

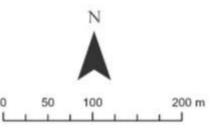


## **Clearing Results**

Stage 9 Everleigh Precinct Greenbank

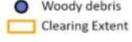
Compiled by: Erin Monaghan Date: 23/10/2022

Scale: 1:3,750 Spatial Reference Name: GCS GDA 1994



### Legend

- Arboreal termite mound
- Capture Fissured bark
- ▲ Scat Stick nest
- + Relocation Water body Woody debris



Thick undergrowth

Hollow-bearing tree O Log hollow

Tracks

FIGURE 7 - CLEARING RESULTS



#### 5 CONCLUSION

Australia Wide Environmental Consultants (AWEC) were commissioned by Shadforth Civil Contractors to manage fauna during clearing for Stage 9 of Everleigh Precinct, Greenbank (FIGURE 1).

A suitably qualified and licenced FSC was on site for the duration of clearing works to ensure all fauna management measure were adhered to.

Results from the survey during clearing included 46 habitat features and fauna signs, a large proportion of these were arboreal termite mounds (no. = 22), and a sugar glider was recorded in one. A koala was observed within 150 m the clearing extent prior to clearing but was not encountered during clearing. Two wedge-tailed eagle nests were noted and left in situ. Five animals were successfully relocated. No fauna injuries or fatalities occurred during clearing works.



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Mcelroy C, Ingleby S, Tipping J, Stokes J, Barclay S. 2004. Survey Guidelines For Australia's Threatened Mammals. Environment.Gov.Au. (2011), <a href="https://www.awe.gov.au/sites/default/files/documents/survey-guidelines-mammals.pdf">https://www.awe.gov.au/sites/default/files/documents/survey-guidelines-mammals.pdf</a>

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# Appendix C

Precinct 9 Environmental Pre-Start Package





Project Area: Precinct 9 Balance Earthworks Area	<b>Date: 19</b> May 2022				
Contractor: Shadforths	<b>Scope of Works:</b> Vegetation clearing associated with Precinct 9 Balance Earthworks Area and				
Date work is to start: 23 May 2022	continuation of EPBC Stage 2 (EPBC2016/7817). Refer Attachment 1 for clearing extent &				
Date work is to cease: 1 July 2022	fencing demarcation and Attachment 2 for EPBC Stage context.				

					C	Complian	ce ( <b>✓ ×</b> N/A)
#	Control Measure	Client	Superintendent	Contractor	Fauna Spotter Catcher	Environmental Coordinator	Details
1a	Has the <b>environmental coordinator</b> obtained approval for works located inside the <i>Environment Protection and Biodiversity Conservation Act 1999</i> referral area (EPBC 2016/7817)?					✓	Yes. Refer Attachment 2 – for a copy of the EPBC Approval (EPBC2016/7817). Attachment 2 shows the extent of works within the EPBC Stages and is continuation of Stage 2.  In accordance with condition 7 of the approval (ref. EPBC2016/7817) the approval holder notified the Department within 10 business days after the commencement of Stage 2 during previous clearing works for Precinct 12.  As per EPBC conditions, all works must occur in accordance with the <i>Mirvac Greater Flagstone Project: Natural Environmental Strategy (18 April 2017), as approved by</i>





#	Control Measure	Client	Superintendent	Contractor	Fauna Spotter Catcher	Environmental Coordinator	Details
							Economic Development Queensland on 2 June 2017 [NESS] (Refer Appendix C).
1b	Has the <b>environmental coordinator</b> obtained approval for an Offset Strategy to compensate for the loss of 230ha of Koala and Grey-headed Flying-fox habitat in order to commence Stage 2 works in accordance with approval conditions 4 to 6 (EPBC 2016/7817)?					√	Refer to Offset Strategy Approval Letter (Attachment 3), which determined the 'Offset Strategy – Mirvac Greater Flagstone Project, Greenbank, Queensland prepared by Saunders Havill Group, dated 23 September 2020' met the requirements of approval condition 4 to 6 of EPBC 2016/7817.
MA	NAGEMENT PLANS						
1b 1c	Has a Vegetation Clearing Management Plan (VMP) been prepared, reviewed by the <b>environmental coordinator</b> and approved by Economic Development Queensland (EDQ)?  Has Fauna Management Plan (FMP) been prepared, reviewed by the <b>environmental coordinator</b> and approved by EDQ?					√ √	Refer to Attachment 4 - 'Vegetation Clearing and Fauna Management Plan, Precinct 9 Balance Earthworks, Everleigh Greenbank prepared by Saunders Havill Group, dated 16 December 2021 [VCFMP]'.
1c	Has the <b>environmental coordinator</b> undertaken a Protected Plants flora survey for the clearing impact area and obtained an exemption / permit to clear from the Department of Environment and Science (DES) for protected species under the <i>Nature Conservation Act 1992</i> ?					<b>√</b>	Refer to Attachment 5 for a copy of the DES Wildlife Authority Permit for clearing of protected plants (WA0026119) granted 23 August 2020 and approved clearing impact area.





#	Control Measure	Client	Superintendent	Contractor	Fauna Spotter Catcher	Environmental Coordinator	Details
							No M. irbyana specimens are to be cleared under the VMP.  All works must be undertaken in accordance with 'Impact Management Plan Melaleuca irbyana 432-520 Greenbank Road, Greenbank prepared for Mirvac QLD Pty Ltd 10 July 2020' [IMP], and associated appendices and supporting documentation.
	NTRACTOR RESPONSIBILITES						
2a	Has the <b>contractor</b> issued copies of the NESS and EDQ Approved						Copies of the VCFMP have been provided to the contractor as attachments to this
	VCFMP been issued to all site contractors and sub-construction and made these management plans available in the site						environmental pre-clearance package. Refer
	construction office?						to Attachment 4.
2b	Have clearing extents provided by the site superintendent to					<b>√</b>	Clearing extents were provided to the
	the site <b>contractor</b> and <b>environmental coordinator</b> ?						<b>environmental coordinator</b> in preparation of the VCFMP. Tree protection fencing lines as shown on the VCFMP were provided to the contactor prior to the installation of tree protection fencing. Refer Attachment 4.



#	Control Measure	Client	Superintendent	Contractor	Fauna Spotter Catcher	Environmental Coordinator	Details
2c	Have clearing extents been marked out and fenced as per VCFMP requirements by the <b>contractor</b> and demarcation fencing signed off by the <b>environmental coordinator</b> ?					<b>√</b>	Clearing extents were checked by the environmental coordinator on 18 May 2022.  Refer to Attachment 1 for sign off by the environmental coordinator of demarcation fencing.
2d	Has the <b>contactor</b> appointed a <b>fauna spotter catcher</b> holding required DES permits (approved by the <b>environmental coordinator</b> ) to be present during all clearing activities and made aware of their responsibilities under the FMP and VMP?					✓	Refer Attachments 6 & 7 for references of AWEC Environmental Consultants current licenses and operating permits as the appointed fauna spotter catcher in Section 3 of the <i>Wildlife Protection Management Plan Everleigh Precinct 9.4-9.7</i> , prepared by AWEC (WPMP) and Section 2 of the <i>Wildlife and Habitat Mitigation Plan, Everleigh Precinct 9.3-9.7</i> , prepared by AWEC (WHMP).
2e	Has the appointed <b>fauna spotter catcher</b> completed preclearance surveys and reports and have these been reviewed by the <b>environmental coordinator</b> ?					✓	Preclearance surveys were undertaken on the 11 May 2022. Refer Attachment 6 for a copy of the WPMP and Attachment 7 for a copy of the WHMP. Review of the WPMP and WHMP was undertaken by the <b>environmental coordinator</b> on 17 May 2022. Koala were identified during the pre-clear inspection by <b>fauna spotter catcher</b> .





#	Control Measure	Client	Superintendent	Contractor	Fauna Spotter Catcher	Environmental Coordinator	Details
							In addition to the preclearance surveys a Thermal Survey for Koalas is to be undertaken prior to works commencing (Refer Attachment 6).
2f	If any threatened fauna species or habitat/breeding places have been identified by the <b>fauna spotter catcher</b> , have appropriate controls been implemented and discussed with the key personnel?					<b>√</b>	Refer to Section 4.2 of WPMP (refer Attachment 6) for identified fauna species and the location of significant habitat features identified by pre-clearance surveys.  Appropriate mitigation measures have been provided in the WHIMP (Attachment 7).  Appropriate controls will be discussed with key personnel at the pre-start meeting.
2g	Has an Erosion and Sediment Control Plan been prepared and self-certified by a RPEQ or accredited CPESC professional / site superintendent and supplied to the contactor?						Refer to Attachment 8 for the construction issue Erosion and Sediment Control (ESC) Plans prepared by the site superintendent.
2h	Has the <b>contractor</b> put in place appropriate induction and management controls to ensure all contractors, subcontractors and associated personnel been instructed on environmental procedures and controls, including timing of clearing, stop-works procedures and non-compliance reporting requirements?					<b>√</b>	Refer to Attachment 10 for project/site induction supplied by the contractor demonstrating environmental awareness.





#	Control Measure	Client	Superintendent	Contractor	Fauna Spotter Catcher	Environmental Coordinator	Details
BIO	DIVERSITY VALUES						
3a	Will the works occur in an area of significant biodiversity values as shown by the NESS?					NA	Works will occur within confirmed waterways.
3b	Will the works occur in an area of other biodiversity values as shown by the NESS?					<b>√</b>	Works will occur within areas of mapped remnant vegetation (Of Concern Regional Ecosystem) and identified juvenile native vegetation.
3с	Will the works occur in a Department of Agriculture and Fisheries (DAF) mapped waterway?					<b>√</b>	Works are not located within a DAF waterway.
3d	Will the works involve the clearing of Koala Habitat as mapped by Koala Habitat Values mapping and do offsets apply to the clearing?					✓	In accordance with the NESS offsets for the clearing of Koala habitat will be addressed through EPBC approval conditions, which take precedence over any State Government Offset or obligations for the same prescribed matter. In addition to the preclearance surveys a Thermal Survey for Koalas is to be undertaken prior to works commencing (Refer Attachment 6).
3e	Has a Bushfire Hazard Assessment and Management Plan been prepared for the stage of works and endorsed by EDQ?					✓	Refer to Attachment 9 for a copy of the Bushfire Hazard Management Plan prepared by Rob Friend and Associates, dated November 2016.





#	Control Measure	Client	Superintendent	Contractor	Fauna Spotter Catcher	Environmental Coordinator	Details
PRE	START MEETING						
4	Has a pre-start been completed with all relevant parties?					<b>√</b>	A pre-start meeting will be held with all
							relevant parties 23 May 2021.

NOTE: if the answer to any question above is NO then the clearing activity will not proceed.





#### **Additional Notes**

Three listed threatened species occur on site, as protected under Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC) and State *Nature Conservation Act* 1992 (NCA) legislation, which include:

- Koala
- Grey-headed Flying-fox
- Melaleuca irbyana

Specific approval conditions relating to protected species and their habitat are applicable to works within the clearing area, including:

EPBC 2016/7818 approval conditions (Attachment 2):

- It is noted that a portion of clearing will occur external the Stage 2 site (refer to Attachment 2). **No** clearing of Koala or Grey-headed Flying-fox habitat must occur outside of the approved area and be minimised where practicable.
- The approval holder must implement the *Mirvac Greater Flagstone Project: Natural Environmental Strategy (18 April 2017), as approved by Economic Development Queensland on 2 June 2017* to avoid degradation of the onsite conservation area until such time as handover is accepted by Logan City Council.

DES Wildlife Authority Permit conditions (Attachment 5):

- All works must be undertaken in accordance with "Impact Management Plan Melaleuca irbyana 432-520 Greenbank Road, Greenbank prepared for Mirvac QLD Pty Ltd 10 July 2020', and associated appendices and supporting documentation.

All works must be undertaken in accordance with the following management plans:

- NESS Mirvac Greater Flagstone Project: Natural Environmental Strategy (18 April 2017), as approved by Economic Development Queensland on 2 June 2017
- IMP Impact Management Plan Melaleuca irbyana 432-520 Greenbank Road, Greenbank prepared for Mirvac QLD Pty Ltd 10 July 2020
- VCFMP Vegetation Clearing and Fauna Management Plan, Precinct 9 Balance Earthworks, Everleigh Greenbank prepared by Saunders Havill Group, dated 16 December 2021.

Copies of these management plans has been supplied to all signatory parties as part of the Environmental Preclearance Package.







### **Compliance Awareness**

Signing below demonstrates acknowledgement of the environmental pre-start procedures and requirements listed in the checklist above and associated attachments.

Name	Company	Position	Signature	Date	
Jason Augustine Mirvac Queensland Client Pty Limited Representative		Jason Digitally signed by Ja Augustine DN: cn=Jason Augus Date: 2022 05 20 12: +10'00'			
Nick Somerville	Premise	Site Superintendent	Nommal	10/5/22	
Callum Watts	Shadforths Civil Contractor	Site Contractor	Curattle	20/05/22	
Joel Keady	. AWEC Environmental Consultants	Fauna Spotter Catcher	Joel Keady Joel Keady (May 24, 2022 90:12 GMT - 10	May 24, 2022	
Mark Vary	QI D Mulching	Project Arborist	mling	27/05	
Laura Thorley	Saunders Havill Group	Environmental Coordinator			



# Appendix A

Environmental Awareness Acknowledgement

### **ENVIRONMENTAL AWARENESS**

### **CONTRACTOR ACKNOWLEDGEMENT**

Outpourd Dhulltd a skypoulos		•	• •	•
Queensland Pty Ltd, acknowled the <b>Precinct 9 Balance Earth</b> y				
Precinct 9 Balance Earthwo			_	
prepared by SHG (16 Dece attachments. By signing below provided within the <b>Precinct</b> contractors and sub-contractor	mber 2021) and r, I acknowledge th <b>9 Balance Earthv</b>	the <b>Environmenta</b> at there are mechanis	Pre-clearance ms in place to en	<b>Checklist</b> and sure all material
 Company Name (Please print)				
 Signature (Contractor / Contrac	ctor Representativ	e)		
Name (Please print)				
 Title / Position				
 Date				





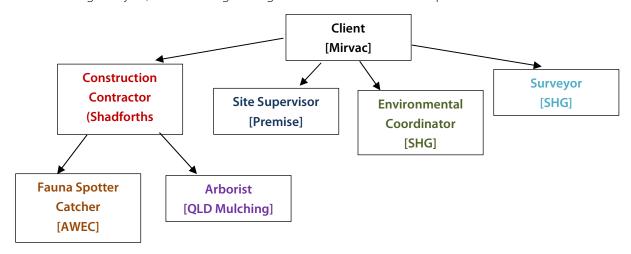
# Appendix B

Environmental Responsibilities

## Mirvac's Everleigh Project Environmental Responsibilities

This document sets out the environmental responsibilities for relevant parties appointed by Mirvac for the Everleigh project at Greenbank.

For the Everleigh Project, the following management structure will be adopted:



#### **Abbreviations**

The following abbreviations have been adopted in this document:

AQF Australian Qualifications Framework

BHMP Bushfire Hazard Mitigation Plan

ESCP Erosion and Sediment Control Plan

DES Department of Environment and Science (Qld)

NESS Natural Environment Site Strategy

WPMP Wildlife Protection and Management Plan

WHMP Wildlife and Habitat Mitigation Plan

VCFMP Vegetation Clearing and Fauna Management Plan



### 1.1. Construction Contractor Responsibilities

The **Construction Contractor** is responsible for the following environmental controls on the project:

- Ensuring construction works (including pre-clearance checks (see Section 1.1.1), erosion and sediment control measures, clearing processes and post clearing requirements (see Section 1.1.2)) are undertaken in accordance with the Environmental Pre-Start Package for the Stage of Works and approved management plans (e.g. Vegetation Clearing and Fauna Management Plan (VCFMP) / Natural Environment Site Strategy (NESS) / Erosion and Sediment Control Plan (ESCP) / Bushfire Hazard Assessment Management Plan (BHAMP) / Wildlife Protection and Management Plan (WPMP) / Wildlife and Habitat Mitigation Plan (WHMP)).
  - o In the event of a non-compliance, all works are halted immediately and non-compliances are reported to the **site supervisor** and **environmental coordinator**.
  - o Weekly review and reporting on compliance with approved management plans (N.B. this can be shown as an item in a weekly review / report / checklist).
  - o Monthly environmental compliance reports to the **environmental coordinator**.
- Engagement and management of a Department of Environment and Science (DES) approved **fauna spotter catcher** to undertake pre and post clearance checks, attend pre-start meetings and be present on site during all clearing activities.
  - o The appointed **fauna spotter catcher** must hold a Rehabilitation Permit for native wildlife, including Koala, issued by the DES.
- Engagement and management of an **arborist** to attend pre-start meetings and be present on site during all clearing activities.
  - o The appointed **arborist** must hold a Level 5 AFQ qualification
- Installation and maintenance of erosion and sediment controls as per approved management plans prepared by the site supervisor.
- Installation of demarcation fencing.
  - o Fencing must be maintained during works and reinstated immediately if damaged or knocked down.
  - o Temporary star picket fencing must be installed around the Stage of Works site, any open space areas and / or individual trees to be retained on the Stage of works VCFMP.
  - o Fencing must be fauna friendly and provide a least a 30cm gap between the bottom of the fence and the ground.
  - o Fencing must remain in place until completion of bulk earthworks and removed prior to on maintenance or as required as subsequent stages of the development occurs.
- Ensuring daily limits and volumes of vegetation clearing occur in accordance with approval allowances (e.g. EPBC Act Approval, EDQ Approval).
- Ensuring stockpiles and cleared vegetation is managed in accordance with approved management plans.
- Ensuring clearing occurs between the hours of 6am 6pm.
- Ensuring clearing occurs in accordance with the direction of clearing plan as detailed in the VCFMP or as prepared by the **fauna spotter catcher**.
- Ensuring all contractors, subcontractors and associated personnel been instructed on environmental procedures and controls.



- o Environmental procedures and controls must form part of induction material (and evidence should be able to be provided to the **environmental coordinator** on request).
- o Copies of approved management plans are made available at the site office at all times and evidence should be able to be provided to the **environmental coordinator** on request).

#### 1.1.1 Construction Contractor Pre-Clearance Procedure (for each Stage of Works)

This procedure is to be followed by the **contractor** prior to clearing for each Stage of Works.

- 1. Have all **contractors**, subcontractors and associated personnel been instructed on environmental procedures and controls as part of their site induction?
- 2. Do you have a copy of the approved management plans?
- 3. Have copies of the approved management plans been made available to all site **contractors** and sub-contractors?
- 4. Has a copy of the approved management plans been made available in the site construction office?
- 5. Have clearing extents as per approved management plans been flagged by the **contactor** in association and checked by the **environmental coordinator**? N.B Fencing must be installed prior to the pre-start meeting for the Stage of Works.
- 6. Have erosion and sediment controls been installed as per approved plans prepared by the **site supervisor**)?
- 7. Have you engaged an EHP approved **fauna spotter catcher** to undertaken necessary reporting requirements and be present during all clearing activities?
- 8. Has the appointed **fauna spotter catcher** undertaken pre-clearance checks and reporting, no more than 2 weeks prior to when clearing is to occur?
- 9. If any threatened fauna species or habitat/breeding places have been identified by the **fauna spotter catcher**, have appropriate controls been implemented and this information provided to the **environmental coordinator**?
- 10. Have you engaged an AQF Level 5 **arborist** to be present at the pre-start meeting and during all clearing activities?
- 11. Has a pre-start been completed with all relevant parties?
- 12. Have the requirements of the approved management plans been discussed a pre-start meeting?
- 13. Have all relevant parties reviewed the Environmental Pre-Start Package and signed the Environmental Pre-Start Checklist?

#### 1.1.2 Construction Contractor During & Post-Clearance Checklist (for each Stage of Works)

This procedure is to be followed by the **contractor** <u>during and post clearing</u> for each Stage of Works.

- 1. Has the clearing occurred in accordance approved management plans? If not, have any non-compliances been reported to the **site supervisor**) and **environmental coordinator**?
- 2. Have erosion and sediment controls been maintained as per approved plans prepared by the **site supervisor**)?
- 3. Has compliance with environmental procedures and controls been reported on within the weekly site compliance checklist?
- 4. Has cleared vegetation been processed though an on or off-site wood-chipper and disposed of as firewood or landscape mulch or otherwise reused / relocated for future use or as per the approved VCFMP?



- 5. If vegetation has been stockpiled, has the **fauna spotter catcher** checked the stockpile prior to its removal?
- 6. Once clearing has ceased, has a post-clearance report been prepared by the **fauna spotter catcher** and provided to the **environmental coordinator**?
- 7. Once clearing has ceased, has a post-clearance report been prepared by the **arborist** and provided to the **environmental coordinator**?
- 8. Has a monthly environmental compliance report been prepared and provided to the **environmental coordinator**?

### 1.2. Fauna Spotter Catcher Responsibilities

The appointed fauna spotter catcher must hold a Rehabilitation Permit issued by EHP and is responsible for the following environmental controls on the project:

- Ensuring works are undertaken in accordance with the Environmental Pre-Start Package for the Stage of Works and approved management plans (e.g. VCFMP / NESS / ESCP / BHAMP / WPMP / WHMP).
- Undertaking pre-clearance checks for the Stage of Works no more than 2 weeks prior to clearing.
- Preparing a Wildlife Protection Management Plan (WPMP) and Wildlife and Habitat Mitigation Plan (WHMP) (as per the Draft Code for Fauna Spotter Catchers) for each stage of works. This includes Identifying fauna habitat values, potential risks to fauna, and appropriate mitigation measures as well as identifying the direction and sequencing of clearing activities to ensure safe flushing of fauna. These are to be provided to the contractor and environmental coordinator for review.
- Attending the pre-start for each Stage of Works.
- Being present during all clearing activities.
- Implementing controls and procedures and controls in the WPMP and WHMP.
- Preparing a post-clearing report to be provided to the contractor and environmental coordinator.
- Inspecting stockpiled vegetation for fauna prior to its removal.

### 1.3. Arborist Responsibilities

The appointed arborist must hold a Level 5 AFQ qualification and is responsible for the following environmental controls on the project:

- Attending pre-start meetings.
- Ground-truthing Koala Habitat mapping and endorsing koala habitat clearing / offset plans prepared by the environmental coordinator.
- Being present during all clearing activities.
- Preparing any necessary reports for trees marked 'subject to arborist assessment' on an approved VCFMP which have been removed during clearing works.

### 1.4. Site Supervisor Responsibilities

The Site Coordinator (Engineer) is responsible for the following environmental controls on the project:

 Ensuring construction works are undertaken in accordance with the Environmental Pre-Start Package for the Stage of Works and approved management plans (e.g. VCFMP / NESS / ESCP / BHAMP / WPMP / WHMP).



- Ensuring the contractor receives copies of approved management plans for the Stage of Works.
- Ensuring required surveys and pre-clearance checks from the **fauna spotter catcher** and **environmental coordinator** have been conducted. (N.B. this includes any surveys i.e. tree plots, required to inform design stages or required for preparation of management plans and development applications).
- Providing the **environmental coordinator** with CAD copies of works extents (including clearing extents for bulk earthworks, access tracks, crossing etc.).
- Coordinating clearing extents to be demarcated by contractor, and checked by the environmental coordinator.
- Confirming works within waterways comply with *Water Act 2000* requirements for riverine protection and proceed under an applicable exemption or a riverine protection permit
- Confirming works within waterways comply with *Fisheries Act 1994* requirements for waterway barrier works and proceed under accepted development outcomes or a permit.
- Ensuring erosion and sediment controls have been installed and maintained as per approved ESCPs prepared by the **site supervisor**?
- Coordination of any pre-start meetings and signing of the Environmental Pre-Start Checklist.
- Ensuring no clearing occurs until sign off is received from the **environmental coordinator**.

### 1.5. Environmental Coordinator Responsibilities

The Environmental Coordinator is responsible for the following environmental controls on the project:

- Ensuring all Commonwealth and State environmental approvals are obtained for the Stage of Works.
  - o Ensuring all notifications government authorities in accordance with approvals have been issued (i.e. notification to Department of Agriculture, Water and Environment of commencement of Stage 2 under the EPBC Approval (EPBC2016/7817)).
- Ensuring all required management plans have been prepared for the Stage of Works.
- Ensuring all required management plans have been review and approved for the Stage of Works.
- Ensuring all relevant parties receive copies of approved management plans for the Stage of Works.
- Preparing, managing and compiling the Environmental Pre-Start Package for the Stage of Works, including the Environmental Pre-Start Checklist.
- Undertaking checks of demarcation flagging installed by the contractor.
- Reviewing fauna spotter catcher pre-clearance and post-clearance reporting.
- Ensuring works are undertaken in accordance with the Environmental Pre-Start Package for the Stage of Works and approved management plans (e.g. VCFMP / NESS / ESCP / BHAMP / WPMP / WHMP).



### Acknowledgement

No clearing works can occur until the Environmental Pre-Start Package, for the specific works site, is distributed by the Environmental Coordinator and written instruction is given by the Site Coordinator (Engineer).

By signing I agree that I have read and understood the Environmental Pre-Start Check Procedure and will comply with the procedure for all clearing works.

Name	Company	Position	Signature	Date
Jason Augustine	Mirvac	Client Representative	Jason Augustine	Digitally signed by Jason Augustine DN: cn=Jason Augustine Date: 2022.05.20 12:20:57
Callum Watts	Shadforths	Contractor Coordinator	Fratti	20/05/22
Nick Somerville	Premise	Site Superintendent	Mount	10/5/22
Laura Thorley	SHG	Environmental Coordinator	4	
Joel Keady	AWEC	Fauna Spotter Coordinator	Joel Keady Joel Keady May 24, 2022 20-7 6	May 24, 2022
Mark Vary	QLD Mulching	Project Arborist	1	-1-
ml			MU	m 27/05







# Appendix C

Natural Environment Site Strategy

environmental management



## MENDED IN RED

**Brandon Bouda** 27 April 2017

## Mirvac

**Greater Flagstone Project** 



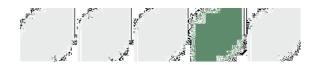
Natural Environment Site Strategy

PLANS AND DOCUMENTS referred to in the PDA **DEVELOPMENT APPROVAL** 

Approval no: DEV2016/768 2 June 2017



Mirvac Greenbank project 18 April 2017 7598



### Document Control

Title	Natural Environment Site Strategy
Job Number	7598
Client	Mirvac

#### Document Issue

Issue	Date	Prepared By	Checked By
Draft	29.02.2016	Keira Grundy	Murray Saunders
Client Draft	07.03.2016	Keira Grundy	Murray Saunders
Client Draft V2	17-03-2016	Keira Grundy	Murray Saunders
Client Draft V3	23-03-2016	Keira Grundy	Murray Saunders
EDQ Submission	01-04-2016	Keira Grundy	Murray Saunders
POST RFI Client Issue	02-11-2016	Murray Saunders / Keira Grundy	Murray Saunders
For Endorsement V1	08-11-2016	Keira Grundy	Murray Saunders
Post App	18-04-2017	Angela Little	Murray Saunders

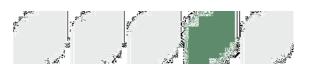
#### Disclaimer

This report has been prepared for **Mirvac. Saunders Havill Group** cannot accept responsibility for any use of or reliance upon the contents of this report by any third party.

### Reports and/or Plans by Others

Reports and/or plans by others may be included within this Natural Environment Site Strategy to support the document.

### environmental management natural environment site strategy



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## **Appendices**

### Appendix I

Plan 1:	Site Aerial
Plan 2:	Certified Property Map of Assessable Vegetation
Plan 3:	Property Map of Assessable Vegetation Awaiting Certification
Plan 4:	SEQ Koala Habitat Values Mapping
Plan 5:	Fisheries – Waterways for Waterway Barrier Works
Plan 6:	Indicative Development Interface to Retained Vegetation – Section AA
Plan 7:	Indicative Development Interface to Retained Vegetation – Section BB
Plan 8:	Natural Environment Site Strategy – Site Constraints Plan

#### environmental management natural environment site strategu



### I. Introduction

#### 1.1. Requirements of site strategy

This Natural Environment Site Strategy (NESS) has been lodged with the initial application for **Mirvac**'s Greenbank Project. While not in response to approval conditions (no approvals in place), this NESS has been prepared based on anticipated requirements with reference to a number of approvals issued in the area and based on feedback from **Economic Development Queensland.** The following components are included within this NESS:

- i. outline measures to conserve and enhance the site's biodiversity values (areas of ecological significance, waterways and vegetation management);
- ii. identify strategies to avoid, minimise and mitigate the clearing of remnant vegetation containing endangered regional ecosystems where proven by ground truthing to be viable;
- iii. identify management plans to be provided to address the clearing of non-viable remnant vegetation containing endangered regional ecosystems;
- iv. identify rehabilitation strategies for any corridors of native vegetation to improve habitat extent and wildlife movement;
- v. identify any buffering to areas of Significant Biodiversity Values and which have associated conservation, biodiversity, habitat or scenic amenity values;
- vi. identify strategies for fauna and flora management of the site, and determine corridors, proposed road crossing designs for expected fauna utilisation and rehabilitation areas (such as for koala habitat);
- vii. Detail the measures outlining how and when Koala habitat obligations for the Greater Flagstone PDA as detailed in the PDA Guideline No. 17 Remnant Vegetation and Koala Habitat Obligation in Greater Flagstone and Yarrabilba PDAs will be delivered;
- viii. identify strategies to prevent land degradation and the management of dispersive/sodic soils;
- ix. identify strategies to rehabilitate major watercourses;
- x. identify strategies for bushfire management;
- xi. identify strategies for pest and weed management;
- xii. identify strategies for monitoring vegetation rehabilitation; and
- xiii. identify strategies for rehabilitation of stream banks of major watercourse areas to create riparian stability for major corridors through the Potential Eco-Lot residential and Conservation Parkland Precincts.
- 1.2. This overarching site strategy, as amended from time to time, is intended to guide future development decisions in relation to the **Mirvac** Greenbank Site.

### environmental management natural environment site strategy



#### Administration Definitions

#### 1.3. In this site strategy:

**Developer** means an entity with effective control of the development of a parcel of land

within the Application Area.

Application Area Refer to Plan 1 in Appendix 1.

**Guideline 14** means PDA Guideline no. 14 for Environmental values and sustainable resource

use (May 2015)

Guideline 17 means PDA Guideline no. 17 for Remnant vegetation and koala habitat

obligations in Greater Flagstone and Yarrabilba PDAs (August 2014)

ICOP means the Infrastructure Charging Offset Plan Greater Flagstone Urban

Development Area (July 2013).

**EDQ** means the Minster for Economic Development Queensland established under the

Economic Development Act 2012, which supersedes the Urban Land Development Authority and repeals the Urban Land Development Authority Act

2007 (Qld)

PDA Development Scheme means the Greater Flagstone Urban Development Area Development Scheme

(October 2011)



### 2. Structure

- 2.1. This site strategy is to be read in conjunction with the reports, Whole of Site Strategies and Infrastructure Master Plans referenced in the Context Plan(s) over the relevant parts of the Application Area (and subsequent revisions and addendums to the same).
- 2.2. This Overarching Site Strategy for the management of the Natural Environment is set out in the following structure:

#### INTRODUCTION

Explains the strategy purpose and extent of land to which it applies, definitions and applicable requirements of EDQ



### GUIDELINE 14 APPLICATION OF GUIDELINE 17



#### **STRATEGIES**

Strategies, ongoing monitoring, and reporting strategies



#### NATURAL ENVIRONMENTAL FEATURES

Gives a description of the general values over the site with a focus on:

**Endangered Regional Ecosystems** 

Low Order Remnant Vegetation

Watercourse Areas

Other Drainage Lines and Waterways

Watercourse Buffer Areas

Site Farm Dams

Areas of Juvenile Native Vegetation



ONGOING MONITORING, REPORTING, AND AMENDMENT



### 3. Guidelines and Relevant Information

- 3.1. This Natural Environment Site Strategy (NESS) is prepared within the parameters of Guideline 14 and Guideline 17. Site specific alterations or legislative departures from the above are outlined in **Section 3** and **Section 4** of this NESS.
- 3.2. The Application Area contains ground-truthed endangered regional ecosystems along the eastern portion of the land holdings. Refer to **Plan 2 (Appendix 1)** for the certified Property Map of Assessable Vegetation (PMAV) that shows the regional ecosystems rectified on-site. **Plan 3 (Appendix 1)** shows rectification of regional ecosystems mapping for a second PMAV which has been lodged with **NRM**.
- 3.3. The Application Area contains koala habitat areas, defined in Guideline 17 as:

An area mapped on State Planning Policy 2/10: Koala Conservation in South East Queensland, SEQ Koala Protection Area Koala Habitat Values maps as:

- bushland habitat; or
- having high and medium value suitable for rehabilitation habitat types.

Refer to Plan 4 (Appendix 1) for the current Koala Habitat Values Mapping.

- 3.4. It is noted that the Koala Habitat Values Mapping covering the Application Area was completed at the GIS level.
  Section 7 of this NESS includes a process and method for amendment of Koala Habitat Values Mapping that is generally consistent with the process and method for amendments to mapping under Division 9 of the South East Queensland Koala Conservation State Planning Regulatory Provisions (Queensland Government, May 2010) (Koala SPRP).
- 3.5. References (including references in Guideline 14 and Guideline 17) to an Act, policy, mapping or other document shall be applied as the Act, policy, mapping or document as at 17 March 2016 or as specified herein.
- 3.6. At the time of submission of the NESS an *Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act) Controlled Action Status Referral was underway. If, through this proposal, an alternative offset outcome is conditioned for a prescribed matter of National Environmental Significance, this is considered to take

### environmental management natural environment site strategy



precedence over any State Government offset or obligation for the same prescribed matter (i.e. the State Government will not require an offset or obligation for the same prescribed matter).

- 3.7. No offsets are required for matters of local environmental significance.
- 3.8. Site and project specific Bushfire Hazard Assessments and Management Plans will be prepared and submitted for endorsement / approval. The outcomes and requirements of these plans will consider the strategies adopted in this NESS.
- 3.9. Notwithstanding any of the requirements of this NESS, the Developer will not be required to perform any rectification works to parts of the site which have been transferred / dedicated to other parties and accepted off maintenance.



### 4. Strategies

#### 4.3 Natural Environment Site Strategies – Conservation Parkland and Development Land

Site strategies have been developed to manage environmental and development outcomes for all land included within this application area, excluding the Future Investigation Area which is subject to further assessment in future. It is intended that the NESS will be amended to include the Future Investigation Area in future (if required). The site strategies include 6 columns listed as Element, Overall Outcomes, Strategies / Actions, Design Standards / Resources, Timing (Indicative) and Achievement Criteria. Mirvac is responsible for the implementation, monitoring and reporting for all site strategies. For some elements (e.g. confirmed viable endangered remnant vegetation), strategy outcomes are identical for both land use areas. For other elements, strategies vary significantly.

For each element, the avoid, minimise, mitigate and restore or offset hierarchy has been adopted. It is noted that the Mirvac Greater Flagstone Project NESS is not preceded by a higher level approval and thus does not link each strategy back to an approval condition as per the majority of NESS operated in the PDA.

#### **Conservation Parkland**

The following Overall Outcomes and Design Standards apply to works within and adjoining the Conservation Parkland:

- Secure and dedicate/transfer to Council a robust and sustainable portion of the site retaining the highest quality ecological values for conservation parkland purposes.
- Consolidate the environmental area into Council's surrounding conservation assets.
- Undertake ecological restoration and waterway stability measures prior to dedication to Council.
- Allow for controlled passive nature based recreational uses as occurring and permissible within adjoining Council conservation parklands

#### **Development Land**

The Development Land is defined as the balance site area which is not included in the Conservation Parkland or Future Investigation Area. The majority of this area will be developed to a minimum net residential density of 15dw/ha, however there may be opportunities to retain environmental values in open space subject to earthworks and servicing requirements. It is noted that development at this density is generally prohibitive of the retention of major or functional areas of environmental values. Note, this whole of site strategy seeks to retain the highest ecological values in Conservation Parkland and the Future Investigation Area. The latter does not form part of this NESS or application.

The following Overall Outcomes and Design Standards apply to the Development Land:

- Ensure systems and processes for assessment, reporting, protection and management are based on leading practice ecological guidelines and relevant legislative frameworks.
- Explore and detail specific opportunities to retain ecological features throughout the site by incorporating detailed environmental data into the site design process.
- Outlines the legislative requirements for all potential or actual threatened plants and animals as scheduled at the State Government and Commonwealth Government Level.

#### **Natural Environment Site Strategies**





Element	Overall Outcomes	Strategies / Actions	Design Standards / Resources	Timing (Indicative)	Achievement Criteria
Survey, Identification & Reporting	Identify Significant Biodiversity     Values within and adjoining the     Development Land	<ul> <li>Robust field surveys (appropriately timed and conducted for expected biodiversity).</li> <li>Desktop assessments using local, state and commonwealth environment databases and mapping.</li> <li>Use the information surveyed and identified in the Significant Biodiversity Values assessment to prioritise environmental features.</li> </ul>	Where suitable, parts of the following documents and standards will assist in measuring the Overall Outcome:  Guideline 14  PDA Development Scheme  State and Commonwealth survey guidelines including:  EPBC Significant Impact Guidelines, including specific guidelines for expected species  DSITIA Terrestrial Vertebrate Fauna Survey Guidelines  NCA Protected Plants Flora Survey Guidelines  NCA Protected Plants Flora Survey Guidelines  Patabase and mapping references including:  EPBC PMST Database  EHP Wildlife Online Database  EHP NCA Protected Plants Mapping  NRM Regulated Vegetation Management Mapping  Koala SPRP Mapping  SARA Mapping  SPP Biodiversity Values Mapping	Context Plan or RoL application	Context Plan and ROL applications are accompanied by Significant Biodiversity Values Assessment Reports
Confirmed Areas of Remnant Vegetation Containing Endangered Regional Ecosystems	Retain and protect Confirmed Areas of Remnant Vegetation Containing Endangered Regional Ecosystems	<ul> <li>Development and infrastructure avoids the clearing of Confirmed Areas of Remnant Vegetation Containing Endangered Regional Ecosystems.</li> <li>Development minimises impacts on Confirmed Areas of Remnant Vegetation Containing Endangered Regional Ecosystems by providing buffers, ideally inclusive of road, between the Development Areas and any retained Confirmed Areas of Remnant Vegetation containing Endangered Regional Ecosystems.</li> <li>Development enhances areas of Confirmed Areas of Remnant Vegetation Containing Endangered Regional Ecosystems by providing for weed management and rehabilitation within the Conservation Parkland.</li> </ul>		Site design and continuing through stages of approved construction.	Areas of Confirmed Areas of Remnant Vegetation Containing Endangered Regional Ecosystems are retained or increased at the completion of the project.



Element	Overall Outcomes	Strategies / Actions	Design Standards / Resources	Timing (Indicative)	Achievement Criteria
Other Vegetation	Development protects and minimises impacts on native vegetation within and supporting	Stretch Target:  Use weed management and rehabilitation of cleared and modified areas to achieve a net increase in the area of Confirmed Areas of Remnant Vegetation Containing Endangered Regional Ecosystems within the Conservation Parkland.  Avoid (to the greatest extent possible) the clearing of non-endangered remnant, regrowth and other native vegetation,		Site design and continuing through stages of	An increase in the volume of vegetation to be included in the site's Significant Biodiversity Values at completion of the
	Significant Biodiversity Values.	<ul> <li>regrowth and other native vegetation, including non-juvenile koala habitat trees within the land designated Conservation Parkland.</li> <li>Unavoidable clearing can only occur for essential community infrastructure within the Conservation Parkland, where this infrastructure cannot be reasonably located elsewhere.</li> <li>Where unavoidable clearing for essential community infrastructure is required within the Conservation Parkland rehabilitate impacted areas in accordance with SEQ restoration guidelines.</li> </ul>	■ Guideline 17	approved construction.	project.  An increase in the Projective Foliage Cover (PFC) of canopy trees and quality condition of shrub and ground cover layers within the Conservation parkland by completion of the project (when measured against precommencement baseline surveys – reported on annually)
		<ul> <li>Through site and earthworks, maximise the retention of non-endangered remnant vegetation, regrowth and healthy isolated native tree species within waterway corridors and future recreation / open space areas (where not in conflict with the purpose and use of the open space or other required infrastructure) within the development land.</li> <li>Stage and minimise the clearing of trees for areas designated under the plan of development as schools, future park, drainage and buffer until preliminary concepts for these areas have been prepared and clearing extents identified.</li> </ul>			



Element	Overall Outcomes	Strategies / Actions	Design Standards / Resources	Timing (Indicative)	Achievement Criteria
		<ul> <li>Prepare Management Plans in accordance with the Reporting and Management Section of this NESS to stage and manage the impacts of clearing.</li> </ul>			
Koala	<ol> <li>Minimise clearing of Non-Juvenile Koala Habitat Trees (NJKHT) and provide obligations in accordance with IG17 to achieve a net gain in koala habitat for the region.</li> <li>Minimise threats to existing local koala populations by avoiding conflicts with roads and dogs.</li> </ol>	<ul> <li>Avoid (to the greatest extent possible) the removal of NJKHT within the Conservation Parkland. Unavoidable clearing of NJKHT within the Conservation Parkland can only occur for essential community infrastructure, where this infrastructure cannot be reasonable located elsewhere.</li> <li>Where unavoidable clearing for essential community infrastructure is necessary within the Conservation Parkland, all works are managed in accordance with the Reporting and Management Section of this NESS.</li> <li>Ensure site design of open space and retained waterway areas within the Development Land minimises the clearing of NJKHT where they can be connected to the Conservation Parkland.</li> <li>Minimise impacts of the clearing of NJKHT through the Development Land by staging and sequencing works commencing in the western disturbed areas and flushing towards the eastern retained areas.</li> <li>Stage and manage the impacts of clearing NJKHT in accordance with the Reporting and Management Section of this NESS.</li> <li>Provide obligations in accordance with IG17 to achieve a net gain in koala habitat for the region for any removed NJKHT from the High and Medium Value – Suitable for Rehabilitation and all Bushland Habitat Mapping categories (or deliver any Approved Environmental Offsets conditioned by the Commonwealth Department of Environment under the EPBC Act)</li> <li>Ensure site design provides for safe koala linkage opportunities to surrounding off-site</li> </ul>	Where suitable, parts of the following documents and standards will assist in measuring the Overall Outcome:  EPBC Koala Referral Guidelines  Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016 (koala plan)  EHP Koala Sensitive Design Guideline  Main Roads Fauna Sensitive Design Manual Vol.2  Draft Code of Practice for the Welfare of Wild Animals affected by Land Clearing  EPBC Act permit	Site design and continuing through stages of approved construction.  Annual Report	Increase in the volume of NJKHT within the Conservation Parkland (Measured at the 5 and 10 year interval)  No temporary fragments or islands of koala NJKHT within clearing zones for the life of the project (reported annually)



Element	Overall Outcomes	Strategies / Actions	Design Standards / Resources	Timing (Indicative)	Achievement Criteria
		habitat by discouraging Koala movement into built up areas through a range of Koala sensitive design measures (fencing, signage, road and landscape design).  Incorporate dog off-leash facilities in recreation parkland and on lead control measures through the Conservation Parkland.			
EVNT Species	Identify and avoid (to the greatest extent possible) any impacts on EVNT species.	<ul> <li>Avoid clearing of EVNT plant species.</li> <li>Ensure appropriate pre-clearance checks and fauna spotter reporting provides a contemporary and more detailed review of EVNT Species or potential habitat within each stage of clearing.</li> <li>Stretch Target         <ul> <li>Where suitable within and adjoining the Conservation Parkland, waterway corridors or open space areas incorporate areas of Melaleuca irbyana and or other habitat reinstatement for EVNT Species.</li> </ul> </li> </ul>	Where suitable, parts of the following documents and standards will assist in measuring the Overall Outcome:  NCA Protected Plants Exemption Process.  Fauna Spotter Pre-Clearance and Post Works Reporting  SEQ Ecological Restoration Framework Code  SEQ Ecological Restoration Framework Guide  SEQ Ecological Restoration Framework Manual	Site design and continuing through stages of approved construction.  Annual reporting	Increase in volume of EVNT species within the Conservation Parkland at completion of the project.  Increase in the availability of habitat and usage of the Conservation Parkland by fauna when compared with benchmark pre-commencement surveys.
Native Fauna (non EVNT Species)	Minimise impacts on native fauna (not scheduled as Threatened)	<ul> <li>Avoid negative impacts on native fauna species in areas designated Conservation Parkland.</li> <li>Consolidate habitat for all native fauna into non development portions of the site (i.e. Conservation Parkland and supporting areas).</li> <li>Minimise impacts of the clearing through the Development Land through staging and sequencing and Management Plans prepared in accordance with the Reporting and Management Section of this NESS to stage and manage the impacts of clearing.</li> <li>Where specific habitat features (such as mature habitat trees retaining hollows) need to be removed, complete an audit of lost</li> </ul>	<ul> <li>Fauna Management Plan prepared in accordance with the Draft Code of Practice for the Welfare of Wild Animals affected by Land Clearing</li> <li>SEQ Ecological Restoration Framework Code</li> </ul>	Site design and continuing through stages of approved construction.  Summarised through Annual Reporting	Fauna Spotter / Catcher pre, during and post clearing reports completed fort each stage of clearing works.  Evidence within the NESS annual report of adaptive management procedural change within Fauna Spotter / Catcher Reports for each stage of the project.



Element	Overall Outcomes	Strategies / Actions	Design Standards / Resources	Timing (Indicative)	Achievement Criteria
		habitat features. Use the audit to determine a strategy to harvest habitat features and/or design and implement a species specific nest box implementation plan as part of the FMP.  Engage a registered fauna spotter for a preclearance report and advice on clearing and sequencing methods within the Development Land. Stage and manage the impacts of clearing in accordance with the Reporting and Management Section of this NESS.			
Waterways & drainage Features	Retain, protect and buffer site watercourses forming part of the projects Significant Biodiversity Values      Values	<ul> <li>Avoid (to the greatest extent possible) any clearing within mapped watercourses, drainage features, overland flow paths or other natural hydrological features within the Conservation Parkland Area.</li> <li>Avoid (to the greatest extent possible) any clearing within identified waterways forming part of the site's Significant Biodiversity Values within or adjoining the Development Land. (Plan 8)</li> <li>Where unavoidable clearing (e.g. access where no other alternative exists, essential community infrastructure and/or approved waterway stability measures) is required within:         <ul> <li>mapped watercourses, drainage features, overland flow paths or other natural hydrological features within the Conservation Parkland; or</li> <li>identified waterways forming part of the site's Significant Biodiversity Values within or adjoining the Development Land;</li> <li>minimise the clearing footprint, mitigate impacts and compensate through ecological restoration measures.</li> </ul> </li> </ul>	<ul> <li>SDAP Module 8</li> <li>DAF Mapping</li> <li>DAF WWBW Self Assessable Codes</li> <li>SEQ Ecological Restoration Framework Code</li> <li>SEQ Ecological Restoration Framework Guide</li> <li>SEQ Ecological Restoration Framework Manual</li> <li>CPTED Guidelines for Queensland</li> </ul>	Site design and continuing through stages of approved construction.  Within each specific Management Plan (Vegetation, Fauna and Weed)	Watercourses identified as Significant Biodiversity Values are retained through site design.  Bio-condition of site watercourses retained as part of Significant Biodiversity Values are increased at completion of the project.



Element	Overall Outcomes	Strategies / Actions	Design Standards / Resources	Timing (Indicative)	Achievement Criteria
		<ul> <li>Where unavoidable clearing is necessary within:         <ul> <li>mapped watercourses, drainage features, overland flow paths or other natural hydrological features within the Conservation Parkland; or</li> <li>identified waterways forming part of the site's Significant Biodiversity Values within or adjoining the Development Land;</li> <li>ensure that all works are managed in accordance with the Reporting and Management Section of this NESS.</li> </ul> </li> <li>Minimise impacts on identified waterways forming part of the site's Significant Biodiversity Values (Plan 7) through appropriately designed and located buffers.</li> <li>Explore infrastructure designed to incorporate existing vegetation with storm water solutions through modified drainage features throughout the development portions and recreational parklands.</li> </ul>			
Land Degradation	Avoid and manage land degradation impacts caused through works within areas of dispersive and sodic soils.		Where suitable, parts of the following documents and standards will assist in measuring the Overall Outcome:  SDAP Module 8  DAF WWBW Self Assessable Codes  SEQ Ecological Restoration Framework Code  SEQ Ecological Restoration Framework Guide  SEQ Ecological Restoration Framework Manual  CPTED Guidelines for Queensland  Endorsed / approved site strategies and infrastructure master plans for:  Earthworks  Stormwater		No indirect impacts from soil deposition or erosion in the downstream Significant Biodiversity Values areas.



Element	Overall Outcomes	Strategies / Actions	Design Standards / Resources	Timing (Indicative)	Achievement Criteria
		<ul> <li>included as part of open space, drainage channels, or the future school.</li> <li>Mitigate the impacts of clearing of any drainage features, overland flow paths or other natural hydrological features through inclusion of detailed erosion and sediment control plan for each stage of self-certified operational works submissions.</li> <li>Dispersive soil mitigation measures are to be implemented during detailed design if required (such as vegetation or protection of batters, minimising velocity of stormwater flows, flattening of grades, stormwater detention, stormwater discharge into erosion resistant areas, soil re-compaction, soil stabilisers (chemical polymers) and use of sandstone/barriers).</li> <li>Carry out water testing of site watercourses (where there are flows at the time). Testing will be for turbidity and total suspension solids to monitor any sediment deposits in the waterways.</li> </ul>			
Rehabilitation / Restoration	Expand and improve the quality of Significant Biodiversity Values and other retained natural features.	<ul> <li>Revegetate and restore to remnant status all cleared, degraded and modified areas within the Conservation Parkland, where not in conflict with bushfire management requirements or passive based nature recreation infrastructure.</li> <li>Undertake rehabilitation (including planting of endemic species and weed management) within the bed and banks of retained or modified watercourses and drainage features. This rehabilitation may be utilised as part of the total site storm water management strategies, particularly with regard to stormwater quality and waterway stability.</li> </ul>	Where suitable, parts of the following documents and standards will assist in measuring the Overall Outcome:  SEQ Ecological Restoration Framework Code  SEQ Ecological Restoration Framework Guide  SEQ Ecological Restoration Framework Manual  Endorsed / approved site strategies and infrastructure master plans for:  Open space  Stormwater	Site design and continuing through stages of approved construction.	Increased quality in the condition of retained areas when measured against precommencement benchmarks.



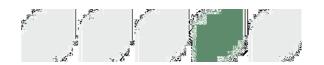
Element	Overall Outcomes	Strategies / Actions	Design Standards / Resources	Timing (Indicative)	Achievement Criteria
		<ul> <li>Reuse cleared native vegetation (e.g. as site mulch in future revegetation works in and adjoining the Conservation Parkland).</li> <li>Explore the harvesting of the A-horizon of healthy bushland areas within the development precinct for assisted natural regeneration within degraded land through and surrounding the Conservation Parkland.</li> <li>Stretch Target:         <ul> <li>Wherever practical, research and incorporate EVNT Species (plants) and TECs into site revegetation.</li> </ul> </li> </ul>			
Weed and Pest Species	Decrease in the volume and diversity of site weed and pest species.	<ul> <li>Identify and map major infestations of environmental and declared weeds which will be targeted for removal through the Conservation Parkland.</li> <li>Prepare detailed weed management and rehabilitation plans for areas of Conservation Parkland (including re-vegetation using existing native species and pre-clear regional ecosystem communities) to strengthen the riparian vegetation cover and diversity through retained creek tributaries and gully lines.</li> <li>Manage weeds and pests in accordance with the requirements of the LPA.</li> <li>Prepare detailed weed management and rehabilitation plans for all portions of open space and waterways relative to the stage in which they are proposed to be created.</li> <li>Explore methods to minimise impacts of domestic animals on core environmental features surrounding the community (such as by implementing educational and control measures for areas of the project adjoining or</li> </ul>	<ul> <li>Guideline 14</li> <li>LPA declared weeds and pests</li> <li>SEQ Ecological Restoration Framework Code</li> <li>SEQ Ecological Restoration Framework Guide</li> <li>SEQ Ecological Restoration Framework Manual</li> </ul>	Pre-Construction Certification and / or Self Certification.  Reporting as per purpose specific management or rehabilitation plan.  Summary reporting as part of annual report.	Decrease in the extent and diversity of site weed species on-site (measured annually for the life of the project)



Element	Overall Outcomes	Strategies / Actions	Design Standards / Resources	Timing (Indicative)	Achievement Criteria
		with the potential to influence the Conservation Parkland).			
Monitoring, Management Plans & Reporting	Ensure monitoring, management and reporting collect adequate information to contribute towards the avoid, minimise, restore and offset principles of this NESS.  Set principles of this NESS.	<ul> <li>Monitoring/reporting to occur as per requirements of each VMP (e.g. photo monitoring, tree health, assessment post works).</li> <li>Monitoring and reporting to occur as per the requirements of each specific weed management and rehabilitation plan (e.g. photo monitoring, quadrant and transect surveys etc.) showing reductions in site weed cover and expanded vegetation area.</li> <li>Monitoring and reporting to occur as per the requirement of each specific FMP, incorporating the reporting requirements of the engaged fauna spotter.</li> <li>Prepare Vegetation Management Plans (VMPs) for each phase of clearing works incorporating requirements of AS 4970-2009.</li> <li>VMPs are to be approved by:         <ol> <li>self-certification where prepared in accordance with AS 4970 -2009 and external to Significant Biodiversity Values areas; or</li> <li>compliance assessment for unavoidable clearing within Significant Biodiversity Values areas.</li> <li>Prepare Fauna Management Plans (FMPs) for each stage of development involving vegetation clearing works. FMPs are to mandate the use of EHP registered fauna spotters.</li> <li>FMPs are to be approved by self-certification where prepared in accordance with the Draft Code of Practice for the Welfare of Wild Animals affected by Land-Clearing.</li> </ol> </li> </ul>	Where suitable, parts of the following documents and standards will assist in measuring the Overall Outcome:  Guideline 14  Regulated Vegetation Management Mapping, PMAV and Pre-Clear Mapping  Management plan specific monitoring and reporting requirements.  Draft Code of Practice for the Welfare of Wild Animals affected by Land Clearing  Australian Standard (AS) 4970 -2009 Protection of trees on development sites.  DSDIP Significant Residual Impact Guideline  EOP  EPBC Act permit.  SEQ Ecological Restoration Framework Code  SEQ Ecological Restoration Framework Manual	All stages – reported annually (until project completion)	Annual evidence monitoring, management and reporting measures have used findings to contribute to the adaptive management of all other NESS site procedures.



Element	Overall Outcomes	Strategies / Actions	Design Standards / Resources	Timing	Achievement Criteria
				(Indicative)	
		<ul> <li>Prepare and implement Weed Management and Rehabilitation Plans for retained vegetation areas, drainage tributaries and other existing or reinstated vegetation areas.</li> </ul>			
		<ul> <li>Create a data repository of all environmental surveys, reports, management plans and monitoring data to inform future government and non-government decision making in the Greater Flagstone and broader areas.</li> </ul>			



### Natural Environmental Features

#### 5.1. At the whole of site scale, core natural environment features include:

- Confirmed Remnant Vegetation Containing Endangered Regional Ecosystems
- Low Order Remnant Vegetation
- Confirmed Waterway Areas
- Other Drainage Features and Watercourses
- Waterway buffer areas
- Site farm dams
- Areas of juvenile native vegetation

#### 5.2. Each of these core features is detailed on Plan 8 (Appendix 1) and briefly described below.

a) Confirmed Areas of Remnant Vegetation Containing Endangered Regional Ecosystems

A certified Property Map of Vegetation (PMAV) has been provided from the **Queensland Department of Natural Resources and Mines** (NRM) which substantially alters the previous Remnant Regional Ecosystem Mapping for the site.

#### b) Low Order Remnant Vegetation

As part of the PMAV process, areas of Of Concern and Least Concern (Non Endangered) Remnant Vegetation have been expanded on site. These areas primarily occur within the development zone with the exception of areas in the eastern third of the property. While not being protected specifically by Guideline 14 and Guideline 17 these vegetated areas escalate in importance when combined with other constraints (e.g. – on a Confirmed Waterway Area).

#### c) Confirmed Waterway Areas

Confirmed Waterway Areas reflect drainage features on-site which recorded consistent features and values to be defined as a waterway under the *Fisheries Act 1994*. These areas displayed more evidence of conveying run-off and areas of greater diversity through mesic variants to the broader habitats in which they are contained.

#### d) Waterway Buffer Area

A 25m nominal buffer has been applied to Confirmed Waterway Areas identified during site survey. This is measured as 25m either side of the centreline of the Confirmed Waterway Area.

#### e) Site Farm Dams

Two large and a number of smaller farm dams have been constructed over the site. Generally, site dams occur in the western and more disturbed and active portions of the project site.

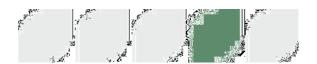


f) Areas of Juvenile Native Regeneration

A number of Category X areas retain dense immature native regrowth. These areas vary diversely in health and value.

## 6. Ongoing Monitoring and Reporting

- 6.1 Ongoing monitoring of achievement of the Natural Environment Site Strategies will occur in accordance with specific management plans (e.g. as specified in VMPs, FMPs, Rehabilitation Plans, etc.).
- 6.2 The Developer undertakes to complete monitoring and reporting in accordance with each approved management plan.
- 6.3 Further specific methods for monitoring and reporting will be developed where required in conjunction with Context Plans, Plans of Development, and Compliance Submissions.
- 6.4 This document has been prepared with consideration of adaptive management principles being adopted into each report and management plan prepared over the project. This NESS sets the overarching outcome and achievement metric for measurement in stage or works specific documents.



## 7. Koala Habitat Values Mapping

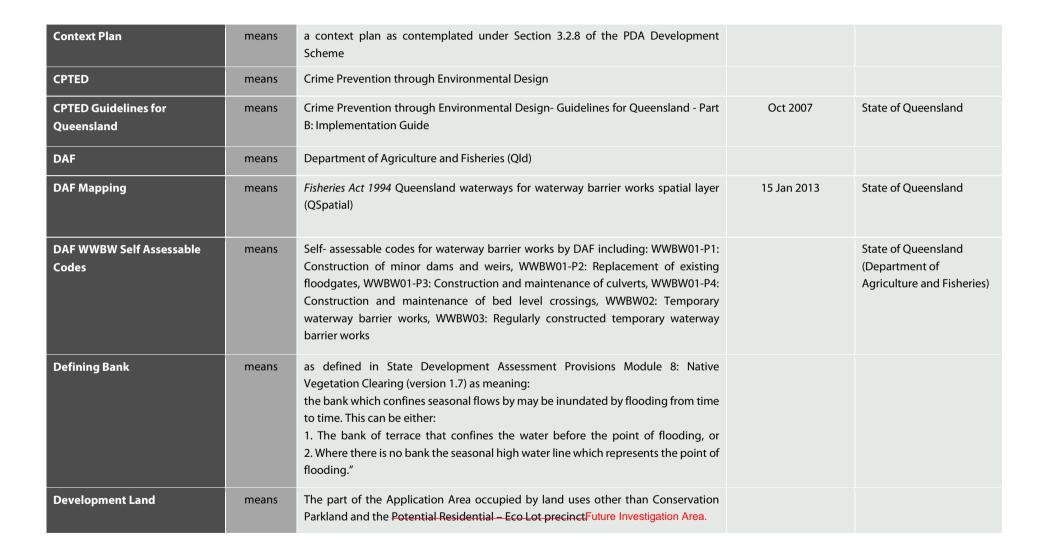
7.1 Koala Habitat Values Mapping can be amended through the use of the following methods which are generally consistent with the Koala SPRP and the accompanying Koala SPRP Guideline:

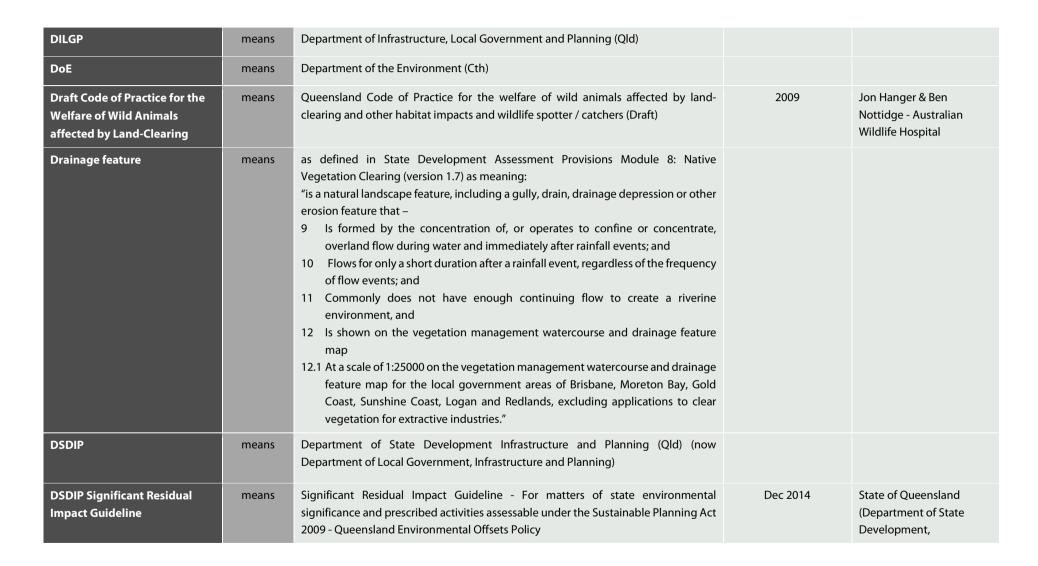
#### Determination of koala habitat type for certain land

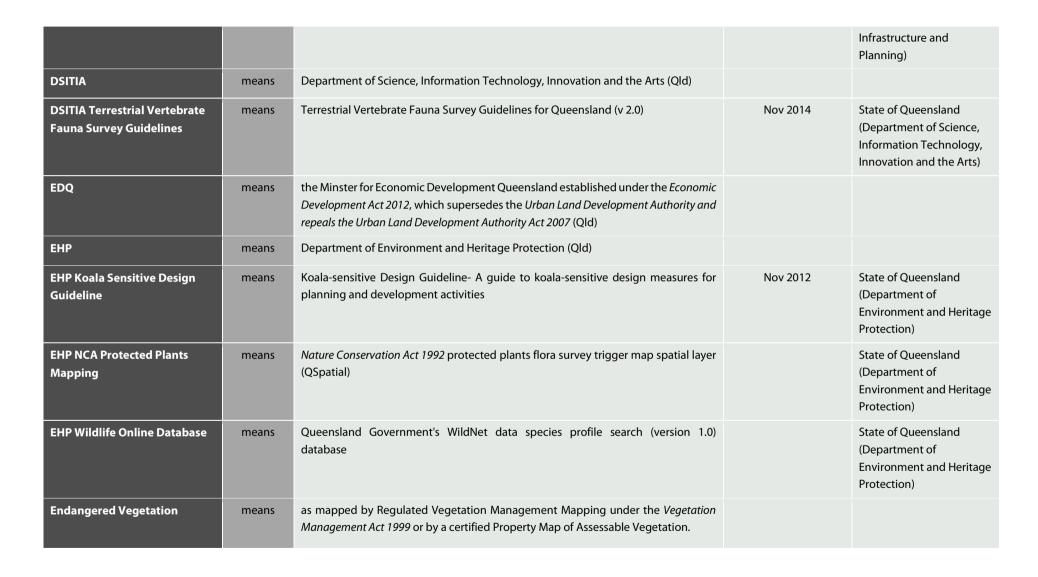
- 1. As part of or prior to the lodgement of a development application, an applicant may request the assessment manager to make a determination that land, which is part of that development application, is of a different koala habitat type than the koala habitat type shown for the land on the Map of Assessable Development Area Koala Habitat Values.
- 2. An applicant who makes a request must provide sufficient information, and (if requested) as part of the response to the information request, for the assessment manager to make the determination.
- 3. Sufficient information includes, but is not limited to, a report by a suitably-qualified and experienced professional in respect of the habitat located on, and in connection with, the land for which the determination is requested.
- 4. An assessment manager who receives a request may determine, as part of its decision, that any part of the land the subject of the request is:
  - a. of a koala habitat type different to that shown on a Map of Assessable Development Area Koala Habitat Values; or
  - b. an area where koalas are generally not present.
- The assessment manager may only make the determination where it is reasonably satisfied that the koala habitat type associated with the relevant land is identified on the Map of Assessable Development Area Koala Habitat Values incorrectly.
- 6. A determination is determinative of the koala habitat type, which applies to the land the subject of the determination for the purpose of applying any rules, guidelines, offsets or other considerations relating to the koala species.
- 7. Further guidance on the technical information and considerations to be incorporated into an application for a redetermination of the koala habitat values maps can be drawn from the Koala SPRP Guideline.

## 8. Definitions / References / Acronyms

Term / Acronym		Definition	Date	Author / Organisation
Application Area	means	the land parcels identified in Plan 1 (Appendix 1)		
AS 4970-2009	means	Australian Standard AS4970-2009 Protection of trees on development sites (incorporating Amendment No. 1)	Mar 2010	Standards Australia
AS	means	Australian Standards		
ASRIS	means	Australian Soil Resource Information System		
Category B Vegetation	means	as defined by the Vegetation Management Act 1999, section 20A.		
Category X Vegetation	means	as defined by the Vegetation Management Act 1999, section 20A.		
Confirmed Areas of Remnant Vegetation Containing Endangered Regional Ecosystems	means	Remnant Vegetation containing Endangered Regional Ecosystems mapped and as annotated on <b>Plan 8 (Appendix 1)</b> and as defined in Guideline 14 (Appendix 1) as areas of viable remnant vegetation containing endangered regional ecosystems as shown on the regional ecosystem map prepared under the <i>Vegetation Management Act 1999</i> and confirmed by on-site investigations using a methodology accepted by the MEDQ.		
Confirmed Waterway Areas	means	Confirmed Waterway Areas as shown on <b>Plan 8 (Appendix 1)</b>		
Conservation Parkland	means	land designated as Conservation Parkland on an endorsed / approved Context Plan for the Application Area		









EOA	means	Environmental Offsets Act 2014 (Qld)	02 July 2015	State of Queensland
Environmental Offsets Act 2014	means	Environmental Offsets Act 2014 (Qld)	02 July 2015	State of Queensland
Environmental Offsets Policy 2014	means	Queensland Environmental Offsets Policy (Version 1.1)	December 2014	State of Queensland
ЕОР	means	Queensland Environmental Offsets Policy (Version 1.1)	December 2014	State of Queensland
ЕРВС	means	Environment Protection and Biodiversity Conservation Act 1999 (Cth)	01 July 2015	Commonwealth of Australia
EPBC Act	means	Environment Protection and Biodiversity Conservation Act 1999 (Cth)	01 July 2015	Commonwealth of Australia
EPBC Koala Referral Guidelines	means	EPBC Act referral guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)	2014	Commonwealth of Australia
EPBC PMST Database	means	Environment Protection and Biodiversity Conservation Act 1999 (Cth) Protected Matters Search Tool database interactive mapping	2015	Commonwealth of Australia
EPBC Significant Impact Guidelines	means	Matters of National Environmental Significance: Significant Impact Guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999	2013	Commonwealth of Australia
ESCP	means	Erosion and Sediment Control Plan		
Essential Habitat	means	as defined in the Vegetation Management Act 1999, section 20AC.		
Essential Management	means	as defined in the Sustainable Planning Regulation 2000, schedule 26.		





				Environment and Heritage Protection)
Koala SPRP Mapping	means	South East Queensland Koala Conservation State Planning Regulatory Provisions - Koala planning area version 1-2 spatial layer (QSpatial)	2 Jun 2010	State of Queensland
LCC	means	Logan City Council		
LPA	means	Land Protection (Pest and Stock Route Management) Act 2002	01 Oct2014	State of Queensland
Main Roads Fauna Sensitive Design Manual Vol.2	means	Fauna Sensitive Road Design Manual - Volume 2: Preferred Practices (Chapter 6 - Measures to achieve fauna sensitive roads, and Chapter 7 - Target Species Design Considerations)	Jun 2010	State of Queensland (Department of Transport and Main Roads)
MNES	means	Matters of National Environmental Significance		
MSES	means	Matters of State Environmental Significance		
MLES	means	Matters of Local Environmental Significance		
Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006- 2016 (koala plan)	means	Nature Conservation (Koala) Conservation Plan 2006	27 Sep 2013	State of Queensland (Department of Environment and Heritage Protection)
NCA	means	Nature Conservation Act 1992	02 Jul 2015	State of Queensland (Department of Natural Resources and Mines)



means

means

means

means



**SARA Mapping** 

**SDAP Module 8** 

SAT

**SDAP** 

QSpatial layers applicable under SARA DA mapping tool

Module 8 of the State Development Assessment Provisions (version 1.7)

State of Queensland

23 Nov 2015

Spot Assessment Technique Survey

**State Development Assessment Provisions** 



SEQ Ecological Restoration Framework Code	means	South East Queensland Ecological Restoration Framework: Code of Practice	2012	Chenoweth EPLA and Bushland Restoration Services. Prepared on behalf of SEQ Catchments and South East Queensland Local Governments, Brisbane.
SEQ Ecological Restoration Framework Guide	means	South East Queensland Ecological Restoration Framework: Guideline	2012	Chenoweth EPLA and Bushland Restoration Services. Prepared on behalf of SEQ Catchments and South East Queensland Local Governments, Brisbane.
SEQ Ecological Restoration Framework Manual	means	South East Queensland Ecological Restoration Framework: Manual	2012	Chenoweth EPLA and Bushland Restoration Services. Prepared on behalf of SEQ Catchments and South East Queensland Local Governments, Brisbane.
SEQRP	means	South East Queensland Regional Plan 2009-2031		
WWTP	means	wastewater treatment plant		





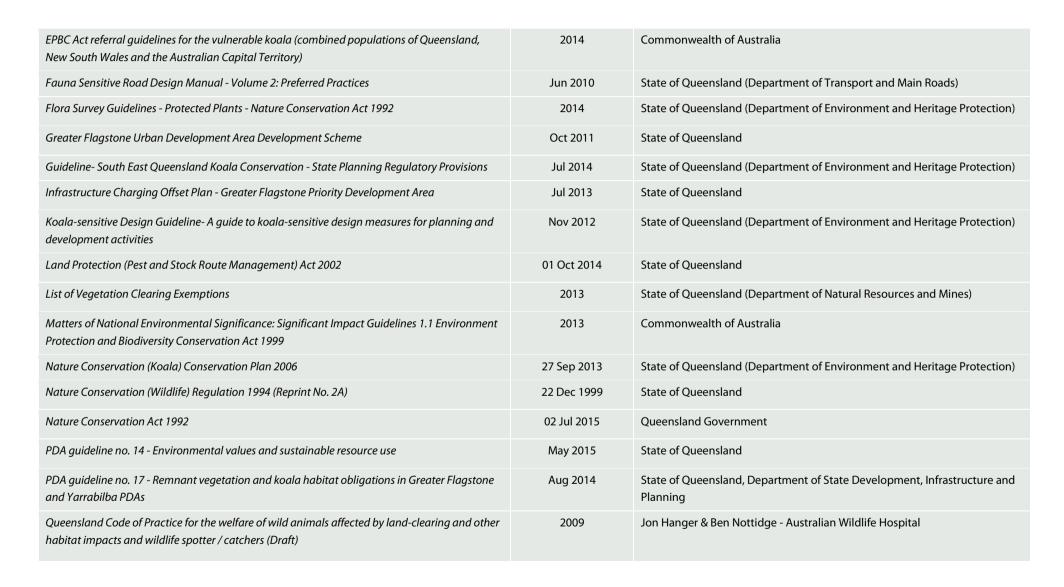
TMR	means	Department of Transport and Main Roads (Qld)		
UDA	means	Urban Development Area (now known as PDA)		
ULDA	means	Urban Land Development Authority (now known as EDQ)		
VMA	means	Vegetation Management Act 1999	11 Sep 2015	Queensland Government
VMP	means	Vegetation Management Plan		
Watercourse	means	is a watercourse as defined under the <i>Water Act 2000</i> , as meaning: "a river, creek or other stream, including a stream in the form of an anabrach or tributary, in which water flows permanently or intermittently, regardless of the frequency of flow events – a. In a natural channel, whether artificially modified or not, or b. In an artificial channel that has changed the course of the stream".		
Waterway	means	as defined by DAF Mapping for WWBW and ground-truthed by field survey		
Waterway Barrier Works (WWBW)	means	as defined in the Fisheries Act 1994		
wwbw	means	Waterway Barrier Works		



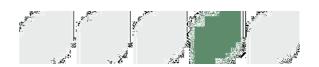
#### Legislation and Guidelines referenced within this strategy

The following legislation (i.e. Acts, Guidelines and Polices) are referenced within this strategy and remain in effect for the purpose of this NESS:

Act / Policy /Guideline	Date of Publication	Author/Organisation
Australian Standard AS4970-2009 Protection of trees on development sites (incorporating Amendment No. 1)	Mar 2010	Standards Australia
Code for Self-assessable development, Minor Waterway Barrier Works, Part 1: Low Impact Dams and Weirs (WWBW01)	Apr 2013	State of Queensland (Department of Agriculture and Fisheries)
Code for Self-assessable development, Minor Waterway Barrier Works, Part 2: Replacement of Existing Floodgates (WWBW01)	Oct 2011	State of Queensland (Department of Agriculture and Fisheries)
Code for Self-assessable development, Minor Waterway Barrier Works, Part 3: Culvert Crossings (WWBW01)	Apr 2013	State of Queensland (Department of Agriculture and Fisheries)
Code for Self-assessable development, Minor Waterway Barrier Works, Part 4: Construction and Maintenance of Bed Level Crossings (WWBW01)	Apr 2013	State of Queensland (Department of Agriculture and Fisheries)
Code for Self-assessable development, Temporary Waterway Barrier Works (WWBW02)	Apr 2013	State of Queensland (Department of Agriculture and Fisheries)
Code for Self-assessable development, Regularly Constructed Waterway Barrier Works (WWBW03)	Oct 2011	State of Queensland (Department of Agriculture and Fisheries)
Crime Prevention through Environmental Design- Guidelines for Queensland - Part B: Implementation Guide	Oct 2007	State of Queensland
Environment Protection and Biodiversity Conservation Act 1999 (Cth)	Jul 2015	Commonwealth of Australia
Environmental Offsets Act 2014	Jul 2015	State of Queensland
EPBC Act Administrative Guidelines on Significance – Supplement for the Grey-headed Flying-fox	2003	Commonwealth of Australia



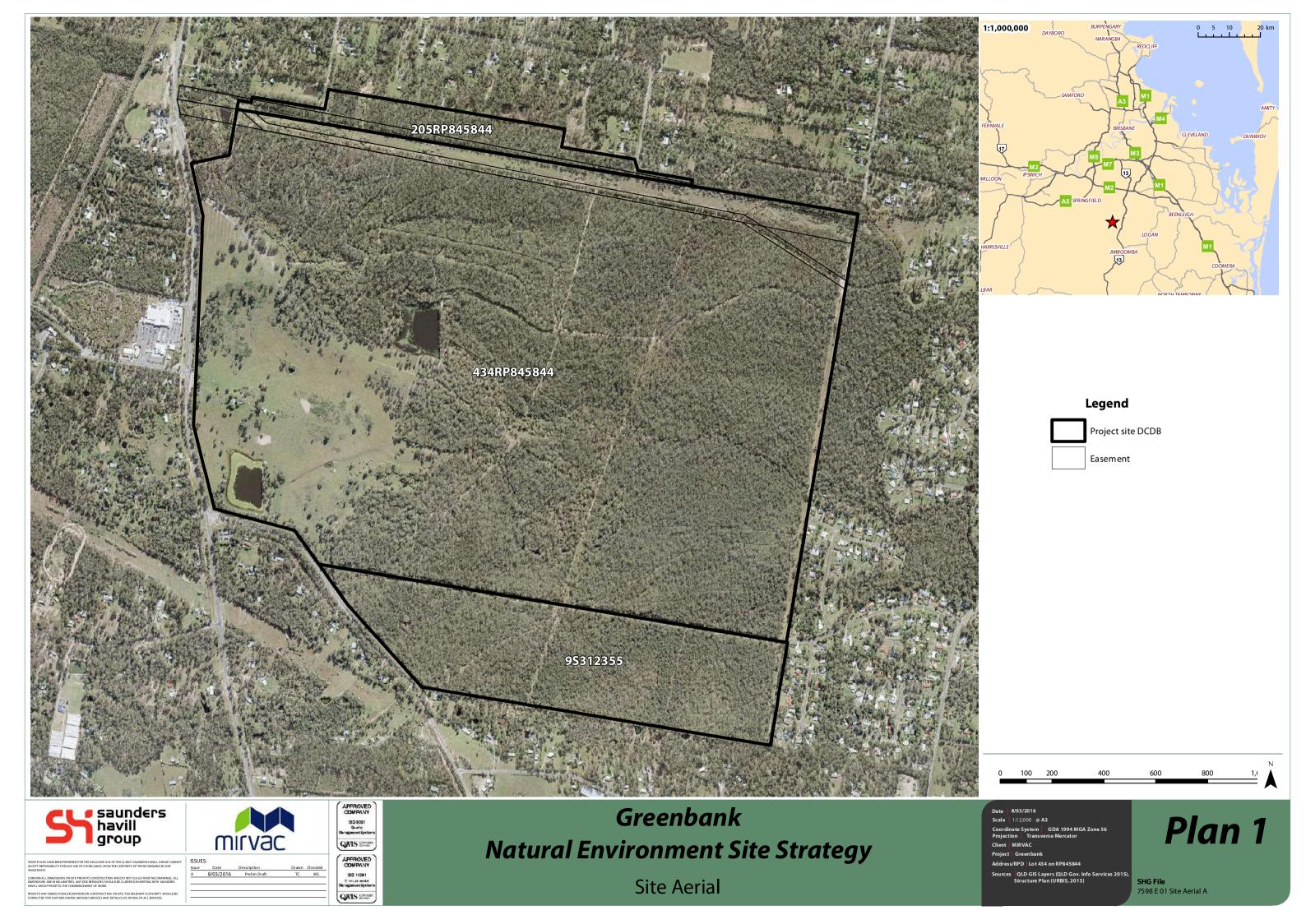


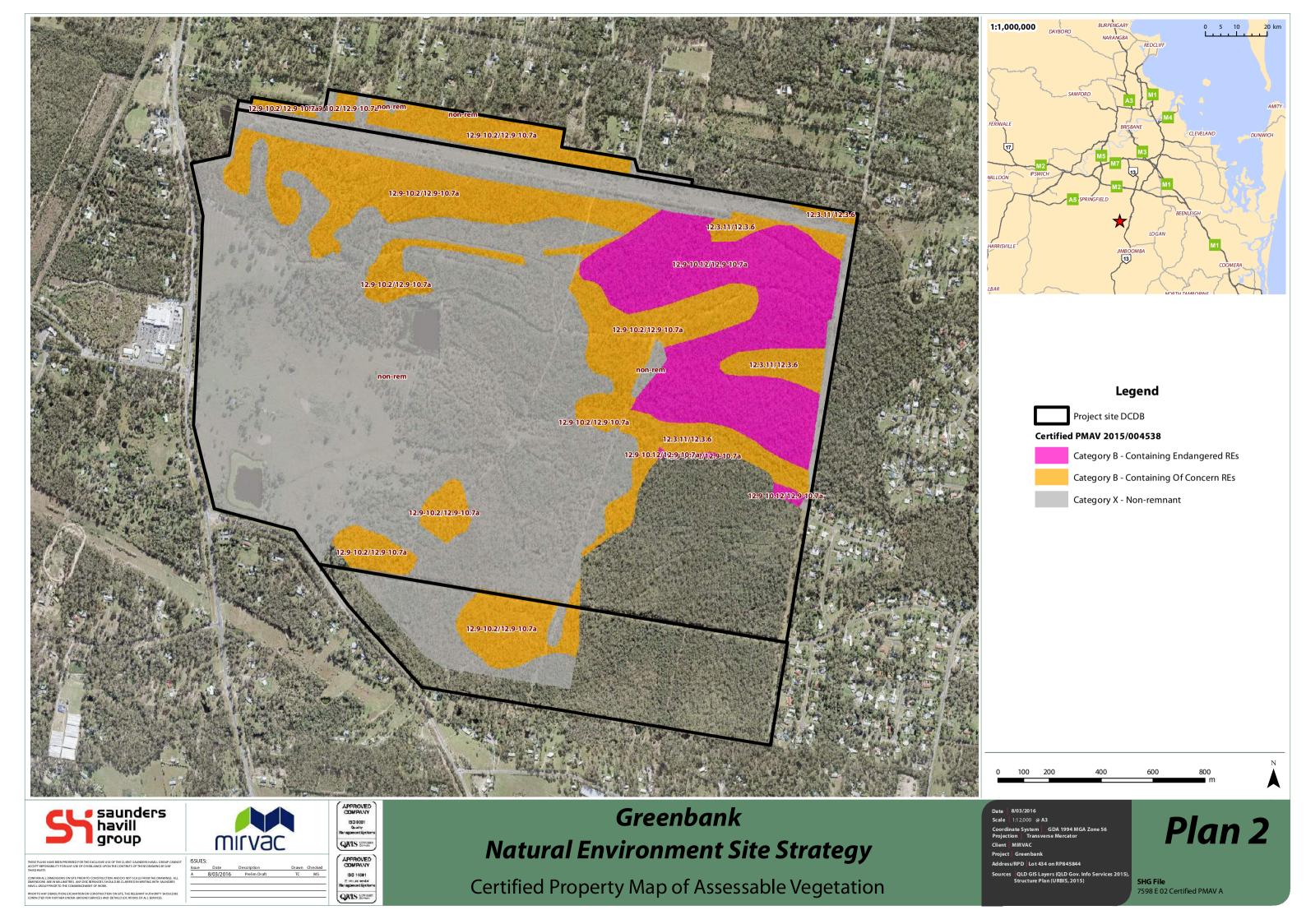


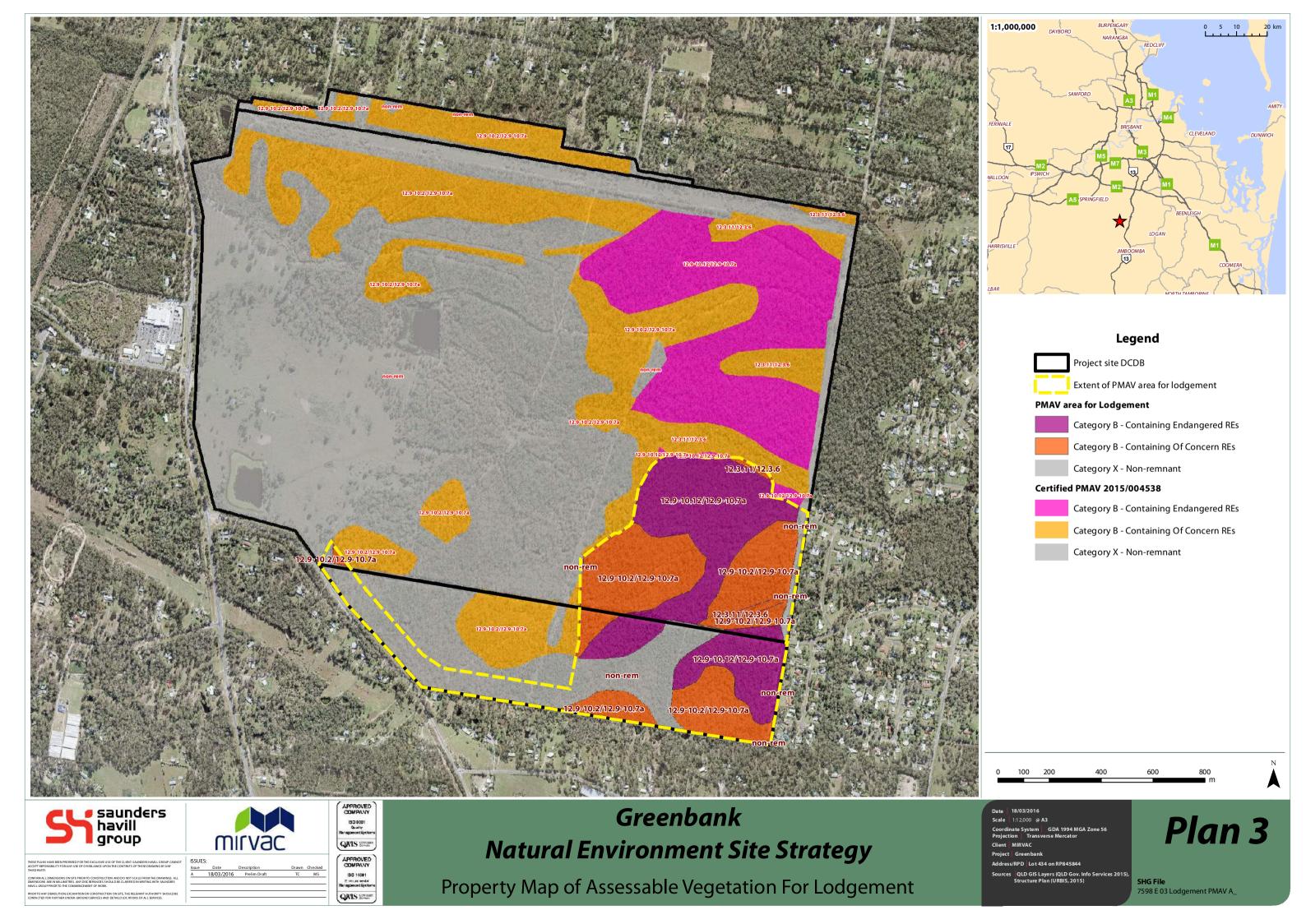
# Appendix I

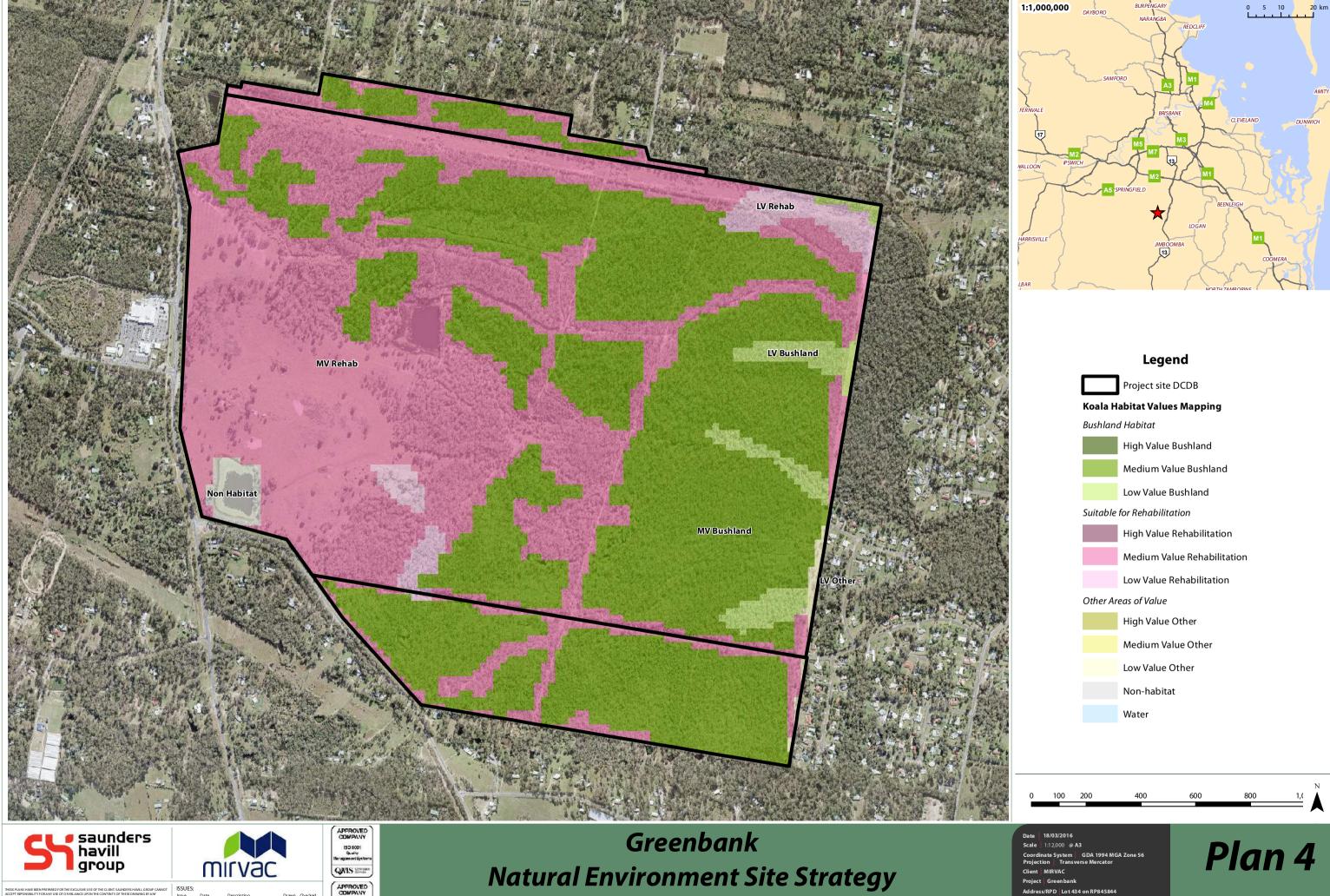
#### **Plans**

Plan 1:	Site Aerial
Plan 2:	Certified Property Map of Assessable Vegetation
Plan 3:	Property Map of Assessable Vegetation Awaiting Certification
Plan 4:	SEQ Koala Habitat Values Mapping
Plan 5:	Fisheries – Waterways for Waterway Barrier Works
Plan 6:	Indicative Development Interface to Retained Vegetation – Section AA
Plan 7:	Indicative Development Interface to Retained Vegetation – Section BB
Dlan 8·	Natural Environment Site Strategy - Site Constraints Plan



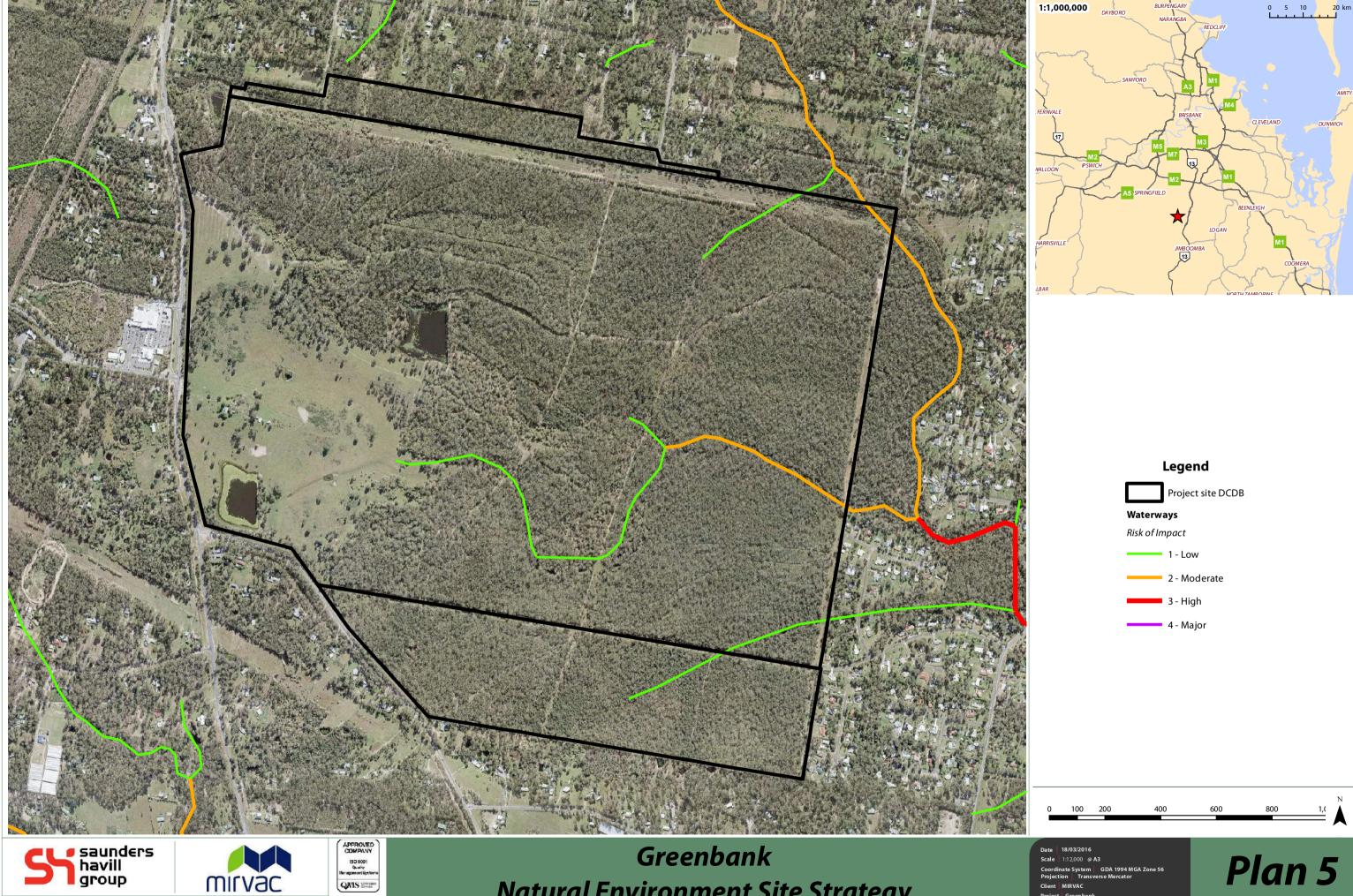






SEQ Koala Habitat Values Mapping

**SHG File** 7598 E 04 Koala Habitat Values A



# Natural Environment Site Strategy

Fisheries - Waterways for Waterway Barrier Works

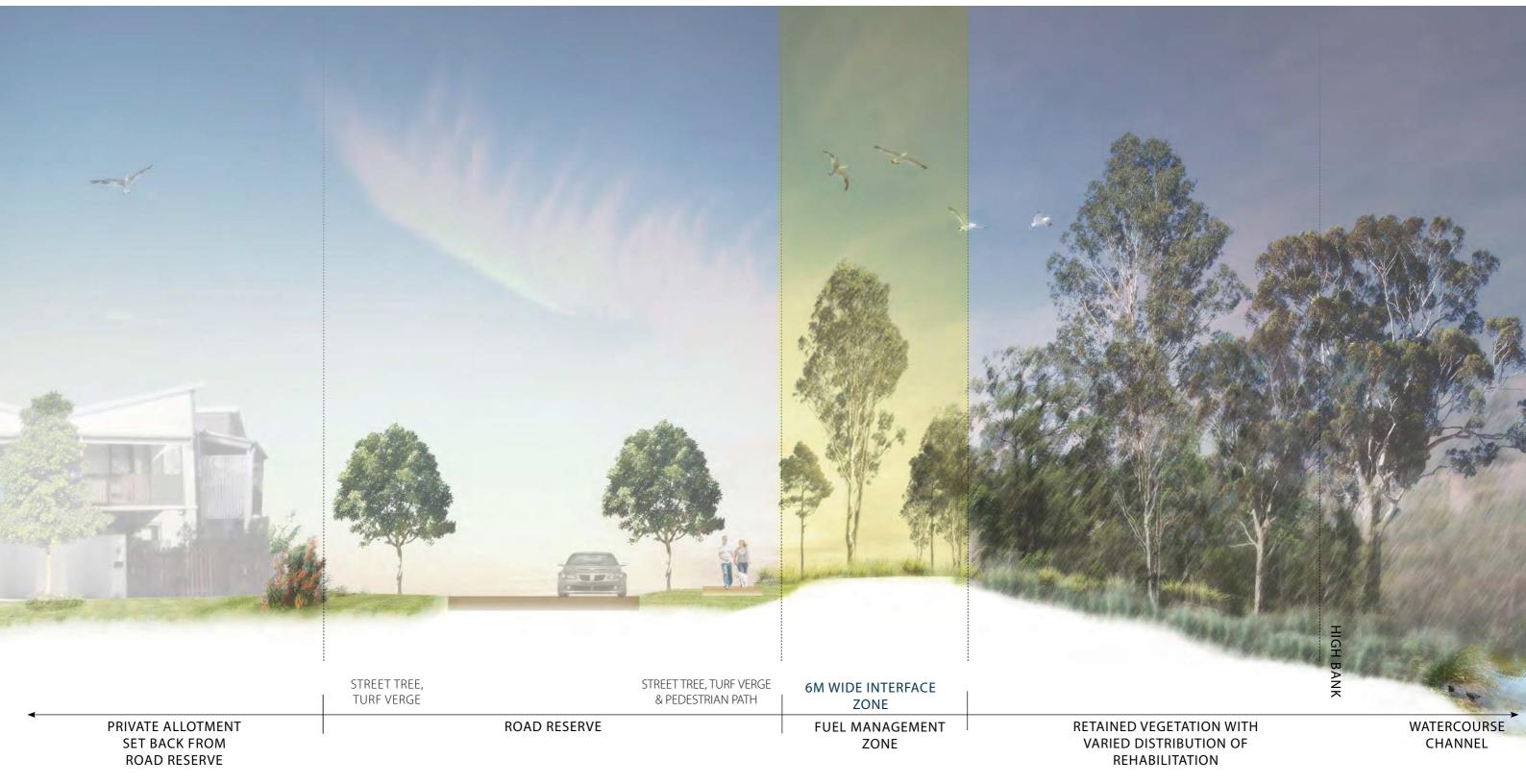
**SHG File** 7598 E 05 Fisheries A

# GREENBANK ROAD - TECHNICAL ECOLOGICAL ASSESSMENT REPORT INDICATIVE DEVELOPMENT INTERFACE TO RETAINED VEGETATION - SECTION AA

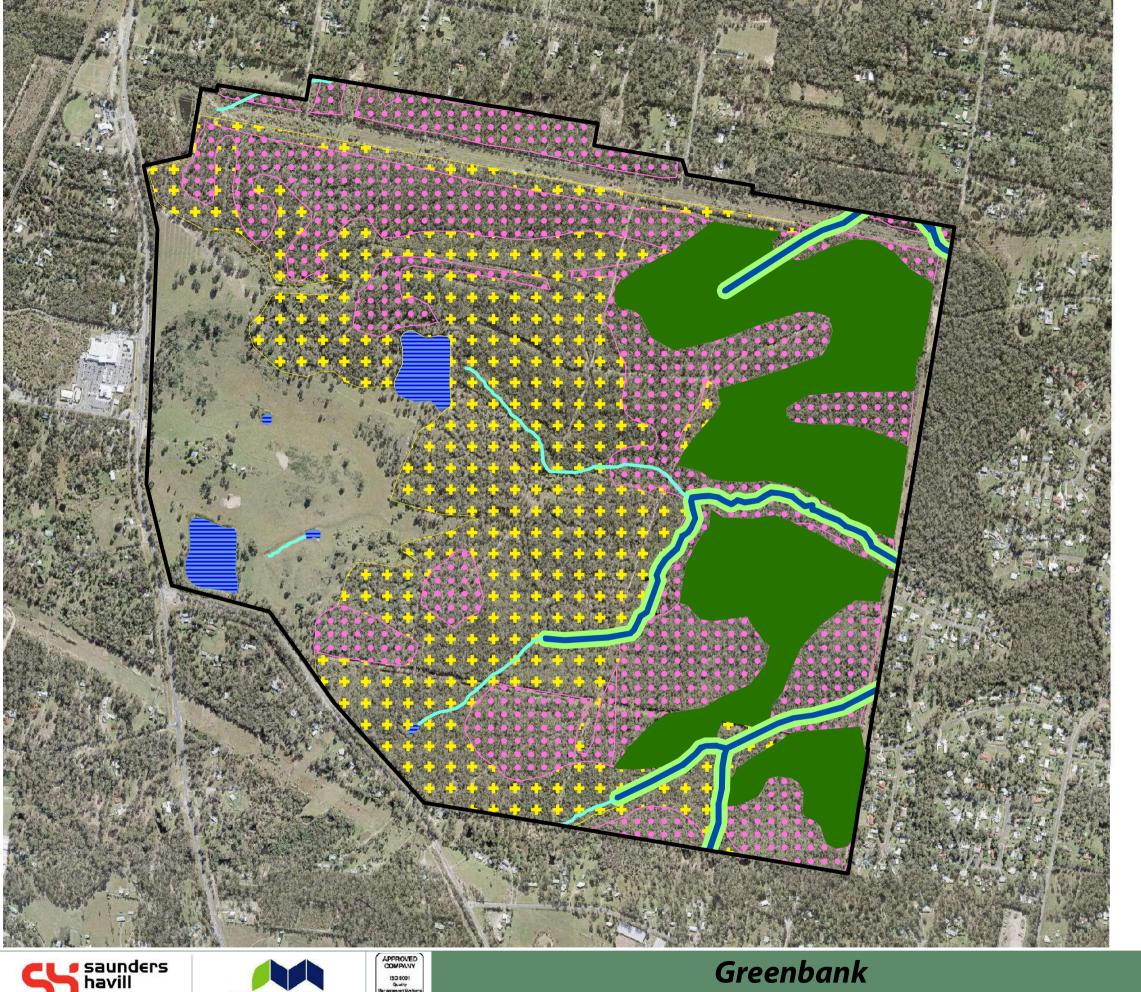




# GREENBANK ROAD - TECHNICAL ECOLOGICAL ASSESSMENT REPORT INDICATIVE DEVELOPMENT INTERFACE TO RETAINED VEGETATION - SECTION BB





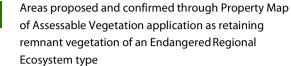


#### Legend

Project site boundary

#### **Significant Biodiversity Values**

#### **Confirmed Areas of Remnant Vegetation Containing Endangered Regional Ecosystems**



#### **Confirmed Waterway Areas**

Areas confirmed through field survey. As retaining features consistent with a watercourse within the extent of the Project Site

#### **Other Biodiversity Values**

#### **Low Order Remnant Vegetation**



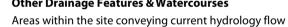
Of Concern and Least Concern Regional Ecosystem type areas

#### **Waterway Buffer Areas**



Areas of preferred buffer extent to Project Site watercourses

#### Other Drainage Features & Watercourses



paths - varying quality.



#### **Project Site Farm Dams**

Locations of artificially created farm dams

#### **Areas of Juvenile Native Vegetation**

Areas of Project Site retaining varying degrees of native regeneration vegetation

QMS STREET

**Natural Environment Site Strategy** 

Site Constraints Plan

Plan 8

SHG File 7598 E 08 Site Constraints C





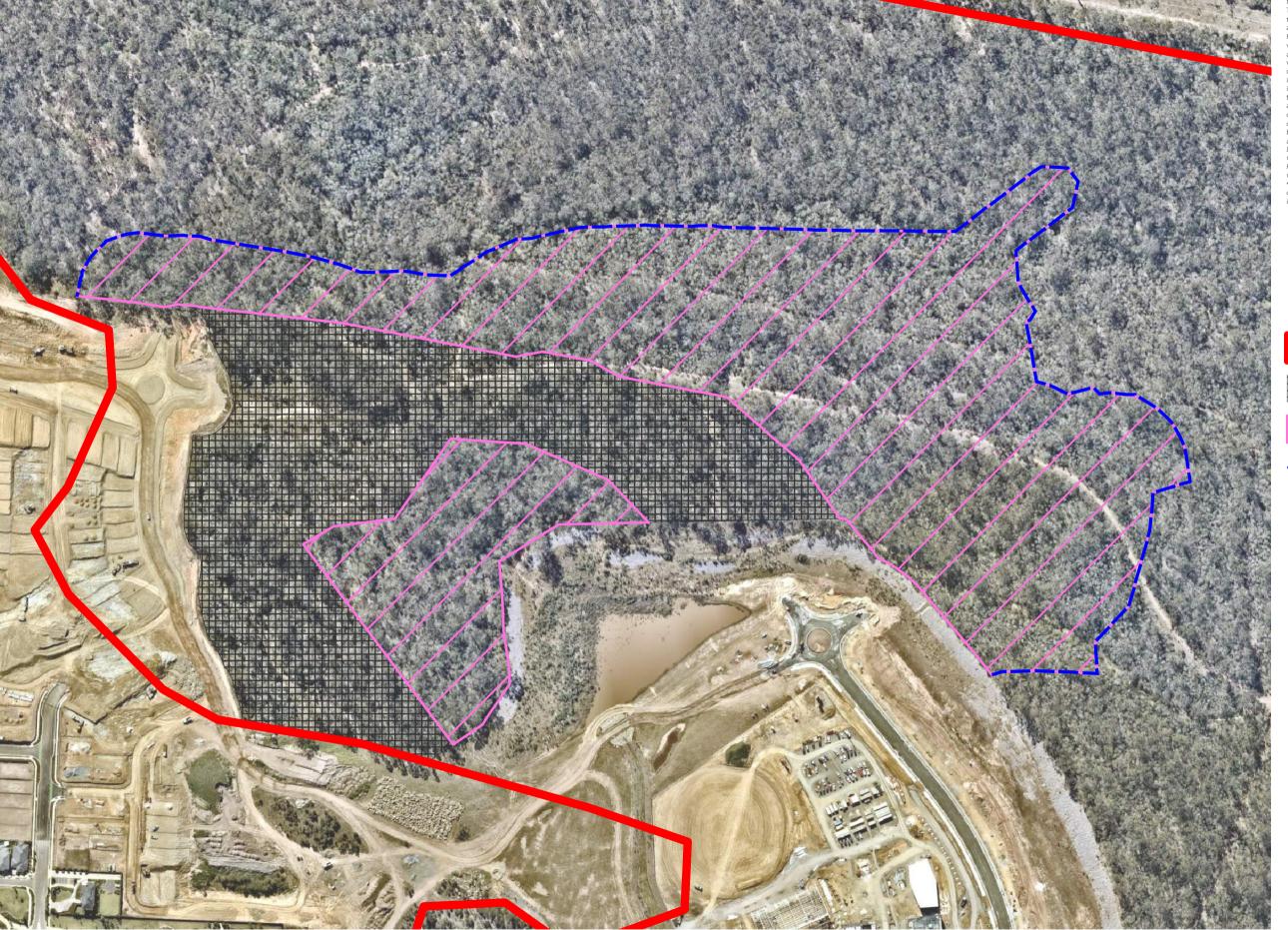
**Environmental Pre-Start Checklist** 

# Attachment I

Clearing Extent and Fencing Demarcation

## ATTACHMENT 1.1 - Precinct 9.4 Clearing Extent

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Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development appropriet which is not an appropriet design. approval states otherwise, this is not an approved plan.

Layer Sources

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#### Legend



EPBC Impact area



Precinct 9.3 phase 1 cleared area (8.8 ha)



Precinct 9.4 clearing area



— Precinct 9.4 fence location

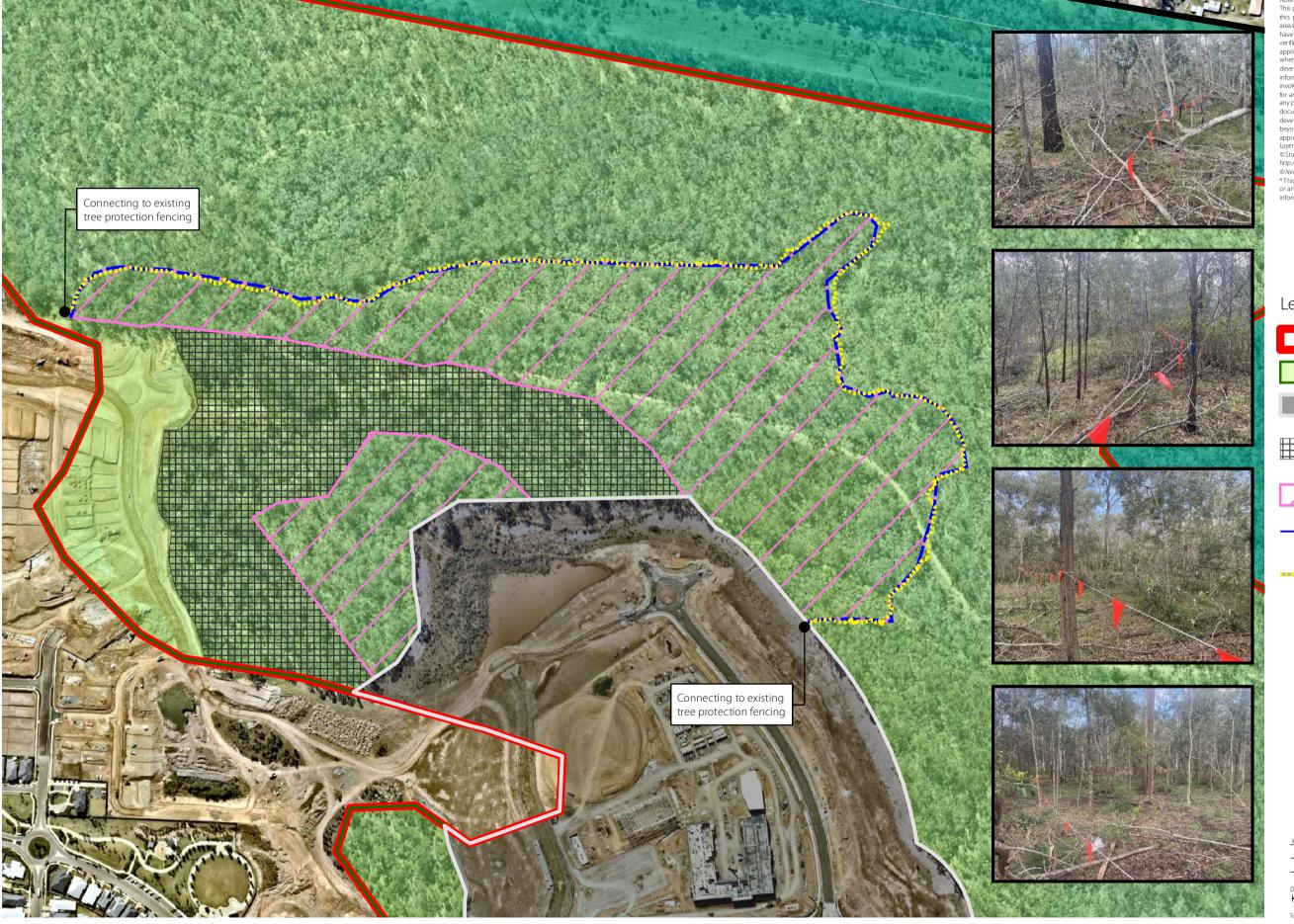






## ATTACHMENT 1.2 - Demarcation Fencing

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Notes:
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http://qldspatial.information.qld.gov.au/catalogue//

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#### Legend

EPBC Impact area



Stage 2 site (201 ha)



Stage 1 site (29 ha)



Precinct 9.3 phase 1 cleared area (8.8 ha)





Precinct 9.4 fence location



Precinct 9.4 fence demarcation (GPS <1m)



