

















LENDLEASE COMMUNITIES

SPRINGFIELD RISE - VILLAGE 12 SITE BASED MANAGEMENT PLAN - GRANDE AVENUE

01 **CONTENTS**

1	CONTENTS	2
2	INTRODUCTION	3
3	SITE DESCRIPTION	4
4	ECOLOGICAL VALUES - SUMMARY	5
5	ENVIRONMENTAL MANAGEMENT	6
6	PRE-CLEARANCE VEGETATION MANAGEMENT	7
	PRE-CLEARANCE VEGETATION MANAGEMENT	8
	PRE-CLEARANCE VEGETATION MANAGEMENT	9
7	PRE-CLEARANCE FAUNA MANAGEMENT	10
	PRE-CLEARANCE FAUNA MANAGEMENT	11
	PRE-CLEARANCE FAUNA MANAGEMENT	12
	PRE-CLEARANCE FAUNA MANAGEMENT	13
	PRE-CLEARANCE FAUNA MANAGEMENT	14
8	FAUNA MANAGEMENT CONSTRUCTION	15
9	THREATENED FLORA MANAGEMENT	16
	THREATENED FLORA MANAGEMENT	17
	THREATENED FLORA MANAGEMENT	18
10	FLORA AND FAUNA CHECKLIST	19





02 INTRODUCTION

Introduction

This phase specific Site Based Management Plan (SBMP) This SBMP-V12 has been informed by the following documents: has been prepared for Village 12 (V12) of Springfield Rise at Spring Mountain Estate and incorporates the management intent, objectives and specifications detailed within the overarching environmental management plans prepared for the development.

The aim of this SMBP-V12 is to set out and guide the implementation of effective measures to ameliorate any impacts, and to ensure and manage the long term sustainability of the project and its natural environment, specifically for Matters of National Environmental Significance (MNES) listed species known to occur within the Spring Mountain project site namely:

- Phascolarctos cinereus (Koala)
- Pteropus poliocephalus (Grey-headed Flying-fox)
- Plectranthus habrophyllus

The document has been developed in accordance with the Spring Mountain SMBP, prepared by Yurrah, as an updated and re-issued phase specific management plan.

The purpose of this SBMP-V12 is to provide a single, consolidated management document which incorporates requirements of numerous ecological management plans prepared for Spring Mountain. From these documents, this SBMP-V12 extracts management objectives, implementation requirements, performance indicators and monitoring and auditing actions relevant to the specific the development of V12 for both construction and operational phases.

Environmental Pre-Start Checklist

This Site Based Management Plan has been prepared to create an on-site working document with easy to find references to management measures without the comprehensive details of the assessment and approval. Core to contractors working under this SBMP is completion of the Spring Mountain Pre-Start Environmental Checklist. Completion and sign off of this checklist, inclusive of attachments should will warrant compliance with this SBMP and broader approval parameters.

- Site Based Management Plan for Spring Mountain Community, prepared by **Yurrah** (July 2015)
- Threatened Flora Management Plan for Spring Mountain, prepared by **Yurrah** (July 2015)
- Fauna Management Plan for Spring Mountain, prepared by Saunders Havill Group (July 2015)
- Code of practice for Welfare of Animals effected by Land Clearing and Other Habitat Impacts, and Wildlife/ Spotter Catchers (Draft) prepared by Wildlife Warriors and Voiceless (2009)
- Offsets Management Plan prepared for Spring Mountain, prepared by Saunders Havill Group (July
- Bushfire Management Plan for Spring Mountain, prepared by Cardno (2016)

This SBMP-V12 should also be read in conjunction with all V12 approvals and conditions including approved civil, landscape, vegetation management and rehabilitation plans and specifications.

This SBMP-V12 has also been prepared to meet compliance and auditing requirements of the Spring Mountain Commonwealth Department of the Environment and Energy (DoEE) approval under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC) (Ref: 2013/7057), specifically Conditions 3-6.

This SBMP-V12 outlines construction measures specific to V12 to manage of impacts to native flora and fauna.

Construction

- Vegetation Management (Clearing & Protection)
- Protection of MNES Fauna (Koala and Grey-headed Flying Fox) and Native Wildlife
- Maintenance of Safe Wildlife Movement Opportunities
- Fauna Habitat Rehabilitation
- Threatened Flora Management
- Pest Management
- Fire Management
- **Education and Awareness**



03 SITE DESCRIPTION

Site Description

V12 is located centrally within the precinct, and, in conjunction with Villages 11 and 13, defines the key intersection of the Grande Avenue extension and the Major Collector linking into the Town Centre. The village represents part of the key focus node of the overall Spring Mountain Precinct as it will accommodate the majority (if not all) of the proposed Neighbourhood Centre, in close proximity to the proposed school, and integrates with the central District Recreation Park (Formal Parks and Gardens FP1) and the Mountain Creek linear open space along the eastern boundary. The village adjoins Development Area 10 of the Town Centre along the northern boundary, and part of this interface is subject to finalisation of this boundary. V12 has a development area of approximately 10ha.

Natural Features

V12 comprises of land with a subtle undulating nature and a typical aspect towards the south west receding from a ridgeline along the northern boundary that accommodates the Major Collector road in the Town Centre.

Land Use

In addition to the Neighbourhood Centre, V12 will be developed for typical residential development predominately comprising a range of low rise (1-2 story) detached dwelling forms. The potential for higher densities and attached dwelling forms towards the norther portions of the village proximate to the Town Centre and the southern potion proximate to the Neighbourhood Centre will achieve a suitable integration within these areas. The potential for higher densities and attached dwellings form up to 4 storeys may be considered overall in this regard. It is proposed that an overall density of 18-20 dw/ha will be achieved.

Interface with Linear Open Space and Formal Park and Gardens

A key consideration of the village is the interface with the District Recreation Park (Formal Parks and Gardens FP1) and linear open space areas adjoining the village to create a central focus for community activity, gathering and recreation. The interface should support building presentation, access and passive surveillance over the adjoining formal park areas and linear corridor and ensure a high level or visual permeability to highlight the presentation of the park and non-vehicular access to the other parts of the Formal Parks and Gardens FP1 opposite Mountain Creek. The interface is to be provided between V9 and V12 crossing Mountain Creek.



Photo: Grey-headed Flying-fox (listed as Vulnerable under EPBC Act (Cth))



Photo: Plectranthus habrophyllus (listed as Endangered under EPBC Act (Cth))



Photo: Koala (listed as Vulnerable under EPBC Act (Cth) and NCA (Qld))



Extract: V12 development site from the Spring Mountain Precinct Plan



04 ECOLOGICAL VALUES - SUMMARY

Ecological Values

Numerous ecological surveys were undertaken over the site as part broader concept planning for the Spring Mountain project. In addition, pre-clearance flora and fauna surveys for V12 were undertaken by Saunders Havill Group and Queensland Fauna Consultants, respectively. The following comments summarise the ecological values of the V12 site:

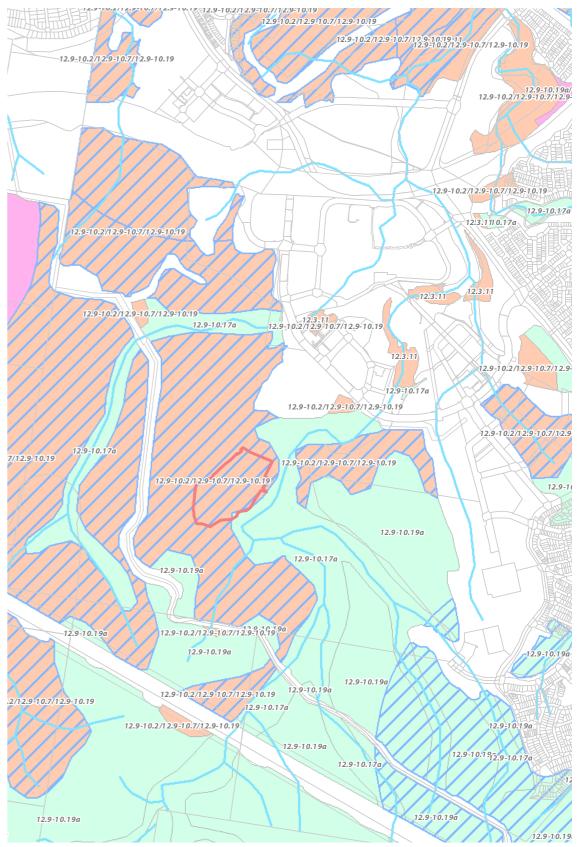
- The V12 clearing area is mapped as containing composite Of Concern RE12.9-10.2/12.9-10.7/12.9-10.19 and Least Concern RE12.9-10.17a. Field survey confirmed these regional ecosystem communities were present on ground.
- The ridgelines adjoining the assessment contained a mix of Corymbia and Eucalypt species with dense understorey of Acacia species. Rocky outcrops were observed throughout the ridgelines. The ridgeline areas were targeted during the field the survey due to these areas being preferred habitat for a number of the listed flora species..
- Several old tracks and firebreaks were observed during the traverse of the area.
 Adjoining low areas associated with the VMA mapped waterway contained extremely dense impenetrable infestations of Lantana camara (Lantana) up to 2m in height. The area containing Lantana camara contained very few native flora species.
- It is noted that potential patches of Plectanthus habrophyllus were identified by Yarrah (2015) along Mountain Creek, adjacent to the V12 development. These mapped patches, as well as other areas of suitable habitat, were checked by Saunders Havill Group for Plectanthus habrophyllus. The species was no recorded.
- \blacksquare No State or Commonwealth threatened flora or fauna species were identified within V8 as part of pre-clear surveys.



Photo: Vegetation consistent with current RE mapping and heavily infested with Lantana layer.

Least Lophostemon confertus or Lophostemon suaveolens dominated open forest usually with emergent Concern RE 12.9 -Eucalyptus and/or Corymbia species. Occurs in gullies 10.17a and southern slopes on Cainozoic and Mesozoic sediments. Least Corymbia citriodora subsp. variegata open forest or woodland usually with Eucalyptus crebra. Other species Concern RE 12.9such as Eucalyptus tereticomis, Eucalyptus moluccana, 10.2 Eucalyptus acmenoides and Eucalyptus siderophloia may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of Lophostemon confertus (whipstick form) often present in northern parts of bioregion. Occurs on Cainozoic and Mesozoic sediments. Of Eucalyptus crebra +/- Eucalyptus tereticornis, Corymbia tessellaris, Angophora leiocarpa, Eucalyptus Concern RE 12.9melanophloia woodland. Occurs on Cainozoic and 10.7 Mesozoic sediments. Eucalyptus fibrosa subsp. fibrosa woodland +/-Least Corymbia citriodora subsp. variegata, E. acmenoides or E. portuensis, Angophora leiocarpa, E. major. Concern RE 12.9-Understorey often sparse. 10.19





05 ENVIRONMENTAL MANAGEMENT

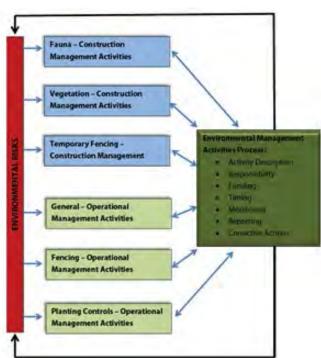
Management - General

This SMBP–V12 sequences through details on a number of site specific outcomes for fauna, vegetation management and operational controls associated with the development of V12. Logically, the document works through construction processes and has been prepared as a sub-plan to the SBMP for Spring Mountain prepared by Yurrah.

Environmental Training

This SBMP-V12 is to be issued to all site contractors (and sub-contractors) and kept within site construction offices. Elements of compliance with the document will form part of the responsibility of the Principle Site Contractor. Training on the management measures outcomes in this SBMP-V12 will occur as part of the broader site environmental management and workplace health and safety procedures. This will include the following steps:

- 1. Copy of the SBMP-V12 made available to all site contractors (and sub-contractors)
- 2.Outline of the SBMP-V12 and its requirement relative to the site and/or particular scope of a contract forming part of the site induction requires contractors to read, acknowledge and sign the document prior to commencement of site works
- 3. Requirements of the SBMP-V12 to be incorporated into workplace checklists, work method statements and toolbox talks.
- 4. Weekly review and report on compliance with the SBMP by the Principle Contractor.



Spring Mountain Risk Management Process

Adaptive Management

Adaptive management refers to a way of managing natural resources where management actions are regularly revised and, if necessary, modified based on monitored changes in environmental condition and/or changes in base knowledge which underpins the original management approach. This SBMP-V12 has been based on, as far as practical, the current state of knowledge of the species ecology and best practice habitat management approaches. When new facts emerge from future research, they should be immediately integrated into the plan so it remains consistent with the current state of knowledge (and best practice).

Statutory Requirements

Activities associated with this SBMP - V12 will comply with the relevant provisions of legislation and regulations and policies of the following:

- Environment Protection and Biodiversity Conservation Act 1999 (Cth) with regard to species listed under the provisions of this Act;
- **Nature Conservation Act 1992 (Qld)** with regard to species listed under the provisions of this Act;
- Biosecurity Act 2014 with regard to weeds and pests; and
- The requirements of the Commonwealth, State and /or Local Government decision notices including any relevant "conditions of approval".

Roles and Responsibilities

Proponent	Lendlease Communities Pty Ltd	Lendlease Communities Pty Ltd Contact: Graeme Knox
Contractor	Appointed party or company that performs the construction works on site and included all employees of the Contractor and sub-contractors.	Shadforth Civil Contact: Tony Hopper
Site Supervisor	Appointed party contracted by the Proponent to oversee daily site operations and site management.	Arcadias Contact: Christo Louw
Environmental Representative	Appointed party contracted by the Proponent to oversee environmental compliance.	Saunders Havili Group Contact: Murray Saunders
Fauna/Spotter Catcher	Appointed Contractor employed to implement fauna welfare responsibilities with vegetation clearing operations. The Fauna Spotter Catcher is a person who holds a rehabilitation permit with an extended authority issued by EHP specifying the gilder may take, keep or use an animal whose habitat is about to be destroyed by a human activity.	Queensland Fauna Consulting Contact: Bryan Robinson
Koala Spotter	Appointed Contractor employed to implement Koala welfare responsibilities associated with vegetation clearing operations. The Koala Spotter is a person who holds a tertiary qualification in Biology or Zoology, or who is demonstrably experienced in the identification and location of Koalas in their natural habitat and has an authorisation from EHP to conduct such activities. For example, demonstrably experienced may include a Koala keeper employed by a licensed wildlife exhibitor (i.e. zoo) may be capable of demonstrating competence in locating Koalas.	Queensland Fauna Consulting Contact: Bryan Robinson
Council	Ipswich City Council (ICC)	Ipswich City Council (ICC) Contact: Tim Foote



06 PRE-CLEARANCE - VEGETATION MANAGEMENT

P1- Vegetation Management (General)

Vegetation clearing must be undertaken in accordance with approved plans to ensure protection of areas of ecological significance and agreed retained linear open space corridors. Habitat trees where marked for retention must not be damaged as a result of tree clearing and or are to be removed at the specification and control of the appointed Fauna Spotter.

Table 1 describes the relevant management requirements to address this issue.

Objective

- 1. To identify clearing in the plans and specification, trees to be retained and trees to be cleared. Areas of retention should be clearly marked and fenced
- 2. To ensure that all contractors understand the requirements of protection and retention and install protective devices to ensure no additional clearing occurs.
- 3. To ensure that the work program is such as to minimise the time between when clearing occurs and the cleared ground is stabilised.
- 4. To ensure that cleared material is mulches or wood-chipped as appropriate for recycling
- 5. To protect linear open space from construction damage and run-off.

Management Strategy

- Clearing to be undertaken in accordance with measures outlined in the EPBC Management Plans.
- Install stormwater management devices as per V12- Stormwater Management Plan.

Performance Indicators

- Integrity of protective devices.
- Existing vegetation and trees retained in good health, with no scars from earthworks machinery and no erosion and sediment deposited within linear open space/retention areas.

Clearing activities should be undertaken in accordance with the with all management plan requirements and associated approval conditions. This SMBP shows the phase 1 clearing of V12 of Spring Mountain. It is acknowledged this clearing line is offset 10m from the ultimately clearing line. Additional lineal clearing will be completed as part of phase 2 works



Photo: Control clearing of vegetation



Photo: Erosion control to cleared batter

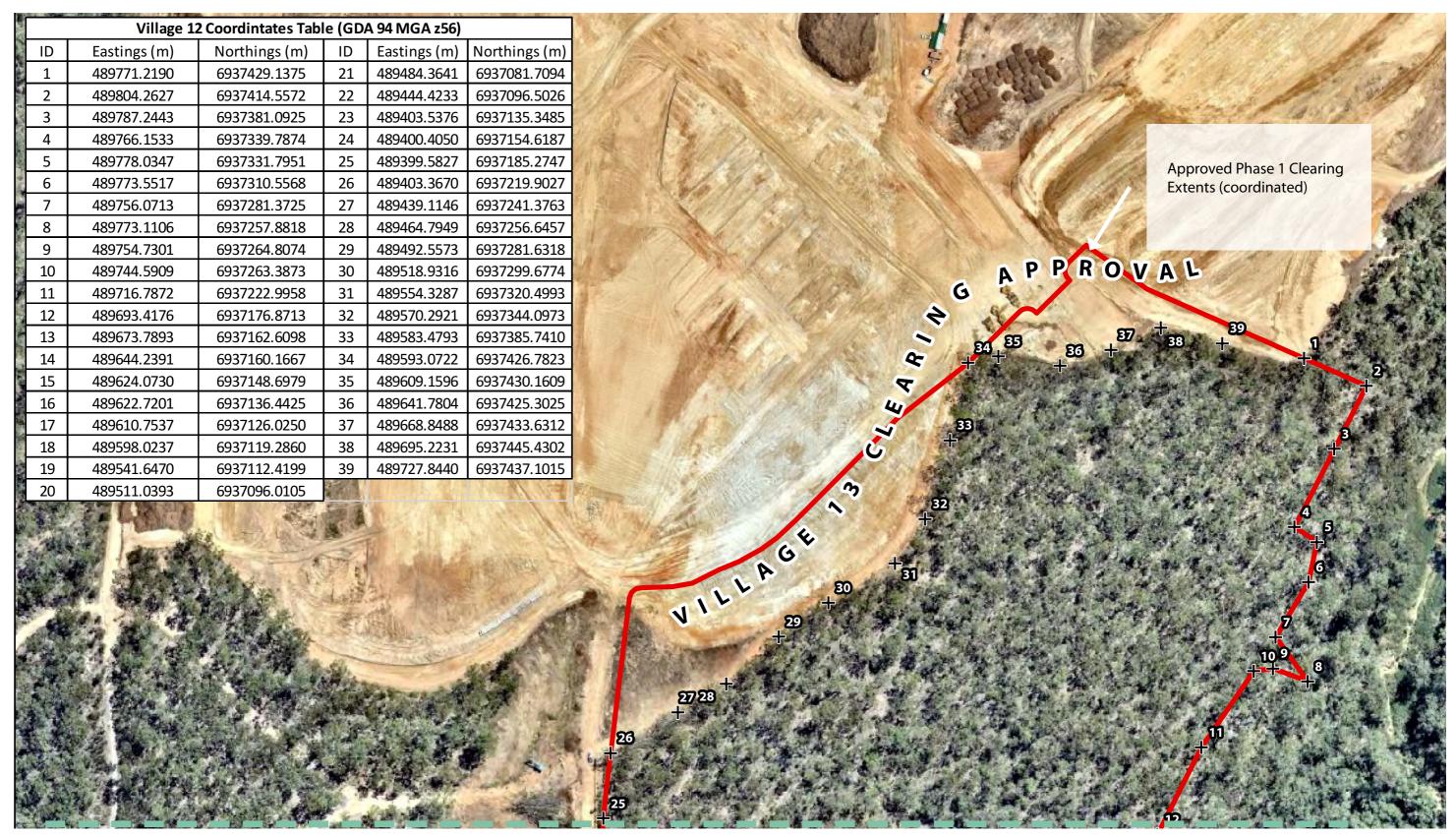


Photo: Tree protection and erosion fence

Table 1: P1: Vegetation Management (Clearing and Protection)

Issue	Vegetation Management – Clearing and Protection	Responsible Person	Timing
mplementation	Ensure protective devices are installed and maintained in functional condition.	Contractor	During Clearing &
Requirements	Monitor and report on the success, protection and retention, and integrity of protective devices such as fences and sediment fences through		Construction
Monitoring	Weekly inspection and log.	Contractor	During Clearing & Construction
Reporting	Monthly (until operation).	Contractor	During Clearing & Construction
orrective action	Repair, replace or reinstate protective devices.	Contractor	During Clearing & Construction
	Appropriate treat any damage to trees or vegetation marked for retention as required.	Contractor	During Clearing & Construction

06 PRE-CLEARANCE - VEGETATION MANAGEMENT



Adjoin Plan next page



06 PRE-CLEARANCE - VEGETATION MANAGEMENT

HAULL ROPE CLEAR APOLIA

P2 – Protection of MNES Fauna (Koala and Grey-headed Performance Indicators Flying Fox) and Native Wildlife (Vegetation Clearing)

Clearing of native vegetation has the potential to result in direct injury or death to fauna. Clearing of vegetation for the purposes of preparing development areas also has the potential to result in incidental damage to adjacent habitats to be retained.

Development protocols to respond to injured wildlife must be Fauna Management prepared prior to vegetation clearing operations. It is expected that some of these protocols are likely to be applicable to responses required for all injured fauna (including Koala) and must be included within the Animal Welfare Plan (AWP) to be prepared by the appointed fauna spotter catcher.

Table 2 describes the relevant management requirements to address the protection of terrestrial fauna, specifically Koala, during vegetation clearing and

<u>Objective</u>

- 1. To minimise and mitigate adverse direct and indirect effects of vegetation clearing on terrestrial including Koala and Greyheaded Flying-fox, during clearing and construction
- 2. Prevent mortality or injury to terrestrial wildlife, specifically Koala.

Management Strategy

- Prevent damage and/or disturbance to native vegetation and associated habitats outside clearing
- Clearing and construction operations are employed to maximise animal welfare and reduce fauna mortality.
- Informal all personnel of site environmental responsibility.
- Reuse hollows and large rocks for habitat in retained habitat areas/linear open space.
- Safe fauna movement opportunities are provided within linear open space to prevent fauna moving through construction areas.
- Direct clearing activities from open area to less open areas allowing fauna to natural seek shelter in conservation land and linear open space/retained habitat
- Provision of permanent and temporary fencing in accordance with the V12-Vegetation Management Clearing Plan
- Undertake works in accordance with V121 Direction of Clearing Plan and install fencing in accordance with V12-VMCP

- Prevent fauna mortality and disturbance to terrestrial
- No injury or death of Koala.
- No damage to linear open space/retained habitat.
- No disturbance to native vegetation outside permitted clearing footprints.

Lendlease Communities Pty Ltd commits to the use of leading practice methods and processes for the role of Wildlife Spotter Catchers in the engagement of any contractors for native vegetation clearing works. The standards and requirements outlined in this Specification Note are acknowledged as above minimum requirements in most Local Government areas and are applicable despite lessor requirements listed within individual project approval packages.

As a minimum specification Wildlife Spotter Catchers will retain the following Queensland State Government Permits:

- Animal Ethics
- Scientific Purposes Permit
- Scientific User Registration
- Damage Mitigation Permit
- Rehabilitation Permit

Wherever practical all clearing works will be coordinated in general accordance with applicable site based components of the DRAFT Code of Practice for the welfare of animals affected by land-clearing and other habitat impacts prepared by the Australia Zoo Wildlife Warriors and Voiceless (and or any contemporary Industry based final version of this Draft Code). This includes mandatory controls on the timing and sequencing of clearing works integrated with a regimented series of fauna management protocols implemented by registered Fauna Spotter / Catchers. The following procedural stages listed in the Draft Code are to be applied to clearing works on all Lendlease Communities Pty Ltd projects:

<u>Action 1 – Engagement Wildlife Spotter Catcher</u>

Action requires that the developer (and or the developer's representative through the principal contractor) engage a Wildlife Spotter Catcher with full registrations and licences provided in accordance with the Queensland Government's National Parks and Wildlife Services.

A Registered Wildlife Spotter Catcher engaged shall have the minimum permits listed in this specification.

Protection and Management Plan (WPMP)

The WPMP should be submitted to the Queensland Department of Environment and Heritage Protection (EHP) or relevant authority and or stakeholder. 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.

<u>Action 3 – Prepare a Wildlife and Habitat Impact Mitigation</u> Plan

Following completion and endorsement of the WPMP the Wildlife Spotter Catcher should prepare a more specific Wildlife and Habitat Impact Mitigation Plan, which will include details 2.

- Measures required to be completed to minimise wildlife a. 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.

Lendlease Communities Pty Ltd support the use of innovative leading practice methods minimising and mitigating impacts on all native fauna during clearing operations.

Action 4 – Wildlife Spotter Catcher Role at Pre-Start Meeting

Prior to the commencement of any construction works, a pre- n. start meeting is to be held between the project manager, site 0. fore-person, plant operators and applicable Local and State Government representatives. At the pre-start meeting, the Wildlife Spotter Catcher is to outline the clearing process and 3. the requirements of the WPMP.

Action 5 – During Construction

The Wildlife Spotter Catcher is to be on-site during all phases of construction which involve potential impacts on wildlife or

habitat (unless otherwise specified by the appointed Wildlife Spotter Catcher. This will enable to the Wildlife Spotter Catcher to make any necessary adjustments to the approved Clearing Action 2 - Wildlife Spotter Catcher to Prepare a Wildlife Management Plans and WPMP to cater for any specific issues encountered during the clearing works.

Action 6 - Post Works Reporting

During the course of all site works, including the pre-clearance surveys, the Wildlife 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, where they are applicable to the project:

- 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
- Wildlife Capture and Disposal Plan Should contain the following details for each captured animals:
- Species
- Identification name or number b.
- Sex (M. F or unknown)
- Approximate Age or Age Class (neonate, juvenile, subadult, adult)
- Time and date of capture
- Method of capture
- Exact point of capture (GPS coordinates)
 - State of health
- Incidents associated with capture likely to affect health
- Veterinary intervention or treatments
- Time held in captivity
- Disposal method (euthanasia, translocation, re-release)
- Date and time of disposal
- Detailed of disposal (GPS points of release)
- For released animals, location relative to point of
- **Animal Injury and Euthanasia Report** similar details for the Wildlife Capture and Disposal Plan should be included in this report.



Koala Management & Welfare

While clearing activities aim to protect and minimise impacts to all terrestrial fauna, specific management measure for Koala are required as part of the EPBC approval and have been specified within the Fauna Management Plan, prepared by **Saunders Havill Group** which should be read in conjunction with the plan.

Key outcomes within the FMP for Koala include:

- Koalas on site are protected
- Koala habitats are protected, maintained and their integrity enhanced.
- The abilities for Koalas to move into, within and out of the sit e is maintained.
- All persons involved in construction and operation of the development are aware of the site values, their potential to impact on Koalas and their habitats, and their responsibilities in regard to procedures and strategies within approved management plans.



Fauna Spotters Retrieving Fauna



Fauna Signage



Koala Signage



Significant Tree Protection Fencing



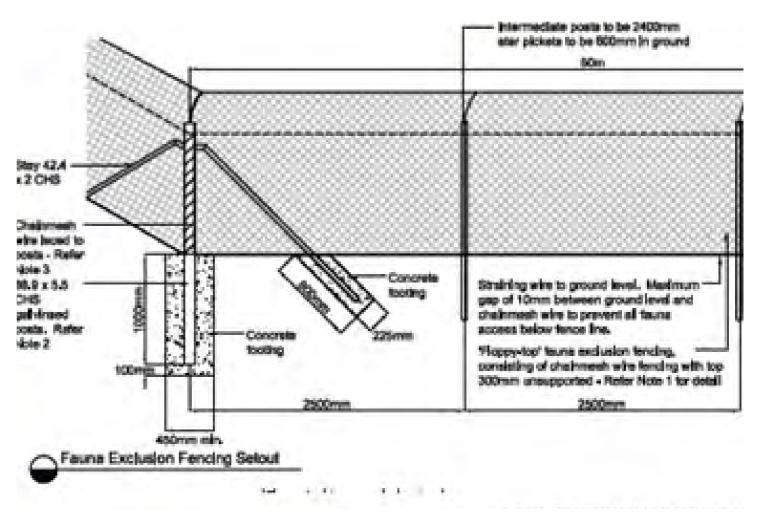
Fauna Spotter During Tree Clearing



Fauna Exclusion Fencing



Fauna Exclusion Fencing



Construction fencing detail

Table 2: P2 – Protection of MNES Fauna and Native Wildlife (Vegetation Clearing)

Issue	P2 - Protection of MNES Fauna and Native Wildlife	Responsible Person	Timing
Implementation	No vegetation removal shall occur until relevant approvals have been obtained All permit conditions will be followed	Proponent	Prior to Clearing
Requirements	 To prevent damage and / or disturbance to native vegetation and associated habitats outside clearing areas: a. Clearing boundaries will be delineated on all drawings and in the field to define the authorised clearing extent. b. Installation of vegetation clearance markers (e.g. high visibility poly-web fencing) prior to the commencement of vegetation clearance to identify and protect remnant vegetation for retention. c. Along the interface between clearing precincts and open space / Environmental Corridors, trees are to be felled towards the clearing precinct to avoid damage to these areas. d. Clearing vegetation is to be stockpiled so as not to impede damage to drainage channels. 	Contractor	Prior to Clearing & During Clearing
	 No clearing of vegetation is to commence without the presence of an EHP approved Fauna Spotter Catcher, or where clearing includes non-juvenile Koala habitat trees, a Koala Spotter. a. An appointed Site Superintendent will be responsible for ensuring that all trees scheduled for removal will be checked on the day of their removal for the presence of fauna by an EHP approved Fauna Spotter Catcher / Koala Spotter as vegetation characteristics dictate. b. The EHP approved Fauna Spotter will check and clear vegetation prior to its felling and, if required, will relocate native wildlife (other than Koala) into appropriate habitat areas within the site which are to be retained. In the case of a Koala being present, translocation of the individual/s must occur in accordance with requirements for Koala. c. Hollow-bearing (habitat) trees are to be identified in the field and by plan prior to commencement of clearing operations. These shall be marked and dismantled using a cherry picker and a suitably qualified arborist and Fauna Spotter Catcher. If fauna is present, the tree will either be left standing overnight to allow the animal to leave via their own volition, or will be encouraged from the tree by shaking or other methods deemed suitable by the fauna spotter. Where no signs of fauna are identified, machinery operators will be instructed to fell trees in a manner directed by the fauna spotter to minimise potential risk to fauna. 	Fauna Spotter Catcher	Prior to Clearing
	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. Areas identified for vegetation clearance are to be clearly defined and detailed in site inductions.	Contractor	Prior to Clearing
	Conduct vegetation clearing in sequential stages for sites with an area of more than 3 hectares. Vegetation clearing is to conform with the following: d. The direction of clearing should be away from threatening processes or hostile environments, and towards the clearing precinct to avoid damage to adjacent retained habitat links, ensuring that: i. Fauna are not required to cross roads or move through developed areas or disturbed areas. Such as residential areas or areas that require movement of greater than 100m over cleared ground to reach suitable habitat; ii. Fauna area not left occupying an "island" of habitat between hostile environments, such as a road and a cleared area, unless there are no other more suitable habitat areas in which to direct fauna, and iii. Fauna can safely leave the site of clearing and relocate to adjacent habitat.	Contractor	During Clearing



Table 2: P2 – Protection of MNES Fauna and Native Wildlife (Vegetation Clearing)

Issue P.	2 - Protection of MNES Fauna and Native Wildlife	Responsible Person	Timing
	 e. Cleared vegetation is to be stockpiled so as not to impede fauna movement. f. Where vegetation to be cleared includes non-juvenile Koala habitat trees, implement sequential clearing as per the requirements for Koala. 		
C	ompanion animals (e.g. dogs) are to be banned from all construction areas.	Contractor	At all times
V	ehicle access within retained habitat/linear open space will be limited and appropriately signed.	Contractor	Prior to Clearing & During Clearing
w	onduct vegetation clearing in accordance with Section 4 of the Spring Mountain FMP (prepared by Saunders Havill Group dated July 2015) hich outlines specific implementation requirements for Koala including clearing in sequential stages for sites. For a site more than 6ha egetation clearing is to conform with the following: Is carried out in a way the ensures Koalas on the area being cleared have enough time to move out of the clearing with without human intervention and involves i. Ensuring not more than 3ha or 3% of the sites area (whichever is greater) in any one stage ii. Ensuring that between each stage and the next there is at least one period of 12 hours at starts at 6pm on a day and ends at 6am on the following day, during which no trees are cleared on the site b. Is implanted in a way that ensures, while clearing is being carried out, appropriate habitat links are maintained within the clearing site and between the site and its adjacent areas allowing Koalas living on the site to move out of the site c. Ensures that no tree in which a Koala is present, or a tree with a crown overlapping a tree in which a Koala is present, is cleared until the tree is vacated by the Koala. d. Ensures that vegetation clearing is directed away from threatening processes, or hostile environments, and towards any retained vegetation or habitat links, ensuring that: i. Koalas are not pressured, through loss of habitat, to cross roads or move through developed or disturbed areas, such as residential areas or areas that require movement of greater than 100m over cleared ground to reach suitable habitat; ii. Koalas are not left occupying an "island" of habitat between hostile environments, such as road and cleared areas, unless there are no other more suitable habitat areas in which direct Koalas; and iii. Koalas can safely leave the site of clearing and relocate to adjacent habitat. e. The Koala spotter is responsible for ensuring, throughout the duration of clearing operations, that no tree in which a Koala is presen	Contractor / Fauna Spotter Catcher/ Koala Spotter	During Clearing

<u>Table 2: P2 – Protection of MNES Fauna and Native Wildlife (Vegetation Clearing)</u>

Issue	P2 - Protection of MNES Fauna and Native Wildlife	Responsible Person	Timing
	A requirement that a permit to interfere with wildlife from EHP will be mandatory for the wildlife handing activities as will the appropriate Animal Ethics Permit from DAF. Construction personnel shall not attempt to handle any wildlife. a. Fauna / Koala handling and relocation activities must only be undertaken by those identified on a current site-specific Damage Mitigation Permit (Removal and Relocation of Wildlife) from EHP. b. Koala Spotter/Fauna Spotter Catchers are required to relocate injured wildlife to the nearest designated veterinary clinic of wildlife hospital. Full contacts will be provided within the AWP. c. A register of fauna incidents / interactions is to be maintained daily during clearing operations.	Fauna Spotter Catcher/Koala Spotter	During Clearing & Construction
	The timing of vegetation clearance should be selected in order to minimise impacts (direct and indirect) to affected fauna habitats during optimum breeding period.	Contractor	During Clearing
	Avoid clearing of vegetation between the hours of 6pm and 6am.	Contractor	During Clearing
Monitoring	For each day of native vegetation clearing operations, a daily audit log is to be completed by the Contractor either prior to, or on completion of daily operations. Audit of key requirements, e.g. clearing contained within designated limits, integrity of clearing boundary devices, no damage to vegetation outside clearing boundary, Fauna Spotter Catcher present.	Contractor	During Clearing
Reporting	Animal Welfare Plan is prepared prior to clearing operations by the appointed Fauna Spotter Catcher.	Proponent / Fauna Spotter	Prior to Clearing
	Weekly report by the Fauna Spotter Catcher/ Koala Spotter to the Contractor on the clearing of any native vegetation and any animals encountered, injured or relocated is to be submitted.	Contractor	During Clearing
	Monthly report by the Contractor the Site Superintendent on native vegetation operations, including compliance, non-compliance incidents (fauna injury and responses) and corrective actions, outcomes of Fauna Spotter Catcher activities.	Contractor	During Clearing & Construction
	Bi-annual report by the Site Superintendent to the Proponent. Report to consider incident patterns, if any, and provide recommended solutions and a description of the corrective actions taken.	Contractor	During Clearing & Construction
	Annual site audit by the Environmental Representative and report to the Proponent	Environmental Representative	During Clearing & Construction
Corrective Action	In the event that monitoring identifies practices inconsistent with the strategies developed for this FMP, the Contractor shall take the necessary corrective steps and note them in the monthly report to be reviewed by the Site Superintendent.	Contractor	During Clearing & Construction
	In the event that monitoring identifies practices inconsistent with the strategies developed for this SBMP, the Contractor shall take the necessary corrective steps and note them in the monthly report to be reviewed by the Site Superintendent	Contractor	During Clearing & Construction



08 FAUNA MANAGEMENT - CONSTRUCTION

P3 – Maintenance of Safe Wildlife Movement Opportunities (Site Preparation Operations)

The following suite of best practice measures will be employed throughout the site to minimise fauna habitat fragmentation, facilitated fauna movement and reduce related injury and mortality. Management requirements are considered in the context of:

- Site preparation operations (i.e. during vegetation clearing and earthworks phases); and
- Design treatments and strategies for the built phase of the development

Table 3 describes the relevant management requirements in regard to site preparation operations. The following should be read in conjunction with the requirements for Koala design treatments and strategies for the built phase of the development.

Retention and rehabilitation of the Mountain Creek Corridor to the west, in addition to the 293ha of offset land for Conservation to the south, will occur as a result of the Spring Mountain development to maintain fauna movement and connectivity within and between the development site.

<u>Objective</u>

- 1. To avoid the impact of habitat fragmentation by roads and maintain safe movement opportunities for native wildlife (including Koala and Grey-headed Flying-fox) between linear open space.
- 2. To maintain fauna movement opportunities within retained habitat areas and minimise fauna movement opportunities through site preparations.

Management Strategy

- Develop a track plan for retained habitat areas/linear open space which allows fauna movement to be maintained
- Restrict access to retained habitat areas/linear open space for environmental management only.
- Reduce road speeds
- Increase driver awareness and education

Performance Indicators

Minimal fauna mortality.

Temporary Fencing

Prior to the commencement of vegetation clearing a temporary fauna exclusion fence will be erected around the area of clearing and works and be maintained until the completion of major civil works. The purpose of the fence is to minimise any native fauna (including koala) from entering into the clearing and or post clearing construction zone during a time when potential risks of impact are at their highest.

The fencing proposed is a "floppy-top" temporary fauna exclusion fencing as per the details and photos shown on this drawing sheet. This fencing type is preferred as it continues to allow any fauna within the impact zone to exit, however prevents new or re-entry once the fence is erected. The fencing type can also be erected along random alignments and relocated to new areas as the clearing areas expand in future clearing and development events. This fencing type has been successfully used as a temporary barrier on other koala related projects within the vicinity of major roads and housing areas.







Controlled clearing access track

<u>Table 3: P3 – Maintenance of Safe Fauna Movement Opportunities – Site Preparation Operations</u>

Issue	P2 - Maintenance of Safe Fauna Movement Opportunities - Site Preparation Operations (Roads and Vehicle Interactions)	Responsible Person	Timing
Implementation	A site access plan is to be developed for the Environmental Corridors.	Proponent	Prior to Clearing
Requirements	Site protocols are to be established which restrict authorised area access to the approved track network identified with the plan.	Contractor	Prior to Clearing
	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 restrictions and construction speed limits.	Contractor	Prior to Clearing
	Erect temporary exclusion fencing around the area of clearing and works and be maintained until the completion of major civil works.	Contractor	Prior to Clearing
	Vehicle movements outside designated operational areas (other than for land management purposes) will be prohibited.	Contractor	During Clearing & Construction
	Road speeds throughout construction areas and through retained habitat areas will be restricted to 50km/hr.	Contractor	During Clearing & Construction
	Strategic use of awareness signage is to be implemented along the interface between operational areas and Environmental Corridors and access restriction signage at all track entry points to Environmental Corridors during construction works.	Contractor	During Clearing & Construction
	Proposed construction access roads will be subject to design treatments to ensure safe fauna crossing opportunities. Construction of an elevated portion (or portions) in the form of bridging structures (culverts) in associated with guide fencing will be incorporated to ensure the provision of safe crossing opportunities.	Contractor	During Clearing & Construction
Monitoring	Weekly inspection and log.	Contractor	During Clearing
Reporting	Monthly report by the Contractor to the Site Superintendent in regard to development / maintenance of structures implemented to facilitate fauna movement, review of fauna / vehicle incident patters, if any, and provide recommended solutions, an a description of corrective actions taken.	Contractor	During Clearing & Construction
	Bi-annual audit report by the Site Superintendent to the Proponent. Report to include compliance with site access restrictions, integrity of structure implemented to facilitate fauna movement, review of fauna/ vehicle incident patterns, if any, and provide recommended solutions, and a description of corrective actions taken.	Contractor	During Clearing
	Annual site audit by Environmental Representative and report to the Proponent.	Environmental Representative	During Clearing & Construction
Corrective Action	In the event that monitoring identifies practices inconsistent with the strategies developed for this SBMP, the contractor shall take the necessary corrective steps and note them in the monthly report to be reviewed by the Site Superintendent.	Contractor	During Clearing & Construction

09 THREATENED FLORA MANAGEMENT

P5 – Threatened Flora Management

Plectranthus habrophyllus, a herb listed as Endangered under the EPBC Act, has been recorded at several locations across the Spring Mountain project site. Core populations have been identified within Core Conservation areas by Yurrah. The majority of these locations are associated with waterways within linear open space and the habitat is to be protected.

Pre-clearance Survey

In accordance with the EPBC approved Threatened Flora Management Plan, prepared by Yurrah, pre-clearance surveys for each development precinct must occur by a suitable qualified person prior to the commencement of clearing. Any additional individuals must be recorded and translocated where necessary.

<u>Translocation</u>

Where plants are located within the development footprint of near the edge of the footprint, and are at risk of impact, these plants will be translocated to establish a new population in suitable habitat within the proposed Linear Open Space. The habitat for both translocated individuals and in situ individuals will be protected within a Core Conservation Area.

As an added habitat protection measures, Buffer Areas, with an offset width of 20m, will be established around Core Conservation Areas. No Go Zones must be marked out by the 20m buffer around know populations within Core Conservation areas. No work apart from conservation management activities is to be permitted within Core Conservation Areas.

Clearing and Construction

Plectranthus habrophyllus is to be protected from impacts of construction. Stormwater Management Plans, Bushfire Management Plans and Weed Management are to address threatened flora management.

Table 5 describes the relevant management requirements to address this issue.

<u>Objective</u>

1. To encourage the locally resident populations of threatened flora species to increase at a natural rate to a desired level on site.

Management Strategy

Threatened flora habitat to be protected through the

- approved Threatened Flora Management Plan
- Recognise and protect all linear open space through management of interface between linear open space and development for bushfire, weeds and access issues.
- Establish Core Conservation Areas and Buffer Areas at threatened flora locations to target management activities.
- Design a network for fire-trails to defined spatial blocks to prevent damage caused by uncontrolled fire and allow access for maintenance.
- Awareness and education of threatened flora presence.
- Ensure all responsible persons are aware of the significance of this issue and are fully aware of any likely impacts of scheduled works.

Performance Indicators

- 0% weed cover in Core Conservation Areas and Buffers
- No evidence of damage from stormwater run-off construction
- Recruitment of threatened flora seedlings in Core Conservation Area
- No damage from uncontrolled access
- Condition of protective fencing remains undamaged.

It is noted that potential patches of Plectanthus habrophyllus were identified by Yarrah (2015) along Mountain Creek, adjacent to the V12 development. These mapped patches, as well as other areas of suitable habitat, were checked by Saunders Havill Group for Plectanthus habrophyllus as part of pre-clearance surveys for V12 Saunders Havill Group in February 2017. Plectranthus habrophyllus was not recorded.



Photo: Plectranthus habrophyllus (listed as Endangered under the EPBC Act (Cth))







09 THREATENED FLORA MANAGEMENT

<u>Table 5: P5 – Threatened Flora Management</u>

Issue	P4 Threatened Flora Management	Responsible Person	Timing
Implementation Requirements	 Core Conservation Areas located within 20m of land proposed for uses other than conservation, identified as areas for additional interface management including: A detailed survey of threatened plant locations by a registered surveyor. Where interfacing with residential, a fence with a minimum 50% transparency to be erected along interface boundary. Signage to be erected identifying area as 'Significant Ecological Area' and 'Dumping of Rubbish Prohibited' and where further information can be obtained. Where interfacing with road verge or park landscaping, design and plant selection considers and avoids any potential impact upon the threatened flora species. Landscape plant species selected will be non-invasive, existing trees to be retained where possible to maintain microclimate, and clear edge formed that discourages access. Mulch to be preferably sourced from the site and is to be weed free. 	Proponent	Design /Prior to Clearing &
	 Undertake pre- clearing surveys. Once the line of clearing (including construction of parks, pedestrian tracks and fire trails) is marked out by a registered surveyor, an additional survey for threatened species is to be undertaken within the clearing area, and Linear Open Space within 10m of the clearing line. Additional individuals, or groups of individuals located to be recorded with a GPS, given a unique ID number, and flagged with marking tape. Where necessary individuals will be translocated in accordance with protocols in the Threatened Flora Management Plan. The boundary of the Core Conservation Areas will be adjusted as necessary (if not within construction footprint), to include any additional individuals located during of the pre-clearing survey. 	Proponent	Prior to Clearing
	 Core Conservation Areas less than 20m from of the clearing and construction footprint will be identified on construction drawings and through signage on site as 'No Go Zones'. Their associated Buffer Areas will be identified as 'Proceed with Caution Zones'. Work within the Buffer Area will require supervision by the Project Ecologist. No work apart from conservation management activities is to be permitted within the Core Conservation Areas. 	Contractor	Prior to Clearing
	 Where Linear Open Space has not been fenced as part of general vegetation protection, temporary fencing must be installed around the Core Conservation Area, where practical, and necessary (i.e. steep terrain may form natural barrier). The temporary fence shall be a minimum of star pickets with 3 strand wire and high visibility mesh attached to the top wire (with minimum gap of 500mm along the bottom) and erected prior to clearing. The required alignment and extent of the fencing is to be undertaken in consultation by the project ecologist and inspected before the start of clearing. Signage is to be attached to fencing clearly identifying the site as a significant ecological area and a 'No Go Zone', and no entry permitted unless approval given by Proponent. Mapping will be produced identifying location of threatened flora and alignment of protective fencing during detailed design for each Phase of the Spring Mountain 	Contractor	Prior to Clearing

09 THREATENED FLORA MANAGEMENT

<u>Table 5: P5 – Threatened Flora Management</u>

Issue	P4 Threatened Flora Management	Responsible Person	Timing
	Stormwater Management controls to be installed through implementation of an Approved Stormwater Management Plan for Spring Mountain. 1. The Stormwater Management Plan will outline management required to ensure water quality and quantity flowing into Core Conservation Areas and all areas of proposed conservation are at predevelopment levels. 2. All stormwater management devices are to be installed and inspected prior to clearing and construction, Stormwater management devices to be regularly checked and maintained to ensure they perform their intended function.	Contractor	Prior to Clearing
	Induct all site workers and visitors in the presence and significance of threatened species on site, and on the management measures being implemented at the present time. All personal associated undertaking works within a Buffer Area are to be made aware of the presence of threatened plants, and are to be educated on protective measures in place, prior to entering area. No personnel to enter Core Conservation Area without approval.	Contractor	Prior to Clearing
	Fire trails will be installed in accordance with the Final Bushfire Management Plan with locked gates and structures to prevent access to vehicles, other than emergency and maintenance vehicles, into all Linear Open Space areas.	Contractor	During Clearing
Monitoring	Core Conservation Areas and Buffers will be monitored on a 3 monthly basis for the first year, and annual thereafter for 2 years subject to satisfactory performance including: Provide general photographic descriptive record Establish permanent sample quadrats located in each management block, according to an agreed sample strategy Confirm the absence of environmental weeds Measure species richness of the ground layer. Measure abundance of flowing threatened species. Measure abundance of threatened species seedlings General observations.	Contractor	During Construction / Operation
Reporting	Every 3 months by the Environmental Representative to the Proponent for the first year, every 6 months in the second year and once in the third year/	Environmental Representative	During Clearing & Construction
	Annually by the Proponent to the DoE including non-conformances, corrective actions and assessment of monitoring results.	Proponent	During Clearing
Corrective Action	In the event that monitoring identifies practices inconsistent with the strategies developed for this SBMP, the contractor shall take the necessary corrective steps and note them in the monthly report to be reviewed by the Site Superintendent.	Contractor	During Clearing & Construction



10 FLORA & FAUNA CHECKLIST

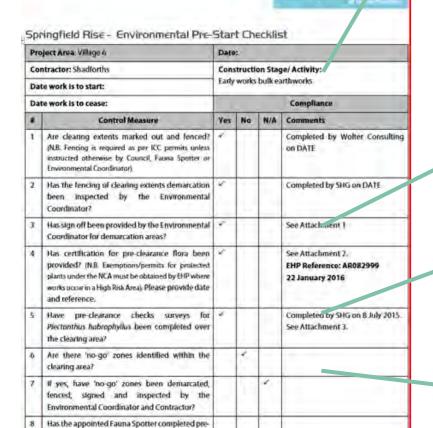
Pre-Clearance Checklist:

This Site Based Management Plan (V12) contains only a small portion of information included within existing assessment management plans for Spring Mountain. Subsequently, the volume of requirements remains complex and overlapping. To ensure compliance with approval requirements and provide a record trail for reporting to the Commonwealth <u>Department of the Environment</u> the following pre-clearance checklist is to be completed with each phase of works.

The checklist is to be completed by the principal contractor and requires sign off by the Environmental Coordinator and Fauna Spotter. To complete the checklist a number of items need to be issued from various parties to the principal contractor (eg confirmation of pre-clearance surveys).

The pre-clearance checklist is established in a format which enables direct annual reporting to the <u>Department of the Environment</u> and will include a number of attachments.

Springije



clearance surveys and reports?

9 Has the appointed Fauna Spotter identified any





