Ripley Residential Development (Binnies Road) EPBC Act (2024/09865)

Site Based Management Plan

25 June 2026

Saunders Havill

PATHWAYS TO SUCCESS

Document Control

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1. Introduction

Saunders Havill (SH) have been engaged to prepare a Site Based Management Plan (SBMP) on behalf of HB QLD Pty Ltd (the proponent) in accordance with conditions (Condition 9) specified within the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval for the proposed Ripley Residential Development (the project) located at 187 – 197 Binnies Road, Ripley, Queensland (EPBC Reference: 2024/09865) (refer Table 1 for property details).

The development proposal (the action) is for a residential subdivision, new roads and drainage area. The development will be accessed via existing roads to the north and east. The site is zoned as Urban Living under the Ripley Valley Priority Development Area Development Scheme and remains a highly isolated vegetated patch surrounded by existing developments and infrastructure. The project will take approximately 18 months to complete.

Table 1: Property Details

Address	187-197 Binnies Road, Ripley, Queensland, 4306
RPD	Lot 335 on RP814578
Area	7.52 ha
Protected Plants	Wholly within high-risk area
VMA 1999	Category X (non-remnant) Category B (Least Concern RE 12.9-10.2) Category C (Least Concern 12.9-10.2, Of Concern 12.9-10.7, Of Concern 12.9-10.16)
Fisheries 1994	Nil
MSES	MSES – Wildlife habitat (special least concern animal) MSES – Wildlife habitat (koala habitat areas – core) MSES – Regulated vegetation (category C) MSES – Regulated vegetation (essential habitat)
Koala Habitat	Wholly outside of Koala priority area Core koala habitat area on site
PDA	Ripley Valley Priority Development Area (RVPDA)
LGA	Ipswich City Council (as administrator for Economic Development Queensland)
Planning Scheme / Local Plan	Ripley Valley Priority Development Area (RVPDA) Development Scheme
Zoning	Urban Living
Existing Land Use	Vacant Bushland
Proposed Land Use	Residential Development

On 26 April 2024 a referral under the EPBC Act was made to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) for a controlled action assessment. The proposed

action was referred as 'not controlled' with an assessment of the proposed action against the applicable EPBC Act guidelines and policies, including the Significant Impact Guidelines 1.1 (SI Guidelines).

On 5 July 2024 this application was deemed a Controlled Action requiring assessment by "Preliminary Documentation." The Controlled Action Determination was based on consideration of the potential of the project to significantly impact on the following Matters of National Environmental Significance (MNES):

- Listed threatened species and communities (sections 18 & 18A) protected under Part 3 of the EPBC Act, specifically:
    - Koala (*Phascolarctos cinereus*) combined populations of Qld, NSW and the ACT, listed as endangered, and
    - Grey-headed Flying-fox (*Pteropus poliocephalus*), listed as vulnerable.

It is noted that the DCCEEW also considered there to be potential the following species listed under the EPBC Act may also be present, or have habitat present, on or within the vicinity of the referral area, and may also be impacted by the proposed action:

- South-eastern Glossy Black-Cockatoo (*Calyptorhynchus lathami lathami*), listed as vulnerable,
- Swift Parrot (*Lathamus discolor*), listed as critically endangered
- Regent Honeyeater (*Anthochaera phrygia*), listed as critically endangered
- Greater Glider (*Petauroides volans*), listed as endangered, and
- South-eastern Yellow-bellied Glider (*Petaurus australis australis*), listed as vulnerable

2. Management Plans & Mitigation Measures

Numerous management and mitigation measures and controls will be adopted as part of mandatory requirements conditioned by Economic Development Queensland (EDQ) due to the site's location within the Ripley Valley Priority Development Area (PDA) and best practice management adopted by HB QLD Pty Ltd. This document includes a number of management measures relating specifically to Koala and Grey-headed Flying-fox (GHFF). Vegetation, Fauna, Stormwater, Erosion and Sediment Control issues will all be managed through EDQ conditioned management plans. Specific plans are also specifically conditioned under the EPBC approval.

In addition, a number of management measures are proposed to ensure impacts are avoided and or minimised through the construction and operational phases.

To avoid and mitigate the direct and indirect impact from the proposed action on the Koala, a project specific Site Based Management Plan (Environment) (SBMP) will be prepared and signed off by the Environmental Coordinator prior to the commencement of operational works. The SBMP will act as the Environmental Management Plan for the project.

Key outcomes within the SBMP for Koala include:

- Potential risks to the species (e.g. vehicle strike, entanglement, fragmentation of habitat / becoming stranded, noise/light pollution etc.) are identified and appropriately managed.
- All persons involved in construction and operation of the development are aware of the site values, their potential to impact on the above species and their habitats, and their responsibilities in regard to procedures and strategies with the SBMP.

Project Description

The action involves clearing of vegetation and construction of a residential development in accordance with the EPBC act Approval (2024/09865). Clearing of vegetation will occur over the entire referral area with no vegetation to be retained. This SBMP and accompanying Vegetation Clearing and Fauna Management Plan (VCFMP) detail the relevant mitigation measure to be implanted during the construction and operation of the project.

Environmental Management

- SBMP objectives;
    - To mitigate and minimise risk associated with the construction and operation of the project to MNES (specifically Koala and Grey-headed Flying-fox)
- Identification of key personnel and roles and responsibilities;
    - The following table provides details of the key personnel relevant to the project. The specific responsibilities of each party during the construction and operational phases are detailed in

Table 2 and **Table 3**. These tables also clearly defined and monitoring and adaptive management required to achieve mitigation measures proposed.

- Environmental Awareness and compliance training
    - Any new contractors to the site during clearing and construction are required to complete site induction training including toolbox talks (refer **Table 2** and **Table 3**)

Party	Role
HB Qld Pty Ltd	Proponent
SEE Civil	Site Contractor
Queensland Fauna Consultancy (QFC)	Fauna Spotter Catcher
Saunders Havill	Environmental Coordinator

Pre-Clearance Requirements – Fauna Management, including:

- Vegetation management (clearing and protection), including:
    - Objectives;
    - Management Strategy;
    - Performance Indicators;
    - Environmental Outcomes; and
    - Monitoring and Adaptive Management.
- Protection of MNES Fauna (Koala) and Native Wildlife, including:
    - Objectives;
    - Management Strategy;
    - Performance Indicators;
    - Environmental Outcomes;
    - Monitoring and Adaptive Management;
    - Requirements of the DETSI approved Fauna Spotter/Catcher and adoption of the *Code of Practice for the Welfare of Animals Affected by Land Clearing and Other Habitat Impacts* in pre-clearance surveys, reporting and monitoring
    - Sequential clearing plan and clearing restrictions; and
    - Specifications and requirements for temporary fauna exclusion fencing.
- Maintenance of Safe Wildlife Movement Opportunities (during Construction) including:
    - Objectives;
    - Management Strategy;

- Performance Indicators;
- Environmental Outcomes;
- Details of Temporary fencing;
- Hours of Operation,
- Details of Fauna awareness signage; and
- Details of Vehicle movement controls.

The above items have been considered in the development of a Vegetation Clearing and Fauna Management Plan (VCFMP) which has been implemented with this SBMP and will be provided to all project contractors as part of the pre-clearance package for acknowledgement and sign-off. Additionally, Sections 2.1 and Section 2.2 and Table 2 and Table 3 of this SBMP provide further detail.

2.1. Description of pre-clearance and clearance procedures

Condition 5 of the EPBC Act approval specifically asks for, *Environmental Pre-clearance Package*.

2.1.1 Environmental Pre-clearance Package

Prior to vegetation clearing within the referral area, an Environmental Pre-clearance Checklist and Environmental Pre-clearance Package will be created and issued to the project team, including all relevant contractors and sub-contractors, to ensure all approval requirements are met. Environmental Pre-clearance Checklists are designed to easily show compliance for approval requirements, including EPBC approval requirements, in a format where they can be reviewed and 'ticked off' prior to vegetation clearing. The purpose of the checklist is to ensure the following can occur:

- All required approvals are in place prior to clearing and all relevant documentation, including approvals, approved plans and management documents are compiled and distributed to all relevant personnel.
- Threatened flora and fauna pre-clearance checks are undertaken of the clearing extent and appropriately documented so that:
    - any threatened flora in the cleared area is identified and appropriate measures are in place; and
    - any threatened fauna and / or fauna habitat is identified and appropriately managed.
- Appropriate induction procedures are in place and environmental requirements are understood and complied with by all contractors and sub-contractors.

The Environmental Pre-clearance Checklist is to be read in conjunction with the SBMP. Together the Environmental Pre-clearance Checklist and subsequent attachments, and the SBMP will form the Environmental Pre-clearance Package for that scope of works. Environmental Pre-clearance Packages require all approval documentation, including EPBC Act approval requirements relevant to clearing, to be prepared, compiled and distributed to all relevant parties prior to the commencement of clearing. The Environmental Coordinator for the project will be responsible for the preparation of and the distribution of the Environmental Pre-clearance Package.

All relevant parties (e.g. civil contractor, clearing contractor, fauna spotter / catcher, environmental coordinator, superintendent and Client) must sign the checklist prior to clearing, acknowledging that they have reviewed all, and will undertake the works in accordance with approved procedures and reporting. As way of acknowledgement, the Environmental Pre-clearance Checklist will be run through at a project pre-start meeting with all personnel and relevant parties required to sign the checklist. No clearing can commence for a specific phase of works until the checklist has been completed and signed off by the Environmental Coordinator.

A pre-clearance checklist will be completed and provided separately to this SBMP with the SBMP and VCFMP forming part of the completed package.

2.1.2 Fauna Friendly Tree Protection Fencing

Clearing and construction works associated with the development impacts will be limited to a maximum of 7.52 ha. Prior to clearing, temporary fauna friendly tree protection fencing in the form of orange bunting and temporary signage will be installed around the clearing impact area. The presence of tree protection fencing will ensure that no authorised clearing impacts occur outside of the clearing footprint and to allow any fauna present within the clearing footprint to disperse retained habitat areas.

2.1.3 Fauna Spotter Catcher Roles and Reporting

As required by the SBMP, a Department of Environment, Science, and Innovation (DESI) registered Fauna Spotter Catcher must be appointed to ensure fauna, specifically Koala, management occurs prior to, during and post clearing. This role is mandated for any clearing of native vegetation in Queensland. The role of the Fauna Spotter Catcher is to complete an assessment of the works area no more than 2 weeks prior to clearing and present a short report to the proponent on the findings and how the proposed clearing is to be managed. The Fauna Spotter Catcher is required at the pre-start meeting and to be on site during all times of clearing works.

Under the *Nature Conservation Act 1992*, registered Fauna Spotter Catchers must complete a return of operations report to the Queensland State Government stating all fauna encountered and the specific management measures used to ensure the safety of native animals.

It is the role of the Fauna Spotter Catcher to take all reasonable steps to protect wildlife that may be impacted by vegetation clearing. These steps include the following:

- Undertaking wildlife load reduction measures through the pre-clearing trapping and relocation of wildlife within 1 to 2 weeks prior to the approved clearing being conducted. Sequential clearing cannot be used as a primary fauna management measure.
- Clearly distinguish vegetation found to contain fauna or fauna habitat (e.g. tree hollows, arboreal termite mounds, stick nests or possum drays) with flagging tape, and visually and verbally communicate this information to the tree feller to ensure flagged trees are not felled until authorised by the fauna manager.
- Manage any Koalas identified on site in accordance with the *Nature Conservation (Koala) Conservation Plan 2017* and *Management Program 2006-2016*.

- Manage fauna habitat identified during the site inspection using the protocols discussed in the SBMP.
- Work in conjunction with a professional tree feller in the removal of any vegetation.
- Schedule vegetation clearing to ensure that the impacts on wildlife are minimised and the likelihood of detection and capture of wildlife is maximised and wildlife load reduction measures are productive.
- Ensuring vegetation and rubbish piles are not left to serve as refuge for displaced or roaming wildlife through the implementation of the following measures:
    - Immediately (within 12 hours) remove or destroy such material.
    - Erect wildlife proof barriers, such as fencing surrounding stockpiles to prevent wildlife use.
    - Ensure old (>12 hours) piles of felled vegetation are treated as potential wildlife habitat and inspected by a wildlife spotter/catcher prior to removal or destruction.
- Limiting the felling of habitat and hollow bearing trees to the following methods:
    - Segmental removal of tree, with hollow bearing limbs being checked by the Fauna Spotter Catcher and cleared of fauna using a cherry picker or suitable means determined by the Fauna Spotter Catcher.
    - Segmental removal of the tree, with hollow bearing limbs plugged and lowered to the ground for inspection by wildlife spotter.
    - Use of an excavator with vertical grab to lower the main trunk (only after the removal of lateral limbs).
    - A combination of the above methods.

Adoption of the RSPCA / ESU of WW Draft Code for Fauna Spotting

The project will adopt the *DRAFT Code of Practice for the welfare of animals affected by land-clearing and other habitat impacts* (Draft Code) prepared by the *Australia Zoo Wildlife Warriors* and *Voiceless* organisations. The Draft Code is not mandatory, however, is advocated by various environmental organisations as the leading practice method for minimising impacts of native wildlife during construction processes.

The Draft Code will be adopted to ensure that fair, reasonable and appropriate measures are undertaken to minimise the adverse impacts on wildlife as a result of vegetation clearing. The Draft Code provides standards and guidelines for the humane treatment of wild animals affected by land clearing by detailing the general responsibilities of people involved in land clearing and the specific roles of wildlife spotter/catchers. As emphasised within the Draft Code, it will be the responsibility of all relevant parties to:

- take all reasonable steps necessary to prevent cruelty or suffering to animals;
- minimise the loss of wildlife caused directly or indirectly by development or land clearing; and
- conserve, to the greatest extent possible, the ecological values of the development site and their surrounding natural environment (Draft Code, p.5).

The following components of the Draft Code are to be adopted as the following actions for any clearing works:

Action 1 – Developer to Engage Fauna Spotter Catcher
This action requires that the developer engage a Fauna Spotter Catcher with full registrations and licences provided in accordance with DESI.

Action 2 – Fauna Spotter to Prepare a Wildlife Protection and Management Plan (WPMP)
The WPMP should include the following information:

- description of the project with reference to impacts on wildlife or wildlife habitat;
- pre-development plan of the site showing habitat areas, features, corridors, riparian habitats and adjacent areas;
- results of any fauna surveys including pre-clearance surveys; and
- a wildlife and habitat impact assessment based on the proposed development works.

Action 3 – Prepare a Wildlife and Habitat Impact Mitigation Plan (WHIMP)
Following completion and of the WPMP the Fauna Spotter Catcher should prepare a more specific WHIMP, which will include details on:

- measures required to be completed to minimise wildlife and habitat impacts during operational works;
- wildlife capture and removal plan;
- contingency plan for wildlife requiring euthanasia, other veterinary procedures or captive care;
- wildlife storage and housing plan;
- wildlife release and disposal plan; and
- post works measures to minimise impacts on wildlife.

Action 4 – Fauna Spotter Catcher Role at Pre-Start Meeting
Prior to the commencement of any construction works, a pre-start meeting is to be held between the project manager, site foreperson, plant operators and Local Government representatives. At the pre-start meeting, the Fauna Spotter Catcher is to outline the clearing process and the requirements listed in the SBMP.

Action 5 – During Construction
The Fauna Spotter Catcher is to be on site during all phases of construction which involve potential impacts on wildlife or habitat. This will enable to the Fauna Spotter Catcher to make any necessary adjustments to cater for any specific issues encountered during the clearing works.

Action 6 – Post Works Reporting (Wildlife Management Report)
During the course of all site works, including the pre-clearance surveys, the Fauna Spotter Catcher is to keep an accurate record of all animals encountered, captured, incidents and disposals for each stage of the

project. The records should form part of the Wildlife Management Report to be issued under licence requirements to the State Government. The Wildlife Management Report should consist of the following 3 sections:

1. *Wildlife Habitat Management Plan* – Aspects of the planning, design, construction and ongoing operation of the project in which risks to wildlife have been identified. This plan should also include recommendations and outline the type, frequency and timeframes for monitoring.
2. *Wildlife Capture and Disposal Plan* – Should contain the following details for each captured animal:
    a. Species.
    b. Identification name or number.
    c. Sex (M, F or unknown).
    d. Approximate Age or Age Class (neonate, juvenile, sub-adult, adult).
    e. Time and date of capture.
    f. Method of capture.
    g. Exact point of capture (GPS coordinates).
    h. State of health.
    i. Incidents associated with capture likely to affect health.
    j. Veterinary intervention or treatments.
    k. Time held in captivity.
    l. Disposal method (euthanasia, translocation, re-release).
    m. Date and time of disposal.
    n. Detailed of disposal (GPS points of release).
    o. For released animals, location relative to point of capture.
3. Animal Injury and Euthanasia Report – similar details for the Wildlife Capture and Disposal Plan should be included in this report.

2.1.4 Vegetation Clearing and Fauna Management Plan

Condition 10 of the EPBC approval requires a Vegetation Clearing and Fauna Management Plan (VCFMP) which will manage and mitigate potential impacts of the construction phase.

The VCFMP will include details on:

- trees marked for removal;
- all civil works likely to impact existing vegetation;
- temporary and permanent exclusion and protection fencing;
- roles and responsibilities for site contractors, the developer and the consultant group;
- stockpiling and site access locations;

- links to weed management and revegetation proposals;
- species surveyed as using the site, focusing on those most likely impacted by development works;
- a list of relevant State and Commonwealth legislation constraints and controls for fauna potentially affected by development works;
- a plan showing existing habitat opportunities and locations;
- details of the threats to existing fauna species;
- a clearing sequence plan showing the commencement of clearing and direction of removal to allow for the appropriate flushing of fauna towards safe havens and/or the application of an appropriate relocation program;
- management and mitigation measures – i.e. temporary use of fauna exclusion fencing;
- description of fauna spotter role, contacts and certification; and
- specific fauna management procedures for potential or known habitat trees.

The VCFMP will be provide as part of the pre-clearance checklist sperate to this SBMP.

2.2. Assessment of avoidance and mitigation measures

Item 5.4 of the PD Request asks, "*For each measure proposed, indicate the:*

a) impacts that are being avoided and/or the significance of impacts being reduced through mitigation.

b) Scientific basis for conclusions being drawn

c) an evidence-based likelihood of success/risk assessment

d) responsible party

e) milestones / performance / completion criteria

f) proposed monitoring and evaluation program."

Discussion of the avoidance and mitigation measures, their individual performance and completion criteria, monitoring and reporting arrangements, residual risk and effectiveness are discussed in Table 2 and Table 3.

Table 2: Construction Impacts

Impact	Avoidance and Mitigation Measures	Evaluation of the Effectiveness of Measures	Mitigation measure	Responsible party	Risk Assessment	Milestone and timeline	Monitoring Actions	Corrective actions	Environmental outcomes
Loss of 7.38 hectares of critical habitat for the Koala and potential foraging habitat for the Grey-headed Flying -fox.	No more than 7.38 hectares of isolated vegetation identified as habitat critical to the survival of the Koala and potential foraging habitat for the Grey-headed Flying-fox, will be impacted to facilitate the development and is considered unavoidable.	Ecological surveys and habitat assessment conducted across the site led to the precise spatial analysis of vegetation and habitat qualities. The project will result in the unavoidable loss of not more than 7.38 hectares of vegetation identified as habitat critical to the survival of the Koala and potential foraging habitat for the Grey-headed Flying-fox will be impacted to facilitate the development and is considered unavoidable.	Selection of a highly isolated site with significantly limited connectivity potential Clearing within referral area boundary	EDQ (QLD Government)- defined the 'urban living' zone and RVPDA establishment. Proponent – selected site based on zoning and context Environmental Consultant – Map values and complete ecological assessments Site contractor – flag clearing limits Environmental coordinator – check fauna friendly tree protection fencing alignment	Several detailed field surveys assessed the quality of habitat within the referral area and usage. The extremely isolated vegetation within the referral area does not provide significant linkages to allow Koalas to access the referral area. Field surveys identified low usage by the species. Furthermore, the small referral area does not constitute foraging habitat which an important population of highly mobile Grey-headed Flying-fox are likely to rely on. The development is located over the entire referral area which is considered low value habitat due to being highly isolated.	The referral area is cleared and developed. Works complete	Prior to commencement of vegetation clearing a VCFMP will be prepared that delineates the extent of clearing to ensure compliance with referral area boundary Environmental pre-start to check clearing limits and tree protection fencing EPBC Annual Compliance Report (ACR) which includes site audit confirming the proposed action is limited to referral area	Report any inconsistencies between the extent of works and referral area boundary to proponent and civil engineer. Correct limits Report non-compliance	Loss of critical habitat for the Koala and potential foraging habitat for GHFF. Habitat will be offset resulting in **no residual impact**
Risk of injury or mortality to Koalas and GHFF from vegetation clearing and construction	All clearing will be undertaken in accordance with the SBMP. This will include: • Provisions for the proponent to engage a qualified Fauna Spotter Catcher to participate in all vegetation clearing. The Fauna Spotter Catcher will be required to adopt elements of the Draft Code of Practice endorsed by the Australia Zoo Wildlife Warriors and Voiceless (The Draft Code). The role of the Fauna Spotter Catcher is to ensure that no injury or deaths occur to Koalas or other fauna species. • Vegetation will be cleared sequentially. Clearing will be conducted so that fauna are flushed into safe, vegetated areas and it will avoid pushing fauna into fragmented areas. • Temporary fauna friendly fencing will allow fauna to safely disperse into vegetated areas away from construction, • Temporary fauna exclusion fencing will then be erected to prevent fauna dispersing into construction areas. • Restricted construction hours (i.e. daylight 6am -6pm)	The use of a Fauna Spotter Catcher throughout clearing is an effective tool to: 1. Identify they types of species on site prior to clearing; and 2. Identify and flag habitat features that require thorough examination before clearing. Fauna Spotter Catchers have a primary role to ensure no fauna are in vegetation before it is cleared. Given the size of Koalas and their utilisation of tree branches, they can quite easily be observed from the ground. As such, it is extremely unlikely that a Koala will be killed or injured during vegetation clearing, particularly given the onerous and thorough procedures set out The Draft Code. The sequential clearing of vegetation will allow for the gradual loss of vegetation, giving fauna time to naturally disperse away from the disturbance. The use of fauna exclusion fencing around construction areas will ensure fauna do not disperse into unsafe, hostile areas, again minimising the risk of injury of death. Each of these measures will ensure that the risk of injury or death to Koalas as a	Fauna Spotter	Proponent – engage fauna spotter Fauna spotter – pre-clear inspection, WHIMP, WPMP, supervision of vegetation clearing and post clearing reporting Environmental Coordinator – review pre and post clearing reports	Fauna Spotter present during clearing reduces risk of koala injury or mortality	No injury or death to Koalas during clearing. Mitigation measures applied at all times during clearing.	Pre-clear inspection. Environmental Coordinator to review pre-clear reports prior to pre-start meeting. On-site pre-start meeting with responsible parties. Supervision of all vegetation clearing works. Post clearing report – also reviewed by Environmental Coordinator.	In the event that a Koala is located within the impact area a 50m buffer and vegetated corridor is provided for dispersal to safe habitat	The use of a Fauna Spotter is mandated **No residual impact**
			Sequential Clearing	Site Contractor – undertake clearing in accordance with VCFMP Fauna spotter – guides clearing direction to promote dispersal	Sequential clearing allows Koalas to safely leave the area	Clearing completed as per sequential clearing	As above	As above	Sequential clearing is mandated and guided by VCFMP and pre-clearance checklists and pre-starts **No residual impact**

Impact	Avoidance and Mitigation Measures	Evaluation of the Effectiveness of Measures	Mitigation measure	Responsible party	Risk Assessment	Milestone and timeline	Monitoring Actions	Corrective actions	Environmental outcomes
	• Prohibition of companion /security animals (e.g. dogs). • Restricted vehicle speeds (e.g. max 40km) within construction areas. In addition to this, all construction personnel shall attend environmental training as part of the site induction process prior to entering the work site. As part of this training all personnel will be instructed on their obligations in regard to vehicle movement and construction speed limits.	result of construction are avoided and mitigated. The aim of these procedures is to support **zero injuries or death to Koalas** as a result of construction.	Temporary fauna friendly fencing	Site contractor – flag extent of clearing with fauna friendly fencing Environmental coordinator – check fence for compliance	Temporary fencing allows Koalas to disperse out of the construction area	Temporary fauna friendly fencing utilised at all times during clearing	Pre-start meeting to check fence alignment and suitability for fauna dispersal EPBC ACR which includes audit confirming the proposed action is condition compliant	Fencing is rectified if deemed to be unsuitable prior to clearing	Temporary fauna fencing is mandated and guided by VCFMP and pre-clearance checklists and pre-starts. **No residual impact**
			Temporary fauna exclusion fencing	Proponent – engage fencing contractor Environmental Coordinator – confirm fencing type is compliant	Temporary fencing does not allow Koalas to re-enter the construction area	Temporary fencing utilised at all times during the clearing/construction process	As above	Fencing to be corrected if deemed not compliance by environmental coordinator	Temporary fauna fencing is mandated and guided by the SBMP. **No residual impact**
			Restricted construction hours	Site contractor – limits construction to 6am – 6pm	Work hours restricted so as to minimise impact to surrounding area	Works are completed within mandated hours at all times during clearing/construction	Site induction and daily sign in register.	Regular reporting by site contractor provided to Site Superintendent and proponent.	Works guided by SBMP. **No residual impact**
			Dog prohibitions	Site contractor – does not allows dogs	No companion and security dogs on site	Construction completed without dogs on site. At all times during clearing/construction	Site induction and daily sign in register.	Regular reporting by site contractor provided to Site Superintendent and proponent	Dog controls are mandated and guided by the SBMP. **No residual impact**
			Low vehicle speeds	Site contractor – applies speed limits during construction	Speed limits to reduce risk of Koala strike	Construction completed without vehicle strike	Site induction and daily sign in register.	Regular reporting by site contractor provided to Site Superintendent and proponent	Speed limits are mandated and guided by the SBMP. **No residual impact**
			Site inductions	Site contractor – all staff are inducted and daily toolbox talks	Induction/toolbox talks to raise awareness of potential Koala	Construction completed without inductions being breached	Site induction and daily sign in register.	Regular reporting by site contractor provided to Site Superintendent and proponent	Inductions are mandated and guided by the SBMP. **No residual impact**
Fragmentation of habitat for Koalas and GHFF, during construction	Vegetation on-site is highly isolated due to the location within an area designated for urban development. It is however acknowledged that vegetation clearing during the construction phase has the risk of fragmenting habitat areas within the site. To avoid this impact, vegetation clearing will be undertaken sequentially to allow fauna to disperse from construction areas to the south. Clearing procedures that avoid the fragmentation of vegetation will be	Habitat isolation and fragmentation is a primary concern due to its impacts on fauna. The direction of clearing of vegetation in accordance with the SBMP (informed by WHIMPs) will ensure that clearing does not create fragmented habitat islands that could trap fauna. Rather, procedures will be in place to ensure clearing flushes fauna away from construction areas into surrounding	Sequential clearing	Site Contractor – undertake clearing in accordance with VCFMP Fauna spotter – guides clearing direction to promote dispersal	Sequential clearing reduces risk of fragmentated habitat	Clearing completed as per sequential clearing plan Clearing completed without fauna mortality	Pre-clear inspection. Environmental Coordinator to review pre-clear reports prior to pre-start meeting. On-site pre-start meeting with responsible parties.	In the event that a Koala is located within the impact area a 50m buffer and vegetated corridor is provided for dispersal to safe habitat	Sequential clearing is mandated and guided by VCFMP and pre-clearance checklists and pre-starts **No residual impact**

Impact	Avoidance and Mitigation Measures	Evaluation of the Effectiveness of Measures	Mitigation measure	Responsible party	Risk Assessment	Milestone and timeline	Monitoring Actions	Corrective actions	Environmental outcomes
	adopted within the SBMPs and informed by the Fauna Spotter Cather WHIMPs. Clearing will be undertaken in a way that flushes fauna into connected areas of habitat and will avoid flushing fauna into fragmented or hostile areas. Specifically: • Fauna are not required to cross roads or move through developed or disturbed areas, such as residential areas of areas that require movement greater than 100m over cleared ground to reach suitable habitat; • Fauna are not left occupying an 'island' of habitat between hostile environments, such as road and cleared areas; • Fauna can safely leave the site of clearing and relocate to adjacent habitat; • Demarcation fencing will be fauna friendly to ensure fauna are not trapped within the proposed cleared extent; and • Cleared vegetation is to be stockpiled as to not impede fauna movement. Additionally, proposed construction roads will be subject to design treatments to ensure safe fauna crossing opportunities are maintained to vegetated areas and impose low vehicle speeds within construction areas.	habitat areas that are connected to the wider landscape.					Supervision of all vegetation clearing works. Post clearing report – also reviewed by Environmental Coordinator.		
			<u>Temporary fauna friendly fencing</u>	Site contractor – flag extent of clearing with fauna friendly fencing Environmental coordinator – check fence for compliance	Koala area able to disperse from the construction area	Temporary fencing utilised at all times during construction	As above	Fauna friendly fencing is rectified in considered to be unsuitable during pre-start	Temporary fauna fencing is mandated and guided by the SBMP. **No residual impact**
			<u>Stockpiling of cleared vegetation ensures safe fauna movement</u>	Site contractor – ensure stockpiling is completed in accordance with SBMP	Stockpiling does not hinder Koala dispersal	Fauna are not fragmented by stockpiles	Site inductions and toolbox talks	Regular reporting by site contractor provided to Site Superintendent and proponent	Stockpiling is mandated and guided by the SBMP and VCFMP. **No residual impact**
Disturbance to Koalas and GHFF during construction	The SBMP includes controls to avoid, minimise and mitigate risk of disturbance to Koalas during construction, specifically: <u>Light and noise disturbance</u> Construction of the project will result in increased noise and light disturbance. These impacts may disturb fauna and disrupt foraging, reproduction or movement behaviours. Restricted construction hours (e.g. 6am-6pm) will limit disruption from light and noise impacts, as well as allow a 12 hour period for fauna to disperse and forage.	Construction management and clearing controls implemented by the SBMP are considered to be able to effectively avoid, minimise and mitigate risk of disturbance to Koala activities during construction, and allow for adaptive management where required. Limiting hours of construction and clearing to daylight hours, allows a 12 hour period for safe dispersal. With appropriate monitoring, pre, during and post construction by the Fauna Spotter Catcher, no residual impacts area expected to occur.	<u>Construction Environmental Management Plan (CEMP) and Restricted construction hours</u> <u>CEMP</u>	Site Contractor – limits construction to 6am-6pm. Proponent – ensure all procedures and protocols are followed on-site. Proponent – confirm acceptance of the CEMP and distribute to Site Superintendent and Contractors. Engineering Consultant – prepare CEMP detailing the procedures and performance criteria for each of the potential indirect impacts listed.	Minimising light and noise impacts	Light and noise disturbance is limited to daylight hours.	Site induction and daily Sign in register.	Regular reporting by site contractor provided to Site Superintendent and proponent.	Management measures implemented and guided by CEMP. **No residual impact**

Impact	Avoidance and Mitigation Measures	Evaluation of the Effectiveness of Measures	Mitigation measure	Responsible party	Risk Assessment	Milestone and timeline	Monitoring Actions	Corrective actions	Environmental outcomes
	<u>Contamination, weeds and pathogens</u> Construction activities increase the risk of weeds, pathogens and contamination into the site. To manage these impacts, a Weed and Pathogen Management Plan will be prepared to identify potential weed species, and include appropriate controls for weed and pathogen management, disposal and monitoring. Weeds will be actively managed within the construction footprint and disposed of appropriately. No companion animals (e.g. dogs) will be allowed within construction areas. <u>Vehicle disturbance</u> Reduced vehicle speeds will be implemented throughout the construction area to minimise vehicle disturbances. Further, proposed construction roads will be subject to design treatments to ensure safe fauna crossing opportunities are maintained to vegetated areas and impose low vehicle speeds within construction areas. <u>Contractor management</u> All construction personnel shall attend environmental training as part of the site induction process prior to entering the work site. As part of this training, all personnel will be instructed on their obligations in regard to vegetation clearing protocols and to protect native fauna.				The risk of contamination and exacerbating weeds and pathogens is minimised	Always during construction Contamination and weed and pathogen incursions do not occur	Site Superintendent required to undertake regular inspections and site audits to ensure the thresholds are not exceeded and/or performance criteria area achieved.	Undertake investigation into exceedance of thresholds and implement corrective actions as recommended in the CEMP.	**As above**
			<u>Reduced vehicle speeds during construction</u>	Site contractor – to enforce site speed limits during construction	Risk of Koala being impacted by high vehicle speeds during construction is reduced	Disturbance to Koala does not occur from vehicles	Site Superintendent required to undertake regular inspections and site audits to ensure the thresholds are not exceeded and/or performance criteria area achieved.	Regular reporting by site contractor provided to Site Superintendent and proponent.	Speed restrictions implemented by CEMP during construction. **No residual impact**
			<u>Site induction and on-site daily toolbox talks</u>	Site Contractor – prepare induction course and initiate daily toolbox talks prior to commencement of works. Construction personnel – complete site induction course, sign into site and attend daily toolbox talks. Proponent – ensure all procedures ad protocols are followed on-site.	Daily toolbox talks held with all construction personnel prior to the commencement of works for the day ensures all parties understand works extent, clearing limits and protocols, significantly reducing the likelihood of direct and indirect impacts to MNES values within and external the referral area.	Inductions and toolboxes completed at tall times during construction	Site induction and daily Sign in register.	Regular reporting by site contractor provided to Site Superintendent and proponent.	Site inductions mandatory **No residual impact**
Hydrological changes	Stormwater detention technologies will be utilised to minimise the effects of excess rainwater flowing into catchments caused by the creation of hardstand areas. All work will be undertaken in accordance with appropriate management plans to ensure the hydrological changes across the site do not impact on surrounding vegetation.	The implementation of a project wide Stormwater Management Plan as designed by certified engineers ensures that hydrological change area appropriately accounted for and managed. These management measures will reduce impacts from higher levels of surface water flow caused by hardstand areas and ensures natural drainage lines continue to function as they naturally would have. Stormwater detention basins prevent localised flooding of drainage lines and waterways caused by increased runoff over hardstand areas and also contribute to maintaining water quality levels.	<u>Hydraulic and Stormwater Management Plan</u>	Site engineer – complete management plans	Impacts associated with hydrological changes are minimised	No worsening of hydrological impacts as a result of the development	Monitoring requirements will be detailed in the associated management plans	Regular reporting by site contractor provided to Site Superintendent and proponent.	Erosion and sediment control plans mandatory **Non residual impact**

Table 3: Operational Impacts

Impact	Avoidance and Mitigation Measures	Evaluation of the Effectiveness of Measures	Mitigation measure item	Timeline for delivery	Risk Assessment	Milestone	Responsible Party	Monitoring Program	Environmental Outcome
Risk of injury or death to MNES from vehicle strike	A number of measures will be imposed to avoid and mitigate the risk of koalas being hit by vehicles. Although the risk to vehicle strike is low, these measures will be concurrent for grey-headed flying-fox. Measures include: • MNES food trees will not form part of the primary landscaping of the development footprint so that koalas and grey-headed flying-fox are not enticed to enter residential areas. • Imposition of low vehicle speeds to reduce the risk of collisions. Vehicle speed limits are restricted to 50km/h on built up residential roads. • Installation of traffic calming devices (where required). • Installation of koala awareness signage to raise awareness of the species' presence in the area.	The purpose of these avoidance and mitigation measures is to minimise the risk of injury or death to koalas from vehicle strike. These measures will also mitigate risks for grey-headed flying-fox. It will be important to minimise the incentive for these species to enter residential areas by restricting the availability of habitat in these areas. As such, street scaping will not be planted with suitable habitat, which will in turn encourage koalas to stay away from the development area. Importantly, low vehicle speeds will be imposed along residential roads, minimising the risk of high-speed vehicle strikes which were identified in the literature review as accounting for a large proportion of vehicle related deaths. In addition, awareness signage will ensure motorists are aware that koalas have potential to occur in the area, making them more conscious of potentially dispersing koalas and encouraging them to maintain a low vehicle speed. The purpose of these measures is to enable the objective of no injury or death to koalas as a result of vehicle strike. No residual impacts can be identified.	Permanent speed limit signage and reduced speeds	During construction of roads	Vehicles speeding	No koala deaths from vehicle strike	Landscape architect and civil contractor as appointed by the proponent.	Annual Compliance Report completed by an engaged suitably qualified professional.	Low vehicle speeds will be signed and enforced as for public roads **No residual impact**
			Koala awareness signage installed where appropriate	At construction of roads and Council on-maintenance phase	Signs not installed	Signs installed progressively with construction of development	Landscape architect and civil contractor as appointed by the proponent.	Annual Compliance Report completed by an engaged suitably qualified professional.	Koala awareness signage will be delivered where appropriate under the SBMP. **No residual impact**
			Traffic calming devices to be installed through development	Traffic calming devices including speed bumps and chicanes are included in the development.	Calming devises not installed prior to public use of the road	Design of devices completed and installed	Engineer as appointed by the proponent responsible for design. Civil contractor responsible for installation.	Annual Compliance Report completed by an engaged suitably qualified professional.	**No residual impact**
			Urban landscaping avoids use of MNES species foraging trees	Landscape design phase and planting during construction	Koala trees inadvertently utilised in urban areas	Urban landscape planting palette designed during operational works phase. Planting delivered with non-Koala native species during construction.	Landscape architect and landscape contractor as appointed by the proponent.	Annual Compliance Report completed by an engaged suitably qualified professional.	**No residual impact**
Risk of injury or death from dog attack	Dogs will be kept on leads when outside of yards or not in designated dog off lead areas. Fauna awareness will be promoted through the installation of fauna awareness signage.	While dogs already occur within the local area, and wild dogs are known to occur on the site, the project will result in an increase in dog ownership numbers in the area. As such, the education of residents has been identified as a key management tool in reducing the risk or injury of dog attacks on koalas. Again, while the risk to grey-headed flying-fox is low, these measures will also be effective to reduce risk of dog attack on the species.	Dog restrictions including appropriate signage to promote responsible pet ownership including "dogs on leads at all times".	At delivery of pedestrian links and detention areas during construction	Dogs are let off their leads by residents in areas where koalas may be present.	Dog signage is designed and delivered. Council controls on dog ownership imposed.	Landscape architect and civil contractor as appointed by the proponent.	Annual Compliance Report completed by an engaged suitably qualified professional.	Dogs will be managed to Council specifications and prohibited from entering the vegetation retention areas **No residual impact**