

Borden Enhancement Project

Rehabilitation Management Plan

This document is uncontrolled when printed				
Document STORE ID	Revision No.	Revision Date	Page	
STORE-310043234-107945	0	24/05/2024	Page i	

DOCUMENT CONTROL

Document Information					
STORE 365 ID	Document Name	Revision	Document Author		
	Borden Enhancement Project Rehabilitation Management Plan	0	A. Black		

Revision History					
Rev No.	Description	Date	Prepared By	Checked By	Approved By
А	Initial draft	05/07/2024	Andrew Black	Neil Dixon	James Roberts
0	Final				

Document STORE ID	Revision No.	Revision Date	Page
STORE-310043234-107945	0	24/05/2024	Page ii

Executive Summary

Cooperative Bulk Handling Ltd (CBH) proposes to expand its facilities at the existing Borden Grain Receival Site (the project), located directly north of the Borden townsite, approximately 400 kilometres (km) southeast of Perth in the Avon-Wheatbelt bioregion of Western Australia (WA). This existing facility consists of twelve (12) open bulkheads with a total storage capacity of 362,000 tonnes (t). The work is required to cater for the growing quantities of grain receivals around the Borden region and surrounding catchments, which is driven by improved cropping and farming techniques, and higher yielding seed varieties being planted by regional (and WA) growers. With a projected average yearly intake of 22 Mt by 2033, there is a need to construct additional grain storage capacity and efficient facilities to accommodate the expected intake. In anticipation of increased yields, CBH is currently evaluating its network; implementing safety and risk mitigation upgrades at various sites.

The development will result in the following residual impacts requiring mitigation:

 Approximately 0.27 ha of native vegetation that is remnant vegetation in an overly cleared landscape.

This Rehabilitation Management Plan outlines how the rehabilitation areas will be managed to maintain and improve the native vegetation by the following:

- Improving the condition of degraded and completely degraded areas within the Lot 150 rehabilitation area:
 - Planting native species seedlings.
 - Protection of remnant native by fencing to restrict access.
 - o Managing weed infestation.

The above strategies will be further supported by an intensive three year maintenance program that incorporates spring and autumn weed management, and replacement of seedling mortality. An ongoing monitoring program will be implemented to ensure that regular observation of the rehabilitation sites occurs to document the quality of the vegetation communities and compare against the proposed performance criteria.

Document STORE ID	Revision No.	Revision Date	Page
STORE-310043234-113318	0	24/05/2024	Page 1

TABLE OF CONTENTS

1.0	Introduction	3
1.1	Purpose and scope	
1.2	Project overview	5
1.3	Approvals process and context	
1.4	Definitions and Acronyms	
2.0	Objectives	9
3.0	Onsite Mitigation Rehabilitation Area	9
3.1	Size, location and zoning	9
3.2	Biological environment	9
3.2		
3.2		
3.2 3.2		
4.0	Rehabilitation management measures	12
4.1	Rehabilitation plan objectives	
4.2	Rehabilitation plan performance criteria and targets	
5.0	Rehabilitation and revegetation strategy	13
5.1	Completion Criteria	
5.2	Rehabilitation methodology	
5.2	1 Site preparation	
5.2		
5.2	······································	
5.2 5.2	· · · · · · · · · · · · · · · · · · ·	
5.2		
5.3	Monitoring	
5.3	5	
5.3		
6.0	Schedule of Revegetation and Monitoring Activities	
7.0	Refferences	
8.0	Appendix A Historical Site Disturbance	
0.0		ـــــــــــــــــــــــــــــــــــــ

TABLES

Table 1-1: Definitions and acronyms	. 8
Table 4-1 Rehabilitation Performance Targets	12
Table 5-1: Rehabilitation Completion Criteria	13
Table 5-2: Flora Species Identified During Botanical Surveys	14
Table 5-2: Schedule of Revegetation and Monitoring Activities	17

FIGURES

Figure 1-1: Vegetation Condition within Disturbance Footprint and Rehabilitation Area	
Figure 1-2 Monitoring Sites and Rehabilitation Areas	
Figure 1-3 Design Drawing of The Project7	
Figure 3-1 Survey Area and Regional Location 11	

Document STORE ID	Revision No.	Revision Date	Page
STORE-310043234-113318	0	24/05/2024	Page 2

1.0 Introduction

1.1 Purpose and scope

CBH proposes to expand its facilities at the existing Borden Grain Receival Site located directly south of the Borden townsite in the Avon-Wheatbelt bioregion of Western Australia (**WA**). Following the application of avoidance measures, the proposed expansion is expected to clear around 0.27 hectares (ha) of native vegetation, which consists entirely of *Acacia acuminata* Low Forest (**AaLOF**) of which 0.17 ha is in Completely Degraded condition, with the remaining 0.10 ha representing Degraded condition (Figure 1-1).

To mitigate the residual impact, this Rehabilitation Management Plan (**RMP**, **the Plan**) has been prepared, which outlines the measures that CBH will implement to improve the condition of remnant vegetation within the defined Rehabilitation Area (Figure 1-2). The area is particularly significant as a remnant of native vegetation in an area that has been extensively cleared.

The Plan is consistent with the Department of Water and Environmental Regulation (**DWER**) 'A Guide to Preparing Revegetation Plans for Clearing Permits' (2018) (Revegetation Guideline). The Plan is informed by relevant site studies and investigations, as referenced throughout.

Document STORE ID	Revision No.	Revision Date	Page
STORE-310043234-113318	0	24/05/2024	Page 3



US DATA (JSDB02 PROJECT SITE

1.2 **Project overview**

CBH proposes to expand its facilities at the existing Borden Grain Receival Site located directly south of the Borden townsite in the Avon-Wheatbelt bioregion of Western Australia (WA). The work is required to cater for the growing quantities of grain receivals around the Borden region and surrounding catchments, which is driven by improved cropping and farming techniques, and higher yielding seed varieties being planted by regional (and WA) growers. The Borden Grain Receival site has been operational since 1976 and currently has a storage capacity that accommodates up to 352,820 tonnes of wheat.

The Borden Expand and Enhance project involves several key components. These include the relocation of one weighbridge and one sample hut, upgrades to open bulkhead frames, the construction of access roads and marshalling areas to accommodate 16 RAV 7 Trucks, and the construction of stormwater drainage infrastructure (Figure 1-3)

The objectives of the Expand and Enhance project extend beyond mere expansion. It is designed to reduce site cycle times and mitigate safety risks while improving traffic flow. Furthermore, the project aims to improve storage capacity, reduce the standing crop risk for farmers, decrease the carbon footprint of overall operations, increase the tonnage to port during harvest and shipping windows, and provide enhanced capacity to manage stormwater onsite.

1.3 Approvals process and context

A referral was submitted under section 51DA(2) of the *Environmental Protection Act 1986* (the EP Act) proposing to clear 0.27 ha of native vegetation on Lot 150, Kebaringup and Borden, to support the expansion. This was received by DWER on 17 August 2022 (REF 9854/1), and was deemed a clearing permit is required for the proposed activity. An application to clear was submitted on 16 January 2024 for the same lot but a revised envelope of 0.27 ha (CPS10486-1).

As a result of this assessment, and after avoidance and mitigation measures were applied, the identification of mitigation was required to address the residual impacts associated with the proposed development. These impacts are:

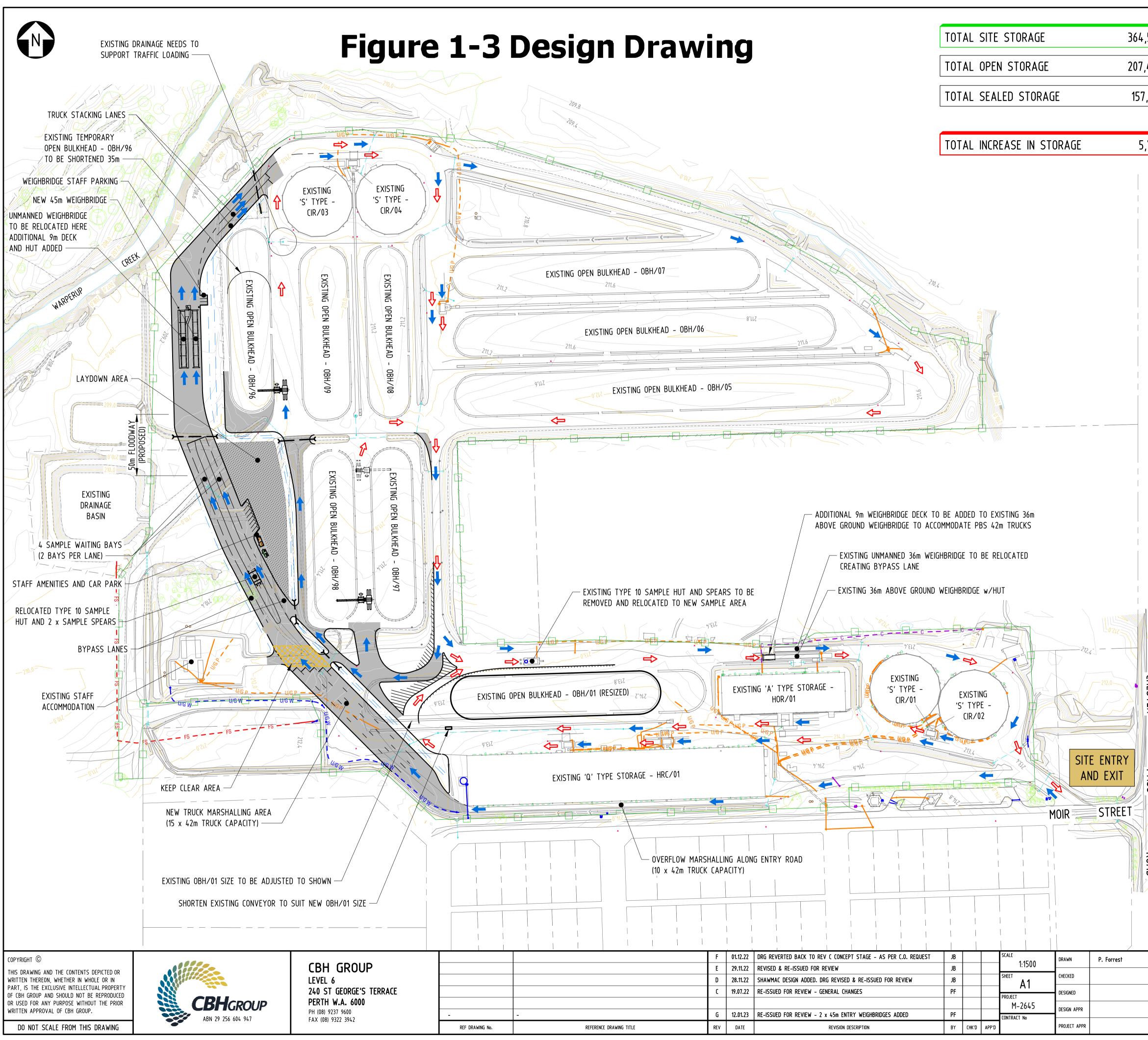
- Clearing of 0.27 ha of AaLOF which is significant as a remnant of native vegetation in an area that has been extensively cleared (Figure 1-1)
 - 0.17 ha is in completely degraded condition, with the remaining 0.10 ha representing a degraded condition.

Т	his document	is u	incontrollec	l when	printed
	ins accument	.5 0		which	princea

Document STORE ID	Revision No.	Revision Date	Page
STORE-310043234-107945	0	24/05/2024	Page 5



EQ PROPERT STESSER



5201	DRA	WING LEGEND	
520†		TRAFFIC MOVEMENTS – TRUCK	KS FULL
420†	=>	TRAFFIC MOVEMENTS - TRUCK	KS EMPTY
100†	l	LOT BOUNDARIES	
	D (CBH SITE BOUNDARY	
/00+	— — — U/G P — —	JNDERGROUND POWER LINES	
/00t	– – – U/G W – –	JNDERGROUND WATER PIPES	
		JNDERGROUND COMMS LINES	
		JNDERGROUND GAS LINES	
			CTEM
		JNDERGROUND FIREWATER SY	
		JNDERGROUND STORMWATER	PIPES
		PROPOSED OPEN DRAINS	
		PROPOSED CULVERTS (WITH H	IEADWALL)
	STOR	AGE CAPACITIES	
	EXISTING SITE STORAGE		
	'A' TYPE STORAGE 'Q' TYPE STORAGE	HOR/01 HRC/01	17,100† 60,000†
	'S' TYPE STORAGE	(4 CELLS)	80,000t
	INT STEEL FRAME OBH INT STEEL FRAME OBH	(01) (05)	29,500† 42,000†
	LOW STEEL FRAME OBH	(06)	31,000t
	LOW STEEL FRAME OBH	(07)	25,000†
	LOW STEEL FRAME OBH LOW STEEL FRAME OBH	(08) (09)	14,000† 17,220†
	LOW STEEL FRAME OBH (TEM		15,000†
	LOW STEEL FRAME OBH (TEM	PORARY) (97)	14,000†
	LOW STEEL FRAME OBH (TEM		14,000t
		TOTAL EXISTING STORAGE	358,820†
	<u>PROPOSED SITE STORAGE</u> INT STEEL FRAME OBH (RESIZ	E) (01)	- 8,250†
	INT STEEL FRAME OBH	(06)	- 0,2301 + 6,200t
	INT STEEL FRAME OBH	(07)	+ 5,000†
	INT STEEL FRAME OBH	(08)	+ 2,800t
	INT STEEL FRAME OBH INT STEEL FRAME OBH (TEMP)	(09) ORARY) (96)	+ 3,450† - 3,500†
		OTAL PROPOSED STORAGE	5,700†
·	HAT	CHING LEGEND	
	AREA OF NEV	N WORKS	23,000m ²
DACC	CHEVRON LIN	E MARKING	
DOAD	DO NOT U	MINARY ISSUE SE FOR CONSTRUCTION DATE 12.01.23	
1/ 07 22	1:1500 @ A1 [IIIIIIIII] 1:3000 @ A3 0 20 40	 60 80 100 120	 140 m
14.07.22	BORDEN PRE-FEASIBILITY STUE NEW MARHSAL/SAMPI CONCEPTUAL LAYOUT	LE/WEIGH AREA	
		002 SHEET 1	OF 1 REV. G

1.4 Definitions and Acronyms

Table 1-1 provides a list of key definitions and acronyms that have been used in this Plan.

Term	Definition
СВН	Cooperative Bulk Handling Limited
DWER	Department of Water and Environmental Regulation
Quality	A measure of how functional and useful habitat is in providing what is needed to enable Carnaby's cockatoos to recover and persist into the future, including proximity and availability of foraging, breeding, night roosting and water resources
IMS	Integrated management system
RMP	Rehabilitation Management Plan
Rehabilitation	Additional plantings, as well as weed and pest management, and fencing, to improve low quality habitat, so that it becomes higher quality habitat
Revegetation	Re-planting habitat in an area where no or limited habitat currently exists (in the wheatbelt this is known as restoration)
ROAM	CBH application for recording hazards and incidents
RPOIC	Receival Point Officer in Charge
TEC	Threatened Ecological Community
WoNS	Weeds of National Significance
WWTEC	Wheatbelt Woodland Threatened Ecological Community

Table 1-1: Definitions and acronyms

Document STORE ID	Revision No.	Revision Date	Page
STORE-310043234-107945	0	24/05/2024	Page 8

2.0 Objectives

This Plan details the environmental management actions for rehabilitation site on Lot 150 to manage and monitor the sites for the purposes of ensuring that the vegetation values at these sites meet the onsite mitigation objectives.¹

It is a management-based plan to document actions required to achieve the required objectives.

The following management objectives have been identified:

- Rehabilitate an area (Rehabilitation Area) to a basic vegetation structure or the ability to regenerate it.
- Manage aggressive weed species.
- Manage over grazing of vegetation.

The starting condition of the vegetation and foraging habitat is determined from the biological surveys conducted as part of the assessment (BDS 2023). The management plan has been prepared with consideration to guidance provided by the Department of Environmental Regulation (now DWER) guide to preparing revegetation plans for clearing permits under Part V of the *Environmental Protection Act 1986* (DER 2013) so far as these are applicable to the RMP.

3.0 Onsite Mitigation Rehabilitation Area

3.1 Size, location and zoning

Lot 150 is an approximate 25.38 ha parcel of land located approximately 40 m north of the existing Borden Grain Receival Site (Figure 3-1). The entire Lot is freehold property already owned by CBH and occurs on land zoned as industrial (Government of Western Australia 2022a).

3.2 Biological environment

A single season reconnaissance flora and vegetation survey was undertaken by Bio Diverse Solutions (BDS) over the 17th and 18th of October 2022 for the survey area which encompasses both the disturbance footprint for The Project and the rehabilitation area. The survey was undertaken in accordance with the Environmental Protection Authority (EPA) Technical Guidance for flora and vegetation (EPA 2016). The survey included:

- Mapping and describing vegetation types.
- Vegetation condition mapping adapted from Keighery (1994; EPA 2016).
- The location of any identified Weeds of National Significance (WoNS) or Declared Pests listed under the State *Biosecurity and Agriculture Management Act 2007* (BAM Act).

The vegetation within both the disturbance and rehabilitation areas is described by BDS as *Acacia acuminata* Low Forest (AaLOF) site vegetation type, which in these areas is:

- Likely been historically cleared and consists of invasive species or disturbance-opportunist natives.
- Characterised by a dominant overstorey of jam wattle (*A. acuminata*) with scattered sheoak (*Allocasuarina fraseriana*) and occasional mixed eucalypts.
- Generally lacking a mid-storey.
- Understorey was dominated by weedy herbs and grasses.

Prior to disturbance, the vegetation of the area would have been consistent with the Pallinup Vegetation association, as mapped by Beard et al. (2013, cited in BDS 2023) and described as Medium Woodland dominated by York Gum (*Eucalyptus loxophleba*) and Yate (*E. cornuta*).

This document is uncontrolled when printed				
Document STORE ID	Revision No.	Revision Date	Page	
STORE-310043234-107945	0	24/05/2024	Page 9	

3.2.1 Historical Disturbance

The area proposed for rehabilitation is adjacent to a small accommodation. Over time, this area has experienced significant degradation, primarily due to construction activities. The development of the accommodation and other buildings has led to the fragmentation of the vegetation, effectively disconnecting this area from nearby native vegetation. This disconnection has further impaired the degradation, as it has disrupted ecological processes and limited the ability of local flora and fauna to recolonize the area.

Appendix A shows aerial imagery from 2001 to 2024, highlighting the changes in landform across time. From 2001, there has been multiple changes to the landscape to accommodate a significant increase in the grain received at the site. In 2006, a major change was seen in the expansion to the neighboring field to the north of site, vastly increasing traffic in the area (Appendix A). 2016 post the prior clearance activities of CPS 2061/1 two additional bulk heads increased site disturbance further adding to traffic along the roads and driving the necessity to increase road safety. The rehabilitation area was disrupted in 2016 through the major works in the area, with a site accommodation being added to the area splitting the clearing area and rehabilitation area. This has led to lack of natural distribution and increased edge effects.

3.2.2 Threatening Processes

49 weed species were found in the Survey Area with one declared pest *Asparagus asparagoides* was found in the proposed rehabilitation area

The majority of herb and grass species which were identified represented in AaLOF were weed species. Dominant species of Herbs and Grasses accounting for 30-70% of ground cover included *Ehrharta calycina*, *Romulea rosea* and *Ursinia anthemoides*.

Edge effects refer to the changes in population or community structures that occur at the boundary of two habitats. In the context of ecology and conservation biology, these effects are often lead to a decrease in biodiversity and the simplification of ecological communities. This is because the conditions at the edge of a habitat can differ significantly from conditions in the interior, creating an environment that is less suitable for interior species. This can lead to a decrease in species richness and abundance. Furthermore, edges often favour the establishment of invasive species, which can outcompete native species for resources. In addition, edges can increase the vulnerability of a habitat to disturbances such as wind, fire, or pollution. For these reasons, edge effects are a critical consideration for this project as the small rehabilitation area is located in an isolated part of the site with boundaries on all sides. Erosion next to a road can also result in the loss of valuable topsoil, impacting nearby vegetation and contributing to further land degradation.

3.2.3 Soil Type and Condition

The soil type within the application area is mapped as the Upper Pallinup 3 subsystem (241Up_3) and Upper Pallinup 5 subsystem (241Up_5). The Upper Pallinup 3 subsystem is described as "lower to upper slopes and crests associated with shallow granite and dolerite. Soils are mainly grey sandy duplex soils (generally shallow) and minor areas of red duplex soils". The Upper Pallinup 5 subsystem is described as "narrow saline valley flats with minor areas of alkaline grey shallow sandy duplex soils, brown and pale deep sands" (DPIRD, 2022c).

3.2.4 Vegetation Condition and Density

The current condition of the rehabilitation area is largely categorized as completely degraded. This classification signifies that the original flora and fauna have mostly been replaced by invasive species, and the original ecosystem functions have been severely compromised. This degradation has been primarily caused by human activities, including construction and heavy footfall, which have disrupted the soil composition and the natural regenerative capabilities of the area. The remnant native vegetation is sparse and struggling to thrive due to the lack of connectivity with healthier ecosystems.

Appendix A shows a section to the western most point of the rehabilitation area which comprises of high bare ground. This section has predominately been bare from 2001, with slight increase in the amount of vegetation to the south of the Rehabilitation Area. R3 being in a section of the site that is removed from disturbance of vehicle movement, has much less bare ground, but this area is filled with more invasive herbs and grasses.

This document is uncontrolled when printed				
Document STORE ID Revision No. Revision Date Page				
STORE-310043234-107945	0	24/05/2024	Page 10	



4.0 Rehabilitation management measures

4.1 Rehabilitation plan objectives

The following are the key RMP objectives that have been identified:

4.2 Rehabilitation plan performance criteria and targets

Performance criteria and targets have been established as auditable criteria linked to the RMP objectives. The intent of these criteria and target is to allow monitoring of the effectiveness of this plan in meeting the objectives of the rehabilitation management plan.

Table 4-1 Rehabilitation Performance Targets

Objectives	Criteria	Target	Completion criteria	Timeframe
Improve and maintain vegetation that is a significant remnant	Successful rehabilitation and revegetation program	To meet the completion criteria within 5 years	Described in Table 5-1	10 years

Document STORE ID	Revision No.	Revision Date	Page
STORE-310043234-107945	0	24/05/2024	Page 12

5.0 Rehabilitation and revegetation strategy

5.1 Completion Criteria

Table 5-1: Rehabilitation Completion Criteria

Item	Criterion	Objectives/targets	Monitoring	Timing
1	Cover and density – number of plants /m ² in each structural layer.	Achieve a similarity in the density of endemic plants to the <i>reference quadrat</i> across upper and mid storey.	Minimum 80% of the number of plants / m ² in upper and mid storey, based on the reference quadrat.	Annually by an <i>environmental specialist</i> until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
2	Weeds	Weed cover is no greater than the baseline at the reference quadrat	Weed cover shall be no greater than the baseline recorded at the <i>reference</i> <i>quadrat</i> .	Annually by an <i>environmental specialist</i> until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
3	Weeds	No priority, high impact or highly invasive weeds present	No weeds present that are listed as Priority Alert, High Impact or Rapid invasiveness on the DBCA <u>Wheatbelt</u> <u>Region Impact and</u> <u>Invasiveness Ratings</u> <u>list</u> as updated from time to time.	Annually by an <i>environmental specialist</i> until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
4	Bare ground	No more than 5 per cent greater than the baseline at the reference sites	the <i>rehabilitated area</i> must not have bare ground more than 5 per cent greater than the baseline recorded at the <i>reference sites</i>	Annually by an <i>environmental specialist</i> until completion criterion has been met and maintained for two years (i.e. three successive monitoring events).
5	Gates and boundary fence	Gates and boundary fence to be in good condition with no obvious damage that will enable access by the general public and fauna, including livestock and kangaroos.		Annually until completion criteria 1 – 5 has been met

Document STORE ID	Revision No.	Revision Date	Page	
STORE-310043234-107945	0	24/05/2024	Page 13	

5.2 Rehabilitation methodology

Revegetation works, including site preparation, will be undertaken by a suitably qualified contractor. These activities will be monitored and amended based upon feedback from qualified revegetation specialists and emerging scientific data on wheatbelt restoration activities.

5.2.1 Site preparation

Where required, surface preparation activities such as ripping and or hand auguring will be performed by experienced personnel.

5.2.2 Species selection and plant allocations

Table 5-2 provides a list of the flora species that have been identified during biological surveys completed in October 2022 (BDS 2022)) in areas identified as identified as AaLOF. Planting programs will prioritize these species, targeting those that have been highlighted in a list prepared by Christine Groom, Department of Environment and Conservation 15 April 2011. These species are prioritized due to their importance for Carnaby's Black Cockatoos. The mid-and understory species chosen for planting will be native to the area and typically available from plant nurseries. The availability of seeds for both direct seeding and growing seedlings is influenced by various factors, including weather conditions.

Species	Form	Priority for planting for Carnaby's(Groome 2011)
Acacia acuminata	Tree	
Acacia consobrina	Shrub	
Acacia saligna*	Shrub	Low
Allocasuarina fraseriana	Tree	
Austrostipa compressa	Grass	
Calothamnus quadrifidus	Shrub	
Eucalyptus longicornis*	Tree	Low
Eucalyptus occidentalis*	Tree	Low
Hakea lissocarpha*	Shrub	Medium
Melaleuca hamata	Shrub	
Melaleuca undulata	Shrub	
Rhagodia drummondii	Shrub	
Santalum acuminatum	Tree	
Thysanotus patersonii	Herb	

Table 5-2: Flora Species Identified During Botanical Surveys

Document STORE ID	Revision No.	Revision Date	Page
STORE-310043234-107945	0	24/05/2024	Page 14

5.2.3 Seed sources and seedling propagation

If timing allows, there may be a possibility to collect seeds from the site for future propagation. Seedlings will be sourced from a commercial nursery and propagated from material that is as close to the site as available at the time of ordering. However, seed sources may be extremely limited, necessitating supplementation from further afield within the Avon-Wheatbelt bioregion. Ideally, seeds for seedlings and direct seeding will be of local provenance, that is, within 100 km of the impact site.

5.2.4 Weed management

Weed control works will be undertaken by a suitably qualified contractor. Prior to undertaking weed control, baseline weed mapping will be undertaken across the reference sites at each rehabilitation location to obtain a full inventory of weed species and % cover. The intent of this activity will be to establish the weed target to be met for the weed management program across the rehab sites.

Initial surveys indicate there are 49 weed species present within the survey area.

Weed management practices will be consistent with guidance from qualified contractor and may include the following actions:

- Applying a broad spectrum herbicide to kill existing competitive plants and prevent seed set (avoiding areas of native grass).
- Follow up application of herbicides to occur (annually).
- Manual removal of key weed species.

5.2.5 Seedling planting

Seedlings will be watered on the day of planting before delivery to site to reduce the potential for transplant shock. It is expected that the planting (including remedial planting) will be undertaken over the naturally wet months of the year and provided the soil is moist no other watering is considered necessary.

Seedlings will be randomly planted within the designated planting areas. However, given the relatively hard nature of the land, it may be necessary to augur planting holes unless the ground is softened after rainfall.

Further weed management may be undertaken during the planting period to ensure that competition from weed species is minimised. Competition effects from weeds can influence survival of seedlings and their overall growth.

5.2.6 Hygiene control

No evidence of dieback or other pathogens was identified during surveys so no activities prior to commencement of rehabilitation is proposed. During rehabilitation activities all contractors and CBH staff will be required to adhere to hygiene measures to minimise the potential for weeds and pathogens to be introduced to the site and will include:

- Ensuring that vehicles, tools, equipment and machinery brought onto the site are free of mud and soil.
- Limiting vehicle access into the site and requiring the use of existing tracks.
- Seedlings and seed mix to be sourced from reputable suppliers and demonstrated to be free of pathogen risks

This document is directivited when printed						
Document STORE ID	Revision No.	Revision Date	Page			
STORE-310043234-107945	0	24/05/2024	Page 15			

5.3 Monitoring

5.3.1 Reference sites

Reference Quadrats:

• 1 quadrat from within the AaLOF vegetation community in the survey area.

The final reference site will be established within 12 months of the clearing permit being approved. Baseline data will be collected from each site against which the completion criteria can be developed. Baseline data collected will include, species density, vegetation structure, bare ground cover, weed cover and vegetation condition.

The reference sites will be established during baseline data collection, identified with markers and georeferenced. Regular monitoring of the reference sites will occur and be documented along with other reporting requirements.

5.3.2 Monitoring sites

Monitoring Quadrats:

• 1 quadrat within the rehabilitation area, as depicted in Figure 1-1 as M1.

Monitoring sites will be established within the areas where rehabilitation activities will occur. Within the survey area, one monitoring site within vegetation unit AaLOF will be established. The monitoring site will also be targeting areas that the baseline survey has identified as requiring improvement to achieve the Keighery (1994) scale of degraded, with management of the weed species through rehabilitation raising the rehabilitation to Good. These sites will be established during initial baseline data collection, identified with markers and geo-referenced.

The monitoring activities will collect the following data:

- Site number
- Species names
- Native species and foliage cover (%)
- Vegetation condition under the Keighery Scale (Keighery 1994)
- Weed species and foliage cover (%)
- Indicators of the presence of fauna (eg scats, burrows, tracks)
- General observations (eg pest insects, feral animal disturbance, fire occurrence)

To support the monitoring program, photo monitoring points will be established at representative locations within each monitoring site and recorded with a GPS. At each point, two photographs will be taken along each direction of a transect or one photo from a quadrat corner. All photos will be date stamped and photo number recorded with appropriate details (monitoring site number and direction of photo).

A brief one to two-page report will be developed by the rehabilitation specialist, giving a snapshot of the status of the rehabilitation program. This brief report will provide a results summary, establish trends with respect to previous assessments (including photographs) and give recommendations for action. Seedling survival will be monitored by counting alive and dead/missing plants. Weed cover will be estimated by visual site assessment, and the presence of any particularly significant weed species noted.

The results of the monitoring and general observations will determine whether remedial action such as weed control and infill planting are required to meet the success targets identified in Table 5-1: Rehabilitation Completion Criteria. Informal monitoring of the site condition will also be undertaken on an occasional basis, with any significant findings or required actions to be reported immediately.

This design is the second standard back and the

This document is uncontrolled when printed						
Document STORE ID	Revision No.	Revision Date	Page			
STORE-310043234-107945	0	24/05/2024	Page 16			

6.0 Schedule of Revegetation and Monitoring Activities

Performance Indicator	Responsibility	Evidence/Output	Frequency/Timing	Corrective Action
Supply of seeds to meet annual revegetation rates	Revegetation specialist/cont ractor	Invoice/seed stock supplies	Annual	Source additional supply from revegetation / accredited nurseries
control Eradication of any declared weed species and reduction of	Revegetation specialist/cont	Inspection report	Twice Annually	Investigate cause and assign action in SHARE
number of weed species and cover	ractor			Determine appropriate remedy (eg additional round of weed control, adjusted method, alternative herbicides, changed timing)
				Implement remedy
h and Site inspection shows all litter moval and rubbish removed from rehabilitation site	Revegetation specialist/cont ractor	Inspection report	Within 12 months of permit grant	Assign Action in SHARE to appoint contractor to remove rubbish and litter
g Seedlings planted	Revegetation specialist/cont ractor	Inspection report	Annual	Investigate cause and assign action in SHARE
ation of Site inspection shows fencing installed	Contractor	Photographic evidence/inspection report	Within 12 months of permit grant	Investigate cause and assign action in SHARE
nce & Confirm location of all ring reference and monitoring sites and establish baseline data	Revegetation specialist/cont ractor	Monitoring report	Within 12 months of permit grant	Investigate cause and assign action in SHARE
	reference and monitoring sites	reference and monitoring sites specialist/cont and establish baseline data ractor	reference and monitoring sites specialist/cont	reference and monitoring sites specialist/cont of permit grant and establish baseline data ractor

Table 6-1: Schedule of Revegetation and Monitoring Activities

This document is uncontrolled when p					
Document STORE ID	Revision No.	Revision Date	Page		
STORE-310043234-107945	0	23/05/24	Page 17		

Year 2	Monitoring and reporting	Undertake monitoring to determine the required maintenance measures (eg weed control, pest control and infill planting)	Environmental specialist	Monitoring report	Annual	Investigate cause and assign action in SHARE
	Seed & plant supply	Order local endemic plants on species list based on survival rates from monitoring activities	Revegetation specialist/cont ractor	Invoice/seed stock supplies	Annual	Source additional supply from revegetation / accredited nurseries
	Seeding & replanting	Implement infill planting as required from monitoring report	Revegetation specialist	Inspection report	Annual	Investigate cause and assign action in SHARE
	Weed control	Implement weed management and control as required from	Contractor	Inspection report	Annual	Investigate cause and assign action in SHARE
		monitoring report				Determine and implement appropriate remedy (eg additional round of weed control, adjusted method, alternative herbicides, changed timing)
	Pest control	Implement pest management and control as required from	Contractor	Inspection report	Annual	Investigate cause and assign action in SHARE
		monitoring report				Determine and implement appropriate remedy (eg adjusted method, alternative pesticides, changed timing)
	Rubbish and litter removal	Implement rubbish and litter management and control as required from monitoring report	Contractor	Inspection report	Annual	Investigate cause and assign action in SHARE
	Monitoring and reporting	Undertake monitoring to determine the required maintenance measures (eg weed control, pest control and infill planting)	Environmental specialist	Monitoring report	Annual	Investigate cause and assign action in SHARE

This document is uncontrolled when printed						
Document STORE ID	Revision No.	Revision Date	Page			
STORE-310043234-107945	0	23/05/24	Page 18			

ear 3	Seed & plant supply	Order local endemic plants on species list based on survival rates from monitoring activities	Revegetation specialist/cont ractor	Invoice/seed stock supplies	Annual	Source additional supply from revegetation / accredited nurseries
	Seeding & replanting	Implement infill planting as required from monitoring report	Revegetation specialist	Inspection report	Annual	Identify revegetation shortfalls (via monitoring report)
						 Identify likely cause of failure (e.g. weeds, lack of water, inappropriate timing of revegetation, lack of nutrients, poor soil condition, lack of water, insect/fungus attack, dieback, predation by herbivores)
						 Address cause of failure (this may include mulching, soil stabilisation, pest control, tree guards)
						Plan infill planting/seeding to compensate for vegetation shortfalls
	Weed control Implement weed management and control as required from monitoring report	Contractor	Inspection report	Annual	Investigate cause and assign action in SHARE	
		monitoring report				Determine appropriate remedy (eg additional round of weed control, adjusted method, alternative herbicides, changed timing)
						Implement remedy
	Monitoring and reporting	Undertake monitoring to determine the required maintenance measures (eg weed control, pest control and infill planting)	Environmental specialist	Monitoring report	Annual	Investigate cause and assign action in SHARE

This document is uncontrolled when print					
Document STORE ID	Revision No.	Revision Date	Page		
STORE-310043234-107945	0	23/05/24	Page 19		

replanting required from monitoring report specialist monitoring report Identify likely cause of failure weeds, lack of water, inapprogrammed, lack of water, inapprogramm	Year 4 and beyond	Seed collection	species list	endemic plants on based on survival monitoring activities	Revegetation specialist/cont ractor	Invoice/seed stock supplies	Bi Annual	Source additional supply from revegetation / accredited nurseries
Weed control Implement weed management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Pest control Implement pest management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Pest control Implement pest management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Pest control Implement pest management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Determine and implement approgreemedy (gg additional round of w control, adjusted method, alterna monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Monitoring and reporting Undertake monitoring to determine the required maintenance measures Environmental Monitoring report Monitoring report Bi Annual Investigate cause and assign acti SHARE Document \$100E UD Indertake monitoring to maintenance measures Environmental Monitoring report Bi Annual Investigate cause and assign acti SHARE		-	•		-	Inspection report	Bi Annual	Identify revegetation shortfalls (via monitoring report)
Weed control Implement weed management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Pest control Implement pest management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Pest control Implement pest management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Pest control Implement pest management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Monitoring and reporting Undertake monitoring to determine the required maintenance measures Environmental specialist Monitoring report Bi Annual Investigate cause and assign acti SHARE Document STORE ID Revision No. Revision Date Page Page								 Identify likely cause of failure (e.g. weeds, lack of water, inappropriate timing of revegetation, lack of nutrients, poor soil condition, lack of water, insect/fungus attack, dieback, predation by herbivores)
Weed control Implement weed management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Determine and implement appropremedy (eg additional round of w control, adjusted method, alternat herbicides, changed timing) Determine and implement appropremedy (eg additional round of w control, adjusted method, alternat herbicides, changed timing) Pest control Implement pest management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Monitoring and reporting Undertake monitoring to determine the required maintenance measures Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Document STORE ID Revision No. Revision Date Page								 Address cause of failure (this may include mulching, soil stabilisation, pest control, tree guards)
and control as required from monitoring report SHARE Determine and implement appropremedy (eg additional round of w control, adjusted method, alternal herbicides, changed timing) Pest control Implement pest management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Monitoring and reporting and reporting Undertake monitoring to determine the required maintenance measures Environmental Monitoring report Bi Annual Investigate cause and assign acti SHARE Document STORE ID Revision No. Revision Date Page								Plan infill planting/seeding to compensate for vegetation shortfalls
Pest control Implement pest management and control as required from monitoring report Contractor Inspection report Bi Annual Investigate cause and assign acti SHARE Monitoring and reporting Undertake monitoring to determine the required maintenance measures Environmental specialist Monitoring report Bi Annual Investigate cause and assign acti SHARE Determine the required maintenance measures Environmental specialist Monitoring report Bi Annual Investigate cause and assign acti SHARE		Weed control	and contro	as required from	Contractor	Inspection report	Bi Annual	Investigate cause and assign action in SHARE
and control as required from monitoring report SHARE Determine and Implement approprimentedy (eg adjusted method, alter pesticides, changed timing) Monitoring and reporting Undertake monitoring to determine the required maintenance measures Environmental Monitoring report specialist Bi Annual Investigate cause and assign actions SHARE Document STORE ID Revision No. Revision Date Page			monitoring	report				Determine and implement appropriate remedy (eg additional round of weed control, adjusted method, alternative herbicides, changed timing)
Monitoring and reporting Undertake monitoring to determine the required maintenance measures Environmental Monitoring report specialist Monitoring report Bi Annual SHARE Investigate cause and assign action SHARE This document is uncontrolled when printed Document STORE ID Revision No. Revision Date Page		Pest control	and contro	as required from	Contractor	Inspection report	Bi Annual	Investigate cause and assign action in SHARE
and reporting determine the required maintenance measures specialist SHARE This document is uncontrolled when printed Document STORE ID Revision No. Revision Date			monitoring	report				Determine and Implement appropriate remedy (eg adjusted method, alternative pesticides, changed timing)
and reporting determine the required maintenance measures specialist SHARE This document is uncontrolled when printed Document STORE ID Revision No. Revision Date		Monitoring	Undertake	monitoring to	Environmental	Monitoring report	Bi Annual	Investigate cause and assign action in
maintenance measures This document is uncontrolled when printed Document STORE ID Revision No. Revision Date Page		•	determine the required			5 1		· · ·
Document STORE ID Revision No. Revision Date Page		. 0						
Document STORE ID Revision No. Revision Date Page					This document is u	uncontrolled when printed		
		Document STORE ID		Revision No.]	
0 23/05/24 Page 20	1	STORE-310043234-1079	945	0	23/05/24	Page 20]	

Year 10 or two years after completi on criteria being met and maintain	Monitoring and reporting	Completion survey and closure report	Environmental specialist	Monitoring report	Once off	Investigate cause and assign action in SHARE
ed						

This document is uncontrolled when printed						
Document STORE ID	Revision No.	Revision Date	Page			
STORE-310043234-107945	0	23/05/24	Page 21			

7.0 Refferences

Bio Diverse Solutions. 2023 Reconnaissance Flora and Vegetation Survey Report.

Beard, J.S. 1975. The vegetation survey of Western Australia. Explanatory notes to Sheet 4, 1:1,000,000 Series Vegetation Survey of Western Australia. University of Western Australia Press, Nedlands, WA.

Department of Water and Environmental Regulation (DWER) 2018. A Guide to Preparing Revegetation Plans for Clearing Permits.

Department of Agriculture, Water and the Environment (DAWE) 2021. Australia's bioregions (IBRA). Available from: <u>https://www.environment.gov.au/land/nrs/science/ibra</u>

Groom, C. 2011. *Plants used by Carnaby's Black Cockatoo*. List prepared by the Department of Environment and Conservation 15 April 2011.

Document STORE ID	Revision No.	Revision Date	Page	
STORE-310043234-107945	0	23/05/24	Page 22	

Appendix A Historical Site Disturbance

2001





- 💛 Major Road
- Unsealed Road Minor Road

Bus & Ferry Routes Not visible

Speed Limits Not visible









