

LEND LEASE COMMUNITIES
(ROADS AND MARITIME)

OCTOBER 2018

**APPIN ROAD UPGRADE,
MT GILEAD, NSW**
BIODIVERSITY ASSESSMENT

wsp



Document tendered by
 DR STEPHEN A HILLIPS
 Received by
 ANDREW RATCHFORD
 Date: 25 / 10 / 19
 Resolved to publish Yes / No

3.8.3 THREATENED POPULATIONS

No threatened flora or fauna populations are listed to occur within the study area or locality of the proposal.

3.8.4 AQUATIC HABITAT

No aquatic habitat was identified within the study area. As such no Key Fish Habitat occurs within the study area or likely to be affected by the proposal (Department of Primary Industries 2016, Department of Primary Industries 2016).

3.9 CRITICAL HABITAT

The registers of critical habitat listed under the EPBC Act, BC Act and FM Act searched during the desktop analysis and no critical habitat was found to occur within or in the locality of the study area.

3.10 WILDLIFE CONNECTIVITY CORRIDORS

Wildlife corridors are generally links of native vegetation that join two or more areas of similar habitat and are critical for sustaining ecological processes, such as provision for animal movement and the maintenance of viable populations (Department of Environment 2016).

Within proximity to the study area, a track of vegetation occurs to the west and east of the site south of the Rosemeadow/St Helens Park residential area. This vegetation is fragmented by Appin Road and further fragmented to the west of Noorumba Reserve by the culvert pipeline 'Upper Canal System'. The Upper Canal System is a continuous system of tunnels, aqueducts and open canals (including security fencing) which enable water to divert to Prospect Reservoir. Wildlife corridors west of Appin Road associated with tracts of land at Rosemeadow/Noorumba Reserve are currently fragmented to due existing infrastructure. Fauna which utilise these tracts would be limited to the west by both Appin Road and Upper Canal System. Connectivity to the west of Appin Road will further be limited following the construction of the approved Mt Gilead residential development and associated infrastructure.

Within the study area, vegetation to the east of Appin Road links high quality native vegetation to Wedderburn Park, Dharawal State Conservation Area and Dharawal National Park.

3.10.1 KOALA CORRIDORS

Koala movement corridors have been mapped previously (Biolink Ecological Consultants 2016) (Kylie Madden Pers Comm 2018) within the study area, and have identified potential Secondary movement corridors across Appin Road at Noorumba Council Reserve. Based on recent studies of the regional Koala population including Bionet Atlas records (Office of Environment and Heritage 2017) only a limited number of isolated individuals utilise the east to west corridor at Noorumba Reserve fragmented by Appin Road. This secondary corridor is further fragmented to the west of Noorumba Council Reserve by the Upper Canal System and will be subject to increased edge effects following the construction of the approved Mt Gilead residential development and associated infrastructure (Figure 3.7, Photo 3.14, Photo 3.15).

Recent studies of the regional Koala population by OEH (Kylie Madden Pers Comm 2018) and Bionet Atlas records (Office of Environment and Heritage 2017) have further identified and defined important Koala corridors in the region. These studies have defined Primary corridors as the most important linkages of koala habitat within the region.

Primary corridors contain large areas of Core Koala Habitat within them and are contiguous (gaps of less than 100m) links of the most important koala habitat. Primary Corridors also contain resident breeding populations (Kylie Madden Pers Com 2018). Within the locality of the proposal area, the majority of Koala records and regionally significant movement occur along a north south corridor east of Appin Road within extensive patches of native vegetation associated with Dharawal National Park/Reserves and Holsworthy Barracks land and the Georges River. This North-South Corridor is identified as the Primary Corridor for Koalas in the locality (Kylie Madden Pers Comm 2018).

Secondary Corridors (like the one identified within the study area) contain Core Koala Habitat and are connected to Primary Corridors, however links to these corridors are limited and may be connected by scattered trees of more than 100 m. Generally, it is considered Koalas use Secondary corridors primarily for dispersal. These Secondary corridors generally do not form areas with records of breeding or established home ranges. Retention of Secondary corridors are less likely to be critical to the long-term survival of the regions koala populations, however they could be enhanced to further support Primary Corridors and Core Habitat (Kylie Madden Pers Com 2018).

Due to the fragmented and relatively small extent of Koala habitat, limited existing records, the proposed significant increase in future residential development to the west of Appin Road and the associated increase in edge effects detrimental to the Koala, the Secondary east- west corridor identified within the draft Campbelltown Koala Plan of Management (CKPoM) (Biolink Ecological Consultants 2016) for the study area is unlikely to be of vital importance to the local Koala population

An improved connectivity strategy that reduces Koala road mortality and strengthen and encourage the north south movement along the Primary Koala corridor east of Appin road and which will utilise better opportunities for east – west links to the south of the study area is likely to be more beneficial for the population (Kylie Madden, Senior Threatened Species Officer OEH, Pers coms 2017).

The value of the fragmented east-west corridor at Noorumba Council Reserve will be subject to increased pressures following the development release of future approved Mt Gilead residential lands adjoining and to the west of Appin Road and increasing the importance of maintaining the strategically important north- south Koala Corridor to the east of Appin Road (Kylie Madden, Senior Threatened Species Officer OEH, Pers coms 2017).

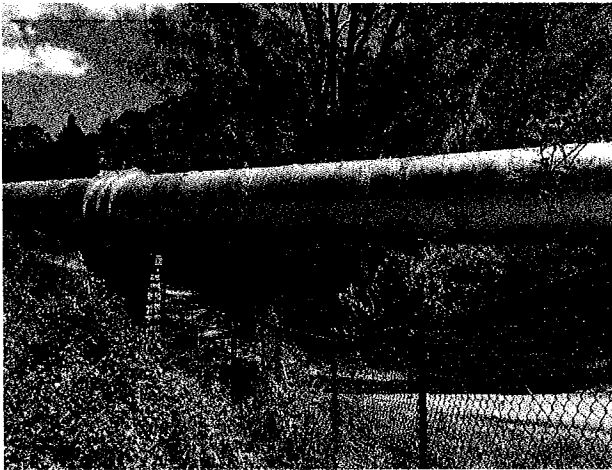


Photo 3.14 Upper Canal System – wildlife barrier to west of Appin Road



Photo 3.15 Upper Canal fencing – west of Appin Road

3.11 SEPP 44 KOALA HABITAT

The *State Environmental Planning Policy No 44 – Koala Habitat Protection* (SEPP 44) applies to Campbelltown LGA under Schedule 1 of the policy. In addition, the study area contains three SEPP 44 Schedule 2 feed tree species including; *Eucalyptus punctata*, *Eucalyptus tereticornis* and *Eucalyptus microcorys* (It should be noted that *Eucalyptus microcorys* were planted within the study area and are not remnant).

Under Regulation 7 of SEPP 44 the study area, or parts of it, is classified as “potential koala habitat”. Potential koala habitat is defined as – *areas of native vegetation where the trees of the types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component. Within the study area Eucalyptus punctata or Eucalyptus tereticornis constitutes at least 15% of the upper canopy or lower tree component.*

Under Regulation 8 of SEPP 44 the study area, or parts of it, is classified as “core koala habitat”. Core koala habitat is defined as – *an area of land with a resident population of koalas, evidenced by attributes such as breeding females and*

recent sightings of and historical records of a population. There is a known resident population of Koalas within Campbelltown LGA and there have been recent records for koala sightings (including road mortality) along Appin Road.

As an activity being considered under Part 5 of the EP&A Act via a Review of Environmental Factors (REF), SEPP 44 does not apply to this proposal. However, despite this and in the interests of completeness it should be noted that the proposal does occur within core koala habitat. It is therefore recommended that the proposal considers the mitigation measures and recommendations within the draft Campbelltown Comprehensive Koala Plan of Management (CKPoM) (Biolink Ecological Consultants 2016). A discussion of the proposal in relation to the draft CKPoM (Biolink Ecological Consultants 2016) is provided in the following Section 3.12.

3.12 KOALA PLAN OF MANAGEMENT

The purpose of the draft CKPoM (Biolink Ecological Consultants 2016) is to ‘focus management efforts into known areas of core Koala habitat, while also enabling the dynamic between occupied and unoccupied landscape unites for planning purposes’. The draft CKPoM was placed on exhibition for public comment in May-June 2016 and has not been finalised, as such amendments may still be undertaken before its approval is finalised.

In order to best manage the Campbelltown Koala population, the draft CKPoM has identified four Koala Management Precincts (KMP) these include:

- Wedderburn
- Kentlyn
- Minto Heights
- Campbelltown Rural-Urban Interface (CRUI).

The proposal occurs within the Campbelltown Rural-Urban Interface KMP and the proposal aims to be consistent with the objectives outlined in Table 3.14.

Table 3.14 Campbelltown Rural-Urban Interface (CRUI) Koala Management Precinct objectives

CRUI KMP OBJECTIVES	PROPOSAL MITIGATION MEASURES
<p>Minimise losses of and or further fragmentation of otherwise contiguous patches of preferred Koala Habitat >10 ha in size</p>	<ul style="list-style-type: none"> – Removal of preferred Koala habitat has been kept to minimal as far as possible and continued refinement through detailed design will be undertaken. – Based on current regional studies (Kylie Madden, Senior Threatened Species Officer OEH, Pers coms 2017) (See section 3.10.1) the current link at Noorumba Reserve is already fragmented by infrastructure and loss of habitat in the region and will be subject to increasing urban pressures following the construction of the approved Mt Gilead residential development and associated infrastructure adjoining the reserve. An improved strategy at this point to include fencing to reduce Koala road mortality and encourage Koalas to use Primary Corridors east of Appin Road and move further south to better opportunities for east – west links to the Nepean River is likely to be more beneficial for the population.

CRUI KMP OBJECTIVES	PROPOSAL MITIGATION MEASURES
Ensure connectivity options between Wedderburn KMP and the Nepean River are optimised and maintained in perpetuity	<ul style="list-style-type: none"> — Based on current regional studies (Kylie Madden, Senior Threatened Species Officer OEH, Pers coms 2017) (See section 3.10.1) the current link at Noorumba Reserve is already fragmented by infrastructure and loss of habitat in the region. Additionally, due to existing infrastructure (i.e. Upper Canal System) land use and future development Noorumba Reserve is largely disconnected from the Nepean River and as such is unlikely to provide a corridor to the Nepean for Koalas in the locality. Proposed mitigation measures to ensure safe connectivity options occur in the study area include a koala fencing strategy to reduce Koala road mortality and encourage Koalas to move further south to better opportunities for east – west links to the Nepean River.
Maximise retention of preferred Koala food trees	<ul style="list-style-type: none"> — Removal of preferred Koala food trees and impact to Koala habitat has been kept to as minimal impact as far as possible. Continuation and refinement of design will aim to minimise native vegetation removal through detailed design. — Proposed offsetting of native vegetation (including Koala habitat) and rehabilitation of offset land will aim to enhance Koala habitat within the locality.
Minimise numbers of Koala mortalities due to domestic dog attack and vehicle strike through community education	<ul style="list-style-type: none"> — Implementation of Koala proof fencing in key areas along Appin Road to reduce road mortality (Figure 5.1) due to the increase in road usage as part of the proposal. Additionally, land use surrounding Noorumba Reserve (i.e. residential developed) will increase road use and dog occurrence surrounding the reserve, likely resulting in increased vehicle strike and dog attack if fencing doesn't occur. The Koala proof fencing will further limit Koalas access to residential areas and becoming exposed to these threats.

3.13 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The focus of this section is threatened species, populations and communities and migratory species listed under the EPBC Act. It also included a discussion of the following MNES as they relate to biodiversity:

- World and national heritage
- Wetlands of international and national importance.

3.13.1 THREATENED COMMUNITIES LISTED UNDER THE EPBC ACT

Within the study area, two plant community types which align to nationally listed threatened ecological communities were recorded. For each plant community type to meet EPBC status, each patch must meet thresholds outlined by the Department of Environment and Energy. Table 3.15 shows a summary the findings for each plant community type and condition class.