

EPBC Act referral



Australian Government

Department of the Environment and Energy

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Title of proposal	2019/8587 - Mt Gilead Stage 2 Residential Development
Section 1	
Summary of your proposed action	
1.1 Project industry type	Residential Development
1.2 Provide a detailed description of the proposed action, including all proposed activities	<p>Mt Gilead Stage 2 is a proposed 332 ha Urban Development project in the southern part of the Campbelltown City Council Local Government Area at Gilead, west of Appin Road and the approved Stage 1 development (EPBC 2015/7599) (Figure 1).</p> <p>The development will primarily comprise low and medium residential development with associated infrastructure, retail & educational facilities, public spaces, active & passive open spaces areas and conservation lands. A Masterplan for the proposed development is shown at Figure 2. Development is proposed to commence from 2024 and take up to 10 years to complete over seven stages, depending on demand for housing. Details of the development include:</p> <p>General residential: The Campbelltown LGA has a forecast population projection of 64,000 between 2011 and 2031. An additional 24,846 homes will be required in the Campbelltown area by 2031 to meet this population growth (Department of Planning and Environment 2014). The Mt Gilead Stage 2 development will deliver approximately 4,500 lots with a range of lot sizes consistent with the natural features of the site. This will enhance and expand housing supply close to the Campbelltown-Macarthur Major Centre.</p> <p>Services: The development will be serviced by the required infrastructure, including water, sewer and electricity for the proposed development.</p> <p>Roads, access ways, and parking: The street network within the site is to be consistent with Campbelltown City Councils Engineering Design Specification and street network principles including the establishment of a permeable network that is based on a modified grid system, and encourages walking and cycling and reduced travel distances.</p> <p>Asset Protection Zones (APZs): The development will be carried out in a way to ensure prevention of loss of life and property due to bushfires. The Masterplan shows that perimeter roads are located along most bushland and landscaped interfaces. APZ's have been calculated in accordance with Planning for Bushfire Protection (RFS 2018) and are met by perimeter roads and building setbacks and management of open space areas between the urban footprint and dedicated conservation areas, thereby providing a buffer to these conservation areas. None of the required APZs extend into proposed conservation/offset areas.</p> <p>On-site Offset sites: The application proposes to permanently protect and manage for conservation, 201.81 ha of lands in the referral area as permanent conservation areas (Figure 3). These areas are proposed to be conserved as five Biobank sites (Browns Bush, Mt Gilead Homestead, Woodhouse Creek, Nepean and Medhurst Biobank sites). The biobank sites will be registered prior to the commencement of development and actively restored and enhanced from 2020 to meet EPBC EEC minimum condition thresholds by the commencement of development (expected to commence in 2024).</p> <p>All offset sites will include signage and perimeter fencing to allow the movement of fauna (including koala) but prevent the entry or people, unauthorised vehicles or cattle from adjacent rural land. The sites will be actively managed for conservation in perpetuity and subject to plans of management in accordance with a Biocertification Agreement between Lendlease and the Minister for the Environment.</p> <p>Open space – passive: natural areas maintained in their existing rural character as open space, retaining ecological value but not for use as a formal conservation areas/offsets. Where possible, trees will be retained in these areas, and enhanced by landscape plantings of species consistent with the existing environment, resulting in structured restoration and regeneration of these areas. These areas will include management under the Local Government Act 1993 (LG Act), and will include fencing, assisted regeneration, and surrounding paths/cycleways to discourage access into the vegetated areas by controlling and formalising movement patterns. Under this management, these areas will have a positive contribution to the environmental outcome of the project through management as native vegetated areas.</p> <p>Recreation and active open space areas: will be provided including an oval and recreation areas with some landscaping consistent with the local native vegetation. These areas will be classified as Community Land under the LG Act and will have a Plan of Management prepared and adopted under the Act.</p> <p>Detention basins: the development has been designed with detention basins/swales that will capture and treat run-off water. The water will be initially captured by a network of curb and guttering along all roads. The detention basins and swales will treat and control run-off water to ensure post development impacts of water quality and flows when released into natural creeks are no greater than those pre-development. The detention basins will include appropriate plantings around the banks</p>



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that will retain and enhance habitat for birds and frogs, foraging/nesting resources for bats, birds and arboreal mammals, whilst also acting as a buffer between the urban development and protected areas of vegetation.

1.3 What is the extent and location of your proposed action?

See Appendix B

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland)

The referral area in the Campbelltown LGA, 70 km south-west of the Sydney CBD and 10 km south of the City of Campbelltown (Figure 1). The site is bound by the Nepean River and Hume Highway/Motorway to the west, rural land to the north and south and the approved Mt Gilead Stage 1 Residential Development to the east (EPBC 2015/7599). The Sydney Water Supply Canal (The Upper Canal) runs through the centre of the site as do easements for electricity and the eastern gas pipeline. There are several creek lines (Woodhouse, Nepean and Menangle) that flow north and west to the Nepean River. The south-eastern boundary of the site abuts the Beulah Biobank Site and there are a number of registered Biobank sites to the west (Stage 1) and north-east (Noorumba Reserve) (Figure 5).

Further information provided in Mt Gilead EPBC Referral_v3 word document.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

The referral area is 673.17 ha of which the proposed urban footprint is 332.16 ha (including 23.91 ha of APZs) or approximately 50% of the site.

1.7 Proposed action location

Lot - Lot 2 DP 1218887, Lot 2 DP249393, Lot 1 DP 622632, Part Lot 5 DP 1240836, Lot 2 DP 603674, Lot 1 DP

1.8 Primary jurisdiction

New South Wales

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

Yes No

1.10 Is the proposed action subject to local government planning approval?

Yes No

1.10.1 Is there a local government area and council contact for the proposal?

Yes No

1.11 Provide an estimated start and estimated end date for the proposed action	Start Date	01/01/2024
	End Date	02/01/2034

1.12 Provide details of the context, planning framework and state and/or local Government requirements

The proposed residential development of Mt Gilead Stage 2 is being undertaken in parallel with the Greater Macarthur Growth Area land use study and Strategic Assessment being led by the NSW DPI&E (DPE 2015 & 2018).

This proposed action is consistent with the DPE structure Plan as outlined in the NSW Department of Planning & Environment's Greater Macarthur 2040 Interim Plan for the Greater Macarthur Growth Area (DPE 2018). The structure plan outlines a 'Vision for Greater Macarthur' which identifies Mount Gilead and Menangle Park as a 'Priority Precincts' due to their proximity to the Campbelltown-Macarthur regional city and the relatively direct access to existing infrastructure).

The NSW EP&A Act is the principal planning legislation that relates to the proposed development. It provides a framework for the overall environmental planning and assessment of development proposed actions in NSW. Approvals will also be required under various other pieces of NSW legislation including the Water Management Act 2000 (WM Act) and Rural Fires



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Act 2007 (RF Act) which are integrated with the EP&A Act.

Other relevant pieces of legislation, policies and guidelines that apply to the referral area include:-

- Biodiversity Conservation Act 2016 (BC Act)
- Protection of the Environment Operations Act 1997 (POEO Act)
- Heritage Act 1977
- Contaminated Land Management Act 1997 (CLM Act)
- Local Government Act 1993 (LG Act)
- Fisheries Management Act 1994 (FM Act)
- Campbelltown Local Environmental Plan 2015
- Campbelltown (Sustainable City) Development Control Plan 2014.

SEPP44 Koala Management is not relevant to this proposed action as an application for Biocertification has been submitted which has already addressed Koala impact assessment and management. Further, a Koala Management Plan will be prepared as part of the Construction, Environmental Management Plan.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders

The former DPE publicly exhibited the Greater Macarthur Land Release Strategy in 2015 (DPE 2015) and the Greater Macarthur 2040 Interim Plan for the Greater Macarthur Growth Area (GM2040) in November 2018. The GM2040 report included a Structure Plan incorporating the Menangle and Mount Gilead Precinct showing urban capable land, indicative transport corridors, indicative Koala/biodiversity corridors and environmental conservation lands that would be subject to the Cumberland Plain Conservation Plan (Figure 6).

The location of Mt Gilead Stage 2 has been previously identified as a key location to provide needed housing into the future for the predicted growth of the Campbelltown – Macarthur area as a major centre in accordance with strategic directions outlined in the Greater Sydney Regional Plan – A Metropolis of Three Cities (GSC 2018). The Plan anticipates the South West Sydney region will need to provide an additional 155,000 dwellings and 141,000 new jobs by 2036, with Campbelltown – Macarthur Strategic Centre contributing 11,000 of these jobs.

The Biocertification application (ELA 2019) and this referral will be placed on public exhibition and any submissions received taken into consideration. The proposed rezoning of the subject lands will also be paced on public exhibition. Navin Officer (2006 and 2013) undertook a Cultural Heritage Assessment for the entire Mt Gilead property and an archaeological assessment and aboriginal consultation for the rezoning of Mt Gilead Stage 1 respectively. ELA (2015) have undertaken an Aboriginal and Historic Heritage due diligence assessment for the Mount Gilead Stage 2 project area. These assessments have found that the overall area includes previously recorded aboriginal sites (scar trees, artefacts, deposits, shell middens and art sites) and areas of archaeological potential. Consultation with local aboriginal groups and other registered parties is ongoing.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project

The referral area that is the subject of this referral forms part of an application for Biodiversity Certification under section 7A of the TSC Act (in accordance with the savings and transitional provisions of the BC Act 2016)(ELA 2019 – Attachment A). Further information provided in Mt Gilead EPBC Referral_v3 word document.

1.15 Is this action part of a staged development (or a component of a larger project)?

- Yes No

1.16 Is the proposed action related to other actions or proposals in the region?

- Yes No

1.16.1 Identify the nature/scope and location of the related action (Including under the relevant legislation)

The land to the east of the site was subject to a separate assessment and determination (EPBC 2015/7599. This action was approved in December 2018 and is the same proponent, Lendlease Communities (Figtree Hill) Pty Ltd.



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Section 2

Matters of national environmental significance

2.1 Is the proposed action likely to have any direct or indirect impact on the values of any World Heritage properties?
 Yes No

2.2 Is the proposed action likely to have any direct or indirect impact on the values of any National Heritage places?
 Yes No

2.3 Is the proposed action likely to have any direct or indirect impact on the ecological character of a Ramsar wetland?
 Yes No

2.4 Is the proposed action likely to have any direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?
 Yes No

Species or threatened ecological community

Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest in the Referral area (CPW)

Impact

A long history of clearing, grazing, pasture improvement and weed invasion has fragmented and modified the Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest (Cumberland Plain Woodland) in the referral area. EPBC Act condition patches of the community were mapped according to the descriptions in the Conservation listing advice for CPW (TSSC 2008) as summarised in (Table 5).

All native vegetation was first mapped and classified into vegetation types based on dominant species in each strata, soil types and topographic position and compared to the descriptions in the ecological community listing decision and diagnostic species lists (Tozer et al 2003: TSSC 2008). A detailed floristic analysis of plot data collected from 66 plots was used to further refine boundaries of remnant vegetation.

The following variables were then used to assign each patch to an EPBC Condition Category as described in Table 4 and to be consistent, as far as practical, with the biocertification assessment report that breaks the vegetation down into 19 condition zones (ELA 2019):

- size of the patch (including proximity to another patch)
- percentage of native groundcover species present (determined by plot data shown in Appendix D)
- contiguity with another patch
- presence of trees with hollows (Figure 12), or large trees above the large tree benchmark.

The vegetation classifications steps are shown sequentially in Figures 9 a-c and show the referral area comprising of four vegetation types (CPW, SSTF, CFEF and GMDR) in nine condition categories.

CPW is represented by two EPBC Act condition categories (A and C) with the higher condition (A) generally being found associated with other remnant vegetation (SSTF) along retained creek lines, and the poorer condition (c) vegetation being adjacent to these areas and/or in small patches where past and current agricultural land use practices have not been as intensive as the more cleared paddocks. Other patches of non-EPBC Condition CPW exists as scattered/isolated paddock trees with no mid-story and a ground cover comprising predominantly (>90%) exotic species.

As part of the impact assessment, a 30m EEC buffer has been provided from the outer edge of the perimeter roads and detention basins surrounding the development and the CPW proposed to be protected. This 30 m buffer was split into an inner and outer 15 m buffer to assess the likely indirect impacts associated with proximity to edge effects and conservation management activities (Table 6). The outer 15m of this buffer zone consisted of managed APZ/open space areas where vegetation was assessed to suffer a 20% decrease in condition. The inner 15m of this buffer comprised existing CPW (or areas proposed to be restored to CPW) as part of proposed biobank sites and will be subject to active, in perpetuity



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conservation management and was assessed to have a 5% decrease in condition from edge effects.

The proposed development will directly impact 9.21 ha of CPW in Condition Category A and C, 0.89 ha will be modified to meet bushfire Asset Protection Zone (APZ) requirements and 0.67 ha will be indirectly impacted as part of 30m managed EEC buffer zones (see Table 6 and Figure 14), where impacts are expected to be minimal given the active conservation management these areas will be subject to (see Mitigation Measures in Section 4)

The proposed action will conserve (as registered Biobank sites) and manage in-perpetuity 18.49 ha of EPBC Condition A and C CPW and enhance to EPBC condition a further 17.66 ha of non-EPBC CPW prior to impacts occurring. A further 1.12 ha will be retained in open space and rural lands. The significant impact criteria (DoTEE 2013) were applied with respect to Cumberland Plain Woodland which concluded that a significant impact is likely to occur to CPW (Table 7).

Species or threatened ecological community

Shale Sandstone Transition Forest

Impact

A long history of clearing, grazing, pasture improvement and weed invasion has fragmented and modified the SSTF in the referral area. EPBC Act condition patches of the community were mapped according to the descriptions in the Conservation listing advice for SSTF (TSSC 2008) as summarised in (Table 8).

All native vegetation was first mapped and classified into vegetation types based on dominant species in each strata, soil types and topographic position and compared to the descriptions in the ecological community listing decisions and diagnostic species lists (Tozer et al 2003; TSSC 2014). A detailed floristic analysis of plot data collected from 66 plots was used to further refine boundaries of remnant vegetation.

The following variables were then used to assign each patch to an EPBC Condition Category as described in Table 8 and to be consistent, as far as practical, with the biocertification assessment report that breaks the vegetation down into 19 condition zones (ELA 2019):

- size of the patch (including proximity to another patch)
- percentage of native groundcover species present (determined by plot data shown in Appendix D)
- contiguity with another patch
- presence of trees with hollows (Figure 12), or large trees above the large tree benchmark.

The vegetation classifications steps are shown sequentially in Figures 9 a-c and show the referral area comprising of four vegetation types (CPW, SSTF, CFEF and GMDR) in nine condition categories.

Shale Sandstone Transition Forest was the dominant native vegetation community in the referral area and was present in three condition classes in the referral area; D, B and A. The Shale Sandstone Transition Forest in the referral area was generally in good condition along creek lines where past clearing and grazing have not impacted the community to the same extent as those areas subject to intensive grazing, where as those patches outside of the creek lines were in much poorer condition due to thinning, under-scrubbing and pasture improvement activities associated with the agricultural land use of the area since the 1850's. Other patches of non-EPBC Condition SSTF exists as scattered/isolated paddock trees with no mid-story and a ground cover comprising predominantly (>90%) exotic species.

As part of the impact assessment, a 30m EEC buffer has been provided from the outer edge of the perimeter roads and detention basins surrounding the development and the CPW proposed to be protected. This 30 m buffer was split into an inner and outer 15 m buffer to assess the likely indirect impacts associated with proximity to edge effects and conservation management activities (Table 9). The outer 15m of this buffer zone consisted of managed APZ/open space areas where vegetation was assessed to suffer a 20% decrease in condition. The inner 15m of this buffer comprised existing SSTF (or areas proposed to be restored to SSTF) as part of proposed biobank sites and will be subject to active, in perpetuity conservation management and was assessed to have a 5% decrease in condition from edge effects.

The proposed development will directly impact 32.75 ha of SSTF in Condition Category D, B and A, 12.62 ha will be modified to meet bushfire Asset Protection Zone (APZ) requirements and 15.17 ha will be indirectly impacted as part of 30m managed EEC buffer zones (see Table 9 and Figure 15, where impacts are expected to be minimal given the active conservation management these areas will be subject to (see Mitigation Measures in Section 4)

The proposed action will conserve (as registered Biobank sites) and manage in-perpetuity 104.65 ha of EPBC Condition D, B and A SSTF and enhance to EPBC condition a further 8.25 ha of non-EPBC SSTF prior to impacts occurring. A further 3.09 ha will be retained in open space and rural lands.

The significant impact criteria (DoTEE 2013) were applied with respect to SSTF which concluded that a significant impact is likely to occur to SSTF (Table 10).

Species or threatened ecological community

Coastal Floodplain Eucalypt Forest (CFEF) in the Referral area

Impact

A long history of clearing, grazing, weed invasion and some gravel extraction /quarrying has fragmented and modified the



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CFEF in the referral area. EPBC Act condition patches of the community were mapped according to the descriptions in the draft Conservation listing advice for CFEF (TSSC 2019) as summarised in (Table 11).

All native vegetation was first mapped and classified into vegetation types based on dominant species in each strata, soil types and topographic position and compared to the descriptions in the ecological community listing decisions and diagnostic species lists (Tozer et al 2003; TSSC 2019). A detailed floristic analysis of plot data collected from 66 plots was used to further refine boundaries of remnant vegetation.

The following variables were then used to assign each patch to an EPBC Condition Category as described in Table 11 and to be consistent, as far as practical, with the biocertification assessment report that breaks the vegetation down into 19 condition zones (ELA 2019):

- size of the patch (including proximity to another patch)
- percentage of native groundcover species present (determined by plot data shown in Appendix D)
- contiguity with another patch
- presence of trees with hollows (Figure 12), or large trees above the large tree benchmark.

The vegetation classifications steps are shown sequentially in Figures 9 a-c and show the referral area comprising of four vegetation types (CPW, SSTF, CFEF and GMDR) in nine condition categories. CFEF is represented by one of EPBC Act condition categories (C). Other patches of non-EPBC Condition CFEF comprised poor quality rehabilitation following quarrying activity in the west of the referral area adjacent to the Nepean River.

As part of the impact assessment, a 30m EEC buffer has been provided from the outer edge of the perimeter roads and detention basins surrounding the development and the CFEF proposed to be protected. This 30 m buffer was split into an inner and outer 15 m buffer to assess the likely indirect impacts associated with proximity to edge effects and conservation management activities (Table 12). The outer 15m of this buffer zone consisted of managed APZ/open space areas where vegetation was assessed to suffer a 20% decrease in condition. The inner 15m of this buffer comprised existing CFEF (or areas proposed to be restored to CFEF) as part of proposed biobank sites and will be subject to active, in perpetuity conservation management and was assessed to have a 5% decrease in condition from edge effects.

The proposed development will directly impact 3.75 ha of CFEF in Condition Category C (roads crossing creeks and river park, 0.05 ha will be modified to meet bushfire Asset Protection Zone (APZ) requirements and 1.21 ha will be indirectly impacted as part of 30m managed EEC buffer zones (see Table 12 and Figure 16, where impacts are expected to be minimal given the active conservation management these areas will be subject to (see Mitigation Measures in Section 4).

The proposed action will conserve (as registered Biobank sites) and manage in-perpetuity 17.79 ha of proposed EPBC Condition C CFEF and enhance to EPBC condition a further 0.09 ha of non-EPBC CFEF prior to impacts occurring (Figure 16).

The significant impact criteria (DoTEE 2013) were applied with respect to CFEF which concluded that a significant impact is unlikely to occur to CFEF (Table 13).

Species or threatened ecological community

Pomaderris brunnea

Impact

Pomaderris brunnea (Rufous Pomaderris) was the only EPBC Act listed threatened flora species identified during targeted survey. It is listed as endangered in NSW and vulnerable nationally. *Pomaderris brunnea* is a shrub with a very limited geographic range, limited to the Colo, Nepean and Hawkesbury Rivers including the Bargo area and near Camden in NSW (OEH 2019) and two locations in Victoria. In NSW, this species grows in moist woodland or forest on clays and alluvial soils, generally along flood plains and creek lines. *Pomaderris brunnea* is generally found in association with *Eucalyptus amplifolia*, *Angophora floribunda*, *Acacia parramattensis*, *Bursaria spinosa* and *Kunzea ambigua*.

The national recovery plan for the species (Suttor 2011) stated that the species had been recorded from 16 locations containing about 600 plants. Of the 14 NSW locations, records at four are over 30 years old and it is not known if the species is still extant at these sites (Suttor, 2011). The NSW Scientific Committee (2014) stated that *P. brunnea* was known from 24 scattered populations in five regions in NSW (Walcha, Wollemi and lower Colo, the Upper Hunter Valley, the Capertee Valley) and the Nepean River and associated tributaries around Camden and Bargo (NSW Scientific Committee 2014 (Figure 17). Bremner (in litt June 2012 to NSW Scientific Committee) reported 190 plants in 10 of 18 sites in south-west Sydney.

Pomaderris brunnea was observed at 10 locations across the referral area with 258 plants recorded (Figure 18). The 258 plants recorded within the referral area, an unknown number of plants in the Beulah Biobank site on the southern boundary of the referral area, and 16 locations (numbers unknown) recorded east of Appin Road in February and May 2019 as part of the DPI&E Greater Macarthur Strategic Assessment/Cumberland Conservation Plan program (Figure 18), are in addition to the earlier estimates of Suttor 2011) and NSW Scientific Committee (2014). Indeed, BioNet 2019 shows over 25 locations (abundance unknown) between Camden, Camden Park, Elderslie, Menangle, Appin, Wilton, Pheasants Nest and Bargo and southern extensions at Mittagong and Wingello (Figure 17).

Whilst the conservation status of many of these population is unknown, and likely not secure, within the Gilead area, the population within the Beulah Biobank site is permanently protected for conservation as a registered Biobank site, the populations east of Appin Road are in a proposed Biodiversity Stewardship site and a further 201 ha of habitat, known to



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contain at least 230 individuals, is proposed for permanent protection within the referral area.

Within the referral area, the majority of plants were observed in areas of higher quality, ungrazed SSTF or in steep, inaccessible areas along creek lines (Woodhouse and Nepean Creeks) and behind fencing (Nepean River and Sydney Water Canal) where domestic stock had limited access. Outside of these protected areas, plants showed signs of grazing pressure and where regeneration was occurring, plants were noticeably grazed/stunted.

The proposed action will impact 23 plants at five locations (Figure 18). Of these, 18 are within proposed APZ areas that will be managed as open space and it is likely that a number of these individuals and their habitat will be able to be retained during the detailed planning of these areas. Up to 5 plants may be directly impacted by road works and creek crossings, some of which may be able to be retained once detailed designs are completed. A further five individuals were recorded within the Sydney Water Canal corridor and will not be impacted by the proposed development.

The proposed conservation areas will permanently protect 230 known plants in five registered Biobank sites including four high plant number areas (111+ and 84+ plants in northern Nepean Biobank site, 13+ plants in the Nepean Creek Biobank site together with plants within the Sydney Water Canal, and 21+ plants in the Woodhouse Creek corridor. Further it is likely that additional plants will be recorded in the Browns Bush north and south Biobank site on the eastern side of Appin Rd where the species has recently been recorded at 16 nearby locations (Figure 18).

The recovery plan (Sutter 2011) does not identify the records at Mt Gilead as an 'important population' as they were not known at the time the recovery plan was prepared. However, as this population was recently recorded (2016-2017) and is one of the largest populations in NSW, it would be considered an important population.

The Significant Impact Criteria was applied with respect to *Pomaderris brunnea* and concluded that the proposed action is unlikely to constitute a significant impact on this species.

Species or threatened ecological community

Phascolarctos cinereus (Koala)

Impact

The NSW/ACT and Qld population of the Koala are listed as a vulnerable species under the EPBC Act.

Koalas are associated with a wide range of temperate, tropical and sub-tropical forests as well as semi-arid communities. They feed almost exclusively on leaves of *Eucalyptus* species, although they have been known to forage on other genera as well (DotEE 2019). Koalas have large overlapping home ranges with larger home ranges present in areas of poorer quality habitat.

The "Campbelltown/Wedderburn" Koala population (referred to as the Campbelltown, Wollondilly and southern highlands regional population by the (DPI&E 2019)) extends from the Georges River National Park north of Heathcote Road in the Liverpool LGA, south to Heathcote National Park along the Princes Highway in the Sutherland LGA, along the Georges River Catchment in the Campbelltown LGA from Minto Heights/Kentlyn in the north, through the Holsworthy Military Area and Wedderburn Plateau to Gilead and then south to Wilton and the Southern Highlands in the Wollondilly LGA (Figure 19). The area includes the Dharawal National Park and Upper Nepean State Conservation Area as well as the Special Management Areas of the Avon, Cordeaux, Cataract and Woronora catchments but are separated by a number of major arterial roads joining major population centres including the Princes Hwy, Heathcote, Appin and Picton Roads and the Hume Motorway in the west (Figure 19).

These roads are a significant source of road mortality with reports of six road kills along Heathcote Road in 2018 and over 23 road kills along Appin Road between 2010 and 2018. In response to this major threat to the local Koala population, the NSW Roads and Maritime Services have installed Koala exclusion fencing and underpasses along sections of Picton Road and have proposed exclusion fencing along Appin Road as part of the upgrade of this road (RMS 2018). The "area of extent" of the northern part of this regional population is approximately 51,000 ha (excluding records to the east of the Princes Hwy and south of Picton Road), although not all of this area is high quality Koala habitat and not all is occupied by Koalas. High quality Koala habitat, and areas occupied by Koala is patchy throughout this range with higher quality habitat and high numbers of observations since the 1980's being in the Georges River corridor (Figure 19). Koala records have been less frequent in areas of poorer quality habitat or modified habitat on rural land.

Biolink (2018) estimates the 'area of occupancy' within the Campbelltown LGA at 6,857 ha, 46.42% of which is estimated to be currently occupied, allowing a population estimate of 177 +/- 12 Koalas. This estimate has been revised to 300-400 Koalas (in the Campbelltown LGA) as part of a submission to the NSW Upper House Koala enquiry. A recent study of the broader Campbelltown-Wollondilly Koala population by DPI&E (2019) has estimated Koala density in high quality habitat at 0.052 koalas/ha, leading to an estimate of 433 Koalas in the Campbelltown, Appin and Wilton areas (the Greater Macarthur Growth Area), with 8,292.46 ha of 'core' Koala habitat mapped into primary, secondary and tertiary corridors.

Evidence of Koala (faecal pellets and one sighting; BioLink 2018; ELA 2016, ELA 2017, ELA 2018, ELA 2019) was identified across the referral area and the species was recorded in remote cameras along the Nepean River corridor. The proposed action will impact (directly and indirectly) up to 72.22 ha of Koala habitat as shown in Table 15 and Figure 20.

Of these impacts, 55.26 ha will be direct impacts resulting in the permanent loss of Koala habitat (6.29 ha of high quality foraging habitat, 12.78 ha of moderate quality foraging habitat and 36.19 ha of poor/low quality habitat), 1.9 ha will be temporary impacts during the establishment of detention basins that will be restored with landscape plantings suitable for



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Koala, 1.05 ha consists of a 1.5m wide bush walking track through Koala habitat that will not impact any trees and 14.01 ha will be modification to existing habitat to establish bushfire APZs.

Consistent with the DPI&E (2019) Koala study in the Campbelltown-Wollondilly area, it was determined that Koala's occur at densities of 0.052 Koalas/ha in intact high quality habitat (i.e. CPW, SSTF and CFEF in the referral area). Based on these density estimates, this loss of 55.26 ha represents habitat for up to 2.72 Koalas, however, as the majority of the habitat being impacted is of low quality, the number of animals supported is likely to be less. Further, Dr Steve Phillips of Biolink, a recognised Koala expert, classifies the Campbelltown-Wollondilly population as a "typical low density population with female home range sizes ranging from 30-35 ha", resulting in a similar number of animals being impacted (around 2).

Further information provided in Mt Gilead EPBC Referral_v3 word document.

Species or threatened ecological community

Chalinolobus dwyeri (Large-eared Pied-bat)

Impact

The Large-eared Pied bat (LEPB) is an insectivorous bat with a distribution from Shoalwater Bay in Queensland through to around Ulladulla in NSW. The species is largely restricted to the interface of sandstone escarpment for roosting habitat, and relatively fertile forests supporting woodlands and forests for foraging habitat. The species forages for insects in and around forest canopies. Important populations for this species occur in the Hunter Valley, Sydney Basin and Southern Tablelands of NSW (DotEE 2016). The national recovery plan for the Large-eared Pied Bat (DERM 2011) states that:

Critical habitat includes any maternity roost and that these appear to be a very specific structure (arch caves with dome roofs). Caves need to be high and deep enough to allow juvenile bats to learn to fly safely inside and have indentations in the roof (DERM 2011).

Sandstone cliffs and fertile wooded valley habitat within close proximity of each other should also be considered habitat critical to the survival of the large-eared pied bat. The majority of records are from canopied habitat, suggesting a sensitivity to clearing, although narrow connecting riparian strips in otherwise cleared habitat are sometimes quite heavily used (DERM 2011).

Important (largest) populations within NSW, appears to be in the sandstone escarpments of the Sydney basin and northwest slopes of NSW. Much of this habitat occurs within state reserves. The species has also been recorded from a few locations in the sandstone escarpments of the Morton National Park at the southern end of its range (DERM 2011).

The Large-eared Pied Bat was detected via echolocation surveys foraging on site. There is no potential roosting habitat (caves) in the development footprint. The development footprint would be used for foraging purposes only. The riparian corridors in the referral area, whilst containing some sandstone caves and overhangs, are not the typical sandstone escarpments usually used for roosting habitat although these are present to the east of the referral area in the Georges River catchment.

The proposed action will impact (directly and indirectly) up to 72.22 ha of LEPB habitat as shown in Figure 23. Of these impacts, 55.26 ha will be direct impacts resulting in the permanent loss of LEPB habitat (42.48 ha of moderate to high quality foraging habitat (intact/grazed woodland) and 12.78 ha of low quality foraging habitat – scattered paddock trees), 1.9 ha will be temporary impacts during the establishment of detention basins that will be restored with landscape plantings suitable for LEPB, 1.05 ha consists of a 1.5m wide bush walking track through LEPB habitat that will not impact any trees and 14.01 ha will be modification to existing habitat to establish bushfire APZs.

The loss of 55.26 ha of LEPB habitat is a very small proportion of the greater than 10,000 ha of nearby foraging and potential roosting habitat in the Georges River catchment, a significant proportion of which is permanently protected in National Parks and water supply catchments. Further, the proposed action will permanently protect and enhance the quality of over 200 ha of LEPB foraging habitat in registered Biobank sites, and retain and enhance 15.91 ha of LEPB habitat in APZ and detention basin areas that buffer these conservation areas from the pressures of urban development and retain and enhance a further 17.11 ha of LEPB habitat in open space and rural land (Figures 3 and 23).

Foraging behaviour would most likely be concentrated along the riparian corridors. No known breeding or roosting habitat for this species would be affected. The good condition habitat to be retained is mostly located along the riparian corridors.

The Significant Impact Criteria was applied with respect to the large-eared Pied-bat (Table 18) and concluded that the proposed action is unlikely to constitute a significant impact on this species.

Species or threatened ecological community

Pteropus poliocephalus (Grey-headed Flying-fox)

Impact

The Grey-headed Flying-fox (GHFF) occupies the coastal lowlands and slopes of south-eastern Australia from Bundaberg to Geelong and inland NSW to the tablelands and western slopes. The GHFF is a highly mobile, partially migratory species with a distribution that is highly varied between seasons and years. The Grey-headed Flying-fox forms part of one single, interbreeding population. The species breeds once a year between October to December (DotEE 2017).



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This species primarily feeds on blossom and fruit in the canopy and will occasionally supplement this with leaves. This species tends to favour Eucalyptus, Corymbia, Angophora, Melaleuca, Banksia and Ficus species and will migrate in response to flowering events and the availability of food. This species will forage between 20 km and 40 km in a feeding foray, with most distances <20 km.

Grey-headed Flying-foxes typically roost in camps which are used as a daytime refuge. Camps are generally stable sites, however numbers and occupation can vary over time, depending on the availability of foraging resources within the locality (DotEE 2017). GHFF occupies most areas in their distribution in highly irregular patterns, and therefore surveys based on animal sightings are unlikely to be reliable. A more effective survey method, as endorsed by DotEE, is to search appropriate databases and other sources for the locations of camps, and to conduct vegetation surveys to identify feeding habitat.

Threats to the GHFF include loss of important foraging and roosting habitat, competition with Black Flying-foxes, negative public attitude and conflict with humans, electrocution, entanglement in netting and on barbed-wire, climate change and disease (DotEE 2017). The draft National Recovery Plan for the GHFF defines habitat critical to the survival of the species as natural habitat that is (DotEE 2017):

- productive foraging habitats linked by migration corridors or stopover habitats and camps within a nightly commuting distance of the foraging resources.
- during winter and spring when food bottlenecks have been identified.

The plan also notes that foraging resources which provide resources in times of food shortage may also be critical to the survival of the species (DotEE 2017). No camps are present in the referral area. The nearest known camps are:

- Campbelltown - 10 km north of the referral area containing approximately 500 – 2,499 individuals
- Macquarie Fields – 25 km north of the referral area containing approximately 2,500 – 9,999 individuals.

The proposed action will impact (directly and indirectly) up to 72.22 ha of GHFF habitat as shown in Figure 24.

Of these impacts, 55.26 ha will be direct impacts resulting in the permanent loss of GHFF habitat (42.48 ha of moderate to high quality foraging habitat (intact/grazed woodland) and 12.78 ha of low quality foraging habitat), 1.9 ha will be temporary impacts during the establishment of detention basins that will be restored with landscape plantings suitable for GHFF, 1.05 ha consists of a 1.5m wide bush walking track through GHFF habitat that will not impact any trees and 14.01 ha will be modification to existing habitat to establish bushfire APZs.

The loss of 55.26 ha of GHFF habitat is a very small proportion of the greater than 10,000 ha of nearby foraging and potential roosting habitat in the Georges River catchment, a significant proportion of which is permanently protected in National Parks and water supply catchments. Further, the proposed action will permanently protect and enhance the quality of over 200 ha of GHFF foraging habitat in registered Biobank sites, and retain and enhance 15.91 ha of GHFF habitat in APZ and detention basin areas that buffer these conservation areas from the pressures of urban development and retain and enhance a further 17.11 ha of GHFF habitat in open space and rural land (Figures 3 and 24).

The Significant Impact Criteria was applied with respect to Grey-headed Flying-fox (Table 19) and concluded that the proposed action is unlikely to constitute a significant impact on this species.

Species or threatened ecological community

Lathamus discolor (Swift Parrot)

Impact

The Swift Parrot is fast-moving and distinctive and is generally conspicuous where present.

The Swift Parrot breeds in Tasmania during the Australian summer and migrates north as a single population to mainland Australia (NSW, ACT and VIC) during winter. In NSW the Swift Parrot typically forages in forests and woodlands and tends to prefer mature trees. When on mainland Australia the Swift Parrot feeds on flowers and lerps in Eucalyptus spp. and will often forage widely. It is a highly mobile species able to utilise a variety of nectar sources over large areas (Saunders et al. 2011).

In New South Wales, Swift Parrots forage in forests and woodlands throughout the coastal and western slopes regions each year. Coastal regions tend to support larger numbers of birds when inland habitats are subjected to drought. Favoured feed trees including winter flowering species such as Swamp Mahogany Eucalyptus robusta, Spotted Gum Corymbia maculata, Red Bloodwood C. gummifera, Mugga Ironbark E. sideroxylon, and White Box E. albens. Key habitat for Swift Parrots on the coast and coastal plains of NSW include Spotted Gum Corymbia maculata, Swamp Mahogany Eucalyptus robusta and Forest Red Gum E. tereticornis Forests.

Swift Parrots tend to feed on the largest, most mature trees available, when in flower. Their distribution fluctuates in response to food availability. The Swift Parrot Recovery Plan (Saunders and Tzaros 2011) defines habitat critical to the survival of the species as:

those areas of priority habitat for which the Swift Parrot has a level of site fidelity or possess phenological characteristics likely to be of importance to the Swift Parrot, or are otherwise identified by the recovery team (DotEE (Bird Life Australia) 2011).

Priority habitat includes areas:

- used for nesting
- used by large proportions of the Swift Parrot population,
- used repeatedly between seasons (site fidelity), or



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- used for prolonged periods of time (site persistence).

Whilst the Swift Parrot was not recorded in the referral area during survey, which is likely to be a result of its highly nomadic and irregular visitation to south-west Sydney, there are reported to be a number of historical records of the species from the Camden area and reports of foraging birds in the Beulah homestead property to the south of the referral area some 30 or so years ago (unpublished data in submissions to Stage 1). BioNet only includes a number of records near Appin, south of the referral area and what is now the Dharawal National Park from the 1990's and 2015 and a recent record of two birds east of Appin Road in May 2018.

The proposed action will impact (directly and indirectly) up to 72.22 ha of potential Swift Parrot habitat as shown in Figure 25. Of these impacts, 55.26 ha will be direct impacts resulting in the permanent loss of Swift Parrot habitat (42.48 ha of moderate to high quality foraging habitat (intact/grazed woodland) and 12.78 ha of low quality foraging habitat – scattered paddock trees), 1.9 ha will be temporary impacted during the establishment of detention basins that will be restored with landscape plantings suitable for Swift Parrot, and 1.05 ha consists of a 1.5m wide bush walking track through Swift Parrot habitat that will not impact any trees. 14.01 ha will be modification to existing habitat to establish bushfire APZs.

The loss of 55.26 ha of Swift Parrot habitat is a small proportion of potential foraging habitat in the locality and region (there is over 23,000 ha of similar woodland habitat in the Campbelltown area alone), a significant proportion of which is permanently protected in National Parks and water supply catchments. Further, the proposed action will permanently protect and enhance the quality of over 200 ha of Swift Parrot foraging habitat in registered Biobank sites, and retain and enhance 15.91 ha of Swift Parrot habitat in APZ and detention basin areas that buffer these conservation areas. A further 17.11 ha of Swift Parrot habitat will be retained in open space and rural land (Figures 3 and 25).

Whilst the habitat to be impacted includes a proportion of key coastal feed trees, the proposed action will not impact on habitat considered to be 'important' or 'critical' to the survival of Swift Parrot as it does not support a large proportion of the overwintering population and there is little evidence to suggest that Swift Parrot use the site on a regular basis or for prolonged periods of time. Further, the proposed action will conserve and retain over 200 ha of potential foraging habitat.

The Significant Impact Criteria was applied with respect to the Swift Parrot (Table 20) and concluded that the proposed action is unlikely to constitute a significant impact on this species.

2.4.2 Do you consider this impact to be significant?

Yes No

2.5 Is the proposed action likely to have any direct or indirect impact on the members of any listed migratory species or their habitat?

Yes No

Migratory species

Yes. Two migratory species, the Cattle Egret and Rufous Fantail have been recorded utilising habitats in the referral area.

Impact

Both of the species considered to have large natural distributions and are found in a large variety of areas throughout Australia. The referral area does not represent 'important habitat' or support an 'ecologically significant proportion of the population' of either of these species and will not result in an invasive species that is harmful to these species becoming established. Any impacts on these species as a result of the development are therefore expected to be minor.

A significant impact to any species will not result from the development

2.5.2 Do you consider this impact to be significant?

Yes No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

Yes No

2.7 Is the proposed action likely to be taken on or near Commonwealth land?

Yes No



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2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.9 Is the proposed action likely to have any direct or indirect impact on a water resource from coal seam gas or large coal mining development? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.10 Is the proposed action a nuclear action? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.11 Is the proposed action to be taken by a Commonwealth agency? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.12 Is the proposed action to be undertaken in a Commonwealth Heritage place overseas? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.13 Is the proposed action likely to have any direct or indirect impact on any part of the environment in the Commonwealth marine area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



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Section 3

Description of the project area

3.1 Describe the flora and fauna relevant to the project area

The referral area contains remnant patches of native vegetation, heavily vegetated riparian corridors and gullies and agricultural land that has a long history of disturbance associated with cattle grazing and horse agistments since the 1850's. The following vegetation communities have been recorded in the referral area:

- Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (CPW)
- Shale Sandstone Transition Forest in the Sydney Basin Bioregion (SSTF)
- Coastal Floodplain Eucalypt Forest of eastern Australia (CFEF)
- Grey Myrtle Dry Rainforest (GMDR)
- Cleared land.

The age and structure of the vegetation in the site varies from mature, remnant trees to patches of regrowth < 50 years old. Biometric plots were undertaken across the site and identified 421 flora species, of which 134 were exotic and 287 were native (A flora species list is provided in Appendix E).

One threatened flora species was identified during survey; *Pomaderris brunnea* (Brown Pomaderris) which is listed as vulnerable under the EPBC Act.

A range of fauna habitat features were observed within the referral area, including vegetated areas of tall open woodland, gorges with some sandstone overhangs, hollow bearing trees, leaf litter, sandstone outcropping, farm dams, native grassland and riparian corridors. A total of 175 fauna species were recorded on site during surveys, including three threatened species; *Phascolarctos cinereus* (Koala), *Chalinolobus dwyeri* (Large-eared Pied-bat) and *Pteropus poliocephalus* (Grey-headed Flying-fox) (Appendix E).

3.2 Describe the hydrology relevant to the project area (including water flows)

The site adjoins the Nepean River on the western boundary of the referral area. The site contains 4 creek lines (Menangle, Woodhouse, Nepean and unnamed) which are all tributaries of the Nepean River (Figure 5). With the exception of the Nepean River, a majority of the riparian corridors in the referral area were dry during survey or had small pools of water, indicating that they are unlikely to provide permanent habitat for fish. Some riparian corridors contained pooled water which may provide some habitat for amphibian species. Some of the 1st order stream showed high levels of degradation associated with agricultural land practices and were dominated by pasture grasses. Higher order streams were generally in better condition, containing rocky bed and banks with native vegetation present.

3.3 Describe the soil and vegetation characteristics relevant to the project area

The referral area is underlain by the Triassic Ashfield Shale of the Wianamatta Group deposited over the Hawkesbury Sandstone. In general there are scattered occurrences of bedrock outcrops increasing in abundance toward the larger riparian corridors and the Nepean River. Shale underlies the northern portion of the site and sandstone in the southern portion of the site. The existing soils within the referral area are cohesive and potentially have low bearing strength when wet. A review of the available Acid Sulphate Soil Risk Map and an assessment of the topography and lithology of the site also confirmed there is a very low risk or potential acid sulphate soils.

Portions of the referral area are cleared of vegetation as a result of its continued agricultural use. The site contains large patches of woodland concentrated around the riparian corridors in the form of Alluvial Woodland, Shale Sandstone Transition Forest and Cumberland Plain Woodland.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area

The referral area contains gorges and sandstone overhangs along the creek lines (Menangle and Woodhouse Creeks) that run through or adjacent to the site. There are no other outstanding natural features or important / unique features within the referral area.

3.5 Describe the status of native vegetation relevant to the project area

The site contains both remnant and degraded native vegetation and large areas of exotic pastures. Four native vegetation communities are located within the boundaries of the site, two of which are listed as critically endangered on the EPBC Act (CPW and SSTF) and once which is being considered for listing (CFEF):

- Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (Cumberland Plain Woodland) – listed as critically endangered under the EPBC Act
- Shale Sandstone Transition Forest in the Sydney Basin Bioregion - listed as critically endangered under the EPBC Act
- Coastal Floodplain Eucalypt Forest of eastern Australia (CFEF) – not currently listed under the EPBC At but under consideration
- Grey Myrtle Dry Rainforest (not a listed matter of NES).

Large portions of the site are comprised of cleared land and highly modified/degraded patches of Cumberland Plain



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Woodland and Shale Sandstone Transition Forest that have resulted from a long history of agricultural land management.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area

Topographically, the land is gently undulating throughout with steep, incised gorges associated with the creek systems.

3.7 Describe the current condition of the environment relevant to the project area

The site and its surrounds currently contain areas of native vegetation in various condition states and exotic pastures with scattered paddock trees. The site has predominantly been used for grazing livestock since the 1850's and more recently pivot irrigation as can be seen by the circular areas devoid of any tree canopy in Figure 5. The majority of remnant native vegetation occurs along drainage lines and steeper slopes with patches/clumps of trees (varying density) in areas subject to grazing and some cropping. The land is approximately 60% cleared.

3.8 Describe any Commonwealth Heritage places or other places recognised as having heritage values relevant to the project

The site does not contain any Commonwealth Heritage Places. The Mt Gilead Homestead, Lot 1 DP 1218887, has been nominated as a heritage item under the NSW State Heritage Register, however this has not yet been finalised (Figure 26). The Mt Gilead homestead will not be impacted by the proposed action and is protected by a 150 ha curtilage bound by the Menangle and Woodhouse creek lines and includes 33 ha of proposed conservation areas (Figure 2).

3.9 Describe any Indigenous heritage values relevant to the project area

Archaeological studies undertaken by Navin Officer (2006 and 2013) and ELA (2015) have found that the referral area includes previously recorded aboriginal sites (scar trees, artefact scatters, shell middens rock art sites and shelters) and areas of archaeological potential. The art sites, shell middens and several scar trees will be protected in the proposed conservation areas.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area

The tenure of the action is 100% freehold land currently owned by Mt Gilead Pty Ltd, Lendlease Communities (Figtree Hill) Pty Ltd has a commercial interest in the land which will see Lendlease Communities (Figtree Hill) Pty Ltd become the registered proprietor. Lendlease Communities (Figtree Hill) Pty Ltd are the proponent and will be undertaking the proposed action.

3.11 Describe any existing or any proposed uses relevant to the project area

The referral area has been used and continues to be used as agricultural land since the 1850's. It is currently zoned rural and is used for pivot irrigation, cropping, cattle grazing and horse agistment. The referral areas has been identified by the Department of Planning, Industry and Environment for future urban growth as part of the Greater Macarthur Investigation area (DPE 2015;2018).



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Section 4

Measures to avoid or reduce impacts

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action

Measures to avoid potential direct impacts

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

The ecological assessments conducted in the referral area by ELA between 2013 and 2017 have been used to inform avoidance and minimisation of direct and indirect impacts to biodiversity values throughout the Master planning stage. These principles include:

- the layout design selection process must include consideration and analysis of the biodiversity constraints of the proposed action
- the project should be located in areas where the native vegetation and threatened species habitat is in the poorest condition

- the project should be in areas which avoid EECs or CEECs
- the project should aim to minimise the amount of clearing or habitat loss
- the project should be located in areas that do not have native vegetation or require the least amount of clearing.

The proposed action is the result of a series of redesigns taking into account the above and is shown in Figure 2. Whilst all impacts to matters of NES have not been completely avoided, impacts have been minimised as far as practicable. The proposed action has been designed to retain larger, more viable patches of these matters of NES in moderate to good quality, with development concentrated in poorer condition areas of the communities.

Measures to avoid potential indirect impacts

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

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

The precinct and lot layout for Mt Gilead Stage 2 has been designed to avoid and / or minimise to the maximum extent possible, indirect impacts to remaining vegetation including that contained in proposed conservation areas. Figure 2 and Figures 27-28 show that the outer perimeter of the proposed residential footprint is a perimeter road. As such, there will be no residential blocks directly adjacent to protected bushland areas. This has been designed to:

- remove the likelihood of illegal encroachment into native vegetation by future residents, thus removing the chance of degradation through illegal clearing, weed invasion by dumping of garden waste;
- allows for the required Bushfire Asset Protection Zones (APZs) to be mostly absorbed (i.e. overlap with) the perimeter roads and the dwelling setback within the individual lots, with only narrow bands of APZ (5-10m) extending beyond the perimeter roads in to open space areas. In these areas, the establishment and maintenance of the APZ has been assessed as an impact as any existing vegetation in these areas will need to be modified (separation of tree canopies, reduction in shrub and ground covers) to meet APZ performance objectives. In most cases, whilst 14.65 ha of existing vegetation has been identified in these APZ zones, it comprises of thinned/grazed woodland where the tree canopies are already separated and the ground /shrub layers are already highly modified by current grazing practices. Therefore, no further clearing or modification will be required to maintain these areas to APZ standards, and in over a third of the APZ zone, additional tree planting will be allowed and undertaken as part of landscaping plans that will provide additional foraging habitat for Koala, Swift Parrot, Large-eared Pied-bat and Grey-headed Flying-fox;
- allows for a managed 30m TEC buffer zone to be established between the outer edge of the perimeter road and protected bushland areas (Biobank sites), as required by the EPBC Act Conservation Listing Advice (TSSC 2014a).

Further information provided in Mt Gilead EPBC Referral_v3 word document.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved

Whilst the proposed development has implemented a number of measures to avoid and minimise impacts to MNES as outlined above, however it was not possible to completely avoid all impacts and some residual impacts to MNES remain. Lendlease is committed to offsetting these impacts in accordance with the EPBC Act Offset Policy (DSEWPaC 2012).

Offset areas will be secured by the registration of five Biobank sites over 201.81ha, prior to impacts occurring as shown in Figure 3. The active conservation management (fencing, removal of grazing, weed control and assisted natural regeneration)



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will commence from 2020 so that regeneration is significantly advanced prior to impacts occurring.

Registered Biobank sites are recognised by the DoTEE and EPBC Act offset policy as an appropriate conservation mechanism as they provide legal protection on title and in perpetuity conservation funding held in a Trust account, administered by the NSW Biodiversity Conservation Trust. They are subject to annual monitoring, reporting, audit and compliance, and once registered and activated by the retiring of credits, can only be terminated by the Minister for the Environment.

Whilst the Biocertification assessment and application for Mt Gilead Stage 2 (ELA 2019a) calculated impacts and offsets under the Biocertification Assessment Methodology (BCAM), this is not recognised by the EPBC Act. The number of credits 'required' for impacts and 'generated' by proposed conservation measures, have therefore been re-calculated using the Biobanking Assessment Methodology (BBAM) (Tables 21 to 24 and Appendices H and I).

The 171.77ha of Biobank sites (excluding 30.04 ha of the 30m TEC buffers that extend into the Biobank areas) will generate 2,563 ecosystem credits for the four vegetation types they protect (Table 21).

525 CPW credits are generated, of which, 236 do not currently meet EPBC thresholds. Similarly, 1,579 SSTF credits are generated, of which, 110 do not currently meet EPBC thresholds and 210 CFEF credits are generated, of which, 1 does not currently meet EPBC thresholds.

Within the 201.81 ha biobank sites, including the buffer areas, 200.38 ha comprises Koala habitat (and GHFF, LEPB and Swift Parrot habitat) that will generate 1,423 credits, however, 38.88 ha (276 credits) do not currently comprise foraging habitat, these are derived native grassland and cleared areas that will be restored to Koala habitat (Table 22). It is noted that the BBAM does not assess GHFF, LEPB and Swift Parrot as species credits; they are accounted for by the areas of the relevant vegetation types that are being impacted/protected.

The 45.71 ha of EPBC Condition EECs that will be impacted, require 1,780 ecosystem credits for direct impacts (383 for impacts to CPW, 1,317 for impacts to SSTF and 80 for impacts to CFEF) and 394 ecosystem credits (18 CPW, 372 SSTF and 3 CFEF) for indirect impacts (Table 23).

The 'up to' 72.22 ha of Koala, LEPB, GHFF and Swift Parrot habitat that will be impacted (direct and indirect impacts) requires 1,878 species credits (Table 24). When comparing the number of credits required to the number of credits generated, other than for SSTF, CFEF and Pomaderris brunnea, the proposed Biobank sites do not generate sufficient credits to fully meet all of the offsets required. In particular:-

For the 401 credits required for impacts to CPW, only 289 are generated by existing EPBC Act quality CPW, although the Biobank sites will generate an additional 236 CPW credits within 5-10 years as the restoration activities progress and will meet EPBC condition thresholds by the time impacts occur (Refer to Figure 29 which shows seven (7) proposed stages of development over 10 years).

Similarly, for the 1,878 Koala species credits required, only 1,423 species credits are generated, including by areas that will be restored to Koala habitat (Figure 20). i.e. there will be a deficit of 455 Koala credits (equivalent to 64 ha). Lendlease will "secure" these credits prior to the commencement of the final stages of development and already holds 99 Koala credits from Noorumba Reserve.

Lendlease will "secure" the remaining Koala credits from either the purchase of land (and subsequent registration as a Biobank site) or the purchase of credits, from registered Biobank sites that are within the Campbelltown-Wollondilly Koala population.

Further information provided in Mt Gilead EPBC Referral_v3 word document.



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Section 5

Conclusion on the likelihood of significant impacts

5.1 You indicated the below ticked items to be of significant impact and therefore you consider the action to be a controlled action

- World Heritage properties
- National Heritage places
- Wetlands of international importance (declared Ramsar wetlands)
- Listed threatened species or any threatened ecological community
- Listed migratory species
- Marine environment outside Commonwealth marine areas
- Protection of the environment from actions involving Commonwealth land
- Great Barrier Reef Marine Park
- A water resource, in relation to coal seam gas development and large coal mining development
- Protection of the environment from nuclear actions
- Protection of the environment from Commonwealth actions
- Commonwealth Heritage places overseas
- Commonwealth marine areas

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action

N/A



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Section 6
Environmental record of the person proposing to take the action
6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Explain in further detail <p>Lendlease Communities (Figtree Hill) Pty Ltd is a subsidiary of the Lendlease Corporation. Lendlease Corporation has an exemplary record of environmental management and sustainability at state, national and international levels.</p> <p>Lendlease has worked closely with community as well as local and state authorities to ensure site-responsive outcomes on its projects. Examples of this include returned effluent treatment and reuse systems, seed collection and propagation programmes with both Landcare and Greening Australia, undertaking HIA Green Smart Programmes across a number of projects, provision of site-based management plans across all communities, generation of site based urban design outcomes (in consultation with local authorities), water recycling programmes at a number of communities, waterway and corridor management plans ensuring no impact into downstream wetlands and builders water recycling programs.</p> <p>Further information provided in Mt Gilead EPBC Referral_v3 word document.</p>
6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application <p>Not applicable.</p>
6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation’s environmental policy and framework? <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
6.3.1 If the person taking the action is a corporation, provide details of the corporation’s environmental policy and planning framework <p>Lendlease’s vision is to become the lead agency for practical demonstration of sustainable development. The company’s Sustainability Framework includes a number of strategies, processes and procedures such as:</p> <ul style="list-style-type: none">• a system for tracking and measuring corporate performance;• a strategy of innovation;• a system for the sustainability assessment of projects;• a project design review process;• a process for visioning and objective setting;• providing guidelines for purchasers to achieve sustainable design outcomes; and• sustainable development policies. <p>The proposed action is governed by all of the above. Lendlease environmental policy seeks to minimise its environmental impact, control waste, prevent pollution, use resources effectively and act with consideration for its neighbours.</p> <p>Additionally, Lendlease identifies compliance with legislation as a minimum goal and will apply global best practice and innovations where legislation does not exist. Lendlease implements management systems, sets goals and measures targets against clear objectives. These are regularly reviewed. Lendlease also provides specific training to staff to ensure a thorough understanding of the Lendlease commitment to the environment.</p>
6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act? <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
6.4.1 EPBC Act No and/or Name of Proposal <p>Yes.</p> <ul style="list-style-type: none">• Lendlease Communities (Figtree Hill) Pty Ltd is a subsidiary of the Lendlease Corporation. Lendlease Corporation has previously referred the following under the EPBC Act:<ul style="list-style-type: none">• 2004/1931 Lendlease – Urban and Commercial Development, Caroline Springs (VIC)• 2005/1935 Lendlease – Urban and Commercial Development, Caroline Springs (VIC)• 2006/3057 Delfin Lend Lease – Residential Development, Craigieburn (VIC)• 2007/3574 Lendlease – Residential and Commercial Development, Rocky Springs (QLD)• 2010/5381 Lendlease – Residential Development, Calderwood Valley (NSW)• 2011/5381 Lendlease – Residential Development, Alkimos (WA)• 2013/6791 Lendlease – Residential Development, Yarrabilba (QLD)• 2019/8552 Lendlease – Residential Development, Werrington (NSW)



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 7

Information sources

Reference source

All references included in Appendix A have been used in this report.

Reliability

All of the references used in preparing this referral are considered to be of a high reliability and from a reliable sources as most have been prepared by either the Australian or NSW Government comprising listing information, impact assessment guidelines and/or recovery plans for MNES. The remaining references have been prepared by consultants engaged by the proponent to prepare the information necessary to complete the referral.

Uncertainties

No uncertainties.

Reference source

Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest EPBC Act policy statement 3.31 (Department of the Environment, Water, Heritage and the Arts (DEWHA), 2010) [Admin Guideline]

Reliability

High

Uncertainties

None

Reference source

Department of the Environment (DotE) 2013. Matters of National Environmental Significance – Significant impact guidelines 1.1. [Online] Available from: http://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf

Reliability

High

Uncertainties

None

Reference source

Department of the Environment (DotE) 2013a. The Draft survey guidelines for Australia's threatened orchids: Guidelines for detecting orchids listed As 'Threatened' under The Environment Protection and Biodiversity Conservation Act 1999.

Reliability

High

Uncertainties

None

Reference source

Department of the Environment (DotE) 2014. EPBC Act Referral Guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory). Commonwealth of Australia, Canberra. Available from <http://www.environment.gov.au/system/files/resources/dc2ae592-ff25-4e2c-ada3-843e4dea1dae/files/koala-referral-guidelines.pdf>

Reliability

High

Uncertainties



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

None

Reference source

Department of Environment and Energy (DoTEE) 2019. National Flying-fox Monitoring viewer. Available from <https://www.environment.gov.au/webgis-framework/apps/ffc-wide/ffc-wide.jsf>

Reliability

High

Uncertainties

None

Reference source

Department of Environment and Energy (2019b). Protected Matters Search Tool. Available from: <https://www.environment.gov.au/epbc/protected-matters-search-tool>

Reliability

High

Uncertainties

None

Reference source

Department of the Environment and Energy (DotEE) 2019a. Species Profile and Threats Database. [Online] Available from: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

Reliability

High

Uncertainties

None

Reference source

Department of Environment and Resource Management (DERM). 2011. National recovery plan for the large-eared pied bat *Chalinolobus dwyeri*. Report to the Department of Sustainability, Environment, Water, Population and Communities, Canberra.

Reliability

High

Uncertainties

None

Reference source

Department of the Environment, Water, Heritage and the Arts (DEWHA) 2010a. Survey guidelines for Australia's threatened reptiles: Guidelines for detecting reptiles listed as threatened under The Environment Protection and Biodiversity Conservation Act 1999.

Reliability

High

Uncertainties



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

None

Reference source

Department of the Environment, Water, Heritage and the Arts (DEWHA) 2010b. Survey guidelines for Australia's threatened frogs: Guidelines for detecting frogs listed As threatened under The Environment Protection and Biodiversity Conservation Act 1999.

Reliability

High

Uncertainties

None

Reference source

Department of the Environment, Water, Heritage and the Arts (DEWHA) 2010c. Survey guidelines for Australia's threatened birds: Guidelines for detecting birds listed as threatened under The Environment Protection and Biodiversity Conservation Act 1999.

Reliability

High

Uncertainties

None

Reference source

Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) 2011. Survey guidelines for Australia's threatened mammals: Guidelines for detecting mammals listed as threatened under The Environment Protection and Biodiversity Conservation Act 1999.

Reliability

High

Uncertainties

None

Reference source

Department of the Sustainability, Environment, Water, Population and Communities (DSEWPC) 2012. EPBC Act 1999 Environmental Offset Policy.

Reliability

High

Uncertainties

None

Reference source

Department of Environment, Climate Change and Water (DECCW) 2011b. Cumberland Plain Recovery Plan. NSW Department of Environment Climate Change and Water, Sydney. January 2011.

Reliability

High



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Uncertainties
None
Reference source
Greater Sydney Commission 2018. Greater Sydney Region Plan, A Metropolis of Three Cities – Connecting People. Available from: https://gsc-public-1.s3-ap-southeast-2.amazonaws.com/greater-sydney-region-plan-0618.pdf
Reliability
High
Uncertainties
None
Reference source
Officer, N. 2006. Mount Gilead Campbelltown, NSW Cultural Heritage Assessment. A report to Manidis Roberts Consultants.
Reliability
High
Uncertainties
None
Reference source
Officer, N. 2013. Mount Gilead Rezoning Campbelltown, NSW Archaeological Assessment and Aboriginal Consultation. Report prepared for Old Mill Properties.
Reliability
High
Uncertainties
None
Reference source
Tozer M (2003). The native vegetation of the Cumberland Plain, western Sydney: systematic classification and field identification of communities. <i>Cunninghamia</i> 8(1), 1–75.
Reliability
High
Uncertainties
None
Reference source
Tozer, MG, Turner K, Simpson CC, Keith DA, Beukers P, Mackenzie B, Tindall D & Pennay C (2006). Native Vegetation of Southeast NSW: A Revised Classification and Map for the Coast and Eastern Tablelands. Version 1.0. Department of Environment & Conservation and Department of Natural Resources, Sydney.
Reliability
High
Uncertainties
None



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Reference source
TSSC (Threatened Species Scientific Committee) 2008. Commonwealth Listing Advice on Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest.
Reliability
High
Uncertainties
None
Reference source
TSSC [Threatened Species Scientific Committee] (2012) Commonwealth Listing Advice on Chalinolobus dwyeri (Large-eared Pied Bat). Department of Sustainability, Environment, Water, Population and Communities. Canberra, ACT: Department of Sustainability, Environment, Water, Population and Communities. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/183-listing-advice.pdf . In effect under the EPBC Act from 29-Jun-2012.
Reliability
High
Uncertainties
None
Reference source
TSSC (Threatened Species Scientific Committee) 2014a. Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Approved Conservation Advice (including listing advice) for Shale Sandstone Transition Forest of the Sydney Basin Bioregion (EC25R).
Reliability
High
Uncertainties
None
Reference source
TSSC (Threatened Species Scientific Committee) 2019. Draft Conservation advice (incorporating listing advice) for Coastal floodplain eucalypt forest of eastern Australia. July 2019
Reliability
High
Uncertainties
None



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Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 8

Proposed alternatives

Do you have any feasible alternatives to taking the proposed action?
Yes No



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 9

Person proposing the action

9.1.1 Is the person proposing the action a member of an organisation?
 Yes No

Organisation

Organisation name	LENDLEASE COMMUNITIES (FIGTREE HILL NO.3) PTY LIMITED
Business name	
ABN	39614296294
ACN	614296294
Business address	2 / 88 Philip Street, Parramatta, 2150, NSW, Australia
Postal address	
Main Phone number	92366111
Fax	
Primary email address	consult.gilead@lendlease.com
Secondary email address	

9.1.2 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:
 Small business
 Not applicable

9.1.2.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations *
 Yes No

9.1.3 Contact

First name	Mark
Last name	Anderson
Job title	Senior Development Manager
Phone	
Mobile	0419148853
Fax	
Email	mark.anderson@lendlease.com
Primary address	2 / 88 Philip Street, Parramatta, 2150, NSW, Australia
Address	

Declaration: Person proposing the action

I, _____, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity.

Signature: Date:

I, _____, the person proposing the action, consent to the designation of _____ as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:.....Date:



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Proposed designated proponent

9.2.1 Is the proposed designated proponent a member of an organisation?
 Yes No

Organisation	
Organisation name	LENLEASE COMMUNITIES (FIGTREE HILL NO.3) PTY LIMITED
Business name	
ABN	39614296294
ACN	614296294
Business address	2 / 88 Philip Street, Parramatta, 2150, NSW, Australia
Postal address	
Main Phone number	92366111
Fax	
Primary email address	consult.gilead@lendlease.com
Secondary email address	

9.2.2 Contact	
First name	Mark
Last name	Anderson
Job title	Senior Development Manager, Communities
Phone	92366111
Mobile	
Fax	
Email	mark.anderson@lendlease.com
Primary address	2 / 88 Phillip Street, Parramatta, 2150, NSW, Australia
Address	

Declaration: Proposed Designated Proponent

I, _____, the
**proposed designated proponent, consent to the designation of
myself as the proponent for the purposes of the action described in this EPBC Act Referral.**

Signature: Date:



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Referring party (person preparing the information)	
9.3.1 Is the referring party (person preparing the information) a member of an organisation?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Organisation	
Organisation name	ECO LOGICAL AUSTRALIA PTY LTD
Business name	
ABN	87096512088
ACN	
Business address	3 / 101 Sussex Street, Sydney, 2000, NSW, Australia
Postal address	
Main Phone number	92593800
Fax	
Primary email address	alexg@ecoaus.com.au
Secondary email address	
9.3.2 Contact	
First name	Alexandra
Last name	Gorey
Job title	Ecologist
Phone	92593800
Mobile	
Fax	
Email	alexg@ecoaus.com.au
Primary address	3 / 101 Sussex Street, Sydney, 2000, NSW, Australia
Address	
Declaration: Referring party (person preparing the information)	
I, _____, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.	
Signature: Date:	



Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Appendix A

Attachment	
Document Type	File Name
action_area_images	Attachment 2 Part 1.pdf
action_area_images	Attachment 2 Part 2.pdf
action_area_images	Attachment 2 Part 3.pdf
govt_approval_conditions	Appendix A Part 5.pdf
govt_approval_conditions	Appendix F_resub.pdf
localgov_approval_consent	Appendix A Part 1.pdf
localgov_approval_consent	Appendix A Part 2.pdf
localgov_approval_consent	Appendix A Part 3.pdf
localgov_approval_consent	Appendix A Part 4.pdf
localgov_approval_consent	Appendix B.pdf
localgov_approval_consent	Appendix C.pdf
localgov_approval_consent	Appendix D.pdf
localgov_approval_consent	Appendix E.pdf
localgov_approval_consent	Appendix F.pdf
localgov_approval_consent	Appendix G.pdf
public_consultation_reports	Appendix H.pdf
public_consultation_reports	Appendix I.pdf
public_consultation_reports	Attachment 1.pdf
public_consultation_reports	Attachment 3.PDF
public_consultation_reports	Attachment 4.pdf
public_consultation_reports	Mt Gilead EPBC Referral_v3 Part 1.pdf
public_consultation_reports	Mt Gilead EPBC Referral_v3 Part 2.pdf
public_consultation_reports	Mt Gilead EPBC Referral_v3 Part 3.pdf
public_consultation_reports	Mt Gilead EPBC Referral_v3 Part 4.pdf
public_consultation_reports	Appendix A Part 4_resub.pdf

Appendix B

Coordinates

Area 1
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Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

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Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

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Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

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Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

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