal mechanism that has been endorsed in writing by the **Minister**.

ii. **Sensitive ecological data** means data as defined in the Australian Government Department of the Environment (2016) Sensitive Ecological Data – Access and Management Policy V1.0.

jj. **Successor mechanism** means any biodiversity offsetting mechanism legislated and implemented by the New South Wales Government to replace, or as a successor to, BioBanking. Such a mechanism is only acceptable for the purposes of this approval if it:

i. is included in a bilateral agreement under the EPBC Act (either referenced directly in the agreement, or as part of a wider process that is adopted in a bilateral agreement) OR

ii. has been agreed by the Department in writing to the approval holder or the title holder as being an appropriate successor mechanism.

kk. **SSTF** means the Shale Sandstone Transition Forest of the Sydney Basin Bioregion ecological community listed as critically endangered under the **EPBC Act** and shown on the map at **Attachment 2.**

ll. **Suitably qualified person** means a person who has professional qualifications, training, skills and/or experience related to the nominated subject matter and can give authoritative

independent assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and/or literature.

mm. **website** means a set of related web pages located under a single domain name attributed to the approval holder and available to the public.

ATTACHMENTS

Attachment 1 – Map showing proposed action area

Attachment 2 – Map showing the extent of SSTF (Dark green) and CPW (Dark orange) within the proposed action area. Impacted areas are those areas outside the green lines.

Attachment 3 – Map showing the extent of Koala habitat within the proposed action area

Attachment 4 – Map showing the extent of Grey-headed Flying-fox habitat within the proposed action area

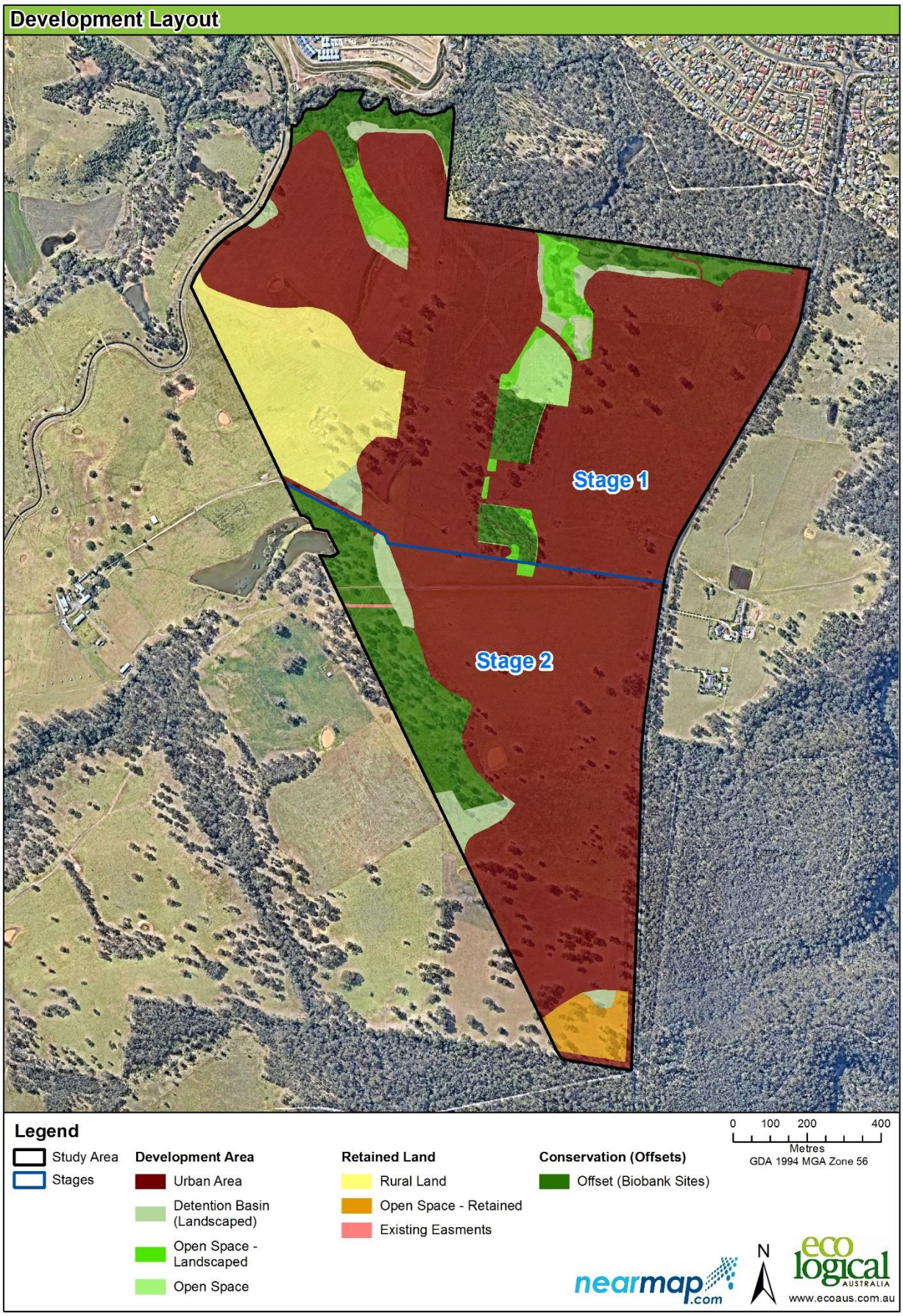
Attachment 5 – Map showing onsite offset areas and Council Reserve (Proposed BioBank site)

Attachment 6 – Map of Fernhill Central West Biobank site

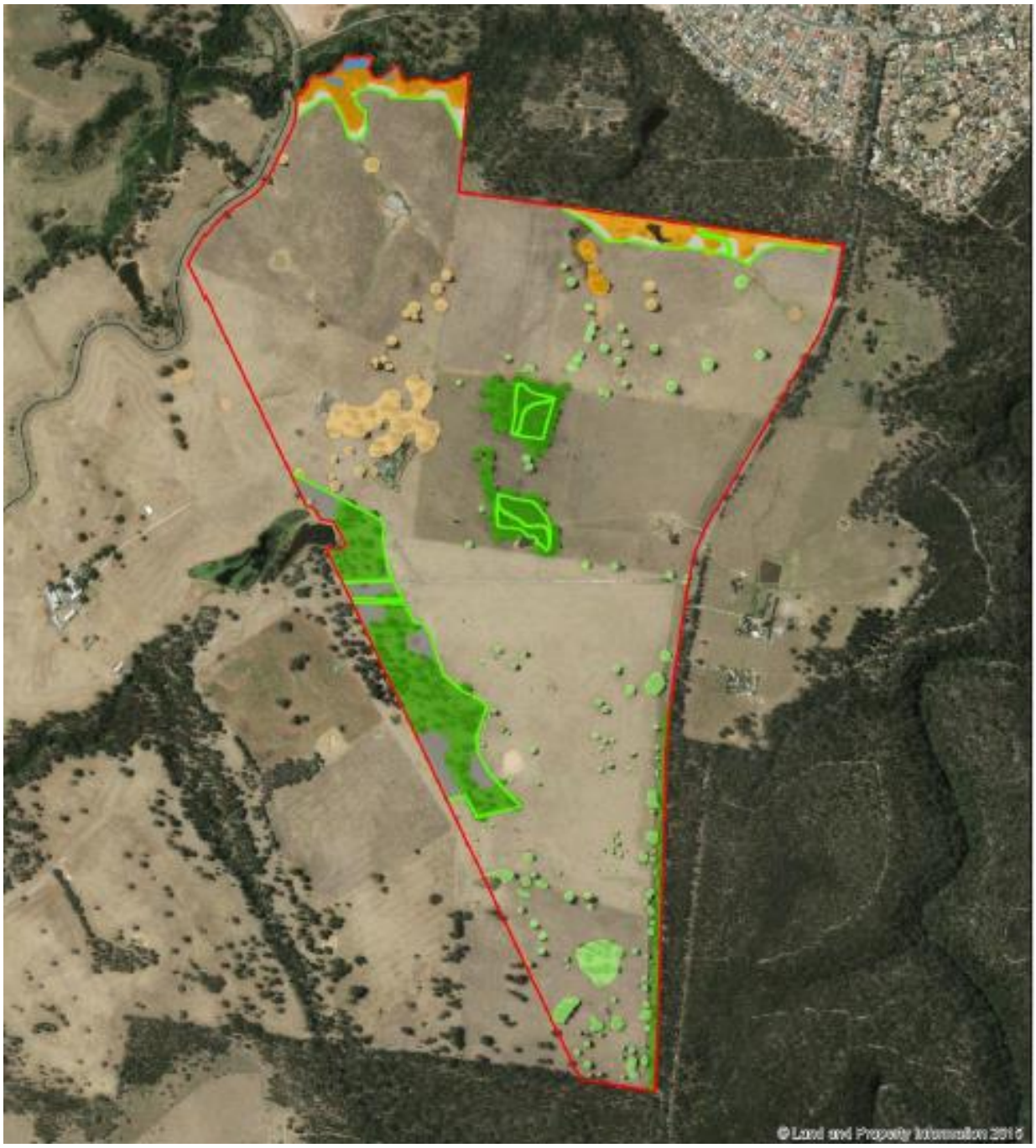
Attachment 7 – Map of Appin West offset site

ATTACHMENTS

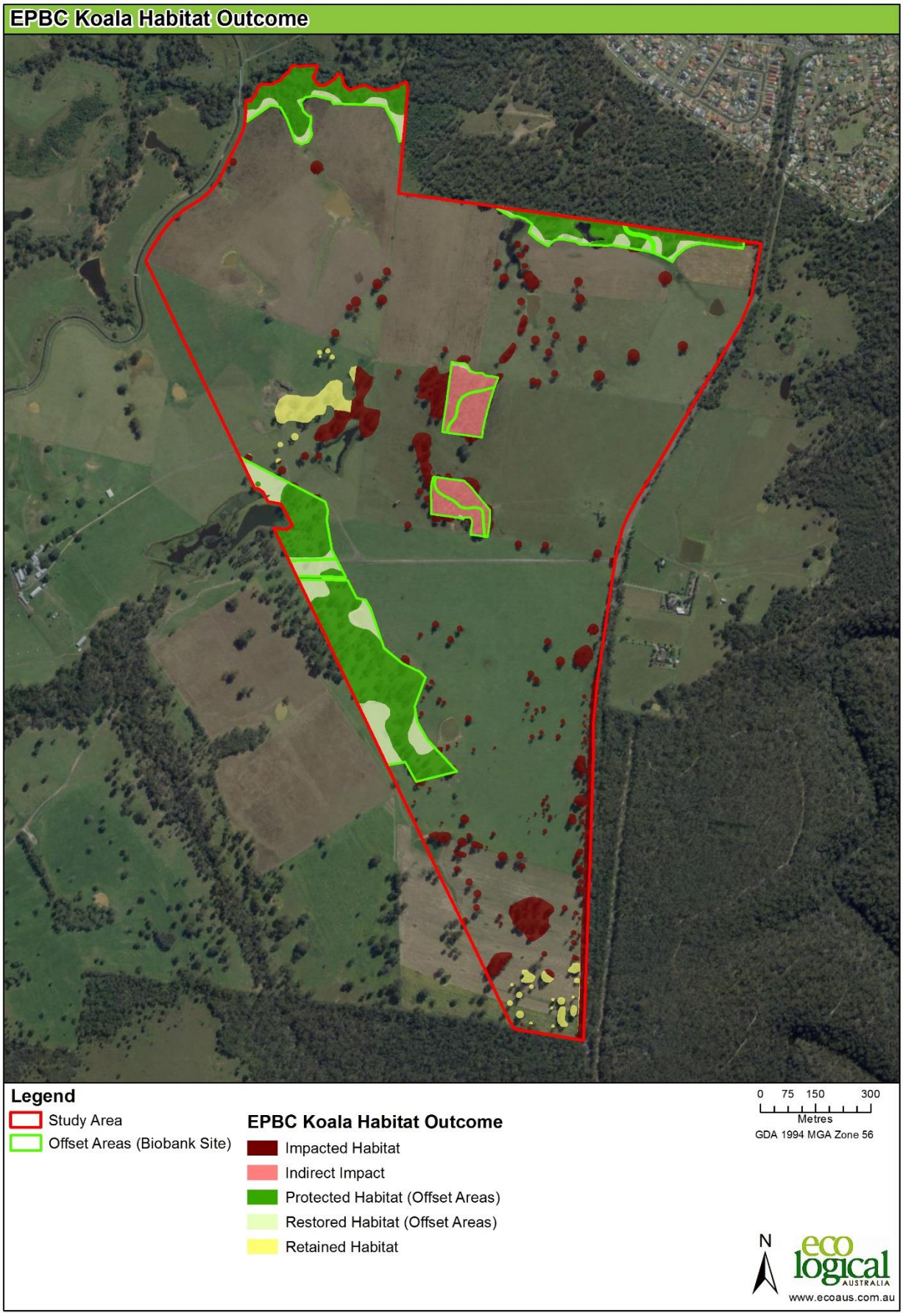
Attachment 1 – Map showing proposed action area (marked on the map as Urban areas, Detention Basin (Landscaped), Open Space -Landscaped and Open Space).



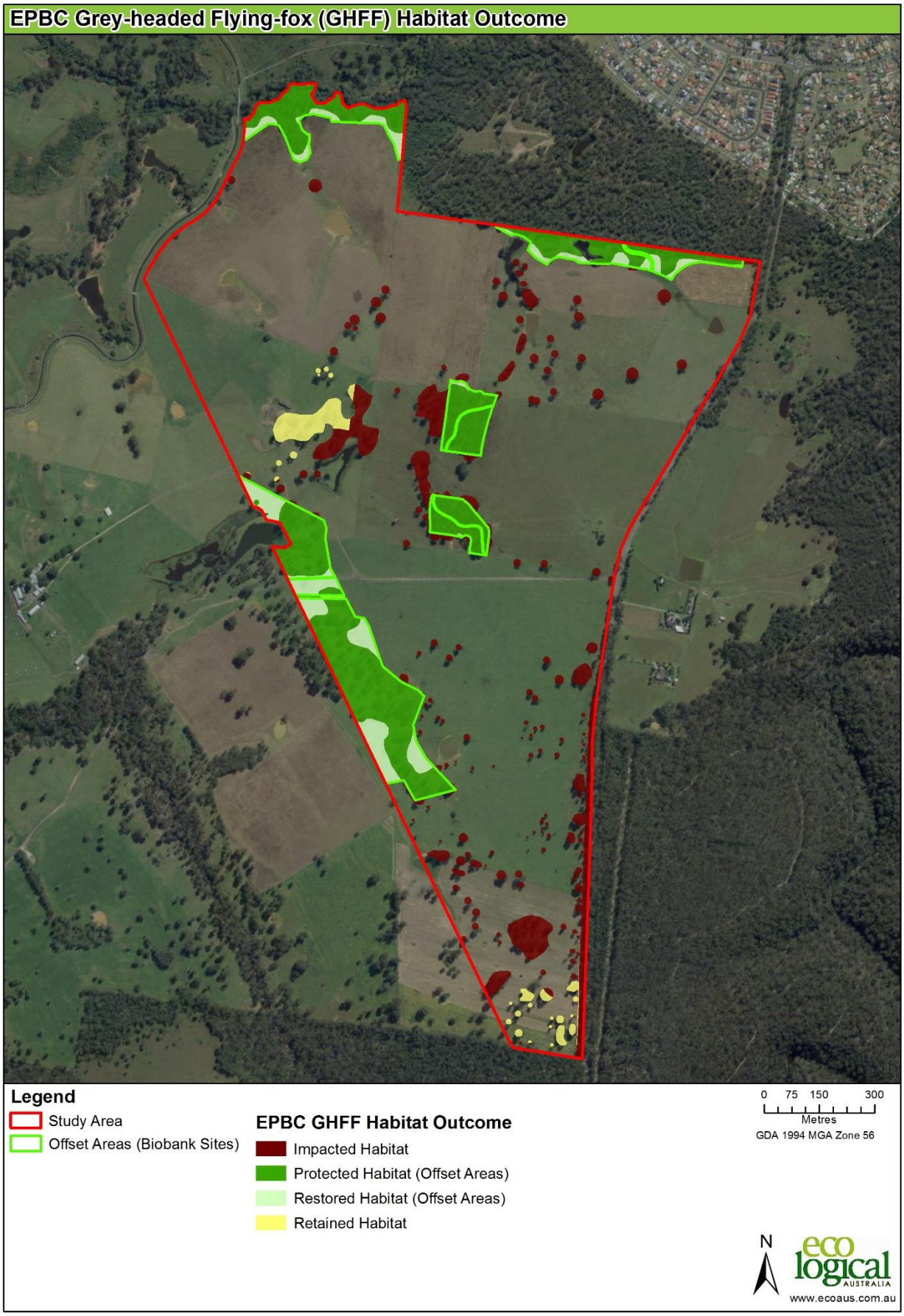
Attachment 2 – Map showing the extent of SSTF (Dark green) and CPW (Dark orange) within the proposed action area. Impacted areas are those areas outside the green lines.



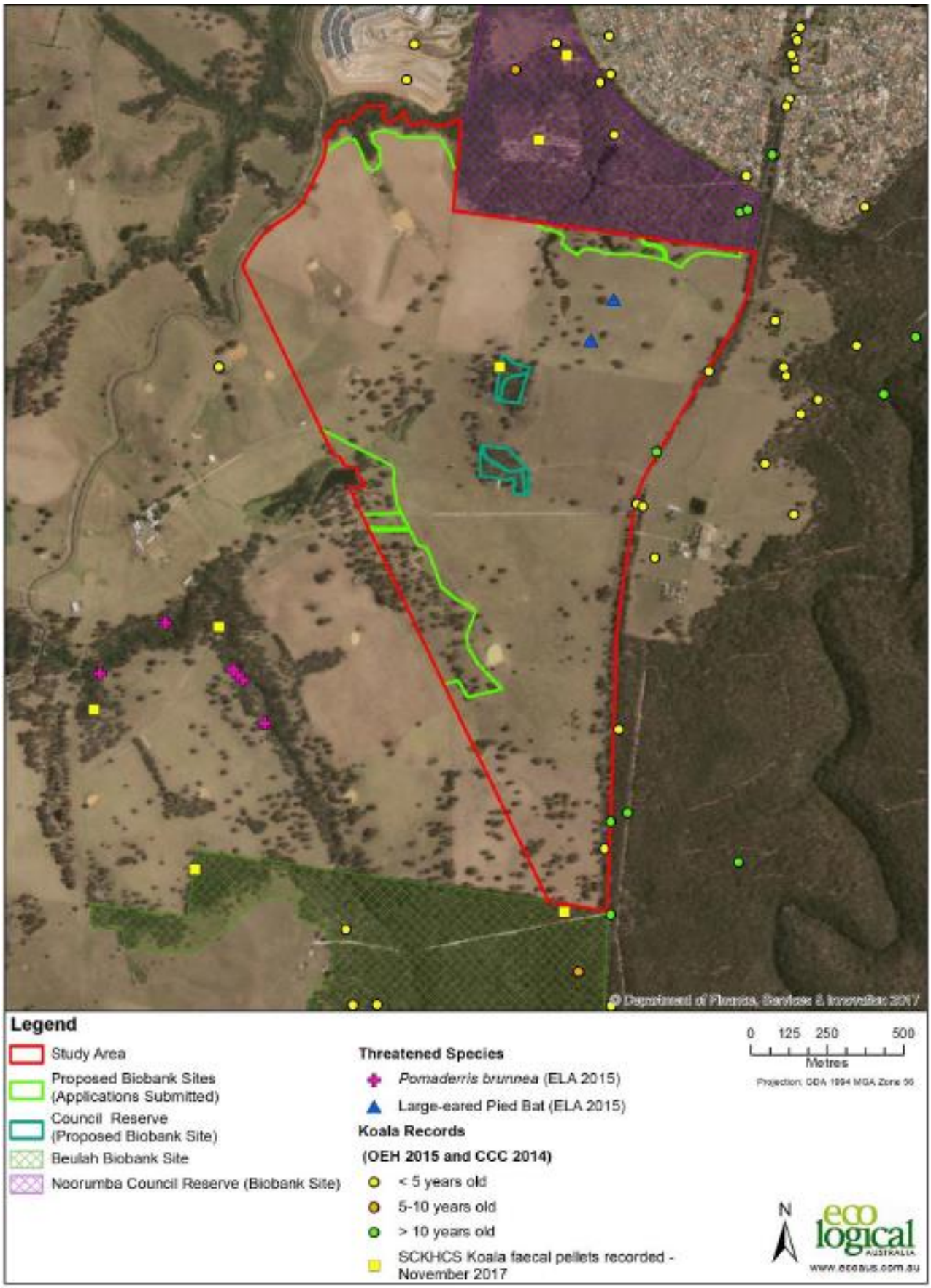
Attachment 3 – Map showing the **e**xtent of Koala habitat within the proposed action area.



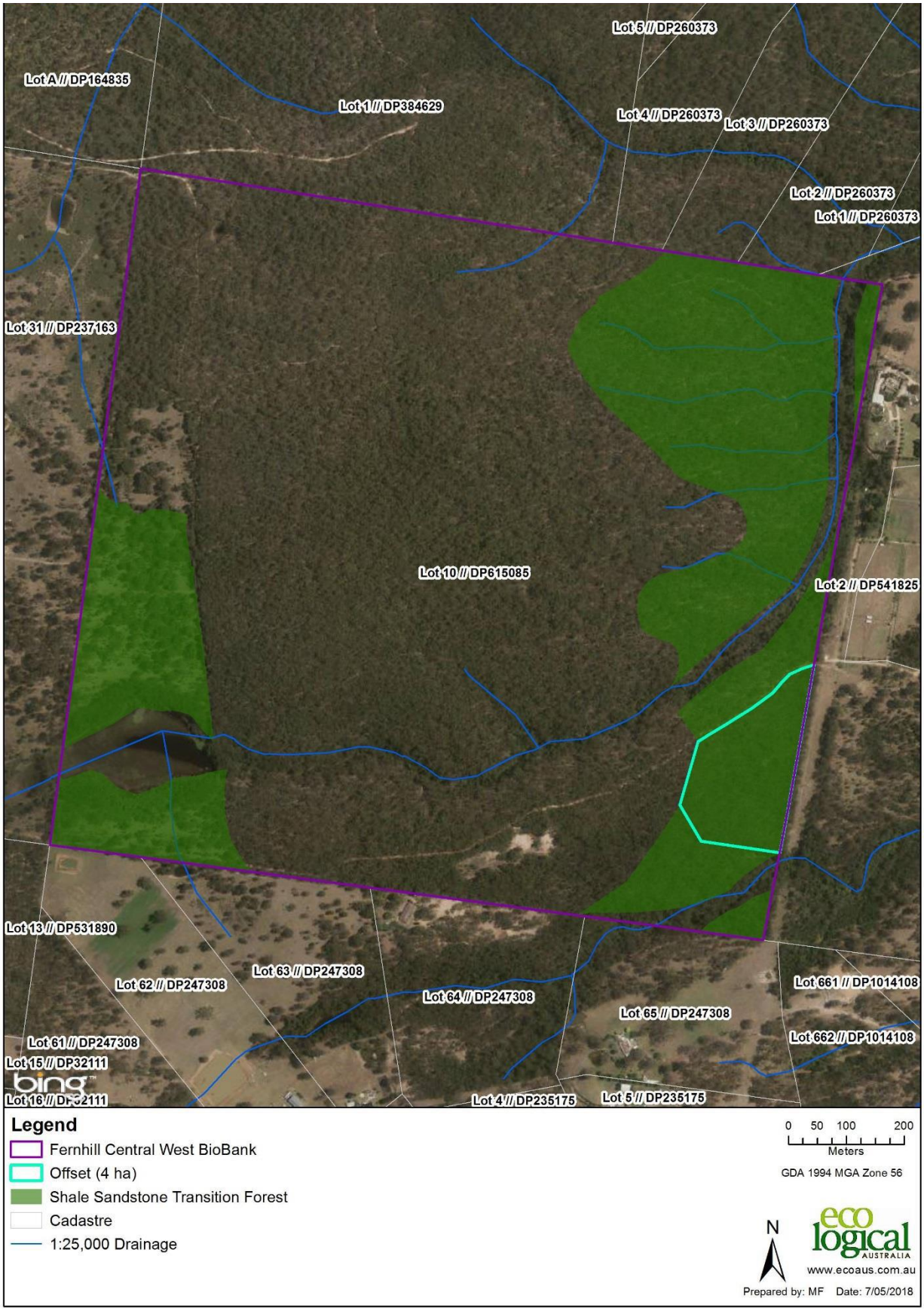
Attachment 4 – Map showing the extent of Grey-headed Flying-fox habitat within the proposed action area.



Attachment 5 – Map showing onsite offset areas and Council Reserve (Proposed BioBank site)



Attachment 6 – Map of Fernhill Central West biobank site



Attachment 7 – Map of Appin West offset site

Koala habitat polygon
The Appin West BioBank Site

niche Environment and Heritage

Appendix B Evidence of retirement of Koala Credits

Copy of advice provided to DoTEE on 31 October 2019.

From: Anderson, Mark
Sent: Thursday, 31 October 2019 1:31 PM
To: Tony Dowd
Cc: Humphries, Robert
Subject: FW: Confirmation of the securing of the compensation measures for EPBC 2015/7599 Conditions 5

Tony,

This email serves as notice and evidence the necessary offsets for EPBC 2015/7599 Conditions 5, required pursuant to Condition 6 of EPBC 2015/7599.

Please find attached the credit retirement report (summary below) confirming the securing of the necessary compensation measures for EPBC 2015/7599 Condition 5

Regards, Mark Anderson , Senior Development Manager

Credit Retirement Report: 2019-TR-479 (EPBC SUMMARY)

Credit owner(s): Lend Lease Communities (Mt Gilead) Pty Ltd (Lend Lease)

Species credits

Agreement ID & NAME		Location	Credit ID	Scientific name	Common name	Credits retired	Area	Condition satisfied
215	Appin West	Offsite	459	Phascolarctos cinereus	Koala	150	21.13 ha	EPBC 2015/7599 - Condition 5
208	Macarthur-Onslow	On-site	442	Phascolarctos cinereus	Koala	85	11.97 ha	Not required for EPBC approval
209	Noorumba-Mt Gilead	On-site	909	Phascolarctos cinereus	Koala	48	6.76 ha	Not required for EPBC approval
239	Noorumba Reserve	Off-site	516	Phascolarctos cinereus	Koala	151	21.27 ha	Not required for EPBC approval

Appendix C Biobank (offset areas) signage and fencing examples

Example Council Reserve Signage

Example Post and cable fencing around offset areas

Example Koala road signage mitigation adjacent to offset areas

Example management of roadside verges to increase visibility of fauna on roadsides

Appendix D Koala Tree Clearing Protocol

This Protocol provides methodology for Koala tree pre-clearance and relocation for implementation during the removal of trees.

Qualifications of ecologist

A suitably qualified fauna ecologist with experience relating to arboreal fauna will be required to be on-site to supervise the felling of all trees. The ecologist will hold a scientific licence from NSW Office of Environment and Heritage (OEH) to conduct flora and fauna surveys. This licence requires that all survey and incidental records are submitted to the OEH for inclusion in their databases (primarily the Atlas of NSW Wildlife).

Fauna ecologist is to take all appropriate hygiene pre-cautions before handling any fauna to prevent spreading diseases.

Pre-clearance survey

Early in the morning of the day of the proposed clearing, trees to be cleared must be inspected by the fauna ecologist for the presence of Koalas. The following scenarios must be followed:

- Where Koalas are identified within a tree, tree clearing work will not proceed on that day, or until the Koala has voluntarily moved from the tree (typically, a Koala in this situation will vacate the tree on the same or following day
- Active relocation (capture and relocation) of Koala is discouraged to avoid causing stress to Koala's unless Koala's are found within active works sites where there is a risk of harm or injury)
- Where Koalas are not identified within the tree, the tree can be cleared using the below felling technique
-

Felling technique

The fauna qualified ecologist must be present on site while the vegetation is removed to provide advice to machine operators and rescue and relocate any fauna encountered and/or injured during tree felling and clearing in accordance with general injured wildlife and tree clearance protocol in the CEMP (ELA 2019b).

The fauna ecologist will need to work closely with the operators during the felling operations to make sure works are stopped if Koalas are spotted and require rescue. Prior to felling operations, a site specific Safe Work Method Statement (SWMS) will be prepared outlining the risks and hazards of felling operations.

Koala handling

Any Koalas that are unable to relocate themselves on their own accord will be captured and will be released into suitable habitat off-site (such as the Biobank sites) by the fauna ecologist.

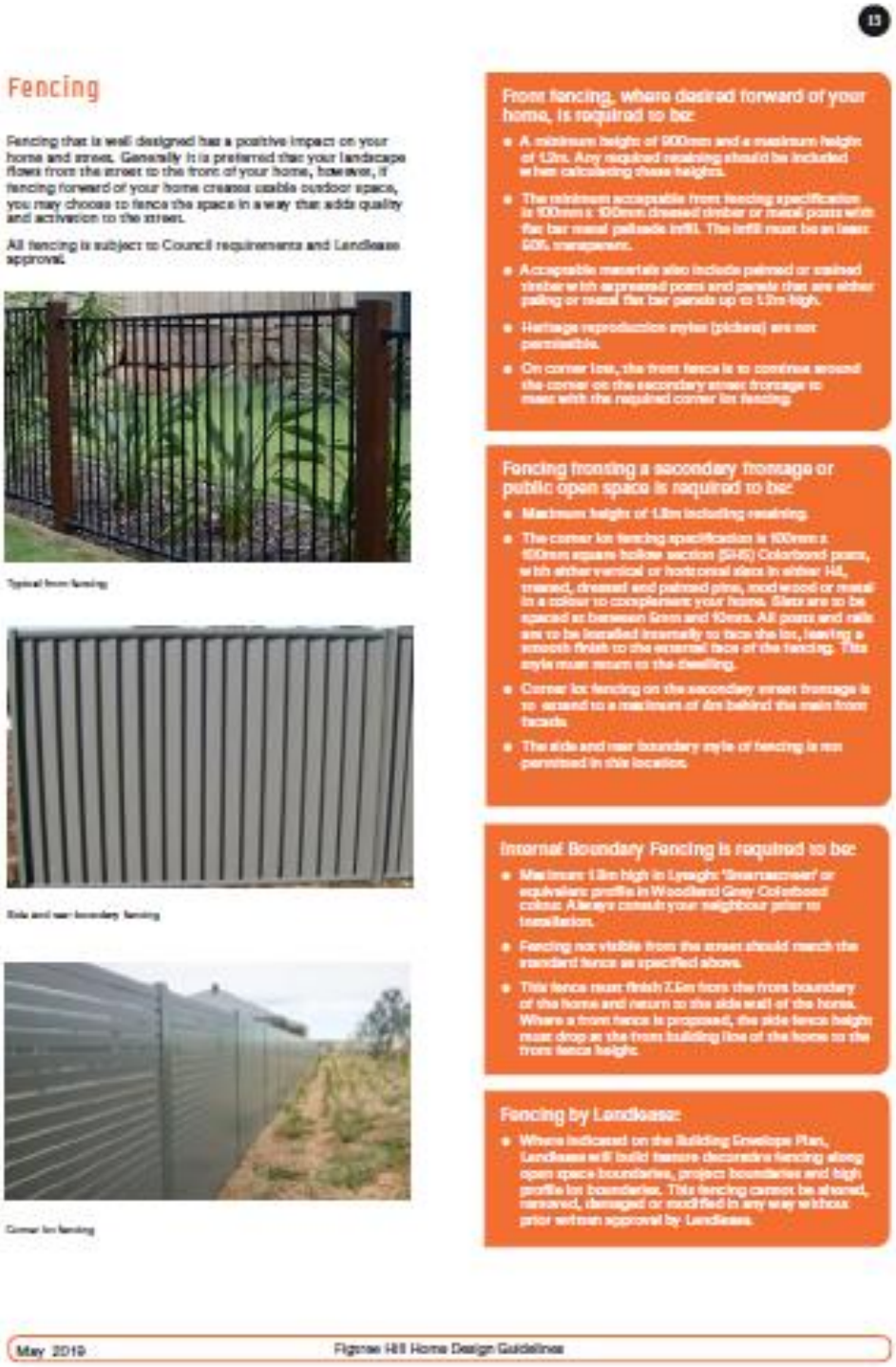
If a Koala is injured during the works, the fauna ecologist will ensure that they receive the appropriate levels of care. Depending on the level of injury and status of the injured fauna, WIRES and/or the nearest veterinary clinic are to be contacted to retrieve to take the animal into care or to determine whether the veterinary staff are capable of caring for injured native animals.

Koala pre-clearing records

Records shall be kept by the fauna ecologist detailing the pre-clearing findings, numbers of Koalas observed, including details on any injuries, treatment, and relocation.

Appendix E Figtree Hill Home Design Guidelines (Lendlease May 2019)

Extract from Figtree Hill Home Design guidelines regarding fencing of home lots to be dog proof



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Fencing

Fencing that is well designed has a positive impact on your home and street. Generally it is preferred that your landscape flows from the street to the front of your home, however, if fencing forward of your home creates usable outdoor space, you may choose to fence the space in a way that adds quality and activation to the street.

All fencing is subject to Council requirements and Lendlease approval.

Typical front fencing

Side and rear boundary fencing

Corner lot fencing

Front fencing, where desired forward of your home, is required to be:

- A minimum height of 900mm and a maximum height of 1.2m. Any required retaining should be included when calculating these heights.
- The minimum acceptable front fencing specification is 100mm x 100mm dressed timber or metal posts with flat bar metal palisade infill. The infill must be an open 50% transparent.
- Acceptable materials also include painted or stained timber with dressed posts and panels that are either paling or metal flat bar panels up to 1.8m high.
- Heritage reproduction styles (pickets) are not permissible.
- On corner lots, the front fence is to continue around the corner on the secondary street frontage to meet with the required corner lot fencing.

Fencing fronting a secondary frontage or public open space is required to be:

- Maximum height of 1.8m including retaining.
- The corner lot fencing specification is 100mm x 100mm square hollow section (SHS) Colorbond posts, with either vertical or horizontal slats in either H4, treated, dressed and painted pine, wood wood or metal in a colour to complement your home. Slats are to be spaced at between 5mm and 10mm. All posts and rails are to be installed internally to face the lot, leaving a smooth finish to the external face of the fencing. This style must return to the dwelling.
- Corner lot fencing on the secondary street frontage is to extend to a maximum of 4m behind the main front facade.
- The side and rear boundary style of fencing is not permitted in this location.

Internal Boundary Fencing is required to be:

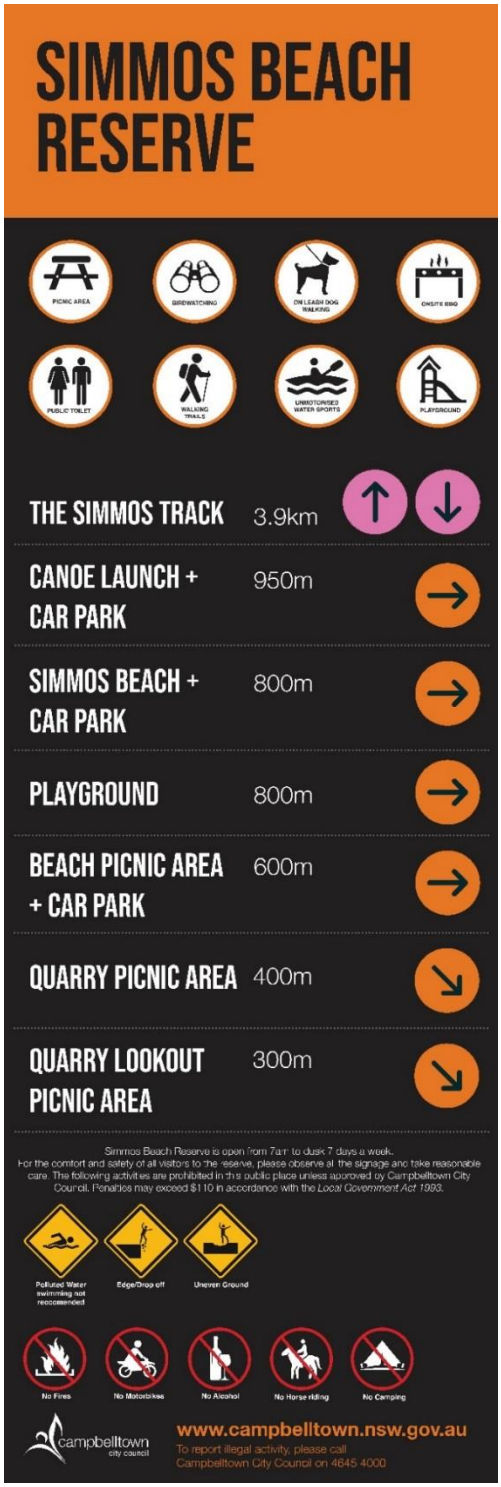
- Maximum 1.8m high in Lysaght 'Smartascreen' or equivalent profile in Woodland Grey Colorbond colour. Always consult your neighbour prior to installation.
- Fencing not visible from the street should match the standard fence as specified above.
- This fence must finish 2.5m from the front boundary of the home and return to the side wall of the home. Where a front fence is proposed, the side fence height must drop at the front building line of the home to the front fence height.

Fencing by Lendlease:

- Where indicated on the Building Envelope Plan, Lendlease will build feature decorative fencing along open space boundaries, project boundaries and high profile lot boundaries. This fencing cannot be altered, removed, damaged or modified in any way without prior written approval by Lendlease.

May 2019 Figtree Hill Home Design Guidelines

Appendix F Example signage showing prohibition of certain activities in reserve



(Image courtesy CCC

ecological AUSTRALIA
A TETRA TECH COMPANY

1300 646 131
www.ecoaus.com.au

Appendix C : Proposed Avoidance, Mitigation and Management Measures included in the Preliminary Documentation Report

A range of safeguards and mitigation measures will accompany the proposed residential development. The goal of these actions is to firstly minimise the direct impact introduced by the development and secondly to ensure that indirect impacts do not eventuate, so all proposed offset areas and adjacent conservation areas are adequately protected and managed alongside the development.

C1 Avoidance and minimisation

The design of the proposed action has followed Step 4 of the *Guidelines for threatened species assessment* (DEC 2004) and the Significant Impact Guidelines for MNES (DotEE 2013), which both identify important factors that must be considered when assessing the potential impacts on threatened species, populations, or ecological communities, or their habitats; namely to avoid, mitigate and finally to offset any residual impacts.

The ecological assessments conducted in the study area (ELA 2014 and 2018a, b & c) have been used to inform avoidance and minimisation of direct and indirect impacts to biodiversity values at both the rezoning and development application stage. These principles include:

- the layout design selection process must include consideration and analysis of the biodiversity constraints of the proposed action
- the project should be located in areas where the native vegetation and threatened species habitat is in the poorest condition
- the project should be in areas which avoid EECs or CEECs
- the project should aim to minimise the amount of clearing or habitat loss
- the project should be located in areas that do not have native vegetation or require the least amount of clearing

C2 Management of potential indirect impacts

Activities within the development areas have the potential to indirectly impact avoided or retained native vegetation over both the short and the long term. These potential impacts, often referred to as 'indirect' and/or 'edge effects', may include:

- the introduction of weeds and exotic species
- the spread of litter and rubbish
- introduction of domestic animals (cats and dogs)
- increased disturbance from pedestrian access
- runoff from construction containing nutrients, sediments and other pollutants
- inappropriate water, sewer and stormwater management leading to erosion
- recreational use of open space adjacent to offset areas
- recreational use of offset areas

The precinct and lot layout at Mt Gilead has been designed to avoid and/or minimise to the maximum extent possible indirect impacts to remaining vegetation including that contained in proposed conservation areas. (with more detail in **Figures 14-19 and 20-25**) shows that the outer perimeter of the proposed residential footprint is a perimeter road. As such, there will be no residential blocks directly adjacent to protected bushland areas. This has been designed to:

- remove the likelihood of illegal encroachment into native vegetation by future residents, thus removing the chance of degradation through illegal clearing, weed invasion, garden escapes, fires and predation by domestic animals;
- allow for the required Bushfire Asset Protection Zones (APZs) to be absorbed (i.e. overlap with) the perimeter roads and the dwelling setback within the individual lots. Therefore, no clearing or modification of vegetation will be required to create or maintain APZ's for the proposed development in offset or other retained areas; and
- allow for a managed 30m TEC buffer zone to be established between the residential lots and protected bushland areas as required by the EPBC Act Conservation Listing Advice (TSSC 2014a), see below.

C3 TEC Buffer zones

The conservation advice for SSTF (TSSC 2014a) recommends that a 30m vegetated buffer is provided between the development zone and the edge of the EPBC SSTF to mitigate against indirect impacts to retained areas of SSTF. Whilst not specifically required for CPW (TSSC 2008), the DoTEE recommends that similar buffers are provided for retained patches of CPW.

As shown in **Figures 20-25**, 30m buffers comprising inner and outer zones have been provided to all retained SSTF and CPW in the study area as described in **Section 5.2.3** and shown in the cross sections in **Figures 14-19**. Indirect impacts to these areas will be mitigated by the fully funded in perpetuity active conservation management and restoration of these proposed conservation areas as described in **Section 8** so that any impacts to the vegetation within the inner buffer zone are fully managed and mitigated. An allowance of a 20% reduction in the quality of these vegetation types has been included in the impact assessment in **Section 5.2.3** on the basis of these mitigation measures.

All proposed conservation areas which total 22.53 ha, including the inner 15m of the 30m buffer zones will be permanently fenced and actively managed for fully funded conservation in-perpetuity under registered Biobanking Agreements. This fully funded management will minimise and mitigate any potential indirect impacts including weed establishment and growth, rubbish dumping, illegal tree removal and will improve the existing condition of all vegetation within the biobank sites ultimately meeting EPBC Act condition criteria (discussed further in **Section 8**). Any changes to surface runoff from the development area will be managed through the proposed stormwater infrastructure and stormwater management strategy which will generally direct surface flows away from the offset sites and to specifically designed stormwater detention basins where water is filtered and ultimately is returned to the original creek lines. The stormwater management strategy aims to ensure that post development peak discharges are equal to or less than pre development discharges (Worley Parsons 2014 – **Appendix G**). Recreational use of conservation areas will be prohibited and discouraged through fencing and signage other than via proposed management trials/walking paths and managed in accordance with a Landscape Plan (**Appendix H**). Large areas of passive and active open space have been

provided in the development design to cater for the recreational needs of the community (Error! Reference source not found.).

WATER SENSITIVE URBAN DESIGN FEATURES

Inappropriate water, sewer and stormwater management presents potential risks to the integrity of the conservation areas. Water sensitive urban design (WSUD) features will be incorporated in the development. The preferred strategy option for water cycle management includes:

- Vegetated swales incorporated into general streetscape
- Vegetated filter strips located within open areas/parks adjacent and upslope of riparian corridors
- Gross Pollutant Traps strategically located at outlet of stormwater drainage systems
- Bio-retention (filtration) system located at the outlet of stormwater drainage system and off-line from existing waterways (and outside riparian zones where practicable)
- Rehabilitated natural drainage channels incorporating stormwater treatment measures

FLOODING, STORMWATER AND WATER QUALITY

A stormwater management plan has been prepared by Worley Parsons (2014) (**Appendix G**) to address engineering considerations, whilst placing a strong focus on conserving and enhancing the biodiversity, ecological health and positive water quality benefits of the site. The objectives of the stormwater quality management strategy are to preserve the state of existing watercourses and to ensure that post-development pollutant loads are consistent with Council stormwater pollutant load reduction targets.

The stormwater management strategy for the site involves the implementation of a treatment train approach to satisfy pre-determined stormwater quality objectives and includes rainwater tanks, Gross Pollutant Traps (GPTs) and bio-retention systems. In order to satisfy stormwater quality management objectives, stormwater detention structures with multi-staged outlets will be provided adjacent to the proposed bio-retention systems in order to ensure that post-development peak discharges are equal to or less than predevelopment peak discharges.

The bio-retention basins/swales are designed to capture and treat run-off water, captured by a network of curb and guttering along all roads, including the perimeter roads adjacent to formal conservation areas. The bio-retention basins, including those on land proposed as RE1 Public Recreation, will be owned and managed by Campbelltown City Council and on completion will be classified as Community Land under the Local Government Act (LG Act), and will have a Plan of Management prepared and adopted in accordance with the LG Act accordingly. It is noted that despite the positive environmental outcomes expected through management of the bio-retention basins/swales, these areas have been included in the direct impact calculation totals.

The detention basins will include appropriate plantings arounds the banks that will provide habitat for birds, frogs and foraging/nesting resources for bats, birds and arboreal mammals. This will provide a strong buffer area between the urban development interface and the proposed conservation areas. An indicative design of the bio-retention basins/swales is depicted in **Figure 5**. The water captured in the detention basins will only be retained for as long as required for it to be released at pre-development flow rates, once discharged (shortly after a rainfall event), the areas quickly dry out as an ephemeral water course. The quantity and quality of the water flowing out of the detention basins into natural

watercourses, including through proposed offset areas, will be of a higher standard than pre development rural run-off and no different to the current high and low flow events.

A Project Ecologist will be engaged for the duration of the onsite works. The Project Ecologist will ensure that all conditions relating to the biodiversity management of the site are fully implemented and complied with including:-

- Vegetation not authorised to be removed shall be protected during construction to ensure the natural vegetation and topography is not unnecessarily disturbed.
- Exclusion fencing will be installed prior to site works commencing, exclusion fencing will delineate the limit of areas impacted by the works and provide protection for trees being retained within the works areas.
- Erosion and sedimentation controls will be in place prior to the commencement of site works and maintained throughout construction activities until the site is suitably revegetated.
- Earthworks will be minimised and generally limited to the foot print area of the drainage structure.
- Stockpiling is to be located within the development areas and not within buffer zones.
- The design performance requirements and maintenance strategies of the drainage structure will ensure that there is no increase in water quantity exiting the structure relative to predevelopment conditions and there is no diminishing of water quality exiting the drainage structure relative to pre development conditions.
- Areas requiring ecological restoration / rehabilitation will be actively regenerated via bush regeneration principles and, where needed, planted with a diversity of plant species from the existing vegetation community. Works will be in keeping with Best Practice Guidelines of OEH and the Commonwealth.
- The project ecologists will recommend and approve plant species selections and ensure the timing of material collection will result in the required plants being available at the time of on-ground restoration works.

As a result of the above measures, no stormwater run-off is expected to enter conservation areas other than periodic discharges of high quality water into existing waterways as described above. Further, the CEMP will include measures to ensure that any impacts during the construction phase of the bio-retention basins is confined to the development footprint and will not extend into proposed conservation areas.

A bioretention basin showing the transition from nature strip to vegetated basin, with footpath on farside and fenced off conservation area in the background.

Established native vegetation within a bioretention basin acting as a buffer to the conservation area in the background.

An aerial view of a bioretention basin functioning alongside residential development and conservation areas

Figure 5: Indicative design of the detention basins from nearby examples at Rouse Hill

C4 Construction Environmental Management Plan

A construction management plan (CEMP) will be prepared prior to construction commencing. It will include the following mitigation measures designed to control potential direct and indirect impacts to conservation areas and retained land.

PRE-CONSTRUCTION MEASURES

Fencing will be installed along the perimeter of all conservation areas and areas of retained vegetation during nearby construction with the objectives of controlling entry to the area and to protect the habitat. The fence will be stock and vehicle proof.

Erosion and sediment control measures will be implemented during the construction phase in accordance with the requirements of Campbelltown City Council and the guidelines set out by Landcom (the "Blue Book" 2004).

The erosion and sediment controls will include the following measures:

- construction of temporary diversion drains or provision of staked straw bales on the high side of the disturbed areas to direct upstream runoff around the areas.
- the use of silt fencing on the downstream side of the area of works to retain soils.
- provision of a stabilised site access at appropriate points where construction vehicles will enter and leave the site to reduce the likelihood of vehicles tracking soil materials onto public roads.
- topsoil stockpile located adjacent to the areas of disturbance and to have an earth bank on the upslope side to divert runoff around the stockpile with a sediment fence located 1 to 2 metres downslope of the stockpile.
- rock wrapped in geofabric or straw bales will be installed in or around any stormwater drainage inlet.

The CEMP will include requirements for ensuring the required controls are in place prior to construction, marking/fencing vegetation for retention and pre-clearance ecological surveys.

Fencing conservation areas

Fencing will be installed along the perimeter of all conservation areas and other retained vegetation. Signage will be provided to increase community awareness of the importance of the conservation areas. Gates will be included within the fence-lines to allow operational/management access and emergency services access as indicated in the Biobank site management plans. The fencing design will incorporate high tensile steel cables as required by the VPA (Voluntary Planning Agreements with CCC).

To allow for appropriate vehicle access for management purposes, including emergency access, a fire trail via a locked gate has been provided in the eastern section of the Noorumba – Mt Gilead Biobank site.

Fencing will be monitored as part of the Biobanking reporting requirements to ensure their integrity remains intact. The fence lines will be regularly checked for weeds, particularly prior to any mowing to

ensure propagules are not dispersed into the conservation areas, with any weeds surrounding these areas to be removed during regular landscaping.

Vegetation and habitat clearance

A Fauna Management Plan (FMP) for the proposed action will be prepared based on the following principles.

Vegetation clearance will be undertaken in a manner which is sensitive to the ecological values of the area. Strict clearing limits will be established and delineated to ensure that no over clearing occurs.

Hollow bearing trees (HBTs) will be cleared in a progressive manner in accordance with a hollow bearing tree clearance protocol to minimise potential impacts to hollow dependant fauna and stress to any Koalas resident during the construction phase. A suitably qualified ecologist will be on site during any vegetation clearance in ecologically sensitive areas (including areas containing MNES) as well as during the clearance of HBTs.

The pre-clearing protocol will include:

- threatened fauna searches one week prior to tree removal;
- protocols for hollow-bearing tree removal;
- addition of fallen logs to conservation areas
- supervision by an ecologist;

Woody weed material will be relocated to offset areas to supplement habitat features for fauna as described in the Biobank Assessment (ELA 201 b & c). Surplus material will be mulched on site, piled into unobtrusive piles or disposed of at a facility licensed to receive green waste. All weed propagules especially noxious will be bagged and disposed of as directed by legislation at a facility licensed to receive green waste. All weed waste without propagules will be composted onsite in small unobtrusive piles.

Dead timber and hollow bearing trees will be retained within the development footprint open space areas where possible with consideration to public safety. Dead timber and hollows from the development areas will also be salvaged and relocated to conservation areas as described in the Biobank Assessment (ELA 2019 b & c).

Weed and pest management

Weeds and control of pests including rabbits and foxes will be managed and reported on as part of the Biobanking Agreement Management Plans.

CONSTRUCTION AND OPERATIONAL CONTROLS

Litter/sediment control

Local drainage from the urban areas will be filtered (using in-line filter pit inserts or equivalent) prior to discharge to water detention basins and to downstream ecosystems. This will allow for protection of the storages from gross pollutants and for the easy interception and collection of this pollutant material. The filtering system will remove nutrients and other pollutants to the agreed standards.

Lighting controls

The potential for added light impacts will be addressed through a range of control measures on the lighting to be used within the residential area, including;

- ensuring the development complies with the Australian Standard 4282 – Control of the obtrusive effects of outdoor lighting, which provides recommended limits for lighting.
- incorporating a lighting strategy which prescribes limits on lights for various areas, such as;
  - Post top overhead street lighting to be used facing down with minimal spill into adjacent areas, in particular, offset areas.
  - Lighting to be set on timers where appropriate, and/or set on sensor switches.
  - Position and directional lighting to be located near the conservation area where deemed necessary but oriented away from the conservation area and back into the development where suitable.

Waste management controls

All reasonable steps will be taken by the developer to remove waste deposited by others within the study area during the development stages. Construction waste management measures will be developed prior to construction as a component of the CEMP.

To deter any waste dumping within the Offset Sites in the longer term, hi tensile steel cable will be installed along the permitter of existing vegetation remnants and the surrounds of the conservation areas (as described above). Additionally, signage will be erected along the boundary to deter dumping.

C5 Parties responsible for implementation

Lendlease Communities will ensure that all mitigation measures are undertaken until the completion of the development. On completion of the development, the responsibility for management will be passed to the CCC in accordance with the responsibilities outlined In the VPA and on completion. Where necessary, suitable environmental, conservation, and engineering contractors experienced in bushland conservation and management will be employed. The contractors will be chosen through a tender process which will likely take into account each tenderer's:

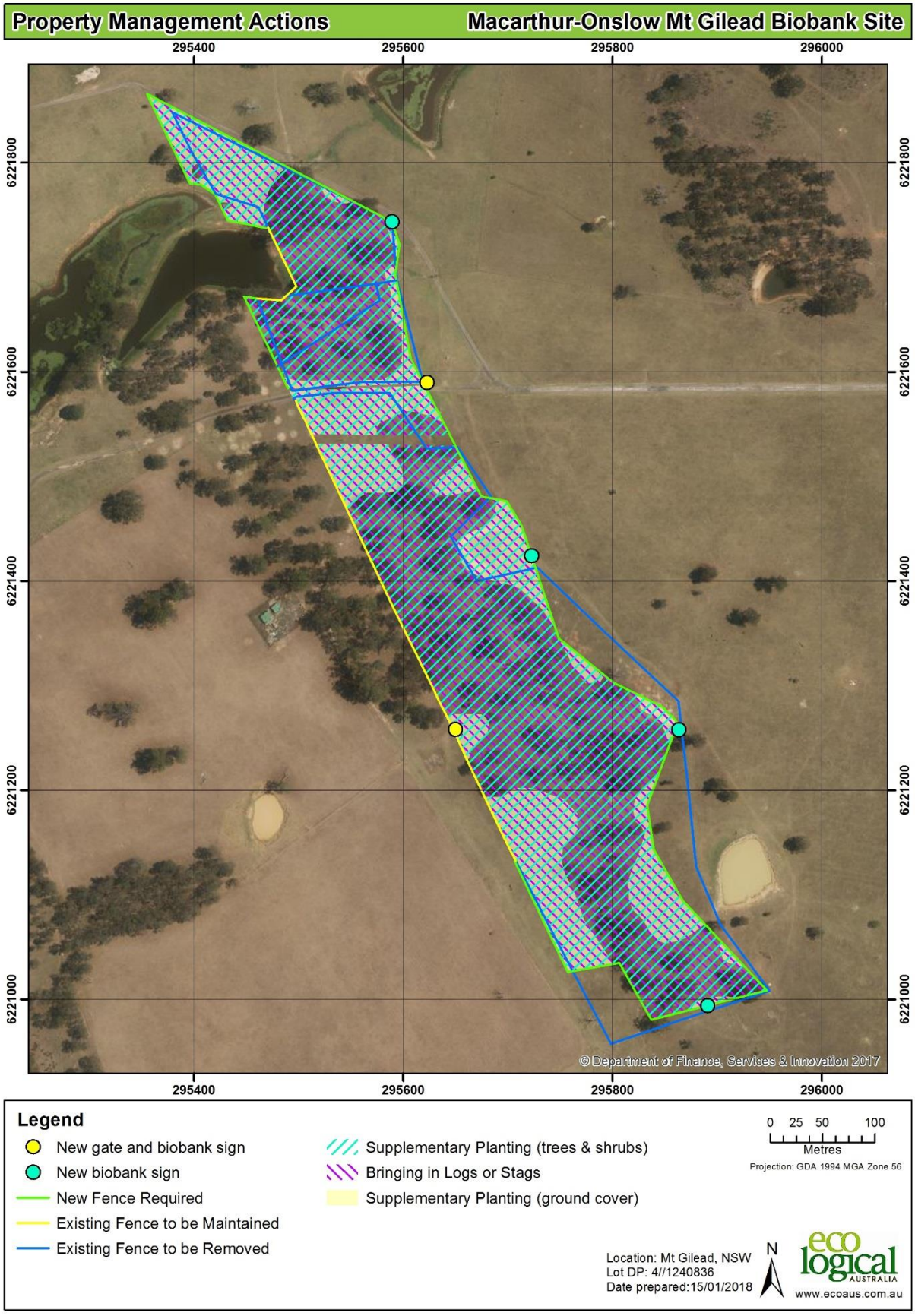
- experience with bushland conservation and management (previous environmental records)
- sustainability and efficiency
- cost
- availability of equipment

Appendix D Biobank Agreement and Management Plan for Macarthur-Onslow Biobank site – BA 208

Summary of management actions at Biobank site:-

- erection of permanent fencing and signage
- retaining all native vegetation, dead trees and rocks
- revegetation of degraded areas via bush regeneration techniques (weeding) and supplementary planting (where and if required)
- salvage and re-use of fauna habitat from the development areas (logs and hollows)
- feral animal (fox, rabbit) control
- maintenance of natural flow regimes in creek lines
- implementation of ecological burning regime
- monitoring of vegetation condition

Map over page shows location of proposed fencing, signage and habitat restoration areas within the Macarthur-Onslow Biobank site.


Property Management Actions
Macarthur-Onslow Mt Gilead Biobank Site
295400
295600
295800
296000
6221800
6221600
6221400
6221200
6221000
© Department of Finance, Services & Innovation 2017
Legend
New gate and biobank sign
New biobank sign
New Fence Required
Existing Fence to be Maintained
Existing Fence to be Removed
Supplementary Planting (trees & shrubs)
Bringing in Logs or Stags
Supplementary Planting (ground cover)
0 25 50 100
Metres
Projection: GDA 1994 MGA Zone 56
Location: Mt Gilead, NSW
Lot DP: 4//1240836
Date prepared:15/01/2018
N
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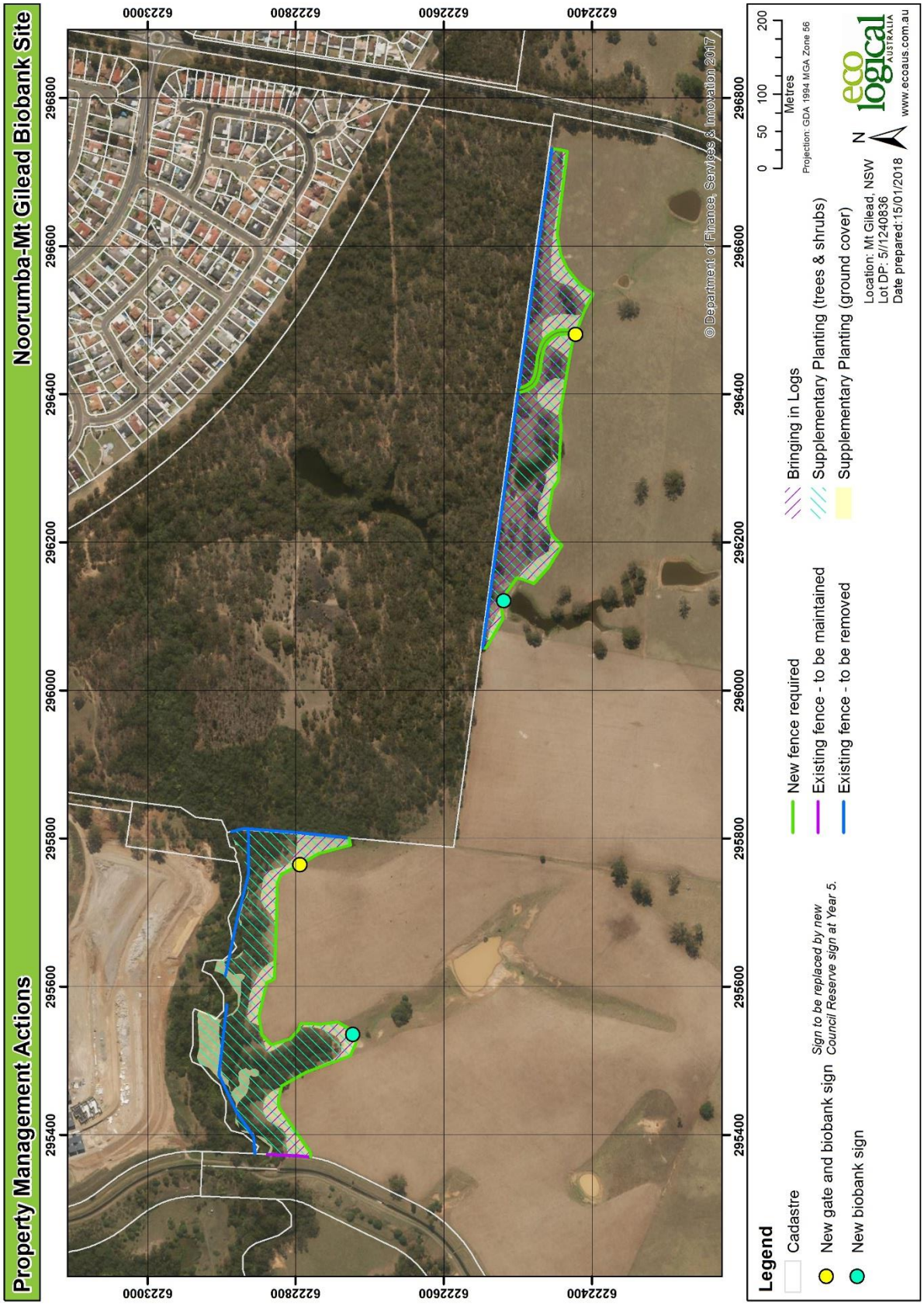
Appendix E Biobank Agreement and Management Plan for Noorumba - Mt Gilead Biobank site – BA 209

Summary of management actions at Biobank site:-

- erection of permanent fencing and signage
- retaining all native vegetation, dead trees and rocks
- revegetation of degraded areas via bush regeneration techniques (weeding) and supplementary planting (where and if required)
- salvage and re-use of fauna habitat from the development areas (logs and hollows)
- feral animal (fox, rabbit) control
- maintenance of natural flow regimes in creek lines
- implementation of ecological burning regime
- monitoring of vegetation condition

Map over page shows location of proposed fencing, signage and habitat restoration areas within the Noorumba-Mt Gilead Biobank site.


Property Management Actions
Noorumba-Mt Gilead Biobank Site
622400
622600
622800
623000
295400
295600
295800
296000
296200
296400
296600
296800
© Department of Finance, Services & Innovation 2017
Legend
Cadastre
New gate and biobank sign
Sign to be replaced by new Council Reserve sign at Year 5.
New biobank sign
New fence required
Existing fence - to be maintained
Existing fence - to be removed
Bringing in Logs
Supplementary Planting (trees & shrubs)
Supplementary Planting (ground cover)
0 50 100 200
Metres
Projection: GDA 1994 MGA Zone 56
Location: Mt Gilead, NSW
Lot DP: 5//1240836
Date prepared:15/01/2018
N
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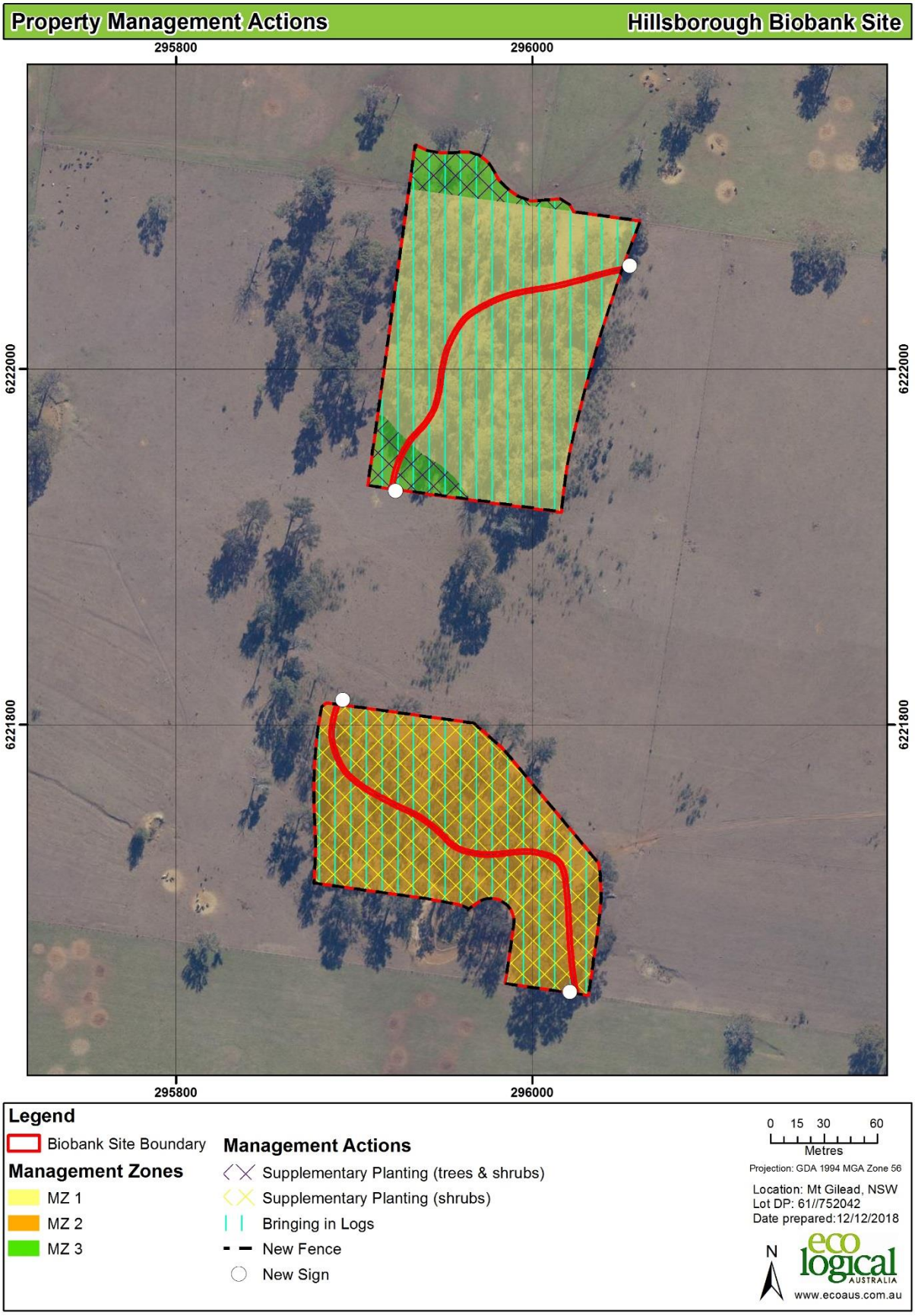
Appendix F Biobank Agreement and Management Plan for Hillsborough Biobank site

Summary of management actions at Biobank site:-

- erection of permanent fencing and signage
- retaining all native vegetation, dead trees and rocks
- revegetation of degraded areas via bush regeneration techniques (weeding) and supplementary planting (where and if required)
- salvage and re-use of fauna habitat from the development areas (logs and hollows)
- feral animal (fox, rabbit) control
- maintenance of natural flow regimes in creek lines
- implementation of ecological burning regime
- monitoring of vegetation condition

Map over page shows location of proposed fencing, signage and habitat restoration areas within the Hillsborough Biobank site.


Property Management Actions
Hillsborough Biobank Site
295800
296000
6222000
6221800
Legend
Biobank Site Boundary
Management Zones
MZ 1
MZ 2
MZ 3
Management Actions
Supplementary Planting (trees & shrubs)
Supplementary Planting (shrubs)
Bringing in Logs
New Fence
New Sign
0 15 30 60
Metres
Projection: GDA 1994 MGA Zone 56
Location: Mt Gilead, NSW
Lot DP: 61//752042
Date prepared:12/12/2018
N
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Appendix G Biobank (Offset areas) signage and fencing

Example Council Reserve Signage

Example Post and cable fencing around offset areas

Example Koala road signage mitigation adjacent to offset areas

Example management of vegetation on roadside verges to increase visibility of fauna on roadsides

Appendix H Fauna Pre-clearing Protocol

This Protocol provides methodologies regarding fauna pre-clearance and potential relocation for implementation during the removal of Habitat Trees.

Qualifications of ecologist

A suitably qualified fauna ecologist with experience relating to micro bats and arboreal fauna will be required to be on-site to supervise the felling of any trees on-site. The ecologist must have a current Lyssavirus vaccination and hold a scientific licence from NSW Office of Environment and Heritage (OEH) to conduct flora and fauna surveys. This licence requires that all survey and incidental records are submitted to the OEH for inclusion in their databases (primarily the Atlas of NSW Wildlife).

Fauna ecologist is to take all appropriate hygiene pre-cautions before handling any fauna to prevent spreading diseases such as Chytrid disease or Beak and Feather disease.

Pre-clearance survey

Prior to clearing, all Hollow-bearing trees (HBTs) and trees with nests within the clearing footprint as shown on Figure 2 are to be clearly marked.

Soft felling technique

It is recommended that a 'slow' or 'soft-drop' technique is used during the felling of all HBTs. This involves removal of non-habitat vegetation (including undergrowth, groundcover etc) only, and/or nudging and shaking each habitat tree prior to its removal, under the supervision of the fauna ecologist. Habitat trees should then be gently lowered to the ground.

The fauna qualified ecologist must be present on site while the vegetation is removed to provide advice to machine operators and rescue and relocate native fauna if encountered and/or injured during tree felling and vegetation clearing.

The fauna ecologist will need to work closely with the operators during the felling operations to make sure works are stopped if fauna species are spotted and require rescue. Prior to felling operations, the fauna ecologist shall prepare a site specific Safe Work Method Statement (SWMS) outlining the risks and hazards of felling operations.

Once a tree has been felled, the fauna ecologist will undertake further searches for any animals that have not fled or are unable to flee. Where fauna has not fled or does not seem likely to flee from a hollow the fauna ecologist will advise on the potential to block hollow exits and move the section of the HBT with the fauna to the Biobank site where the exits can be unblocked and the animal left to exit and move on its own accords. Where this method of relocation is not considered acceptable by the fauna ecologist, the fauna ecologist will attempt to capture or encourage any un-injured fauna that is capable to move or relocate from the subject site. If it proves difficult to remove an animal from a hollow, these trees/logs must be left on the ground overnight to give these animals a chance to relocate before the tree is mulched or moved. Typically, most fauna in this situation will have multiple roosts throughout the region and will vacate the hollow and move away from the subject site.

Any small and nocturnal fauna that are unable to relocate themselves on their own accord, such as micro-bats, lactating females, will be captured, placed into an individual calico bag and then stored in cool location for released after dusk. Any captured fauna will be released into suitable habitat offsite.

If an animal is injured during these works, the fauna ecologist will ensure that they receive the appropriate levels of care. Depending on the level of injury and status of the injured fauna, WIRES and/or the nearest veterinary clinic are to be contacted to retrieve to take the animal into care or to determine whether the veterinary staff are capable of caring for injured native animals.

Retention of timber

Representative re-usable native timber, at the quantities defined in the Biobanking Agreements, will be retained on-site for use as habitat logs for ground dwelling reptiles and mammals within the Biobank sites.

Fauna pre-clearing records

Records shall be kept by the fauna ecologist detailing the results of any fauna encountered during clearing. The fauna ecologist will record species and numbers of fauna, including details on injuries, treatment, and relocation.

Appendix I Hygiene procedures for vehicles and machinery to control the introduction and spread of Phytophthora cinnamomi

Guidelines taken from "Arrive Clean, Leave Clean. Commonwealth of Australia 2015

Undertake visual inspections to confirm that vehicles, plant and equipment and footwear, are free of clods of soil, slurry (water and soil mixture) and plant material.

Use facilities specifically designed for cleaning vehicles, plant and equipment and footwear.

Vehicles, machinery and large equipment

Use a wash-down facility for vehicles and machinery pay particular attention to cleaning mud flaps and tyres and undercarriage.

Dispose of wash-down water so that it drains back into a low area away from waterways. If this is not possible, empty it into a waste container for responsible disposal offsite.

Do not allow mud and wash-down effluent to drain into bushland and surface waters, such as rivers, creeks, reservoirs and dams.

Don't drive through wash-down water.

Footwear, small equipment and hand tools

Set up a wash-down area for participants to wash and dry their face and hands and clean their footwear before entering and exiting the site.

To clean footwear, first use a hard brush or stick to remove as much mud, soil and organic matter as possible before disinfecting with a solution of 70% ethanol or methylated spirits in 30% water—applied through a spray bottle or a footbath.

Collect all removed mud, soil and organic matter in a bag or bucket, and keep it out of clean bushland.

Appendix J Erosion and Sedimentation Control Plan

GENERAL INSTRUCTIONS

1) The Construction Manager shall ensure that all soil and water management works are located as documented or as otherwise directed by the Environmental Manager.
   All work shall be generally carried out in accordance with
   a. Campbelltown City Council Requirements
   b. EPA requirements
   c. NSW department of housing manual "managing urban stormwater, soils and construction", 4th edition, March 2004.

2) The Construction Manager shall maintain the erosion control devices to the satisfaction of the Environmental Manager and Campbelltown City Council.

3) The Construction Manager is to ensure all erosion & sediment control devices are maintained in good working order and operate effectively. Repairs and or maintenance shall be undertaken as required, particularly following storm events.

LAND DISTURBANCE

4) Where practical, the soil erosion hazard on the site will be kept as low as possible. To this end, works should be undertaken in the following sequence:
   a. Install a sediment fence along the boundaries as shown on plan. Refer detail.
   b. Construct stabilised construction entrance to location as determined by superintendent/engineer. Refer detail.
   c. Install sediment basins as shown and install sediment traps as shown.
   d. Undertake site development works in accordance with the engineering plans. Where possible, phase development so that land disturbance is confined to areas of workable size.

EROSION CONTROL

5) During windy weather, large, unprotected areas will be kept moist (not wet) by sprinkling with water to keep dust under control.

6) Final site landscaping will be undertaken as soon as possible and within 20 working days from completion of construction activities.

SEDIMENT CONTROL

7) Stockpiles will not be located within 2 metres of hazard areas, including likely areas of concentrated or high velocity flows such as waterways. Where they are between 2 and 5 metres from such areas, special sediment control measures should be taken to minimise possible pollution to downslope waters, e.g. through installation of sediment fencing.

8) Any sand used in the concrete curing process (spread over the surface) will be removed as soon as possible and within 10 working days from placement.

9) Water will be prevented from entering the permanent drainage system unless it is relatively sediment free, i.e. the catchment area has been permanently landscaped and/or any likely sediment has been filtered through an approved structure.

10) Temporary soil and water management structures will be removed only after the lands they are protecting are stabilised.

11) Acceptable receptors will be provided for concrete and mortar slurries, paints, acid washings, light-weight waste materials and litter.

12) Any existing trees which form part of the final landscaping plan will be protected from construction activities by:
    a. Protecting them with barrier fencing or similar materials installed outside the drip line
    b. Ensuring that nothing is nailed to them
    c. Prohibiting paving, grading, sediment wash or placing of stockpiles within the drip line except under the following conditions.
        (i) encroachment only occurs on one side and no closer to the trunk than either 1.5 metres or half the distance between the outer edge of the drip line and the trunk, whichever is the greater
        (ii) a drainage system that allows air and water to circulate through the root zone (e.g. a gravel bed) is placed under all fill layers of more than 300 millimetres depth
        (iii) care is taken not to cut roots unnecessarily nor to compact the soil around them.

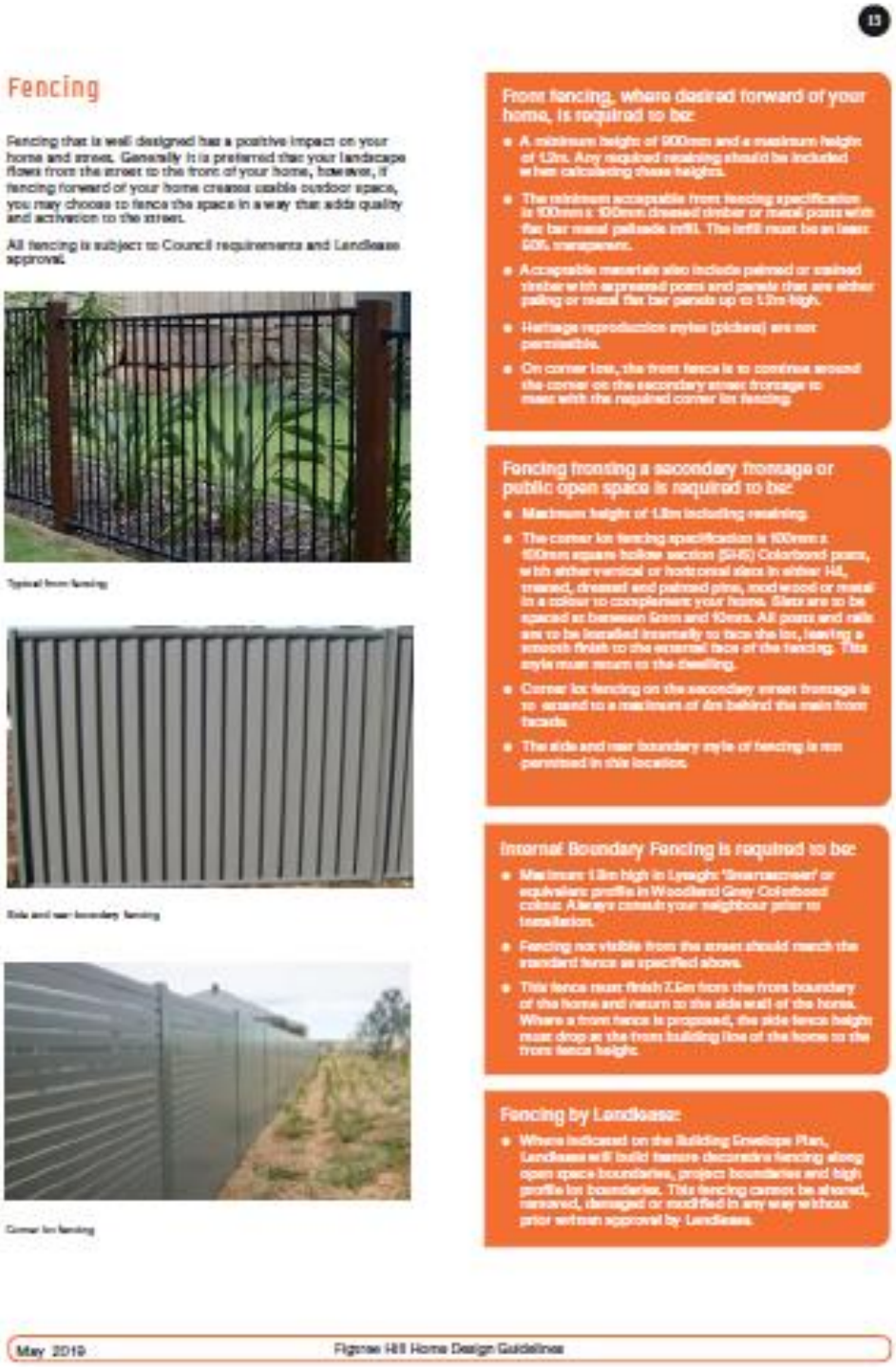
Appendix K Dust Management Control Plan

The following strategies are suggested to minimise dust from this project during the bulk earthworks stage:

- Optimise the haulage route on-site to minimise travel
- Minimise speed along haul road to 15km/hr on unsurfaced roads and 25km/hr on surfaced roads
- Use water cart regularly along hauls roads
- Keep a daily site log observing wind, rain, dust leaving the site, dust on flora and any actions where relevant
- Minimise the use of stockpiles, alternatively cover, seed or fence
- Ensure all trucks moving on/off site are covered
- As soon as practical, landscape/plant any disturbed areas that are completed

Appendix L Figtree Hill Home Design Guidelines (Lendlease May 2019)

Extract from Figtree Hill Home Design guidelines regarding fencing of home lots to be dog proof



15

Fencing

Fencing that is well designed has a positive impact on your home and street. Generally it is preferred that your landscape flows from the street to the front of your home, however, if fencing forward of your home creates usable outdoor space, you may choose to fence the space in a way that adds quality and activation to the street.

All fencing is subject to Council requirements and Lendlease approval.

Typical front fencing

Side and rear boundary fencing

Corner lot fencing

Front fencing, where desired forward of your home, is required to be:

- A minimum height of 900mm and a maximum height of 1.2m. Any required retaining should be included when calculating these heights.
- The minimum acceptable front fencing specification is 100mm x 100mm dressed timber or metal posts with flat bar metal palisade infill. The infill must be an open 50% transparent.
- Acceptable materials also include painted or stained timber with pressed posts and panels that are either paling or metal flat bar panels up to 1.8m high.
- Heritage reproduction styles (pickets) are not permissible.
- On corner lots, the front fence is to continue around the corner on the secondary street frontage to meet with the required corner lot fencing.

Fencing fronting a secondary frontage or public open space is required to be:

- Maximum height of 1.8m including retaining.
- The corner lot fencing specification is 100mm x 100mm square hollow section (SHS) Colorbond posts, with either vertical or horizontal slats in either H4, treated, dressed and painted pine, hardwood or metal in a colour to complement your home. Slats are to be spaced at between 5mm and 10mm. All posts and rails are to be installed internally to face the lot, leaving a smooth finish to the external face of the fencing. This style must return to the dwelling.
- Corner lot fencing on the secondary street frontage is to extend to a maximum of 4m behind the main front facade.
- The side and rear boundary style of fencing is not permitted in this location.

Internal Boundary Fencing is required to be:

- Maximum 1.8m high in Lysaght 'Smartascreen' or equivalent profile in Woodland Grey Colorbond colour. Always consult your neighbour prior to installation.
- Fencing not visible from the street should match the standard fence as specified above.
- This fence must finish 2.5m from the front boundary of the home and return to the side wall of the home. Where a front fence is proposed, the side fence height must drop at the front building line of the home to the front fence height.

Fencing by Lendlease:

- Where indicated on the Building Envelope Plan, Lendlease will build feature decorative fencing along open space boundaries, project boundaries and high profile lot boundaries. This fencing cannot be altered, removed, damaged or modified in any way without prior written approval by Lendlease.

May 2019 Figtree Hill Home Design Guidelines

Appendix M Environmental Inspection Checklist and Corrective Action Required

Environmental Inspection Checklist- Mount Gilead Residential Development EPBC	Compliance (Yes or No)	Corrective Actions / Maintenance Required (and due date)	Corrective Actions / Maintenance Completed (Signature/date of responsible manager
Site/ work zone inspected:			
Time & Date: **Weather:**			
Endangered Ecological Communities			
Loss or damage to vegetation in offset areas as a resut of construction activity	☐		
Protective fencing/ barrier erected around all conservation areas	☐		
No damage to protective fencing/ barrier erected around all conservation areas	☐		
Weed species stockpiled separately from other waste	☐		
Vehicles/ plant entering and leaving site free of soil and weeds	☐		
Erosion and/or sedimentation impacting offset areas	☐		
Deposition of dust impacting offset areas	☐		
Spread of litter and/or waste into offset areas	☐		
Fauna			
Loss of fauna habitat beyond approval	☐		
Habitat trees (with hollows and/or nests) to be retained clearly marked onsite	☐		
Trees or parts thereof to be re-used within conservation areas salvaged and placed within conservation areas	☐		
Tree clearing protocol is implemented for any tree clearing	☐		
Injury of death of threatened fauna during clearing	☐		
Road mortality of any threatened fauna during construction	☐		
Dam dewatering protocol is implemented for any dam dewatering	☐		

Environmental Inspection Checklist- Mount Gilead Residential Development EPBC	Compliance (Yes or No)	Corrective Actions / Maintenance Required (and due date)	Corrective Actions / Maintenance Completed (Signature/date of responsible manager
Site/ work zone inspected:			
Evidence of fauna disturbance from excessive construction noise	☐		
Waterways			
Hazardous materials/ fuels stored securely in designated storage area	☐		
Spill kits are available on-site in designated areas (including near fuel /haz material storage and refuelling zones) and well stocked	☐		
No evidence of any spills or turbidity plumes in receiving water	☐		
Refuelling/ servicing of plant/ vehicles to occur off-site or in a designated area away from water bodies/ drainage lines	☐		
Site and waterways are free of rubbish and wastes (except within designated waste receptacles)	☐		
Waste containers are not filled beyond capacity	☐		
Waste containers are located away from water bodies / drainage lines	☐		
Concrete wash-out area lined with suitable material / bunded and not filled beyond capacity	☐		
Erosion and sediment controls are in place as per the Erosion and Sediment Control Plan	☐		
No evidence of run off/ sedimentation downslope of any sediment controls or offsite	☐		
Other	☐		
	☐		
Inspected by: **Signature:**	**Date:**		

Appendix N Evidence of securing offsets by retirement of biodiversity credits

Copy of advice provided to DoTEE on 31 October 2019.

From: Anderson, Mark
Sent: Thursday, 31 October 2019 1:31 PM
To: Tony Dowd
Cc: Humphries, Robert
Subject: FW: Confirmation of the securing of the compensation measures for EPBC 2015/7599 Conditions 2, 3 & 5

Tony,

This email serves as notice and evidence the necessary offsets for EPBC 2015/7599 Conditions 2, 3 & 5, required pursuant to Condition 6 of EPBC 2015/7599.

Please find attached the credit retirement report (summary below) confirming the securing of the necessary compensation measures for EPBC 2015/7599 Conditions 2, 3 & 5

It is noted that the satisfaction of condition 4 is only required prior to the commencement of actions within Stage 2 of the action and will be subject to a separate compensation process.

Regards,

Mark Anderson

Senior Development Manager,

Credit Retirement Report: 2019-TR-479 (EPBC SUMMARY)

Credit owner(s): Lend Lease Communities (Mt Gilead) Pty Ltd (Lend Lease)

Ecosystem credits

Agreement ID & NAME		Location	Credit ID	Vegetation Code	Credit Type	OFFSET AREA (Ha)	CREDITS GENERATED	CREDITS PER HA	CREDITS RETIRED	AREA SECURED (Ha)	CONSERVATION MEASURE REQUIRED (Ha)	CONDITION SATISFIED
209	Noorumba - Mt Gilead	Onsite	2,211	HN528	CPW	6.9	74	10.72	28	2.61	0.55	EPBC 2015/7599 - Condition 2
209	Noorumba - Mt Gilead	Onsite	2,213									
208	Macarthur- Onslow	Onsite	2,208	HN556	SSTF	11.99	120	10.01	104	10.39	8.00	EPBC 2015/7599 - Condition 2
208	Macarthur- Onslow	Onsite	2,209									
208	Macarthur- Onslow	Onsite	2,207									
117	Fernhill Central West	Offsite	1,492	HN556	SSTF	17.64	150	8.50	34	4.00	4.00	EPBC 2015/7599 - Condition 3

Species credits

Agreement ID & NAME		Location	Credit ID	Scientific name	Common name	CREDIT RETIRED	CONDITION SATISFIED
215	Appin West	Offsite	459	Phascolarctos cinereus	Koala	150	EPBC 2015/7599 - Condition 5

Appendix O Threatened Wildlife Injury Procedure

Should any threatened fauna (e.g. Koala) be observed near the works area, then the following procedure should be followed:

1. Contact the site supervisor.
2. The site supervisor reviews if the animal is at risk of being harmed.
    - If yes, all works in the vicinity of the animal (works in other areas may continue) should be halted and the project ecologist contacted to conduct a "catch and release" in order to safely remove the animal from risk.
    - If the animal is not at risk of being harmed and can move on of its own accord, then works should be halted in the vicinity of the animal until it moves on (works may continue in other areas of the site). If the animal is not capable of moving on of its own accord, then the following steps should ensue.

If an animal is found within the study site that is injured the following procedure should be implemented:

1. Contact the site supervisor.
2. The site supervisor determines the most appropriate person to engage:
    - Project ecologist for any non-aquatic fauna
    - Aquatic ecologist for any aquatic fauna
    - The Wildlife Information and Rescue Services (WIRES), who will respond to all sick, injured or orphaned native wildlife queries.
3. If the injuries are too great for the animal to be relocated, then the animal should be taken to a WIRES Wildlife Carer or Veterinary Clinic.

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