



Mount Gilead Stage 2 Residential Development  
Construction Environmental Management Plan  
EPBC 2019/8587

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**Lendlease Communities (Figtree Hill) Pty Limited**

**ACN 605 278 311**

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**DOCUMENT TRACKING**

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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 Stage 2 Residential Development Construction Environmental Management Plan EPBC 2019/8587*) is complete, current and correct.
2. I am duly authorised to sign this declaration on behalf of the applicant.
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



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Full name

**Robert Keir Humphries, Eco Logical Australia Pty Ltd**

Signed



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Full name

**Mark Iain Anderson, Lendlease Communities (Figtree Hill) Pty Limited**

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## 1. Introduction and purpose of the plan

The proposed action EPBC 2018/8359 is located within the Campbelltown City Council (CCC) Local Government Area (LGA) approximately 5 km south of Campbelltown city centre comprising the following lots (Lots 1 and 2 DP1218887, Part Lot 5 DP 1240836, Lot 2 DP603674, Lot 1 DP603675 and Lot 2 DP249393).

The Mt Gilead Stage 2 action area is 644.27 ha of which 259.02 ha (the action area) is proposed for urban development and associated infrastructure (roads, detention basins, open space), 149.28 ha of retained rural land, open space and existing power, gas and water easements and 235.96 ha of dedicated conservation lands (which includes 33.54 ha of environmental buffers). The Mt Gilead Stage 2 development will deliver approximately 3,300 new houses with a range of lot sizes consistent with the natural features of the site to accommodate 10,000 new residents. Development is likely to commence in 2025 and take up to 10 years to complete in eight indicative stages, depending on demand for housing.

Measures to avoid and/or reduce impacts to biodiversity values have been included at all stages of the project, including identification and avoidance of high or higher conservation value areas during the rezoning process (intact remnant vegetation and habitat for threatened plants and animals). Feedback during consultation with stakeholders and relevant authorities was also used to update the proposed development footprint and reduce impacts to threatened ecological values.

As a result of the avoidance and impact minimisation measures incorporated into the planning of the action, the final areas of impact to MNES are as follows:-

- 7.59 ha of direct impact to EPBC Act listed CPW within the action, no partial impacts in asset protection zones (APZs) and up to 0.98 ha of indirect impacts in 30 m buffer areas around proposed conservation areas (Stewardship Agreement sites) within the action area.
- 26.29 ha of direct impacts to EPBC Act listed SSTF within the action area, partial impacts to 1.63 ha in asset protection zones (APZs) and up to a further 13.33 ha of indirect impacts in 30 m EEC buffer areas around proposed conservation areas.
- Impacts to two *Pomaderris brunnea* across the action area (down from 23).
- up to 47.87 ha of impacts to Koala habitat comprising 30.71 ha of permanent impacts (20.63 ha of low condition, non-browse species scattered paddock trees), up to 11.50 ha of partial impacts in APZ's and open space areas (where some Koala feed trees can be retained), 3.85 ha of temporary impacts (detention basins and creek crossings that will be revegetated to Koala habitat after construction and 1.81 ha of excluded access to existing habitat (as a result of Koala exclusion fencing to prevent Koalas entering urban areas and the associated risks of vehicles and domestic dog attack)
- Up to 44.52 ha of impacts to Spot-tail Quoll habitat (mainly loss of 41.91 ha of thinned/pasture improved woodland, scattered paddock trees and derived grassland/shrubland across action area), 1.71 ha of partial impacts (managed bushfire APZs) and exclusion from 1.81 ha of habitat as a result of koala exclusion fencing.
- Up to 44.35 ha of impacts to potential Grey-headed Flying-fox and Large-eared Pied-bat habitat (mainly loss of 41.76 ha of thinned/pasture improved woodland, scattered paddock trees and

derived grassland/shrubland across action area) and 1.71 ha of partial impacts (managed bushfire APZs where some trees will be retained).

- Up to 44.13 ha of impacts to potential Swift Parrot foraging habitat (mainly loss of 37.76 ha thinned/pasture improved woodland, scattered paddock trees across action area) and 1.63 ha of partial impacts (managed bushfire APZs where some trees will be retained and the establishment of a walking track that will not impact any trees).

The impacts of the proposal and the measures to avoid and mitigate these impacts are described in the Preliminary Documentation Report (PD Report) (ELA 2023), which includes a commitment to prepare a Construction Environmental Management Plan (CEMP).

Eco Logical Australia (ELA) has been commissioned by Lendlease Communities (Figtree Hill) Pty Limited (Lendlease), to prepare the CEMP referred to in the PD report to ensure that potential direct and indirect impacts on EPBC Act Protected Matters in the on-site offset areas as a result of 'construction' (as defined in the PD report) for the Mount Gilead Stage 2 residential development at Gilead, NSW are avoided and mitigated. This CEMP is Appendix N of the PD report (ELA 2022).

## 1.1 Project description and planning background

The Mount Gilead Stage 2 'Action Area' (Figure 1) consists of:

- The Development Area
- On-site Conservation Areas (four proposed Biodiversity Stewardship Sites)
- Retained Land (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, *Pomaderris brunnea* and Koala habitat) in the on-site offset areas shown in Figure 2, Figure 3, Figure 4 and Figure 5.

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 Biodiversity Stewardship Agreements as outlined in Section 1.2.2.

This CEMP has been prepared to meet the request for further information by the PD requirements (Appendix C of the PD Report) and to be consistent with the Department's Environmental Management Plan (EMP) Guidelines (DoE 2014).

Table 1 provides a summary of where and how the EMP Guidelines have been addressed in this CEMP.

In addition, Sections 8.2 and 8.3 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.



## 1.2 Site description

The action area (Figure 1) covers a total area of approximately 645 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 urban development including the development of:

- Residential and non-residential land uses
- 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 10 years commencing in 2025.

A full description of the proposed action is provided in the Preliminary Documentation report (ELA 2023)

#### 1.2.1.1 Construction timeframe and duration

The construction phase is expected to commence in 2025 and the project completion date is expected to be in late 2035, however this is dependant on many factors.

#### 1.2.1.2 Construction work hours

All work on site is expected to occur between the following hours (subject to Council approval):

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 will be registered as Biodiversity Stewardship Agreement sites (BSAs) under the NSW *Biodiversity Conservation Act 2016* (Figure 2).

These stewardship sites offset the impacts to Protected Matters including the critically endangered ecological communities Cumberland Plain Woodland (CPW) and Shale Sandstone Transition Forest (SSTF) (Figure 2), and threatened species habitat for Koala (Figure 3), Grey-headed Flying Fox (Figure 4), Swift Parrot (Figure 5) and *Pomaderris brunnea* individuals and habitat (Figure 6).

These on-site offset areas are:

- The 189.09 ha Gilead Stewardship Agreement site.
- The 19.99 ha Mt Gilead-Homestead Stewardship Agreement site

The ongoing management of biodiversity values within the on-site offset areas is addressed by the conservation management requirements of the proposed Biodiversity Stewardship Agreements.

Each of these stewardship 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 stewardship 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.

This CEMP does not repeat the management actions required in the stewardship 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.

Preliminary management of the stewardship sites is proposed to commence within 30 days of approval being granted with fencing to exclude stock and weed control to allow natural regeneration to commence, and where necessary plant supplementary Koala feed trees. Active management of the stewardship sites will commence in stages, following the retirement of biodiversity credits. Annual reports that document the implementation of management actions and the health of the stewardship sites will be provided annually.

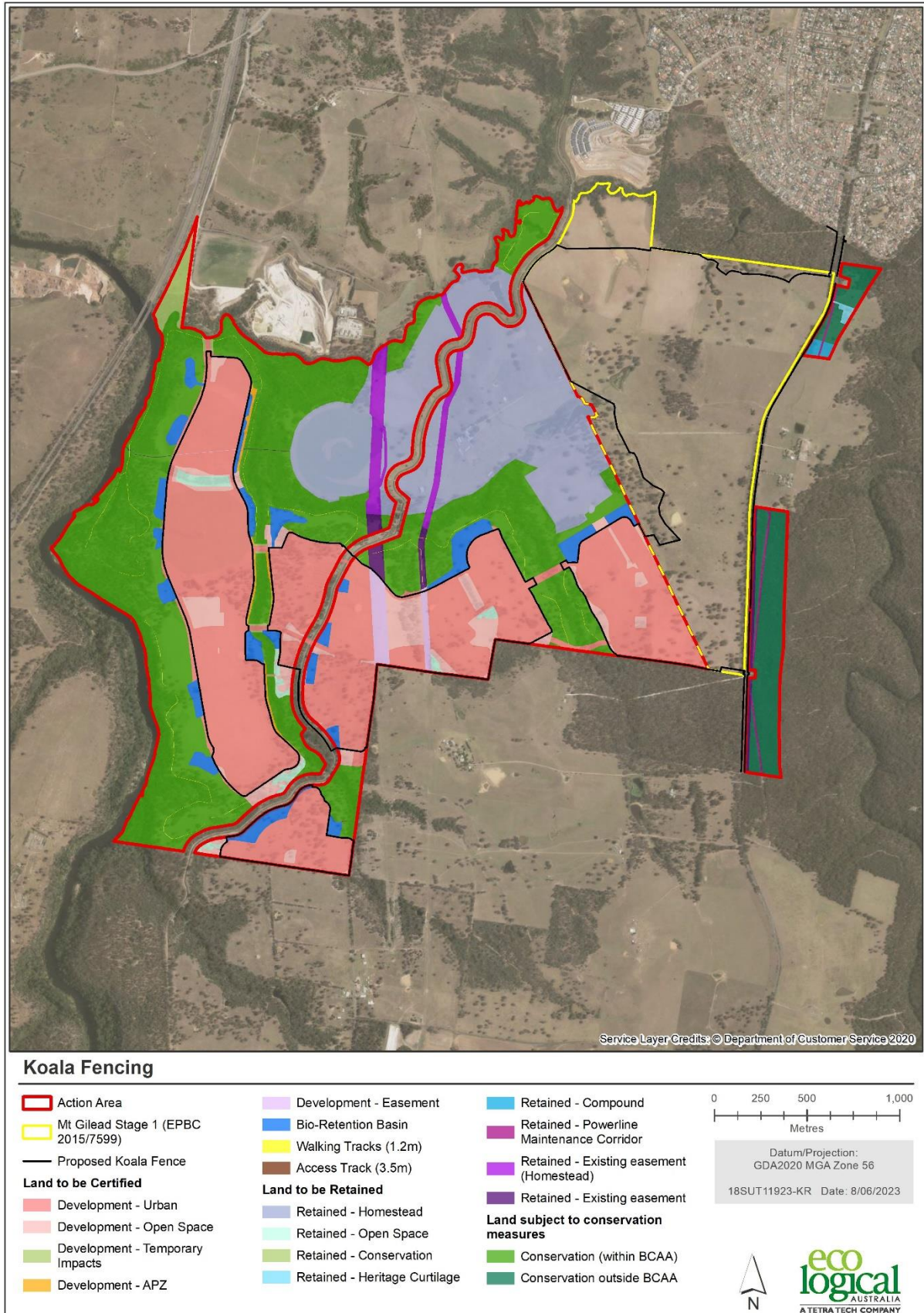


Figure 1: Development Layout showing open space and biodiversity offset areas



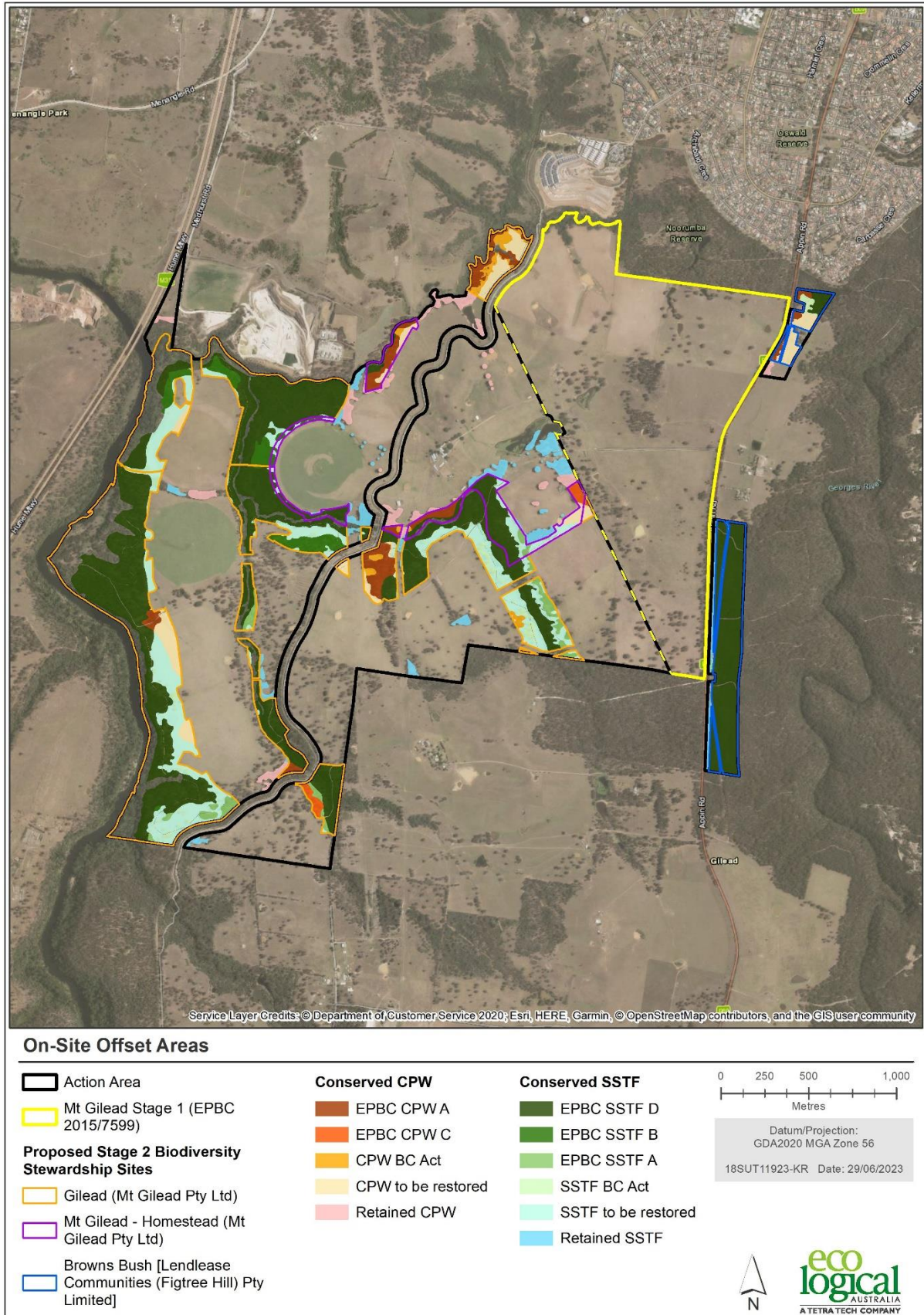


Figure 2: Environmental Control Map showing the Protected Matters to be protected



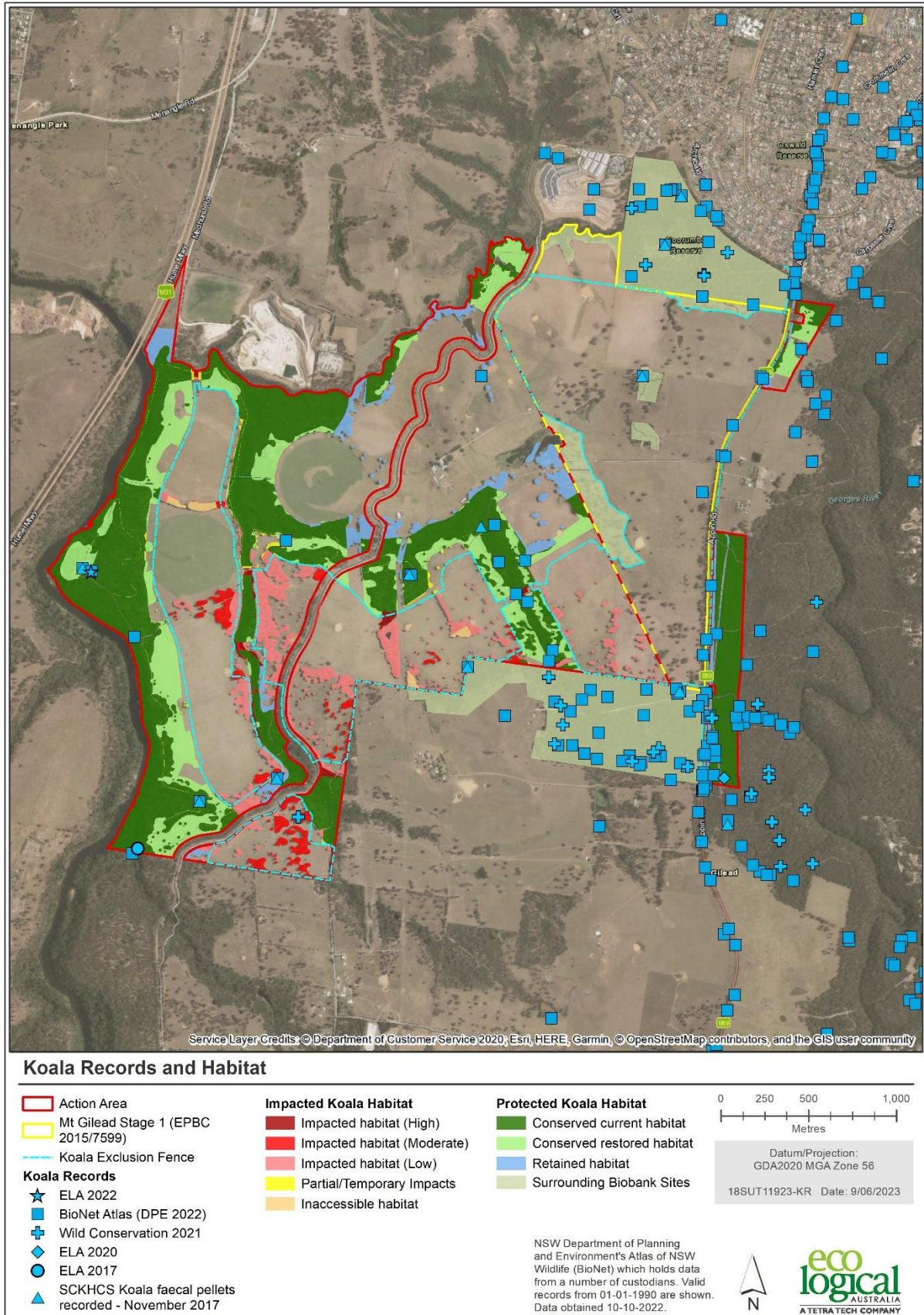


Figure 3: Impacted and protected Koala habitat



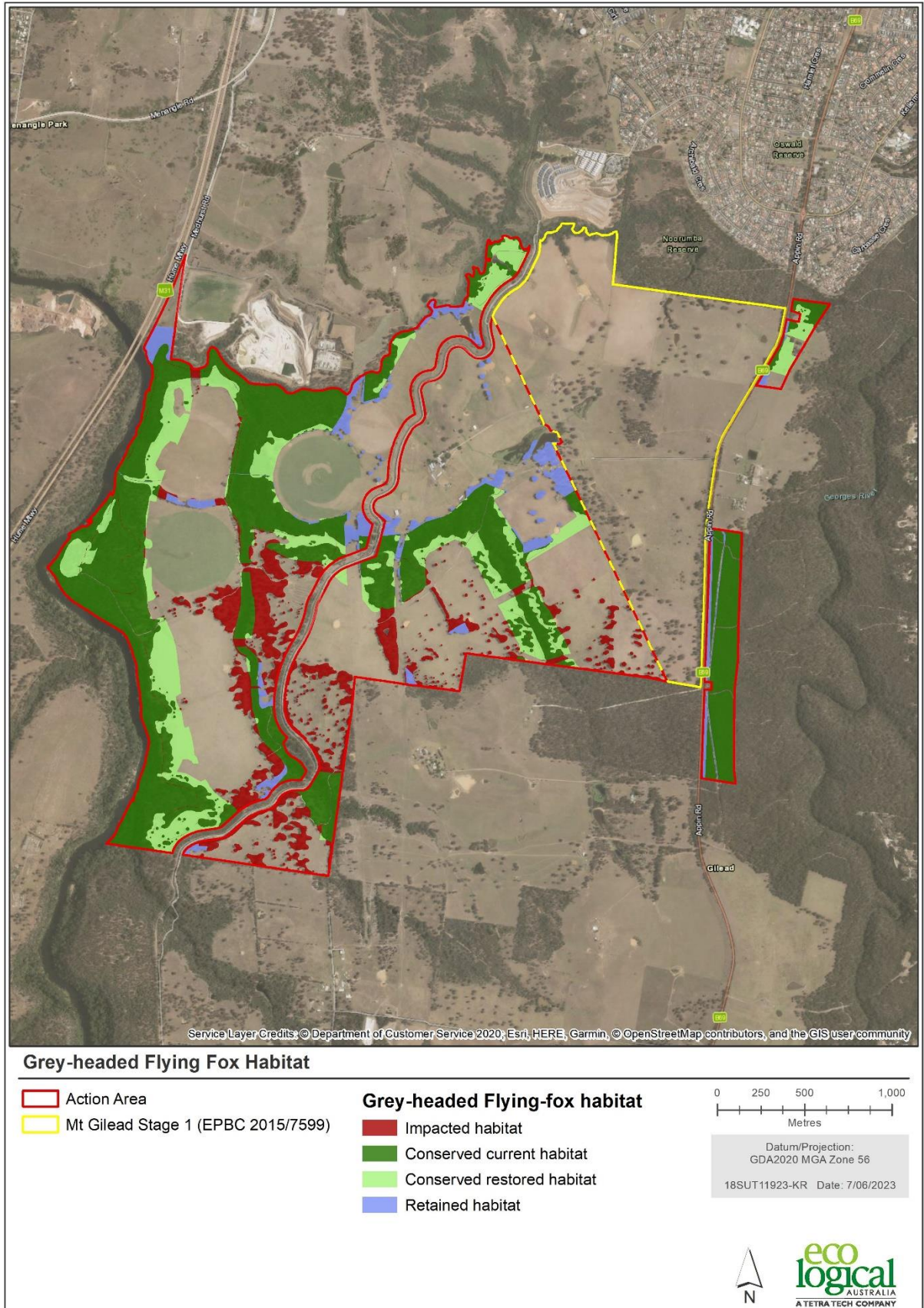


Figure 4: Impacted and protected Grey-headed Flying-fox



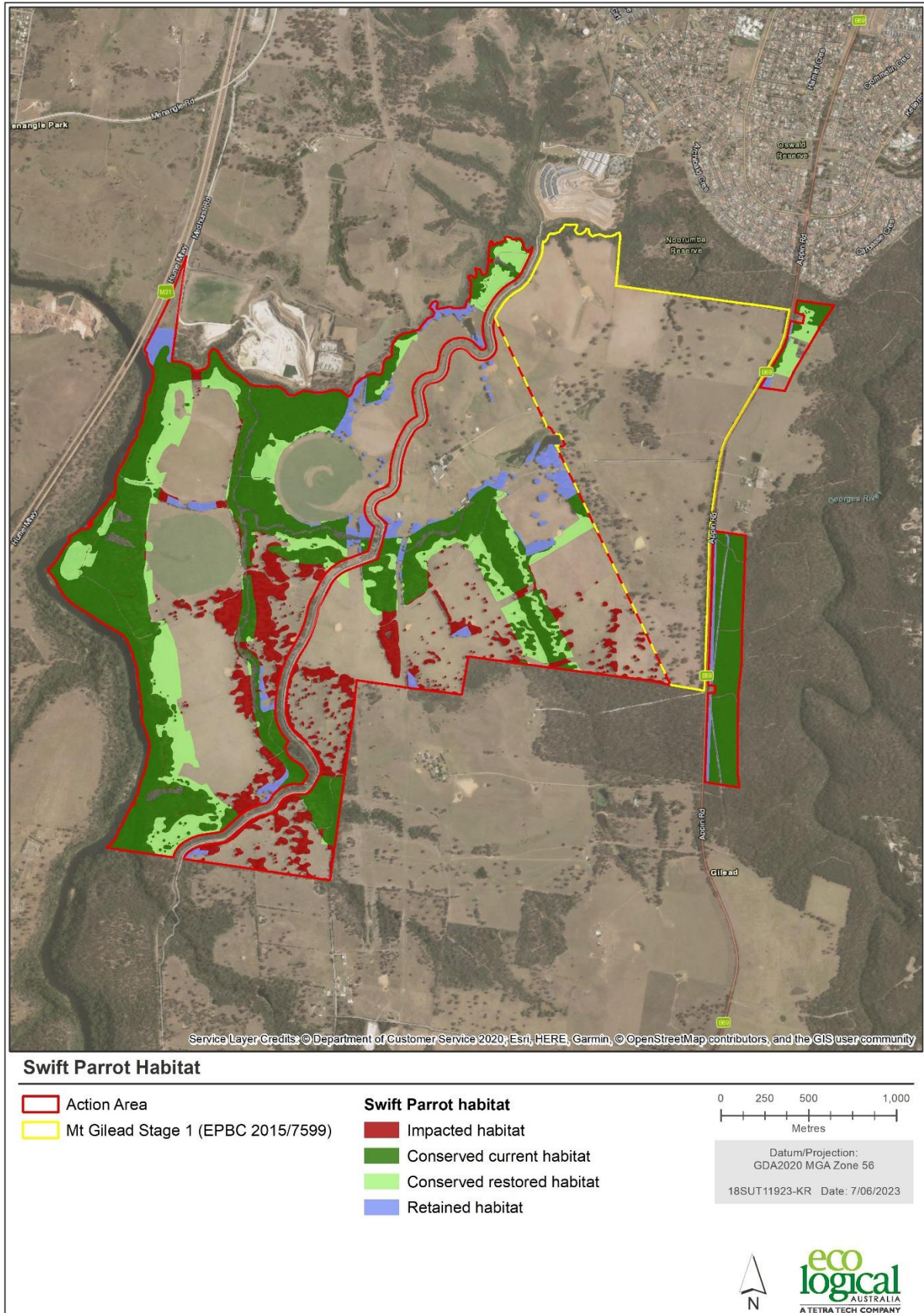


Figure 5: Impacted and protected Swift Parrot habitat



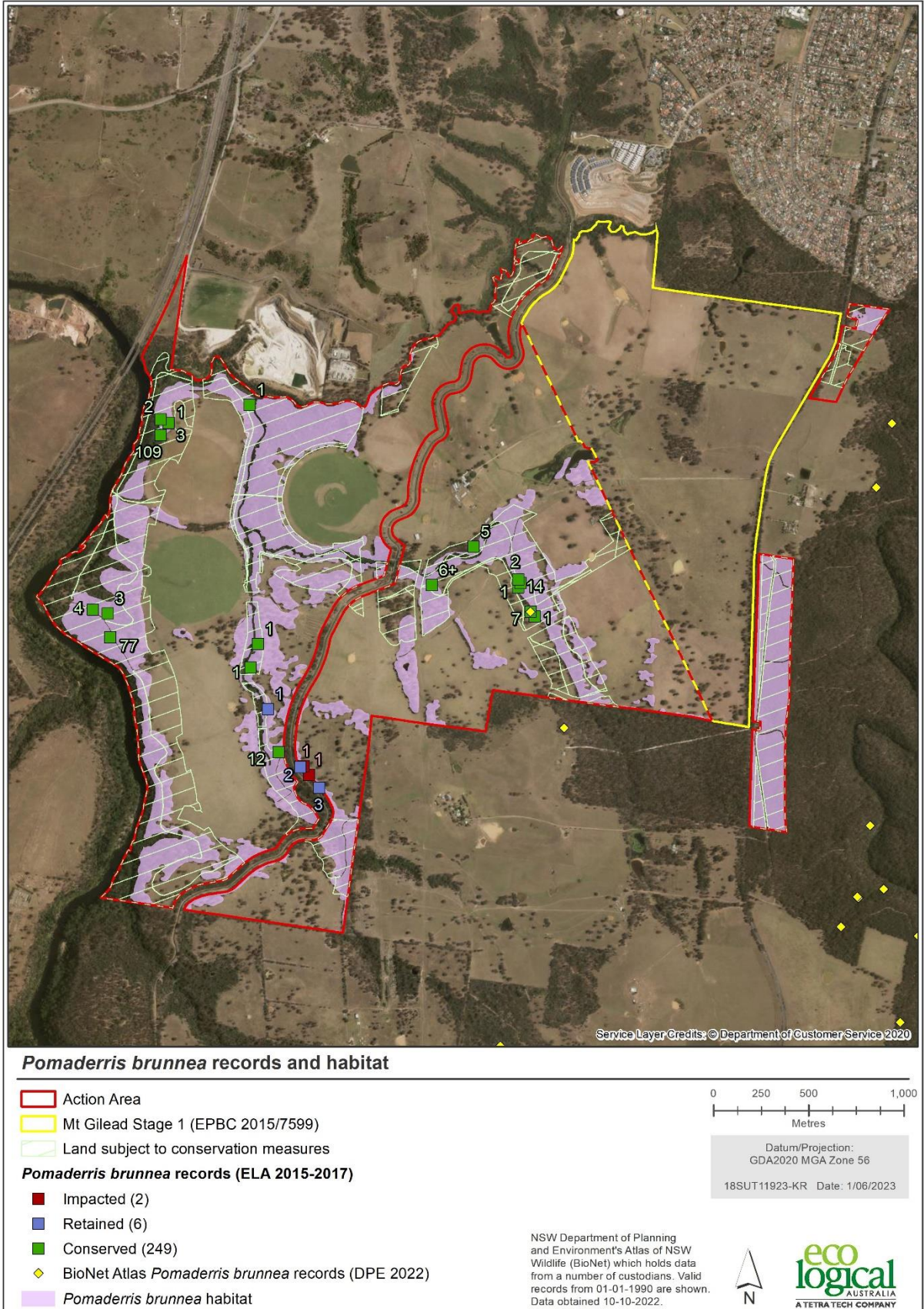


Figure 6: Impacted and protected *Pomaderris brunnea* individuals



## 2. Environmental Management Plan Guidelines reference table

**Table 1** provides a summary of the Department’s Environmental Management Plan Guidelines (DoE 2014) and where and how they have been addressed in this draft CEMP. The mitigation commitments made in the final Preliminary Documentation report are in Section 8 of the PD.

**Table 1: EMP guidelines relevant to EPBC 2019/8587 and where addressed in this CEMP**

Condition requirement	Plan reference	How plan addresses EMP guidelines and commitments made in CEMP
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 matters within on-site offset areas.
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.
Details of the parties responsible for undertaking management actions;	Section 7 and Table 7	Table 7 identifies the responsible parties and their respective roles in implementing this CEMP.
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 four proposed Biodiversity Stewardship Agreements.
Hygiene protocols to minimise the risk of spread of <i>Phytophthora cinnamomi</i> ;	Table 6 and Appendix C	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 C provides measures for preventing the introduction and spread of <i>Phytophthora</i> in the action area (i.e. a designated vehicle and machinery wash down and disinfection area).
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.
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.

Condition requirement	Plan reference	How plan addresses EMP guidelines and commitments made in CEMP
Impact avoidance, mitigation and/or repair measures, and their timing	Table 6	<p>Table 5 provides the mitigation measures (strategies) designed to avoid and minimise these risks from occurring.</p> <p>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 F) includes provision for specifying corrective actions (if required) and responsibility and timeframes for their implementation.</p>
<p>A monitoring program, which must include:</p> <ul style="list-style-type: none"> <li>i. measurable performance indicators;</li> <li>ii. trigger values for corrective actions;</li> <li>iii. the timing and frequency of monitoring to detect changes in the performance indicators and timely detection of trigger values; and</li> <li>iv. proposed corrective actions, if trigger values are reached.</li> </ul>	Section 6 and Tables 5 & 6	<p>Section 6 and Appendix F provides for daily, weekly and monthly site inspections and audits of the implementation of this CEMP.</p> <p>Tables 5 and 6 provide performance targets and performance indicators for each environmental objective and management action respectively .</p> <p>Table 6 provides for the frequency of monitoring of each action.</p> <p>The checklist in Appendix F provides for an evaluation of compliance/non-compliance with each measure and if required, identification of corrective actions, responsible party and timeframes to implement.</p>

### 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 as a result of construction.

#### 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 proposed development footprint
  - Weed dispersal and introduction throughout the project area
  - Erosion and sedimentation impacting offset areas
  - Introduction of plant pathogens such as *Phytophthora cinnamomi* 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 proposed 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
- Threatened Flora (including *Pomaderris brunnea*)
  - Loss of flora habitat beyond proposed development footprint
  - Weed dispersal and introduction into the offset areas

- Erosion and sedimentation impacting offset areas
- Construction dust inhibiting plant health and growth in offset areas
- Spread of litter and rubbish into offset areas
- Direct impacts from domestic animals entering offset areas
- Increased access to / recreational use of offset areas (post construction)
- Waterways (Menangle Creek, Woodhouse Creek, Nepean 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 F) 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 F 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						
<b>Protected Matter - Ecological Communities (Cumberland Plain Woodland and Shale Sandstone Transition Forest)</b>									
Clearing of remnant vegetation beyond development footprint	Possible	High	Major	To ensure that no clearing occurs beyond the approved footprint	None	<p>Ensure that all staff are inducted and aware of ecological sensitivities, including the location of all conservation areas and riparian zones (Figure 2).</p> <p>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 <b>Appendix A</b>).</p> <p>Any trees in the clearing area identified for protection within Open Space areas to be clearly marked prior to clearing activities commencing.</p> <p>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.</p> <p>The Tree Clearing Protocol (<b>Appendix B</b>) is to be implemented for any tree clearing.</p> <p>Location and identification of 'trees to be retained' to be discussed during daily pre-start where relevant.</p>	Low	<p>Staff induction &amp; training records</p> <p>Daily, weekly inspection of Stewardship site fencing</p> <p>Incident reports</p>	<p>Repairs to fence (as/if required).</p> <p>Restoration of damaged vegetation/habitat.</p>
Weed dispersal and introduction throughout the project area	Possible	Moderate	Medium	To prevent the introduction and spread of invasive weeds to offset areas	Not undertaking daily inspections and cleaning of vehicles/equipment	<p>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 (<b>Refer to Hygiene Protocol – Appendix C</b>).</p> <p>During vegetation clearing and weed removal, weed species must be stockpiled separately and disposed of at an appropriate waste disposal facility.</p>	Low	<p>Pre-start checklists</p> <p>Daily checks of vehicles</p> <p>Weekly inspection records</p> <p>Incident reports</p> <p>Stewardship site monitoring and annual reports</p>	<p>Weed control and monitoring of offset areas</p>
Introduction of soil pathogens to offset areas (including Phytophthora spp.)	Possible	High	High	To prevent the introduction of soil pathogens to offset areas	Not undertaking daily inspections and cleaning of vehicles/equipment	<p>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 (<b>Refer to Hygiene Protocol – Appendix C</b>).</p> <p>Implementation of Erosion and Sediment Control Plan (ESCP – <b>Appendix D</b>). The ESCP will be approved by Campbelltown Council prior to the issue of a construction certificate which is usually required by a conditions of consent.</p>	Low	<p>Pre-start checklists</p> <p>Daily checks of vehicles</p> <p>Weekly inspection records</p> <p>Incident reports</p> <p>Stewardship site monitoring and annual reports</p>	<p>Monitoring of offset areas and chemical treatment of any Phytophthora outbreaks</p>
Erosion and sedimentation impacting offset areas	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	<p>Implementation of Erosion and Sediment Control Plan (ESCP – <b>Appendix D</b>)</p>	Low	<p>Post rainfall site inspections</p> <p>Weekly inspections Erosion and sediment control fences</p> <p>Stewardship site monitoring and annual reports</p>	<p>Repair to sediment control fences</p> <p>Restoration of damaged vegetation/habitat</p>
Deposition of dust inhibiting growth / health of plants in offset areas	Possible	Moderate	Medium	To prevent high levels of dust that may inhibit growth/health of vegetation	Not implementing Dust Control Plan	<p>Implementation of Dust Management Control Plan (<b>Appendix E</b>). The Dust Management Plan will be approved by Campbelltown Council prior to the issue of a construction certificate usually required by a conditions of consent .</p>	Low-medium	<p>Checks of water cart usage records</p> <p>Checks of haul vehicles being covered</p> <p>Monitoring of stockpiles</p> <p>Incident reports</p> <p>Stewardship site monitoring and annual reports</p>	<p>Increase use of water cart</p> <p>Reduce/modify activity on windy days</p>

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						
Spread of litter and waste to offset areas	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 Stewardship 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)	Highly Likely	High	High	To avoid recreational use of offset areas	Insufficient funds allocated to enforcement of Biodiversity Stewardship 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 Stewardship 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 Stewardship site annual reporting	Increase Council staff presence at Stewardship sites to undertake enforcement action if required.
<b>Protected Matter - Threatened Fauna Habitat - Koala, Grey-headed Flying Fox, Large-eared Pied Bat, Swift Parrot</b>									
Loss of fauna habitat beyond development footprint	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 ( <b>Appendix A</b> ). Any trees within the clearing area identified for protection within Open Space areas to be clearly marked prior to clearing activities commencing. 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 Stewardship sites in accordance with the Biodiversity Stewardship Agreements.	Low	Staff induction & training records Daily, weekly inspection of Stewardship site fencing Incident reports	Repair to fence Restoration of damaged vegetation/habitat
Injury /death of threatened fauna during clearing	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 ( <b>Appendix B</b> ). The Tree Clearing Protocol ( <b>Appendix B</b> ) 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



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						
Disturbance due to lighting (during construction)  Post Construction	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.  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	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.  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	Possible	High	High	To avoid, reduce potential for road kill of Koala in action area (Mt Gilead Stage 2 Residential Estate)	Insufficient funds allocated to implement/install mitigation measures	<b>Construction Phase</b> Implementation of Koala Management Plan ( <b>Appendix M of PD Report</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  <b>Operational Phase</b> 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 ( <b>Appendix M of PD Report</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	Low-medium	Training & induction records Pre-clearance surveys Monitoring of fencing Observations of Koalas in action area during construction activities	Cessation of construction activities if Koala are present in immediate work area as directed by Project Ecologist
Disturbance from domestic animals (cats/dogs)  Operational Phase	Highly Likely	Moderate	High	To avoid, reduce potential for disturbance to Koala from domestic animals (dogs) in		<b>Construction Phase</b> Implementation of Koala Management Plan ( <b>Appendix M of PD Report</b> )  Stewardship sites will be fenced and have signage to prohibit dog-entry – (Refer to <b>Appendix A</b> )	Low to medium	<b>Operational Phase</b> Routine inspection of open space areas and off leash	Additional inspections of open space areas  Additional Community

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							
				action area (Mt Gilead Stage 2 Residential Estate)		<p>Dog proof fencing will be a design requirement for each residential lot in accordance with the Gilead Home Design Guidelines (Lendlease 2019 – refer to Section 5.2.1 of Koala Management Plan <b>Appendix M of PD Report</b>)</p> <p>Prohibition of dogs within the offset areas</p> <p>Designated areas within open space / recreation areas where dogs will be permitted to be off leash</p> <p><b>Operational Phase</b></p> <p>On-going implementation of Koala Management Plan (<b>Appendix M of PD Report</b>)</p> <p>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 (<b>Appendix M of PD Report</b>)</p> <p>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</p> <p>All public areas will be effectively signposted regarding dog exercise provisions</p> <p>Education programs for residents regarding the requirements for dogs within the development</p>		<p>areas by Council enforcement officers</p> <p>Records of Community Education Programs</p>	<p>Education programs</p>	
<b>Protected Matter - Threatened Flora Habitat (<i>Pomaderris brunnea</i>)</b>										
Loss of flora habitat beyond development footprint	Possible	High	Major	To ensure that no clearing occurs beyond the development footprint	None	<p>Ensure that all staff are inducted and aware of ecological sensitivities, including the location of all conservation areas and riparian zones (Figure 2).</p> <p>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 is provided in <b>Appendix A</b>).</p> <p>Any <i>Pomaderris brunnea</i> individuals in the clearing area identified for protection within Open Space areas to be clearly marked prior to clearing activities commencing.</p> <p>Any <i>Pomaderris brunnea</i> individuals 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.</p> <p>Location and identification of ‘threatened flora to be retained’ to be discussed during daily pre-start where relevant.</p>	Low	<p>Staff induction &amp; training records</p> <p>Daily, weekly inspection of Stewardship site fencing</p> <p>Incident reports</p>	<p>Repairs to fence (as/if required).</p> <p>Restoration of damaged vegetation/habitat.</p>	
Weed dispersal and introduction into the offset areas	Possible	Moderate	Medium	To prevent the introduction and spread of invasive weeds to offset areas	Not undertaking daily inspections and cleaning of vehicles/equipment	<p>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 (<b>Refer to Hygiene Protocol – Appendix C</b>).</p> <p>During vegetation clearing and weed removal, weed species must be stockpiled separately and disposed of at an appropriate waste disposal facility.</p>	Low	<p>Pre-start checklists</p> <p>Daily checks of vehicles</p> <p>Weekly inspection records</p> <p>Incident reports</p> <p>Stewardship site monitoring and annual reports</p>	<p>Weed control and monitoring of offset areas</p>	
Erosion and sedimentation impacting offset areas	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	<p>Implementation of Erosion and Sediment Control Plan (ESCP – <b>Appendix D</b>)</p>	Low	<p>Post rainfall site inspections</p> <p>Weekly inspections Erosion and sediment control fences</p> <p>Stewardship site monitoring and annual reports</p>	<p>Repair to sediment control fences</p> <p>Restoration of damaged vegetation/habitat</p>	

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 dust inhibiting plant health and growth in offset areas	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 ( <b>Appendix E</b> ). The Dust Management Plan will be approved by Campbelltown Council prior to the issue of a construction certificate usually required by a conditions of consent.	Low-medium	Checks of water cart usage records Checks of haul vehicles being covered Monitoring of stockpiles Incident reports Stewardship site monitoring and annual reports	Increase use of water cart Reduce/modify activity on windy days
Spread of litter and rubbish into offset areas	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 Stewardship site monitoring and annual reports	Increase number of rubbish bins, frequency of emptying bins
Disturbance from domestic animals in offset areas	Highly Likely	Moderate	High	To avoid, reduce potential for disturbance to Koala from domestic animals (dogs) in action area (Mt Gilead Stage 2 Residential Estate)		<p><b>Construction Phase</b></p> <p>Implementation of Koala Management Plan (<b>Appendix M of PD Report</b>)</p> <p>Dog proof fencing will be a design requirement for each residential lot in accordance with the Gilead Home Design Guidelines (Lendlease 2019 – refer to Section 5.2.1 of Koala Management Plan <b>Appendix M</b>)</p> <p>Prohibition of dogs within the offset areas</p> <p>Stewardship sites will be fenced and have signage to prohibit dog-entry</p> <p>Designated areas within open space / recreation areas where dogs will be permitted to be off leash</p> <p><b>Operational Phase</b></p> <p>Ongoing implementation of Koala Management Plan (<b>Appendix M of PD Report</b>)</p> <p>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 (<b>Appendix M of PD Report</b>)</p> <p>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</p> <p>All public areas will be effectively signposted regarding dog exercise provisions</p> <p>Education programs for residents regarding the requirements for dogs within the development</p>	Low to medium	<p><b>Operational Phase</b></p> <p>Routine inspection of open space areas and off leash areas by Council enforcement officers</p> <p>Records of Community Education Programs</p>	Additional inspections of open space areas Additional Community Education programs
Increased access to/recreational use of offset areas (post-construction)	Highly Likely	High	High	To avoid recreational use of offset areas	Insufficient funds allocated to enforcement of Biodiversity Stewardship 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 Stewardship site access points requiring passive recreation to be restricted to provided walking paths	Low	Attendance at community education days Stewardship site annual reporting	Increase Council staff presence at Stewardship sites to undertake enforcement action if required.

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						
<b>Protected Matter Waterways</b>									
Contamination by rubbish / waste	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) spills	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. 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.	Low	Safety data sheets on file Hazardous substances register Weekly inspection records Monthly audit reports	Increased training in handling of hazardous materials Increased inspections
Pollution through sedimentation (turbidity) and stormwater runoff	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 – <b>Appendix D</b> ) 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: <ul style="list-style-type: none"> <li>Minimise areas of bare soil wherever possible through phasing of works and covering/ stabilising.</li> <li>Create stabilised site access and egress with vehicle cleaning bay / rattle grids to reduce the likelihood of vehicles tracking soil materials onto public roads.</li> <li>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</li> <li>Install sediment controls downslope at the site to capture sediments from the works from going offsite</li> <li>Soil stockpiles and concrete washout are to be located away from waterways and drainage lines</li> </ul>	Low - Medium	Weekly inspections of erosion and sediment control fences Post rainfall site inspections	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						
						<ul style="list-style-type: none"> <li>• 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.</li> <li>• Rock wrapped in geofabric or straw bales to be installed in or around any stormwater drainage inlet</li> <li>• Monitor and maintenance of all erosion and sediment controls to be undertaken daily.</li> <li>• Concrete is to be washed-out in designated concrete wash-out area lined with suitable material and bunded to avoid release of washout materials.</li> <li>• Concrete washout bay is to be monitored regularly and washout to be disposed of to an appropriately licenced waste facility</li> </ul>			

## 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 & 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 or threatened flora individuals 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 ( <b>Appendix B</b> ) 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 Biodiversity Stewardship Agreements Stewardship site monitoring and annual reports	Project ecologist Project Manager Construction Manager	During tree clearing  /
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 <b>Appendix C</b> ) 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 Stewardship 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 Stewardship site monitoring and annual reports completed	All Staff	At all times



Management Objective / Outcome	Performance Target and / or Completion Criteria	Management Action / Measure	Monitoring Activity	Performance Indicators	Responsibility	Timing & Frequency
To prevent the introduction of soil pathogens to offset areas	No soil pathogens introduced to offset areas as a result of construction activity	<p>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 (<b>Refer to Hygiene Protocol – Appendix C</b>).</p> <p>Implementation of Erosion and Sediment Control Plan (ESCP – <b>Appendix D</b>). The ESCP will be approved by Campbelltown Council prior to the issue of a construction certificate .</p>	<p>Daily checks of vehicles</p> <p>Weekly inspection records</p> <p>Incident reports</p> <p>Stewardship site monitoring and annual reports that assess weed cover</p>	<p>Pre-start checklists completed</p> <p>Daily checks of vehicles undertaken as determined by retained records</p> <p>Incident reports acted on</p> <p>Stewardship site monitoring and annual reports completed</p>	All Staff	At all times
To prevent erosion and sedimentation impacting offset areas and waterways	<p>No erosion or sedimentation as a result of construction activity impacting offset areas.</p> <p>Any erosion in offset areas as a result of construction activity has an appropriate management plan at completion of construction activity</p>	<p>Erosion and sediment control methods listed in the ESCP will be installed prior to construction commencing and will include:-</p> <ul style="list-style-type: none"> <li>Minimise areas of bare soil wherever possible through phasing of works and covering/ stabilising.</li> <li>Create stabilised site access and egress with vehicle cleaning bay / rattle grids to reduce the likelihood of vehicles tracking soil materials onto public roads.</li> <li>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</li> <li>Install sediment controls downslope at the site to capture sediments from the works from going offsite</li> <li>Soil stockpiles and concrete washout are to be located away from waterways and drainage lines</li> <li>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.</li> <li>Rock wrapped in geofabric or straw bales to be installed in or around any stormwater drainage inlet</li> <li>Monitor and maintenance of all erosion and sediment controls to be undertaken daily.</li> <li>Concrete is to be washed-out in designated concrete wash-out area lined with suitable material and banded to avoid release of washout materials.</li> </ul> <p>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 Stewardship sites.</p>	<p>Monitoring and maintenance of all erosion and Sediment controls to be undertaken daily</p> <p>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</p>	<p>Daily inspection records</p> <p>Weekly inspections Erosion and sediment control fences</p> <p>Post rainfall site inspection records</p>	All staff	At all times

Management Objective / Outcome	Performance Target and / or Completion Criteria	Management Action / Measure	Monitoring Activity	Performance Indicators	Responsibility	Timing & 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) ( <b>Appendix E</b> ) Dust control methods listed in the DMCP include:- <ul style="list-style-type: none"> <li>Stabilised site access and egress routes</li> <li>Minimise areas of bare soil (including stockpiles) wherever possible through phasing of works and covering/ stabilising with suitable materials.</li> </ul>	Water cart usage records Covering of haul vehicles Monitoring of stockpiles Incident reports Stewardship 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	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 Stewardship 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 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. 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



Management Objective / Outcome	Performance Target and / or Completion Criteria	Management Action / Measure	Monitoring Activity	Performance Indicators	Responsibility	Timing & Frequency
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.  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 to 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
To avoid, reduce potential for road kill of Koala in action area (Mt Gilead Stage 2 Residential Estate)	No road deaths or injuries in action area during construction	<b>Construction Phase</b> Implementation of Koala Management Plan ( <b>Appendix M of PD Report</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  <b>Operational Phase</b> 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 ( <b>Appendix M of PD Report</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

Management Objective / Outcome	Performance Target and / or Completion Criteria	Management Action / Measure	Monitoring Activity	Performance Indicators	Responsibility	Timing & Frequency
To avoid, reduce potential for disturbance to Koala from domestic animals (dogs) in action area (Mt Gilead Stage 2 Residential Estate) during construction	No dog attacks (dogs owned by construction staff) in action area during construction	<p><b>Construction Phase</b></p> <p>Implementation of Koala Management Plan (<b>Appendix M of PD Report</b>)</p> <p>Dog proof fencing will be a design requirement for each residential lot in accordance with the Gilead Home Design Guidelines (Lendlease 2019) – refer to Section 5.2.1 of Koala Management Plan <b>Appendix M</b></p> <p>Prohibition of dogs within Stewardship site areas</p> <p>Stewardship sites will be fenced and have signage to prohibit dog-entry – (Refer to <b>Appendix A</b>)</p> <p>Designated areas within open space / recreation areas where dogs will be permitted to be off leash</p> <p><b>Operational Phase</b></p> <p>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 (<b>Appendix M</b>)</p> <p>Dogs will be prohibited from entry into the Stewardship sites. These areas will be actively managed and subject to enforcement powers under the Local Government Act</p> <p>All public areas will be effectively signposted regarding dog exercise provisions</p> <p>Education programs for residents regarding the requirements for dogs within the development</p>	<p><b>Construction Phase</b></p> <p>Daily inspections for presence of dogs</p> <p>Design of residential lot fencing complies with Design Guidelines</p> <p><b>Operational Phase</b></p> <p>Routine inspection of open space areas and off leash areas by Council enforcement officers</p> <p>Records of Community Education Programs</p>	<p>No dogs on site with project staff</p> <p>Rear yards of house lots are dog proof</p>	<p>Construction Manager / Project Ecologist / All Staff</p>	<p>At all times</p>

## 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 F**. Inspections shall be carried out in conjunction with personnel responsible for a particular work area and shall include the following:

- Weekly Inspections of key environmental issues recorded on an Environmental Site Inspection Checklist (**Appendix F**) – 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 F**) 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 F**). A CAR for any non-compliance is to be actioned no later than within 3 working days of receiving confirmation of the non-compliance. 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 four registered Biodiversity Stewardship Agreements.

The Stewardship site assessments (ELA 2020 a, b, c and 2020d) 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 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 Stewardship sites (i.e. incidence of fire, introduction of pathogens), the Biodiversity Stewardship Agreements requires the owners of the Stewardship 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.

A copy of these annual reports will be provide the DoTEE for each year that construction is ongoing as part of the reporting requirements in Section 6.3.

## 6.2 Records management

Lendlease will commit to maintaining 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

Once an approval is given, the approval holder must prepare a compliance report for each 12 month period following the commencement of the action.

This includes the following:-

- 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 five business days of publication.

This annual compliance report will include a copy of the annual Stewardship site 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 Environmental management roles and responsibilities

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

**Table 7: Environmental management roles and responsibilities**

Role	Responsibilities	Reports to
Project Manager	<ul style="list-style-type: none"> <li>Ensure all works comply with relevant regulatory and Project requirements</li> <li>Ensure the requirements of this CEMP are fully implemented</li> <li>Ensure all personnel and contractors have completed a site induction and orientation</li> <li>Ensure all approval reporting and review requirements are met</li> <li>Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of this CEMP</li> <li>Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements</li> <li>Liaise with government authorities as required</li> <li>Stop work immediately where there is an actual or potential risk of harm to the environment</li> </ul>	Lendlease Management
Construction Manager	<ul style="list-style-type: none"> <li>Plan construction works in a manner that avoids or minimises impact to environment</li> <li>Ensure the requirements of this CEMP are fully implemented</li> <li>Ensure construction personnel manage construction works in accordance with statutory and approval requirements</li> <li>Ensure environmental management procedures and protection measures are implemented</li> <li>Ensure all Project personnel attend an induction prior to commencing works</li> <li>Stop work immediately where there is an actual or potential risk of harm to the environment</li> <li>Implement corrective action reports</li> </ul>	Project Manager
Environmental Manager	<ul style="list-style-type: none"> <li>Conduct site environmental inspections</li> <li>Investigate and review nonconformances and identify, implement and monitor corrective and preventative actions for nonconformances</li> <li>Prepare written Corrective Action Reports</li> <li>Maintenance of training, nonconformance and complaints registers</li> <li>Undertake or coordinate environmental monitoring events</li> <li>Undertake scheduled and non-scheduled environmental audits.</li> </ul>	Project Manager
Project ecologist	<ul style="list-style-type: none"> <li>Manage fauna during tree clearing in accordance with the Tree Clearing Protocol (<b>Appendix B</b>)</li> <li>Possess suitable fauna licences and permits</li> <li>Provide tree clearing report</li> </ul>	Project Manager
Project aquatic ecologist	<ul style="list-style-type: none"> <li>Manage aquatic fauna during dewatering of dams in accordance with the Dam Dewatering Plan</li> <li>Possess suitable fauna licences and permits</li> <li>Notification of NSW Fisheries 48 hrs prior to fish relocation</li> <li>Provide fauna relocation report</li> </ul>	Project Manager

## 7.2 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.

### 7.2.1 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.

### 7.2.2 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.

### 7.2.3 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 8.

**Table 8: 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 G**.

## 9. Review and audit

Once approval is given, 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 2019/8587 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
DAWE	Department of Agriculture, Water and the Environment
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	Matters 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

Chief Scientist and Engineer (CS&E) 2020. Advice on the protection of the Campbelltown Koala population. Koala Independent Expert Panel Report to the Minister for Energy and Environment and Minister for Planning and Public Spaces, dated 30 April 2020.

Commonwealth of Australia 2015. Arrive Clean, Leave Clean.

Department of Environment (DoE) 2014. Environmental Management Plan Guidelines.

Eco Logical Australia 2019. *Mt Gilead Residential Development Construction Environmental Management Plan EPBC 2015/7599*. Prepared for Lendlease Communities (Mt Gilead) Pty Ltd, 21 November 2021.

Eco Logical Australia 2023. *Mt Gilead Stage 2 Preliminary Documentation EPBC 2019/8587*. Prepared for Lendlease Communities (Figtree Hill) Pty Ltd, 28 June 2023.

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

Lendlease 2022 Figtree Hill Home Design Guidelines.

Lendlease 2022. Gilead Koala Conservation Plan, Rev 4.

## Appendix A Stewardship Site (Offset areas) signage and fencing

### Example Council Reserve Signage



# You are entering Smith's Creek Reserve – a Critically Endangered Vegetation Community

Smith's Creek Reserve is home to many special species of plants and animals, including koalas (*Phascolarctos cinereus*).

Campbelltown City Council, in partnership with the local community and Greater Sydney Local Land Services, is currently undertaking bush regeneration works to remove weed species and help improve koala habitat within the reserve.

We ask that you respect the work being done to improve the reserve, and be mindful of the impact of your activities.








If you'd like to help by joining the Smith's Creek Bushcare Group, please contact Council's Environment Unit on 4645 4601.



Proposed Koala exclusion 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 B 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 Department of Planning, Industry and Environment (DPIE) to conduct flora and fauna surveys. This licence requires that all survey and incidental records are submitted to the DPIE 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 active nests within the clearing footprint as shown on Figure 2 are to be clearly marked.

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. These inspection may use drones to assist identify fauna in tall and/or dense trees where visibility from the ground is obscured. 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

### Soft felling technique

It is recommended that a 'slow' or 'soft-drop' technique is used during the felling of all HBTs identifies as containing roosting fauna and/or active nests. 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 Stewardship 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 Biodiversity Stewardship Agreements, will be retained on-site for use as habitat logs for ground dwelling reptiles and mammals within the Stewardship 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 C 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 D 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 E 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 F 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:			
<b>Endangered Ecological Communities</b>				
Loss or damage to vegetation in offset areas as a result of construction activity		<input type="checkbox"/>		
Protective fencing/ barrier erected around all conservation areas		<input type="checkbox"/>		
No damage to protective fencing/ barrier erected around all conservation areas		<input type="checkbox"/>		
Weed species stockpiled separately from other waste		<input type="checkbox"/>		
Vehicles/ plant entering and leaving site free of soil and weeds		<input type="checkbox"/>		
Erosion and/or sedimentation impacting offset areas		<input type="checkbox"/>		
Deposition of dust impacting offset areas		<input type="checkbox"/>		
Spread of litter and/or waste into offset areas		<input type="checkbox"/>		
<b>Fauna</b>				
Loss of fauna habitat beyond approval		<input type="checkbox"/>		
Habitat trees (with hollows and/or nests) to be retained clearly marked onsite		<input type="checkbox"/>		
Trees or parts thereof to be re-used within conservation areas salvaged and placed within conservation areas		<input type="checkbox"/>		
Tree clearing protocol is implemented for any tree clearing		<input type="checkbox"/>		
Injury or death of threatened fauna during clearing		<input type="checkbox"/>		
Road mortality of any threatened fauna during construction		<input type="checkbox"/>		
Dam dewatering protocol is implemented for any dam dewatering		<input type="checkbox"/>		

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

## Appendix G 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.

