

Moreton Bay Regional Council  
**Koala Management Plan**  
**The Mill at Moreton Bay Redevelopment**

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# Koala Management Plan

## EPBC 2016/7839: The Mill at Moreton Bay Redevelopment

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Version	Adoption	Date	Reference
V1	Coordination Committee	21.11.2017	A16122452 (Word) A16122474 (pdf)
V2	Update 1 July 2021	1.7.2021	A20364960 (Word)

# 1 Introduction

Moreton Bay Regional Council (MBRC) is creating a thriving new major precinct at the former Amcor Paper Mill at Petrie that will generate thousands of local higher education and employment opportunities for the region.

With a full-scale University of the Sunshine Coast (USC) campus at its core, this new destination will offer world-class study opportunities to residents in the Moreton Bay Region. The vision for the site is to adopt an ecologically sensitive design that maintains and enhances koala habitat for the koala population.

During the initial planning phase, Council identified that redevelopment of the site may impact environmental values and careful management of the site would be needed to ensure the protection of the local environment. Various flora and fauna call the site home, including koalas, which are protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and require special consideration.

Council worked closely with environmental consultants, the Federal Government and local environmental stakeholder groups during the early planning stages of the redevelopment project. Based on the feedback received, Council submitted an EPBC Act referral to the Federal Government for a “controlled action” outlining the strategies that would be implemented to help manage environmental impacts and protect native animals, including koalas. During the controlled action referral, it was determined that 22 hectares of critical koala habitat (koala habitat) would be lost over the duration of the project.

On 7 September 2017, the Federal Government provided approval under the EPBC Act for the establishment of a new campus of the University of the Sunshine Coast and other associated urban uses at Petrie (the project).

In December 2019, Council provided the Federal Government with an update regarding the on-ground works that had occurred since September 2017, including an overview of the decontamination of the site. In addition, an update was provided regarding a site survey plan and amendments to land tenure. The Federal Government subsequently updated Council’s EPBC conditions, by amending the rehabilitation map. All other EPBC approval conditions remained the same. The updated approval is provided in **Appendix 1 - Federal Government EPBC Approval 2016/7839**.

This Koala Management Plan (KMP) forms an integral component of Council’s commitment to koala management and is a required as part of the EPBC Act Approval.

As required by the Federal Government, this plan was reviewed by Dr Bill Ellis (Post-doctoral Researcher University of Queensland) and Dr Jon Hanger (Director, Endeavour Veterinary Ecology Pty Ltd) in 2017, prior to its adoption - refer **Appendix 2 - Consultation**.

Further reviews of the KMP will be undertaken to ensure that the content remains aligned to the works being undertaken across the site, including decontamination works, operational works, revegetation and implementation of koala conservation activities.

## 2 Guiding principles

This plan and any revisions of it are to be guided by a number of key principles implicit in the overarching vision for the site of the project (the site) as a conservation area, and specifically as a koala conservation area. These are:

1. The site contains important remnant koala habitat and supports a viable koala population of critical importance to koala conservation in the region. This fact is acknowledged and has become embedded as a component of the environmental vision for development of the site.
2. The protection and conservation of koalas (including the maintenance and improvement of koala population viability) are a high priority and will be considered in design, construction and the operational phase of the site.
3. The long-term development of the site will maintain and, whenever possible, enhance the eastern and western habitat linkages and koala movement corridors along the North Pine River.
4. Most areas of the site, including the built environment, will be permeable to koalas, and therefore design and functional aspects will facilitate koala movement and safety. Specifically, the minimisation and mitigation of risks associated with vehicle traffic and dog attacks will be a key consideration in terms of design and function of the built environment.

This plan acknowledges that detailed design for individual precinct areas across the site will evolve over time, including the location of roads and other factors that could impact koala safety and conservation. Therefore, the management and mitigation measures proposed for the protection and conservation of koalas on the site are less prescriptive and detailed in this document. However, implemented koala conservation measures will be included in reports submitted to the Federal Government (refer section 5.5 Record Keeping and Reporting).

## 3 Project Overview

### 3.1 Project Site

The Mill at Moreton Bay Priority Development Area (PDA) was declared on 2 September 2016. PDAs are parcels of land within Queensland, identified for specific accelerated development with a focus on economic growth. The PDA encompasses an area of approximately 460 hectares with the primary purpose being to facilitate the development of the proposed USC campus and associated areas.

Information relating to The Mill at Moreton Bay PDA, including PDA Precincts, can be found in **Appendix 3 - Priority Development Area**.

The project involves the redevelopment of the former Amcor Paper Mill site at Petrie. A map of the site is included in **Appendix 1- Federal Government EPBC Approval 2016/7839**. This KMP is applicable to the site only.

In a local context, the site is positioned on the northern side of the North Pine River. It is bound to the west by Gympie Road, the North Coast Railway line and Redcliffe Peninsula Rail Line, to the north by the Redcliffe Peninsula Rail Line; to the northeast by a recently established industrial subdivision, and to the east by Murrumba Downs Sewage Treatment Plant.



The site is located at the nexus of the North Coast Rail Line and the Redcliffe Peninsula Rail Line. This provides an ideal opportunity to deliver the new campus as well as vital, active, inclusive and integrated mixed-use neighbourhoods that support the university and the existing Petrie town centre, as well as promoting public transport use.

This redevelopment opportunity will not only revitalise the local area and the broader Moreton Bay Region, it will support positive local and regional environmental outcomes through the strengthening of east/west ecological habitat corridors and supporting north/south wildlife movement opportunities.

### 3.2 Project Objectives

The project is a unique opportunity to transform a former industrial site into an education and innovation precinct incorporating ecologically sustainable design principles. Specifically, this will include the protection of the local koala population, and the implementation of a comprehensive range of measures to ensure that the on-site koala population is secure, viable, and connected to the broader regional koala population.

The project objectives embodied in this KMP include key measures to minimise the loss of koala habitat, establish new koala habitat, implement koala-friendly design principles, maintain habitat corridor connectivity, monitor koalas and threats to koala populations, and manage threats using innovative management solutions.

Council will liaise with a range of partners, including USC, koala specialists, researchers and local environmental stakeholder groups, to develop and implement strategies to improve the health of wild koala populations.

Council is committed to:

1. Identifying impacts on koala habitat during the planning phase.
2. The rehabilitation of the North Pine River floodplain and the establishment and enhancement of koala habitat across the site.
3. Implementing a weed management strategy across the site, to facilitate koala movement.
4. Implementing a range of koala safety measures during the construction phase to ensure that no koalas are injured or killed as a direct result of construction activities.
5. Supporting the health and ongoing viability of koalas on the site through the implementation of a range of direct benefit conservation measures.

## 4 Impacts and Mitigation Measures

During the planning stages of the project, threats to koala were identified, including the impact of wild dogs, domestic dogs, vehicle strike, disease and vegetation clearing.

Council is committed to minimising the impact of these threats to the greatest extent possible across the site, as outlined below. Some of these threats are persistent to a greater or lesser extent throughout the koala's range in Queensland, whereas others are more localised or will vary over time.

Specifically, some threats will be unique to the construction phases of the project, whereas others will principally occur during the operational phases. These are summarised in **Appendix 4 - Summary of potential impacts**.

## 4.1 Wild Dogs

### 4.1.1 Impacts:

Wild dogs are known to have a significant impact on koalas (Queensland Government 2015). While the project is not expected to directly increase the impacts of wild dogs, the control of wild dogs is an important component of reducing koala mortality and ensuring a viable population of koalas at the site.

### 4.1.2 Mitigation:

Council will implement a wild dog management program, which will be delivered across the site and in the surrounding area for the life of the project. Council's wild dog management program will focus on identifying and removing wild dogs from the site and surrounding areas and will utilise a range of monitoring and management measures refer **Appendix 5 - Wild Dog Management Areas**.

Due to the site's proximity to residential areas, wild dog management within the site is restricted to trapping. Alternative wild dog management strategies, including baiting and shooting, will be implemented in areas surrounding the site in accordance the *Biosecurity Act 2014* and the *Weapons Act 1990* to establish a protective buffer from wild dog infiltration.

The management of wild dog populations aims to achieve:

- (i) minimal encounters between koalas and wild dogs on-site and in buffer areas; and
- (ii) minimal koala mortality attributable to wild dog attack/predation.

## 4.2 Domestic dogs

### 4.2.1 Impacts:

Domestic dog attacks are relatively uncommon in the local (on-site) koala population, with a small number of deaths being recorded during koala management activities for the Moreton Bay Rail project. (Hanger *et al*, 2017).

Development associated with the project creates a potential significant additional risk of domestic dog impacts on the local koala population if strict mitigation measures are not implemented and enforced.

### 4.2.2 Mitigation:

Most areas of the site will be managed to facilitate koala movement and use, including non-core habitat areas, and as such, domestic dogs will be strictly managed in accordance with Council's *Local Law 2 (Animal Management) 2011*.

In addition, koala-friendly development principles, including prohibition of domestic dog access to koala habitat areas, will be implemented in conjunction with a compliance and enforcement program.

## 4.3 Vehicle strike

### 4.3.1 Impacts:

The site's position at a major transport hub has the strategic benefit of maximising opportunities to access the site by public transport. However, at a site-scale, new roads will be established though areas where they do not currently exist. This is expected to create an increased risk of vehicle strike. There is also the risk of vehicle strike during the construction phase of the project.

### 4.3.2 Mitigation - fauna infrastructure:

The over-arching principle regarding koala use of the site is that the site will be koala-friendly, with most areas of the precinct to be permeable to koalas. For example, landscaping and tree-plantings around green-spaces, sporting areas, and along roads may be used by koalas to traverse the site.

Appropriate mitigation of threats, particularly related to vehicle strike, will be implemented, primarily through speed restrictions and general traffic calming approaches. Where possible, installation of innovative technology solutions will occur. In addition, fauna fencing and crossing structures will be used on major roads.

During the design phase for each precinct, the locations of fauna infrastructure, including fauna underpasses, exclusion fencing and escape devices, will be identified and installation will occur during the construction phase.

**Appendix 6 - Proposed Fauna infrastructure** provides an overview of the proposed locations of the fauna infrastructure planned for the site. As a minimum, fauna exclusion fencing will be applied and maintained in the following areas:

- Along the road connecting the university precinct to Dohles Rocks Road (Dohles Rocks Connection Road) to restrict koala movement into the road corridor.
- Along the northern edge of Yebri Creek to restrict koala movement from the open space area associated with the creek into the adjoining precinct. Escape poles will be established on the development side of the fencing. Wherever the proposed new fencing intersects with existing rail line fencing, the design will ensure that the fences are securely interconnected.
- Along the eastern edge of the unconstructed School Road reserve. The fence will be positioned on the eastern side of the road corridor. Escape poles will be established on the development side of the fencing.
- Where necessary to direct koalas to safe passage underpasses.

Upon the advice of koala specialists, fauna infrastructure will be installed along the proposed haulage routes and the primary offset area during the construction phase (e.g. dewatering and re-profiling engineering works) to maximise wildlife safety during operational works. Prior to vegetation clearing, the installation of temporary exclusion fencing around construction areas will also be assessed and, where recommended, fauna exclusion fencing will be installed.



#### 4.3.3 Mitigation - speed restriction:

A maximum 50km/h vehicle speed restriction will be in place on most roads within the site. Lower speed limits (20km/h to 40km/h) will apply in areas identified as posing increased risk to koalas.

During the design phase, speed management measures such as calming devices, speed alert devices, wildlife road stencilling and signage will be incorporated into road designs. These measures will assist to establish a low speed road network that can be more safely traversed by koalas and other wildlife.

### 4.4 Disease

#### 4.4.1 Impacts:

Impacts of disease on koalas were identified by the Department of Transport and Main Road (DTMR) during the Moreton Bay Rail project (Hanger *et al*, 2017).

While the project is not expected to contribute directly to an increase in disease, addressing disease is recognised as an important component of achieving koala conservation outcomes. For example, after wild dog predation, disease was identified as the second most important cause of premature death during koala management activities for the Moreton Bay Rail project, accounting for approximately 30% of premature deaths of koalas (Hanger *et al*, 2017).

The most important diseases are associated with chlamydial infection, which results in both individual consequences and reduction in population reproductive rates.

#### 4.4.2 Mitigation:

Council will continue to contribute to the health and ongoing viability of koalas on the site by supporting koala disease research, including the USC's koala vaccination program which aims to address both *Chlamydia* and koala retrovirus-associated disease impacts.

Collaboration with researchers at the USC and other interested groups will continue opportunistically during intensive koala management periods. In addition, sick koalas will be treated during telemetric monitoring periods and where available, vaccination against disease will be provided. This is expected to maintain disease at very low levels, as well as contributing to scientific research on koala disease.

### 4.5 Weed Management

#### 4.5.1 Impacts:

A variety of weeds have been identified across the site with some of these weeds are competing with, or suppressing the growth of, higher-quality koala habitat and will be removed.

#### 4.5.2 Mitigation:

Council will implement a comprehensive natural area management program across the site in liaison with environmental consultants and contractors. The management program will be implemented over the life of the project.

### 4.6 Vegetation clearing:

#### 4.6.1 Impacts:

During the planning stage, it was determined that 22 hectares of koala habitat will be lost from the site.

#### 4.6.2 Mitigation - vegetation clearing:

As per the approval conditions (**Appendix 1 - Federal Government EPBC Approval 2016/7839**), impacts will be mitigated through the rehabilitation of 26 hectares of koala habitat (the primary offset planting area) and dedication of a minimum of 74 hectares of koala habitat (the supplementary habitat restoration area).

In addition to the implementation of offsets and habitat restoration, the following conditions will apply to all vegetation clearing \*\*.

- A vegetation and fauna management plan (plan), or similar, will be developed and implemented for each area of clearing.
- The plan will detail the procedures for vegetation clearing, managing fauna, protective fencing requirements and use of removed vegetation during operational and construction works.
- The plan will be prepared by a suitably qualified person and contain at least the following information:
  - Instructions for fauna spotter/catchers, contractors and machine operators on each clearing front including roles and responsibilities.
  - Sequential clearing plan to encourage sedentary fauna to leave the area via an established egress path;
  - Slow and controlled lowering of potential habitat trees to be felled for inspection within habitat bearing structures;
  - Procedures for dealing with all fauna observed immediately prior to and during vegetation clearing or dam dewatering;
  - Inspection and assessment of potential fauna habitat and activity within tree canopies and understorey, tree limb hollows, and dams;
  - Pre-clearance survey procedures to be undertaken by a suitably qualified person prior to the commencement of vegetation clearing operations.
  - Inspection and assessment of disturbed ground, logs, debris, leaf litter and felled vegetation;
  - Procedures for the treatment / removal of captured or injured fauna from the site; and
  - Details of fauna captured, health assessment and relocation, transportation and release.
- A nominated environmental representative of MBRC will be notified by the contractor (or subcontractor) 48 hours prior to any clearing of vegetation comprising koala food or habitat trees.
- A fauna spotter/catcher shall be present on site and directly supervising clearing operations to minimise risk of harm to koalas and other wildlife.
- Clearing of vegetation will not commence until such time as koala/s vacate the vegetation or are relocated by a suitably qualified person. Exclusion fencing may be used in some areas as a part of the clearing methodology to exclude koalas from re-entering as deemed appropriate by a koala specialist on a site by site basis.
- Vegetation clearing will provide for wildlife movement between adjoining vegetated areas. This will be achieved by clearing in a manner that directs fauna

to adjacent vegetated areas beyond the extent of works.

*\*\* Vegetation clearing in this instance refers to clearing and construction works that have the potential to: (1) disturb native fauna within vegetation that is to be cleared; and (2) impact areas of vegetation and fauna habitat identified for retention.*

## 4.7 Primary Offset Area and Supplementary Offset Areas

### 4.7.1 Impacts:

During the planning stage, it was determined that 22 hectares of koala habitat will be lost from the site.

### 4.7.2 Mitigation:

In accordance with the approval conditions (refer **Appendix 1 - Federal Government EPBC Approval 2016/7839**), Council is required to:

- a. rehabilitate a minimum of 26 hectares within the defined primary offset planting area and
- b. dedicate a minimum of 74 hectares for rehabilitation within the supplementary habitat restoration area.

These areas must be rehabilitated so that the defined areas reach non-juvenile koala habitat tree status within timeframes set out by the Federal Government.

## 5 Monitoring and Reporting

### 5.1 Baseline Koala Population

In accordance with the approval conditions (**Appendix 1 - Federal Government EPBC Approval 2016/7839**), a baseline study of the koala population within the site was undertaken by Endeavour Veterinary Ecology (EVE).

Baseline monitoring of the koala population occurred between May to June 2017. As at 30 June 2017, 45 koalas had been accounted for on the site (refer **Appendix 9 - Koala Monitoring**)

### 5.2 Koala Monitoring - Construction Phase

Council aims to reduce the risk of koala injury or death during the decontamination and construction phase by implementing strategies that monitor koalas across the site.

Intensive koala management periods, using telemetry tags or similar devices, will occur as determined by the construction timeframe and in consideration of advice from koala specialists. (refer **Appendix 7 - Koala Monitoring**).

Thereafter koala monitoring across the site will include the use of various monitoring methodologies. For example, low intensive monitoring, night vision cameras, visual population assessments and koala scent detection dogs. In addition, Council will seek to trial innovations in wildlife monitoring across the site (e.g. drone identification technology) as opportunities arise.

### 5.3 Koala Monitoring - Precinct 2 - Mill Innovation

The development of Precinct 2 - Mill Innovation (refer **Appendix 3 - Priority Development Area**) will require additional koala management measures to be implemented before, during and after koala habitat removal. This will ensure that the likelihood of untagged koalas being present in the vegetation removal areas is minimised. Tagged koalas will be able to be telemetrically located during vegetation clearing to ensure that vegetation clearing avoids harming koalas, and complies with relevant State Government requirements for koala protection.

Management and mitigation measures will be implemented to protect those koalas and ensure that they can continue to contribute to the broader population as development of Precinct 2 proceeds. These measures include:

- Establishment of new koala habitat in Precinct 5 - Mill Green.
- An intensive search, capture, health check and telemetry tagging of all koalas occupying or using the Precinct 2 area a minimum of two (2) months prior to habitat removal.
- Staged habitat removal under the direction of a qualified fauna spotter/catcher, which will include daily location of all tagged koalas in the clearing areas.
- Telemetric koala monitoring for a minimum of 3 months' post habitat removal.

Vegetation removal will be conducted sequentially, such that koalas are encouraged to move into preserved koala habitat and corridors. Koalas that are displaced into dangerous situations will be captured and relocated to safe habitat areas on the site, if required.

### 5.4 Koala Monitoring - Use of Primary Offset Area and Supplementary Habitat Restoration Area

In accordance with the approval conditions (**Appendix 1 - Federal Government EPBC Approval 2016/7839**), following the 'commencement of the action', Council is required to implement a monitoring program to ascertain the use by koalas of the primary offset planting area and the supplementary habitat restoration area.

This will be conducted via a range of monitoring methodologies applied in a standardised manner on an annual basis.

Searches by qualified personnel (which may include the use of detection dogs) will check presence of scat and/or koalas. Methodologies may include the use of camera trapping, results from radio telemetry, and drone searching, where available to enhance monitoring.

### 5.5 Record Keeping and Reporting

In accordance with the approval conditions (**Appendix 1 - Federal Government EPBC Approval 2016/7839**), record keeping and reporting will include:

- Notification to the Department of Environment (DoE) within 20 business days of the 'commencement of the action';
- Recording information to substantiate activities associated with or relevant to the conditions of the approval, including measures taken to implement this KMP; and
- Within 60 business days of every 12-month anniversary of the commencement of the action, compliance reports as per the DoE Annual Compliance Report Guidelines submitted.

## Appendix 1 - Federal Government EPBC Approval 2016/7839



Australian Government  
Department of the Environment and Energy

### VARIATION OF CONDITIONS ATTACHED TO APPROVAL PROJECT TITLE (EPBC 2016/7839)

This decision to vary conditions of approval is made under section 143 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

#### Approved action

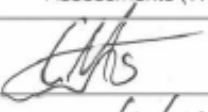
<b>Person to whom the approval is granted</b>	Moreton Bay Regional Council ACN: 92 967 232 136
<b>Approved action</b>	To establish a new campus of the University of the Sunshine Coast and other associated urban uses at Petrie, Queensland [See EPBC Act referral 2016/7839]

#### Variation

<b>Variation of conditions attached to approval</b>	The variation is:  Delete Map 1 attached to the approval and substitute with the attachment specified in table below
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<b>Date of effect</b>	This variation has effect on the date the instrument is signed
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#### Person authorised to make decision

<b>Name and position</b>	Greg Manning Assistant Secretary Assessments (WA, SA, NT), Post Approval and Policy Branch
<b>Signature</b>	
<b>Date of decision</b>	24/12/19

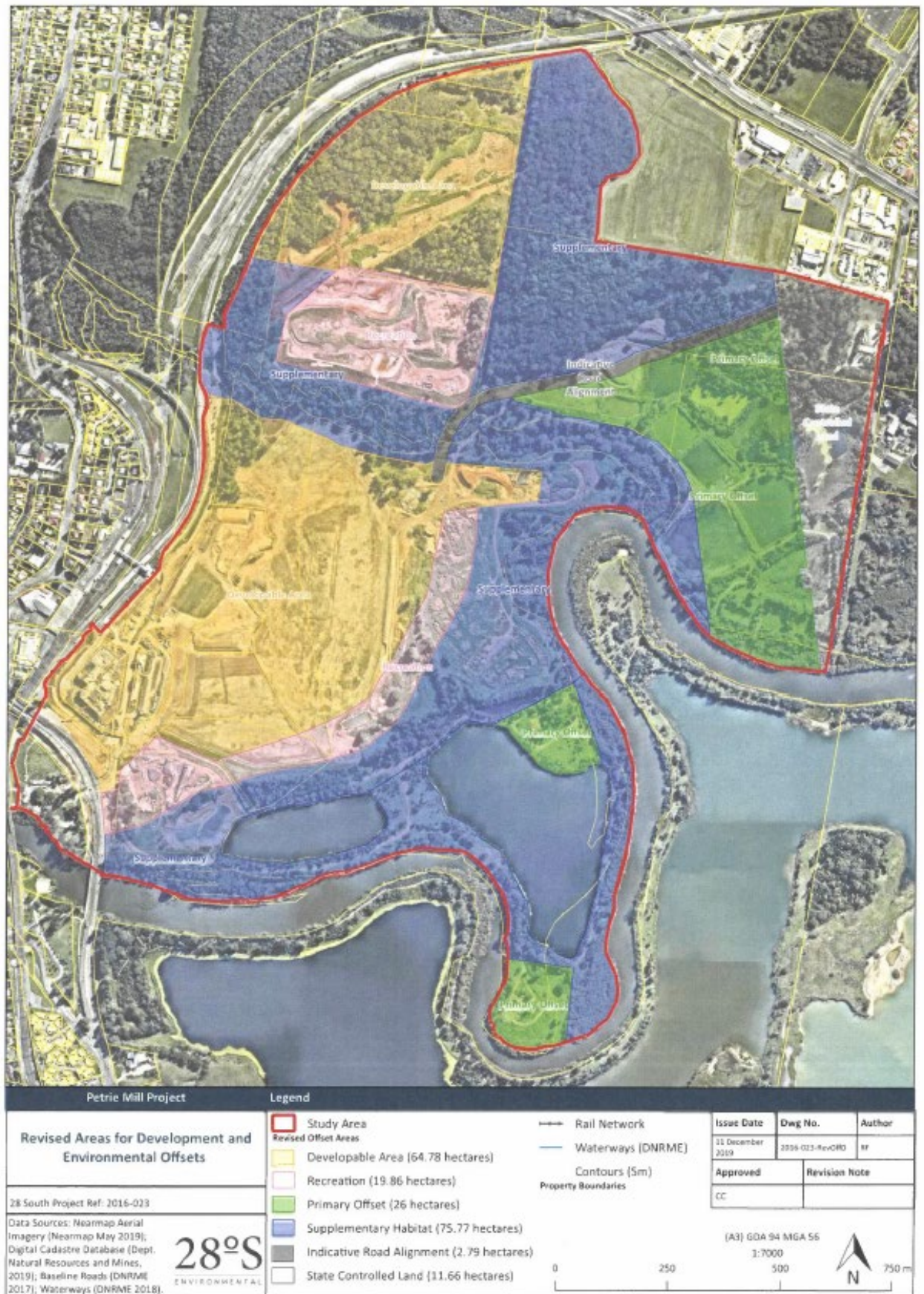
Date of decision	Conditions attached to approval
Original dated 6/9/2017	1. For the purposes of the action, the <b>approval holder</b> must not clear more than 22 hectares of critical habitat for the <b>Koala</b> within the <b>project site</b> .
Original dated 6/9/2017	2. Prior to any clearing of vegetation within the <b>project site</b> , the <b>approval holder</b> must ensure a pre-clearance survey is undertaken by a <b>suitably qualified person</b> to identify any <b>Koalas</b> present. The <b>approval holder</b> must not clear any vegetation supporting any <b>Koalas</b> until such time any <b>Koalas</b> vacate the vegetation or are relocated by a <b>suitably qualified person</b> .
Original dated 6/9/2017	3. Prior to <b>commencement of the action</b> , the <b>approval holder</b> must develop a management plan for the <b>Koala</b> . The management plan must:
	<ul style="list-style-type: none"> <li>a. describe measures to be implemented for the life of the approval to minimise <b>Koala</b> mortality attributable to wild dog attack and vehicle strike within the <b>project site</b> (including by use of fauna exclusion fencing, fauna underpasses and escape poles, and vehicle speed limits);</li> <li>b. describe measures to be implemented for the life of the approval to control <b>weeds</b> within the <b>project site</b>;</li> <li>c. include a monitoring program for the <b>monitoring period</b> capable of determining and recording: <ul style="list-style-type: none"> <li>i. the baseline population of <b>Koalas</b> within the <b>project site</b> prior to <b>commencement of the action</b>; and</li> <li>ii. the use of the <b>primary offset planting area</b> and the <b>supplementary habitat restoration area</b> by <b>Koalas</b>;</li> </ul> </li> <li>d. include written evidence of input and review by a <b>suitably qualified person</b>; and</li> <li>e. take account of the <b>conservation advice</b>.</li> </ul>
Original dated 6/9/2017	4. The management plan must be implemented. The <b>approval holder</b> must publish the management plan on their website prior to <b>commencement of the action</b> and the management plan (or any subsequent revised versions) must remain on the website for the life of the approval. The results of the management plan must be included in compliance reports provided to the <b>Department</b> .
Original dated 6/9/2017	5. To compensate for the loss of 22 hectares of critical habitat for the <b>Koala</b> within the <b>project site</b> , the <b>approval holder</b> must:
	<ul style="list-style-type: none"> <li>a. rehabilitate a minimum of 26 hectares within the <b>primary offset planting area</b> and meet the following offset outcomes: <ul style="list-style-type: none"> <li>i. within 10 years of <b>commencement of the action</b> the <b>primary offset planting area</b> must meet the <b>condition criteria</b>; and</li> <li>ii. within 20 years of <b>commencement of the action</b> at least 24 hectares within the <b>primary offset planting area</b> must be <b>koala habitat</b> and <b>non-juvenile koala habitat trees</b> must be the dominant canopy species;</li> </ul> </li> <li>b. dedicate a minimum of 74 hectares for rehabilitation within the <b>supplementary habitat restoration area</b> (the dedicated area) and provide the <b>Department</b> with a georeferenced map of the dedicated area prior to <b>commencement of the action</b>;</li> <li>c. meet the following offset outcomes for the dedicated area: <ul style="list-style-type: none"> <li>i. within 10 years of <b>commencement of the action</b> the dedicated area must meet the <b>condition criteria</b>; and</li> <li>ii. within 20 years of <b>commencement of the action</b> the dedicated area must be <b>koala habitat</b> and <b>non-juvenile koala habitat trees</b> must be the dominant canopy species.</li> </ul> </li> </ul>
Original dated 6/9/2017	6. If, at any time during the life of the approval, the <b>approval holder</b> identifies that any of the offset outcomes in condition 5 are unlikely to be achieved or maintained, the <b>approval holder</b> must report to the <b>Department</b> in writing within 40 <b>business days</b> of becoming aware. The report must state the cause of the circumstance, the corrective actions to be



Date of decision	Conditions attached to approval
	taken (including timeframes for reporting to the <b>Department</b> the success of those actions) and the measures to prevent further occurrences.
Original dated 6/9/2017	<p>7. If the <b>Minister</b> is not satisfied that the offset outcomes in condition 5 are likely to be achieved, or is not satisfied there is sufficient evidence that the offset outcomes in condition 5 are likely to be achieved (including on the basis of information provided in compliance reports and or audits under these conditions of approval), the <b>Minister</b> may request the <b>approval holder</b> to submit a plan for the <b>Minister's</b> approval, to monitor, manage, avoid, mitigate, offset, record or report on, impacts to the <b>Koala</b>.</p> <p>a. The <b>Minister</b> may set a timeframe in which the plan must be submitted, and may designate that the plan must be prepared or reviewed by a <b>suitably qualified person</b> (or another specified person).</p> <p>b. If the <b>Minister</b> approves the plan then the <b>approval holder</b> must implement that plan (or a revised version if approved by the <b>Minister</b>).</p>
Original dated 6/9/2017	8. Within 20 <b>business days</b> of <b>commencement of the action</b> , the <b>approval holder</b> must advise the <b>Department</b> in writing of the actual date of <b>commencement of the action</b> .
Original dated 6/9/2017	9. The <b>approval holder</b> must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement management plans required by this approval, and make them available upon request to the <b>Department</b> . Such records may be subject to audit by the <b>Department</b> or an independent auditor in accordance with section 458 of the <b>EPBC Act</b> , or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the <b>Department's</b> website. The results of audits may also be publicised through the general media.
Original dated 6/9/2017	10. Within 60 <b>business days</b> of every 12 month anniversary of <b>commencement of the action</b> , the <b>approval holder</b> must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the <b>Department</b> at the same time as the compliance report is published. The <b>Minister</b> may provide written consent to the <b>approval holder</b> to cease reporting under this condition if satisfied additional reports are not warranted.
Original dated 6/9/2017	11. The <b>approval holder</b> must report any potential or actual contravention of the conditions of this approval to the <b>Department</b> in writing within 5 <b>business days</b> of becoming aware of the potential or actual contravention.
Original dated 6/9/2017	12. Upon the direction of the <b>Minister</b> , the <b>approval holder</b> must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the <b>Minister</b> . The independent auditor must be approved by the <b>Minister</b> prior to the commencement of the audit. Audit criteria must be agreed to by the <b>Minister</b> and the audit report must address the criteria to the satisfaction of the <b>Minister</b> .
Original dated 6/9/2017	13. If, at any time after 5 years from the date of this approval, the <b>approval holder</b> has not <b>commenced the action</b> , then the <b>approval holder</b> must not <b>commence the action</b> without the written agreement of the <b>Minister</b> .

Date of decision	Definitions attached to approval
Original dated 6/9/2017	<b>Approval Holder:</b> the person to whom the approval is granted.
Original dated 6/9/2017	<b>Business days:</b> a day other than a Saturday or a Sunday or a day which is a public holiday for the whole of Queensland.
Original dated 6/9/2017	<b>Commence' Commenced' Commencement of the action:</b> the point at which clearing of vegetation for the purposes of the action either in a single event or cumulatively first exceeds 4 or more hectares.

Date of decision	Definitions attached to approval
Original dated 6/9/2017	<p><b>Condition criteria:</b></p> <p>i. at least 85 per cent of trees within a given survey plot are <b>non-juvenile koala habitat trees</b>; and</p> <p>ii. at least 85 per cent of plots surveyed meet criterion i.</p>
Original dated 6/9/2017	<b>Conservation advice:</b> Threatened Species Scientific Committee (2012). <i>Approved Conservation Advice for Phascolarctos cinereus (combined populations of Queensland, New South Wales and the Australian Capital Territory) (koala Northern Designatable Unit)</i> . Commonwealth of Australia, Canberra.
Original dated 6/9/2017	<b>Department:</b> the Australian Government Department responsible for administering the <b>EPBC Act</b> .
Original dated 6/9/2017	<b>EPBC Act:</b> the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth).
Original dated 6/9/2017	<b>Koala's:</b> the Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) ( <i>Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</i> ) listed as a threatened species under the <b>EPBC Act</b> .
Original dated 6/9/2017	<b>Koala habitat:</b> a vegetation community that conforms to the structural form of a woodland or forest that contains <b>non-juvenile koala habitat trees</b> and scores five or more using the habitat assessment tool in Table 4 of the <b>koala referral guidelines</b> .
Original dated 6/9/2017	<b>Koala referral guidelines:</b> Department of the Environment (2014). <i>EPBC Act referral guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)</i> . Commonwealth of Australia, Canberra.
Original dated 6/9/2017	<b>Minister:</b> the Australian Government Minister responsible for administering the <b>EPBC Act</b> and includes a delegate of the <b>Minister</b> .
Original dated 6/9/2017	<b>Monitoring period:</b> the period commencing from the date of this approval and extending until the date the outcomes at condition 5.a.i. and condition 5.c.i. of this approval are achieved.
Original dated 6/9/2017	<b>Non-juvenile koala habitat trees:</b> a species of tree of genus <i>Angophora</i> , <i>Corymbia</i> , <i>Eucalyptus</i> , <i>Lophostemon</i> or <i>Melaleuca</i> whose leaves are known to be consumed by the Koala with a height of more than 4 metres or a trunk with a circumference of more than 31.5 centimetres at 1.3 metres above the ground.
Original dated 6/9/2017	<b>Primary offset planting area:</b> the area marked as 'primary offset planting' shown on <u>Map 1</u> .
Original dated 6/9/2017	<b>Project site:</b> the area marked as 'site' shown on <u>Map 1</u> .
Original dated 6/9/2017	<b>Suitably qualified person:</b> a person who has professional qualifications, training, skills or experience relevant to <b>Koalas</b> who can give authoritative assessment, advice and analysis in relation to the identification, safe capture and release and management of <b>Koalas</b> using the relevant protocols, standards, codes of conduct, methods or literature.
Original dated 6/9/2017	<b>Supplementary habitat restoration area:</b> the area marked as 'supplementary habitat restoration' shown on <u>Map 1</u> .
Original dated 6/9/2017	<b>Weeds:</b> an invasive plant listed under Part 2 of Schedule 2 of the <i>Biodiversity Act 2014</i> (Qld).
Date of decision	Attachments
As varied on the date this instrument was signed	<b>Map 1 - Map of project site, primary offset planting area and supplementary habitat restoration area</b>





## Appendix 2 - Consultation.

### **Dr William (Bill) Ellis - Post Doctoral Researcher at University of Queensland**

Bachelor of Science (Honours) Zoology

Master of Environmental Law

Doctor of Philosophy (Zoology)

Head of the Koala Ecology Group (KEG) at University of Queensland

### **Dr Jon Hanger - Director of Endeavour Veterinary Ecology (EVE)**

Bachelor of Veterinary Science

Bachelor of Veterinary Biology

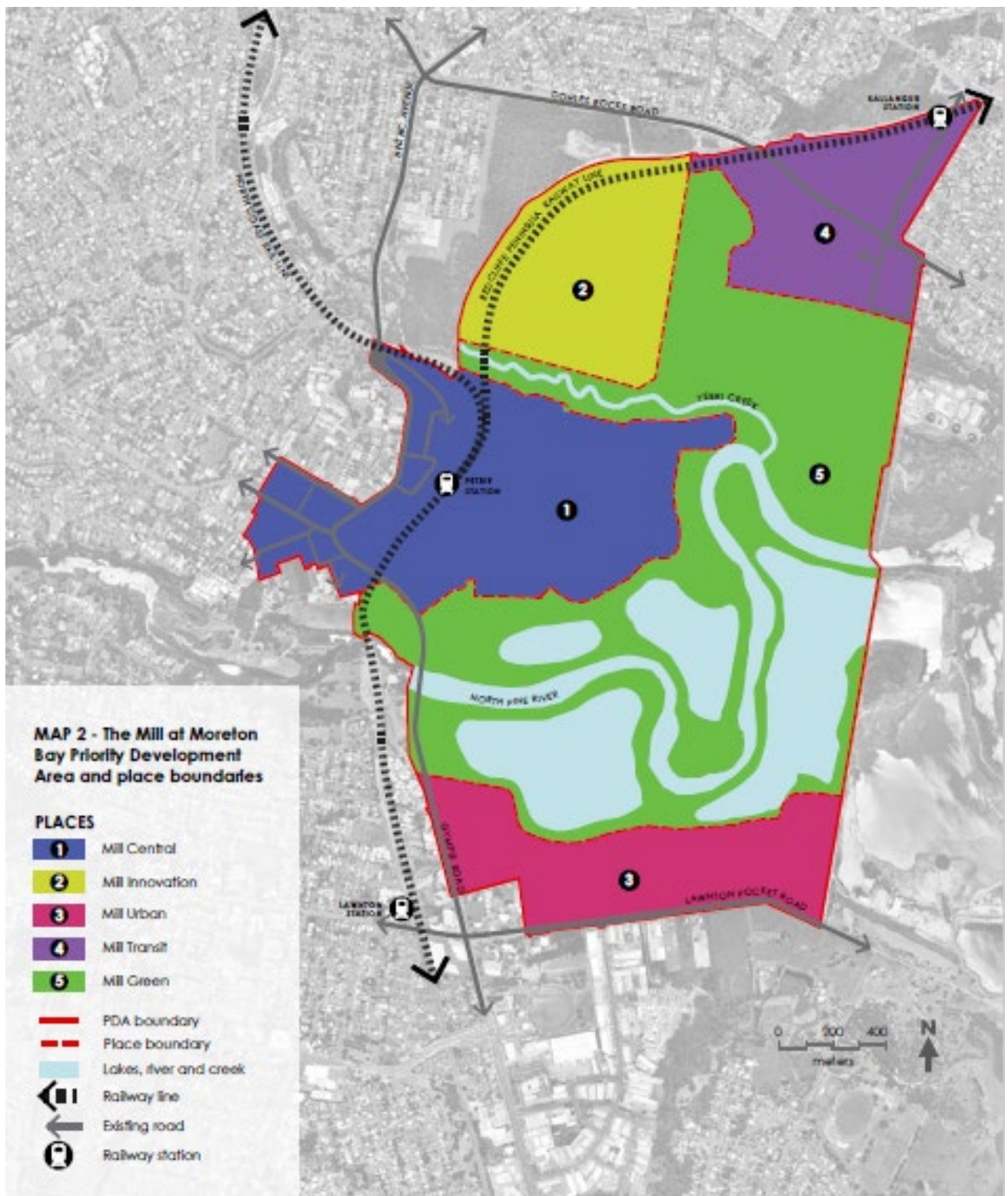
Doctor of Philosophy

Member of the Australian College of Veterinary Scientists

Founding member of the Koala Research Network

Member of the Koala Crisis Taskforce

Appendix 3 - Priority Development Area  
[The Mill at Moreton Bay PDA - Moreton Bay Regional Council](#)

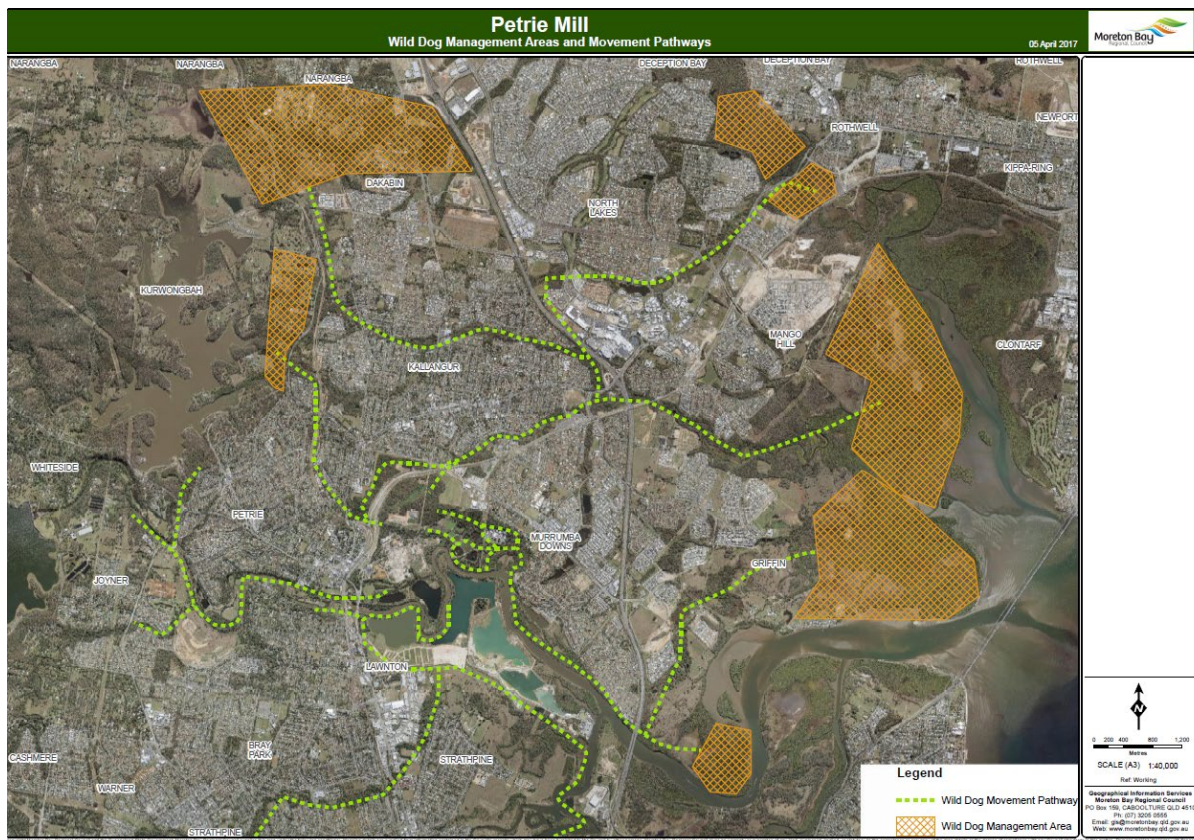


## Appendix 4 - Summary of potential impacts

Threat	Risk Profile	Project impact	Details
Wild dog predation	Persistent (on-going monitoring and action required).	Negligible.	Wild dog predation in the local koala population is negligible due to ongoing wild dog management surveillance and action. Vigilance and ongoing management are required to maintain wild dog impacts at low levels.
Domestic dog attack	Persistent (on-going monitoring/surveillance and education required).  Risk profile will increase following operational phases, subject to domestic dog management regulations.	Potential to significantly impact without appropriate mitigation	Domestic dog predation currently low and dogs are prohibited in construction areas during decontamination and construction activities.  Following release of defined areas to 'open' public access, domestic dog control will be required to minimise risks.
Vehicle strike	Persistent (on-going monitoring/surveillance and education required).  Risk profile will increase following decontamination and construction phases e.g. as roads are created and public access commences.	Significant increase in risk associated with development and use of roads in the project, particularly as night-time traffic increases	The University and associated developments will significantly increase the risk of vehicle strike for local koalas without appropriate mitigation.  Vehicle speed restriction and fauna friendly designs integrated at planning stage.
Disease	Persistent (on-going monitoring/surveillance)  Persistent threat, but currently well managed to very low impact, partly due to management during the Moreton Bay Rail project.	Negligible additional impact or no net change.	Chlamydial disease prevalence and incidence are low due to prior and ongoing chlamydial disease monitoring and management.  Future monitoring and treatment required to ensure health and viability of on-site koala population.
Vegetation clearing	Significant risk of koala mortality and injury during project construction if not managed.	Operational phase threat only.	Telemetric monitoring of koalas on site during vegetation clearing and other construction works provides almost complete risk mitigation. Ongoing or repeated monitoring programs during periods of operational/vegetation clearing works will be required to provide equivalent risk mitigation.



## Appendix 5 - Wild Dog Management Areas





## Appendix 6 - Proposed fauna infrastructure



## Appendix 7 - Koala Monitoring

Year	Number of Koalas	
30 June 2017	45 Koalas	Baseline survey
30 June 2018	55 with 18 Dependent Joeys	Koala monitoring during decontamination and operational works - Phase 1 (Tag and monitor; health assessments - EVE)
30 June 2019	71 with 24 Dependent Joeys	Koala monitoring during decontamination and operational works - Phase 2 (Tag and monitor; health assessments - EVE)
30 June 2020	84 with 26 Dependent Joeys	Koala monitoring during decontamination and operational works - Phase 3 (Tag and monitor; health assessments - EVE)
30 June 2021	98 with 40 Dependent Joeys	Koala monitoring during decontamination and operational works - Phase 4 (Tag and monitor; health assessments - EVE)

## Reference List

Queensland Government 2015, *Koala Action Plan*, Department of Main Roads and Transport (Queensland), viewed 14 September 2017, < <https://www.tmr.qld.gov.au/.../koala-action-plan.pdf?la=en>>

Hanger, J., de Villiers, D., Forbes, N., Nottidge, B., Beyer, H., Loader, J., & Timms, P. (2017). *Final Technical Report, Moreton Bay Rail Koala Management Program*. Department of Transport Main Roads, Brisbane, Queensland.