

Clearing Assessment Report/ Vegetation Management Plan (VMP) – CPS 818

*We're working for
Western Australia.*

Cooperative Bulk Handling Group (CBH)
Site Access Improvements
South Coast Highway (H008) SLK 366.35 - 367.60
Great Southern Region
EOS No: 3432

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1 PROPOSAL

1.1 Purpose and Justification

The Cooperative Bulk Handling Group (CBH) has expanded its Munglinup Receiving point operations in the Shire of Ravensthorpe. Due to these upgrades, there will be more heavy vehicles entering and exiting from the site. Therefore, access points are needed to be improved to account for the extra heavy vehicles. Main Roads Western Australia will be delivering the works on behalf of CBH. This requires localised widening and access modifications to South Coast Highway (H008) SLK 366.35 - 367.60 to accommodate for the facility's increased grain storage capacity (the Proposal).

The purpose of this Clearing Assessment Report (CAR) is to detail the assessment of native vegetation clearing that is proposed to be undertaken using the Statewide Clearing Permit CPS 818 issued to Main Roads Western Australia (MRWA).

The CAR outlines the key activities associated with the Proposal, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the Proposal using the ten Clearing Principles, and the strategies used to manage vegetation clearing.

1.1.1 Main Roads Approach to Road Safety and the Environment

Main Roads is committed to minimising the environmental impacts of all of its activities and manages the State road network to achieve balanced economic, social, safety and environmental benefits for the community. Main Roads recognises that Western Australia's environment is significant from a global perspective and the unique conservation values that are contained within its road reserve. Main Roads road network often adjoins natural areas and, in some locations, the reserve itself hosts remnant vegetation with high environmental values. Although the reserves were not established for this purpose, Main Roads recognises that it has a responsibility to conserve the environmental values that occur within the State's road network and minimise the impact its proposals have on the environment. In addition to providing a safe and efficient road network for all people using the roads under its control, Main Roads is also committed to protecting the natural environment.

In accordance with National and State Government road safety policies, Main Roads is also committed to substantially reducing road trauma on the road network through Safe System principles. The Safe System approach acknowledges that more than two thirds of all serious crashes are due to human error rather than deliberate risk taking (e.g. speeding or drink driving) and seeks to improve behaviour through education and enforcement while managing the safety of vehicles, speeds and the road and road infrastructure. It is shown that improving sub-optimal road formation will substantially reduce the likelihood and severity of road crashes. For example, according to the Road Safety Management Guideline, increasing the sealed shoulder from 0.5 m to 2 m will reduce Killed and Seriously Injured numbers by more than 50%.

As the statutory authority responsible for providing and managing a safe and efficient main road network in Western Australia, Main Roads focuses on improving road safety by thoroughly considering all environmental, economic and community benefits and impacts. It operates on a hierarchy of avoiding, minimising, reducing and then, if required, offsetting our environmental impacts. This has been achieved through changes in proposal scope and design. Main Roads regularly reduces its clearing footprint by restricting earthworks limits for proposals, steepening

batters, installing barriers, establishing borrow pits in cleared paddocks and avoiding temporary clearing for storage, stockpiles and turn around bays to avoid and minimise its impacts.

Further details on measures to avoid, minimise and reduce are provided in Section 1.5.

1.2 Proposal Scope

To accommodate for the widening and modification of the CBH access, The Proposal will require the clearing of up to 0.50ha of remnant native vegetation within a 12.42ha Development Envelope (DE). Main Roads Great Southern Region has agreed to develop and deliver the H008 works and proposes to use Main Roads' Clearing Purpose Permit CPS 818/17 to undertake the associated clearing, with construction proposed to commence in March 2025.

Upgrades to site access at the CBH Munglinup Bin, consisting of a turning bulge and localised windings at the site exit and a declaration/slip lane and localised widening at the site entry. Two existing culverts along the main alignment require removal and replacement and the existing culvert at the site exit requires extending. Line marking will be required for the new works. An existing Telstra copper cable runs under the main alignment and will need to be lowered/protected as part of the works.

Ground disturbing activities required for the works include, the preparation of the foundation, construct embankment and pavement layers, cut and reshape drains, removal of two culverts and installation of two culverts.

1.3 Proposal Location

The DE is located on South Coast Highway (H008) SLK 366.35 – 367.60 in Munglinup within the Shire of Ravensthorpe as shown in **Figure 1**.

The central coordinates of the proposal are:

Eastings: -33.688132

Northings: 120.825055.

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818/17:

The Proposal will require up to 0.50 ha clearing of remnant native vegetation within a 12.42 ha DE, which can be achieved with up to a 1.85m constructability buffer added to the earthworks footprint (averaged across the project).

Areas of Native Vegetation Clearing:

The areas of native vegetation and their condition ratings that will be cleared are shown in **Figure 2**.

Type of Native Vegetation:

The DE consists of two vegetation types:

- Kwongkan Shrubland (KSH), which meets the criteria for 'Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia' (Endangered under *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999*).
- Invasive Novel Ecosystems (INE), which consist of predominantly introduced and invasive species and are within areas mapped as "Completely Degraded".

The proposed design footprint will require the clearing of a maximum area of 0.50 ha of Native Vegetation comprising the Kwongkan Shrubland vegetation type.

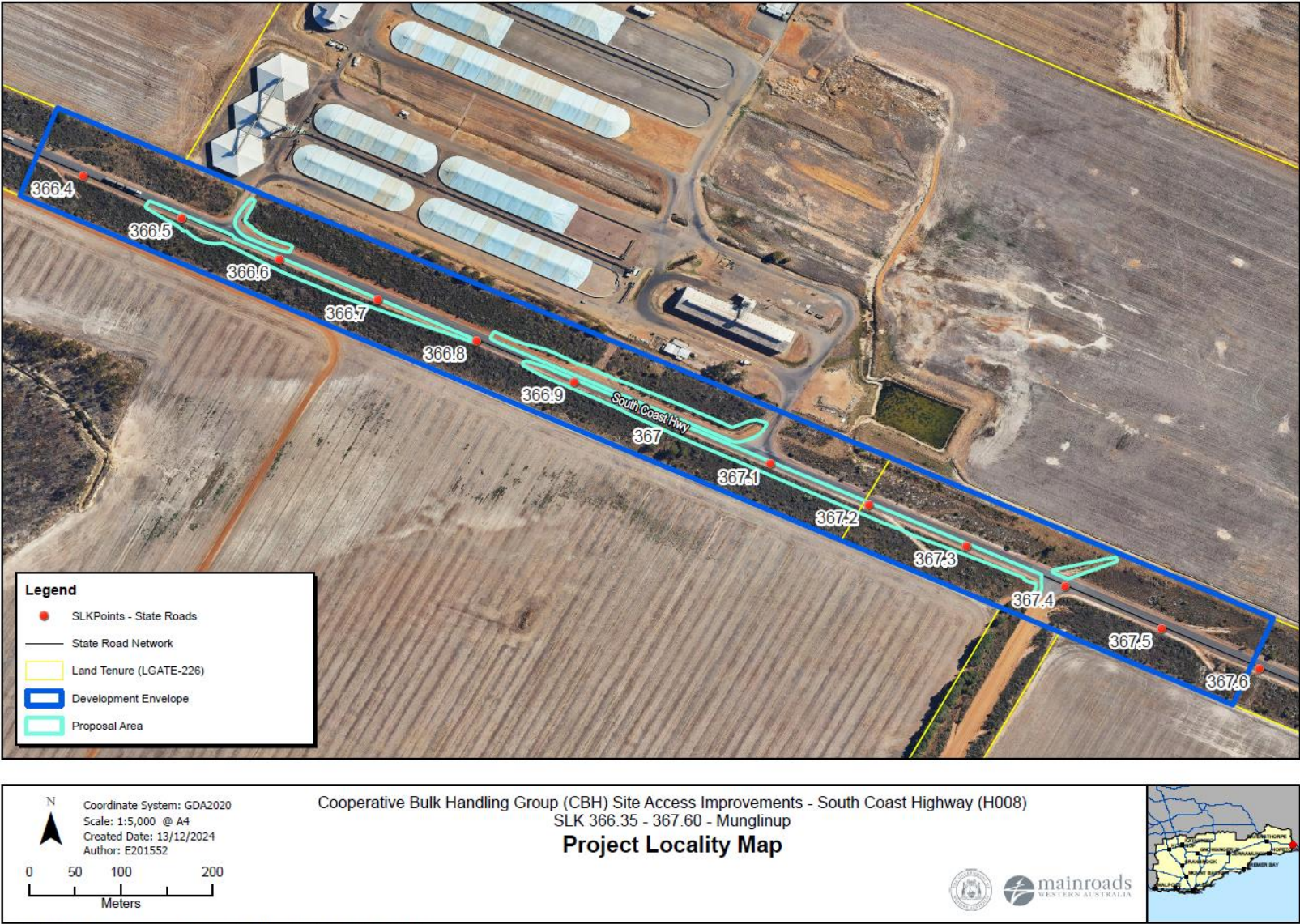


Figure 1. Locality Map, Development Envelope and Design Earthworks Footprint for CBH Site Access Improvements

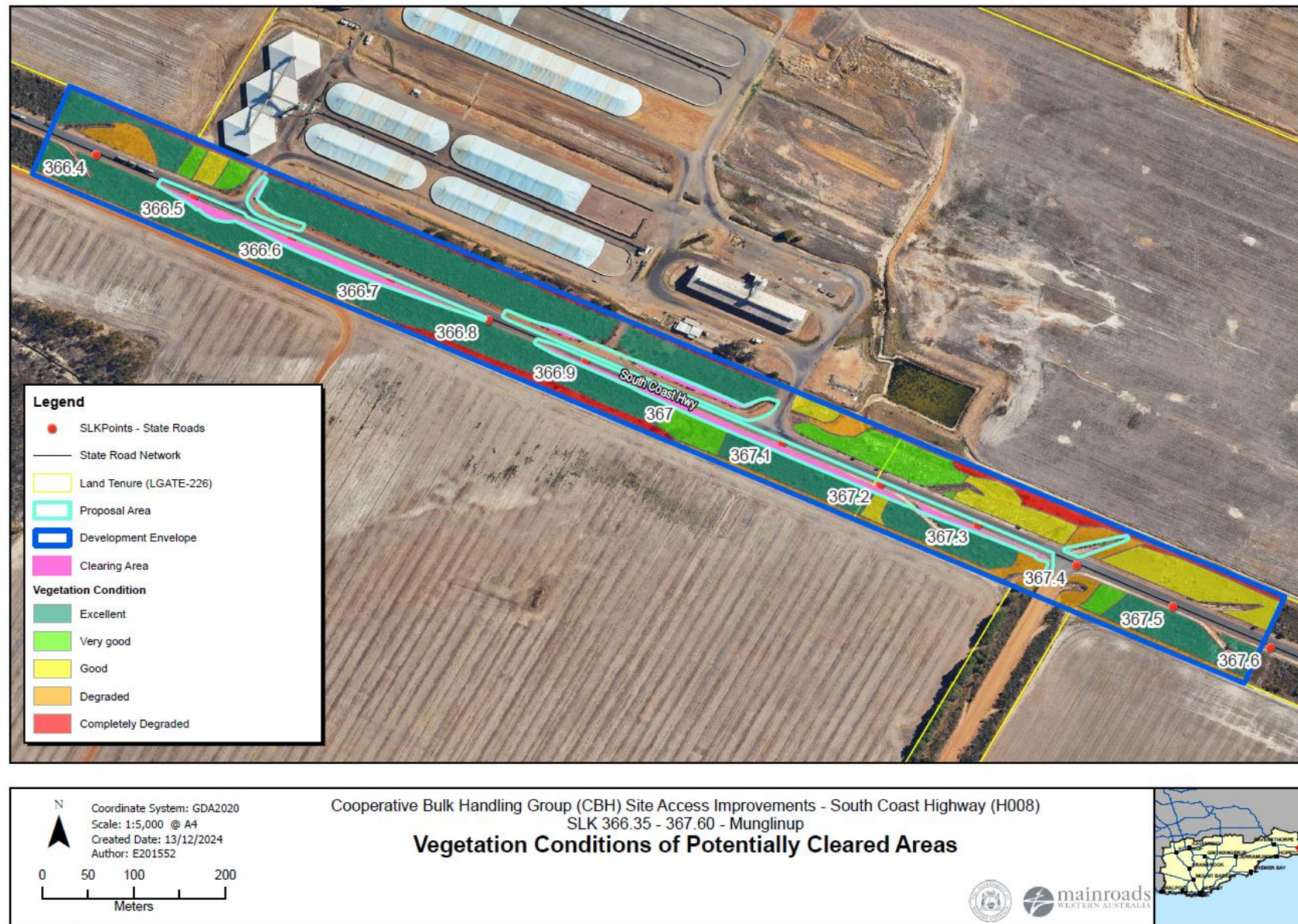


Figure 2. Vegetation Conditions Potentially Cleared within Development Envelope for CBH Site Access Improvements.

1.5 Alternatives to Native Vegetation Clearing Considered During Proposal Development

The following alternatives to clearing were considered during the development of the proposal:

- Upgrading other alternative routes that are less vegetated and environmentally constrained; however, these are not suitable due to longer travel times, sensitive local receptors (such as residences) or other planning issues.
- Do not upgrade the road; however, this will potentially result in hindering CBH's operations due to the increase in their storage capacity.
- Main Roads retains frangible vegetation where a clear zone is to be established for road projects. For this project; however, clearing will only be required to accommodate the road formation, with no clear zone being established. Accordingly, the retention of frangible vegetation does not apply to this proposal.
- Reducing the speed limit to minimise clearing requirements, while still balancing safety (driver fatigue) and freight efficiency. Speed Limits are an essential mechanism to ensure the safe and efficient operation of road networks. The application of appropriate speed limits and other traffic management measures is a key mechanism in managing vehicle speeds to achieve desired safety, mobility, traffic management, local amenity, and road user expectations. There are several factors involved in road safety, including road conditions, driver behaviour and overall road design. Except in special situations, reducing speed limits below national standards on state and national roads is not typically supported as it has the potential to contribute to driver frustration, impatience, tiredness and recklessness. The environmental values protected by reducing the speed limit, do not justify the impacts on freight efficiencies nor road user safety. Accordingly, the reduction of the speed limits to avoid clearing of native vegetation for this proposal is not proposed.

1.6 Measures to Avoid, Minimise, Reduce and Manage Proposal Clearing Impacts

The design and management measures implemented to avoid and minimise the potential clearing impacts of the Proposal are provided in Table 1.

Table 1. Measures Undertaken to Avoid, Minimise, Reduce and Manage the Proposal Clearing Impacts

Design or Management Measure	Discussion and Justification
Alignment to one side of existing road	Due to the nature of the works being upgrades to the established entry and exit of CBH, widening to one side of the existing road doesn't meet the increased operation requirements of the expanded Munglinup Receiving site. Widening treatments are required on both sides of South Coast Highway.
Alternative alignment located within pasture or degraded areas	Due to the nature of the works being upgrades to the established entry and exit of CBH, Altering the Alignment of the South Coast highway any direction from these fixed points would cause a greater environmental impact than the chosen method of keeping the alignment and adding localised widenings.
Simplification of design to reduce number of lanes and/or complexity of intersections	The widening scope of works cannot be further simplified whilst retaining the necessary safety benefits and meet the operation requirements. The upgrade of the entry and exit with localised widenings has been selected as a result of 15% scoping study which included traffic modelling conducted by Shawmac Consultants. Numbers from this modelling concluded that since the Munglinup receiving site had increased its capacity, the safe entry and exit of heavies onto South Coast Highway can be improved through the addition of localised widening and turning treatments. If the widening was not undertaken, this would likely result in no improvements in safety, which is unacceptable to Main Roads.
Steepen batter slopes	The use of 4:1 fore slopes and 2:1 backslopes on the Proposal batters instead of 6:1 fore slope 3:1 backslope allowed for the reduction of the earthworks footprint by 0.14 ha (28% reduction). Any further reduction to the batter slopes impeded on the safety standards on highways of this traffic volume.
Installation of barriers	N/A
Installation of kerbing	The implementation of kerbing through the area would require the shoulder to be improved for the drainage scheme to work correctly. With the open cut drains already either side of the road alignment it would increase the earthworks footprint further than the reduced batter slope design that's been selected
Use of existing cleared areas for access tracks, construction storage and stockpiling	There's the possibility of using a previously cleared area on CBH land for site offices, lay down etc. No vegetation will be cleared for this purpose.
Drainage modification	The existing road drainage profile has been left undisturbed as much as possible to minimise the earthworks footprint.
Reduction of Construction buffers	Construction buffers have been reduced to the absolute minimum achievable (1.85m from edge of earth works) whilst still allowing the safe movement of machinery and constructability of the proposal.

1.7 Approved Policies and Planning Instruments

The clearing of native vegetation in Western Australia is regulated under the *Environmental Protection Act 1986* (EP Act) and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act, Main Roads has also had regard to the below instruments where relevant.

Other Legislation potentially relevant for assessment of clearing and planning/other matters:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P and D Act)
- *Soil and Land Conservation Act 1945* (WA)
- *Rights in Water and Irrigation Act 1914*
- *Aboriginal Heritage Act 1972* (WA).

Environmental Protection Policies:

- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992
- Environmental Protection (Western Swamp Tortoise Habitat) Policy 2011.

Other relevant policies and guidance documents:

- Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (Government of WA, December 2014)
- Procedure: Native vegetation clearing permits (Government of WA, October 2019)
- Environmental Offsets Guidelines (Government of Western Australia, 2014)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Approved conservation advice under section 266B of the EPBC Act for threatened flora/fauna/vegetation communities.
- EPBC Act Matters of National Environmental Significance, Significant Impact Guidelines 1.1 (DoE, 2013).
- Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black Cockatoo (DAWE, 2022)
- Proteaceae Dominated Kwongkan Shrubland: a nationally-protected ecological community (DOE, 2014)
- Technical Guidance on the Threatened Ecological Community Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province (MRWA, 2021)

2 SCOPE AND METHODOLOGY ASSESSMENT OF CLEARING

Native vegetation will be cleared to accommodate this Proposal. This clearing will be undertaken using the Main Roads Statewide Clearing Permit CPS 818/17.

To comply with CPS 818/17, Main Roads must prepare a Clearing Assessment Report (CAR).

The CAR outlines the key activities associated with the Proposal, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the Proposal using the ten Clearing Principles listed under s51 of the EP Act and strategies used to manage vegetation clearing.

2.1 Report Terminology and Sources

The following terms are used in this Clearing Report:

- **Native Vegetation Clearing Area (Clearing Area)** – The maximum amount of native vegetation to be cleared for the Proposal that will accommodate the designed earthworks and, typically, a nominal buffer to allow for the safe movement of machinery during construction.
- **Development Envelope (DE)** – The maximum extent within which the Clearing Area will be located. This envelope larger than the Clearing Area and the Proposal Area to allow for minor changes to the Proposal footprint as the design process continues, and to account for minor and unexpected changes that may occur during construction, such as working to avoid a large tree or encountering buried boulders or services. This flexibility allows the site personnel to make modifications to the Proposal to avoid areas that may contain better environmental values. The CAR has assessed all environmental values within the DE as though all of these values will be impacted, up to the amount specified within the Clearing Area.
- **Proposal Area** – The total footprint of the Proposal including both cleared and uncleared areas. This is based on the current design and is less than the DE. It usually includes a buffer to allow for constructability and the movement of machinery during construction.
- **Survey Area** – Area covered by the field surveys, which is typically larger than the DE.

2.2 Desktop Assessment

A desktop assessment of the Native Vegetation Clearing Area was undertaken by viewing internal datasets and other government agency managed databases, and consulting with relevant stakeholders where necessary.

GIS layer viewing and mapping is done using ArcMap and/or Main Roads corporate mapping system known as iMaps. Referencing of the GIS layers accessed is done under the relevant methodology section of each clearing principle. Government managed databases were searched to locate additional information, which are found under References in Section 10.

2.3 Surveys and Assessments

The following surveys/assessments were undertaken to inform this CAR:

Biological and targeted surveys conducted for the proposal are outlined in **Table 2** and a summary of the findings in these reports are presented in Sections 3.1 to 3.2.

Table 2. Summary of Biological and Targeted Surveys Relevant to the Proposal

Consultant and Survey Name	Survey Details
Bio Diverse Solutions (2023) Reconnaissance and Targeted Flora and Vegetation Survey Report: CBH Munglinup Receival Site 10754 - South Coast Hwy Munglinup WA 6450	Survey Area: 26.2ha area, that includes the CBH Munglinup Receival Site property and adjacent portion of road reserve (managed by MRWA). The survey area consists of 18.68ha that was previously surveyed during the out-of-season 2022 survey. Type: Reconnaissance and targeted flora survey during the spring season to determine whether Threatened or Priority flora species or ecological communities are present within the survey area. Timing: Spring survey on 18th – 19th October 2023. Survey Results Shapefile TRIM Ref: D24#1145688 Document TRIM Ref: D24#1145480
Bio Diverse Solutions (2022) Reconnaissance Flora, Vegetation and Basic Fauna Survey Report: CBH Munglinup Receival Site 10754 - South Coast Hwy Munglinup WA 6450	Survey Area: 68.93ha of CBH Munglinup Receival Site property and an adjacent portion of a MRWA road reserve spanning from SLK 366.48 to 367.75. Total survey area of 75.27 ha. Type: Reconnaissance Flora, Vegetation and Basic Fauna Survey. The survey identified and mapped the dominant vegetation units, assessed vegetation condition and completed opportunistic searches for conservation significant ecological communities and flora and fauna taxa. Timing: Out-of-season survey on 6th – 7th July 2022. Survey Results Shapefile TRIM Ref: D24#1246034 Document TRIM Ref: D24#1246022

3 SURVEY RESULTS

In accordance with CPS 818/17 condition 8 (e) (iii), a copy of the relevant sections of the executive summary and report conclusions from the biological survey and/or field assessments are provided in [Appendix 1](#).

3.1 Summary and Analysis of Flora and Vegetation Surveys

The BDS out-of-season survey (2022) employed traverses which aimed to identify and map the different vegetation units, their conditions, and undertake intensive targeted surveys within suitable habitat for conservation significant species. Seven relevés were also used to record species occurrence and representative vegetation descriptions. The BDS spring survey (2023) employed traverses and aimed to determine the presence of targeted flora which the out-of-season survey (BDS 2023) would not have been able to detect due to them flowering during spring. The targeted species were:

- Endangered
 - *Conostylis lepidospermoides*
- Priority 2

- *Caesia viscida* and *Thysanotus brachiatus*
- Priority 3
 - *Daviesia pauciflora*, *Pterostylis faceta*, *Opercularia acolytantha*, *Stylidium pulviniforme*, and *Sphaerolobium validum*
- Priority 4
 - *Goodenia phillipsiae*, *Thysanotus parviflorus* and *Dampiera deltoidea*.

One hundred and seventy three flora species were recorded, which consisted of 44 families and 103 genera. One hundred and fifty three of these are native species and 21 are introduced. No conservation-significant flora were identified during the BDS-out-of-season (2022) survey. The spring survey (BDS 2023) detected an additional 70 flora species, which comprised of 49 families and 143 genera. The spring survey also did not record any Threatened or Priority flora.

Both BDS surveys (2022 and 2023) identified one TEC/PEC within their Survey Area; the Kwongkan Shrubland (KSH), which meets the criteria for '*Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia*' ((Endangered under the EPBC Act 1999) / (P3 under the BC Act 2016)).

The BDS out-of-season (2022) and BDS spring survey (2023) vegetation units and their conditions are shown on **Table 3** and **Table 4**.

Table 3. BDS Out-of-Season Survey (2022) Vegetation Types and Conditions within the Survey Area

Vegetation Unit	Condition Rating	Area (ha)
Kwongkan Shrubland (KSH)	Excellent	5.346
	Very Good	1.002
	Good	1.676
	Degraded	1.036
Invasive Novel Ecosystem (INE)	Completely Degraded	38.266
	Cleared	21.598
Total		68.93

Table 4. BDS Spring Survey (2023) Vegetation Types and Conditions within the Survey Area

Vegetation Unit	Condition Rating	Area (ha)
Kwongkan Shrubland (KSH)	Excellent	10.54
	Very Good	1.06
	Good	1.58
	Degraded	1.58
	Completely Degraded	0.79
Invasive Novel Ecosystem (INE)	Degraded	0.10
	Completely Degraded	1.33
	Cleared	9.21
Total		26.2

Main roads conducted a review of the spatial data as supplied by BDS (2022 and 2023). It was noted that areas of cleared ground within the road maintenance zone have been mapped as native vegetation in Excellent quality. Main Roads conducted a review of the provided spatial data based on a VD String Line (Main Roads pick up of edge of the maintenance zone) and review of aerial

imagery to map the vegetation with greater accuracy. **Plate 1** illustrates an example of inaccuracies in the mapping where previously cleared areas have been mapped as Excellent quality Kwongan TEC.



Plate 1: Example of inaccuracies in the Biological Survey spatial data

Areas presented within this document utilise the revised Main Roads dataset which has been adjusted for greater accuracy. The areas and condition ratings of the vegetation within the proposed DE are shown on **Table 5**. The areas of Kwongan TEC intersected by the Clearing Area are shown in **Figure 3**.

Table 5. Vegetation Condition within the Development Envelope

Vegetation Condition Within DE		
	Area (ha)	Percentage of DE (%)
Excellent	5.38	57.82
Very Good	0.87	9.31%
Good	1.03	11.04%
Degraded	1.08	11.62%
Completely Degraded	0.95	10.21%
Cleared	0.07	0.78%
Total Vegetation in ha (No cleared areas)	9.30	100%

It is noted within the reports that two species of non-vascular taxa were identified within the desktop assessment, namely the P2 *Amanita inculta* mushroom and P3 *Xanthoparmelia subimitatrix* lichen. These species have been listed as a major constraint to the survey due to experience of personnel.

Amanita inculta is listed as having a known record 20 km distant associated with *Melaleuca uncinata* or Acacia/ Allocasuarina scrub. *Melaleuca uncinata* does not occur within the survey area and Allocasuarina and Acacias are not dominant genera Proteaceous Kwongan shrubland. Furthermore, the species has a known distribution as far north as Yalgoo. Based on the above, the survey area does not appear to have any of the species preferred habitat features and it is suggested that

although there may be some possibility of *Amanita inculta* occurrence, it is unlikely. No further analysis of the species is presented in this document.

Xanthoparmelia subimitatrix is noted to occur on granite or lateritic rock, the survey area noted within BDS (2023) as containing a gravel/ sand duplex. It is queried as why this species was listed as Possible to occur and it is suggested that it is Unlikely to occur due to lack of suitable habitat.

Upon revision of likelihood of occurrence, and as these species are outside of the scope of the survey and experience of the personnel, it is suggested they have been included as they have been identified within broad desktop searches, without regard to specifics of habitat preference. No further analysis of the species is presented in this document.

3.2 Summary and Analysis of Fauna Surveys

The BDS out-of-season survey (2022) conducted a fauna assessment concurrent with the flora and vegetation survey. A total of 58 species of fauna were recorded from the survey; this comprised of 25 birds, 10 mammals, three reptiles, and 15 invertebrates. One Carnaby's Cockatoo (Threatened), quenda (Priority 4), and one western brush wallaby were a part of the 58 species detected from the survey. The BDS out-of-season survey (2022) mapped one sighting of, and feeding debris from Carnaby's Cockatoo that are within the DE; however, outside the Clearing Area. Although seven significant trees were identified to be within the Survey Area, five are mapped to be within the proposed DE, and none are mapped to be within the Clearing Area. Furthermore, none contained hollows or the potential to develop hollows.

A majority portion of the habitat mapped within the DE by BDS (2022) is "Proteaceous Heath", listed as "High Quality" Carnaby's Cockatoo foraging and roosting habitat, and Quenda foraging habitat and shelter.

Main Roads agrees that the survey area contains Carnaby's Cockatoo foraging habitat in the form of proteaceous heath (also representing the Kwongan TEC); however, notes that the survey areas contains a few scattered trees. Review of relevé data as presented in BDS (2022) lists no trees (or Mallee) over 8m in height within the proteaceous heath, furthermore the report states:

"Isolated yates provided potential roosting habitat for Carnaby's Cockatoo. There was no evidence of roosting detected within the survey area and none of the significant trees recorded contained hollows nor had the potential to form hollows suitable for use by breeding cockatoos."
Pg. 37 (BDS 2022)

The isolated yates correspond to the Individual trees habitat types as outlined in **Table 6**, of which there is 0.09ha within the DE and no occurrence within the Clearing Area.

It is suggested that as there appears to be no trees of suitable height to accommodate Black Cockatoo Roosting within the proteaceous heath (based on relevé data), no evidence of roosting was located, and that the text of the report suggests that roosting habitat does not occur within this habitat type, that the proteaceous heath was labelled as roosting habitat erroneously within the report.

All the habitat types mapped by BDS to be within the DE and those contained within the Clearing Area are presented in **Table 6**. The maximum area of this habitat type impacted by the proposal is

0.50 ha. The areas of Proteaceous Heath Fauna Habitat contained within the Clearing Area are shown in **Figure 4**.

As displayed in **Figure 4**, a small portion of the north-western end of the DE was not covered by fauna habitat spatial data supplied by (BDS 2022). However, as the spring survey (BDS 2023) assessed this north-western section and mapped it as Kwongkan TEC (consistent with adjacent areas), it is reasonable to assume this unmapped area comprises the Proteaceous Heath Fauna Habitat type. The area of unmapped fauna habitat within the Clearing Area and would likely be Proteaceous Heath is only 0.0015 ha. The areas of Proteaceous Heath outlined in **Table 6** accounts for this and includes this extrapolated area within calculations.

Table 6. Fauna Habitat Types within DE and Clearing Area

Habitat Type	Amount within DE (ha)	Amount within Clearing Area
Proteaceous Heath	8.71	0.50
Individual Trees	0.09	N/A
Open Stubble or Grassy Paddock	0.5	N/A
Total	9.3	0.50

Main Roads WA employs the Bamford Scoring Tool (BCE 2020) to determine a numerical value that can be used to reflect the significance of foraging habitat for Black Cockatoos. This can be subsequently utilised to inform offset calculations. The Bamford Scoring Tool has been applied to this Proposal and is summarised with justification in **Table 7**.

Table 7 Carnaby's Cockatoo Foraging Habitat Value Assessment using the Bamford Scoring Tool

Scoring Tool Components	Score	Score Value Description	Justification of Score
Site Condition	4	Kwongkan / Shrubland in which species of foraging value have 20-40% projected foliage cover.	The Native Vegetation Clearing Area is situated within a mapped distribution of Kwongkan TEC.
Site Context	0	'Local' breeding unlikely <0.1%	Nearest BC breeding site is ~75.5km east of the Clearing Area. Furthermore, the total area of Kwongkan TEC (Carnaby's Cockatoo Habitat) within a 15km radius of the Clearing Area is 18,100.46ha; the 0.50ha of cleared vegetation only accounts for <0.0001% of this total area.
Species Stocking Rate	1	BC species seen or reported regularly and/or there is abundant foraging evidence.	Evidence of Carnaby's Cockatoo feeding such as feeding debris recorded to be within the native vegetation surrounding the Clearing Area.
Total	5		

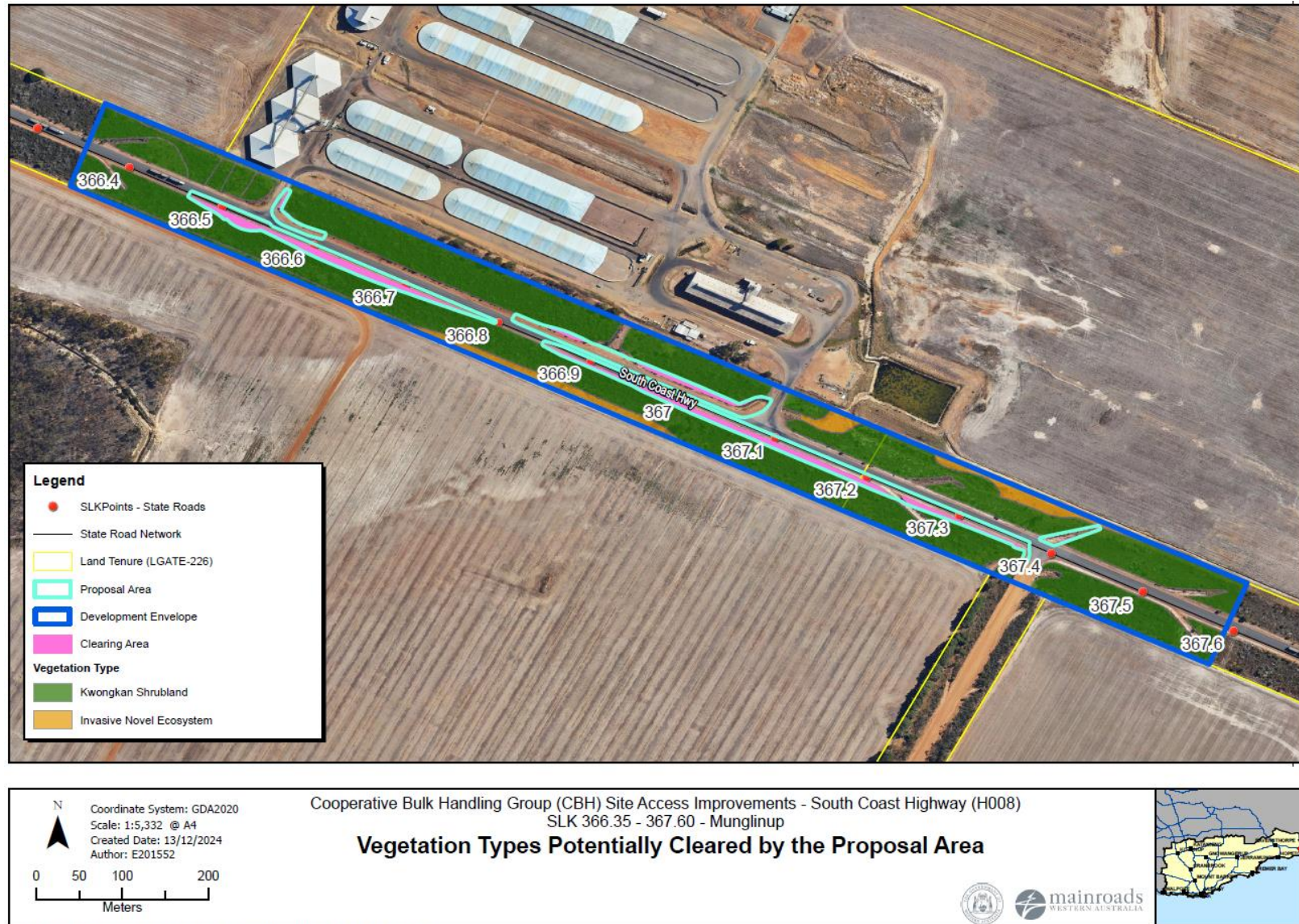


Figure 3 Vegetation Types Potentially Cleared by the Proposal Area for CBH Site Access Improvements

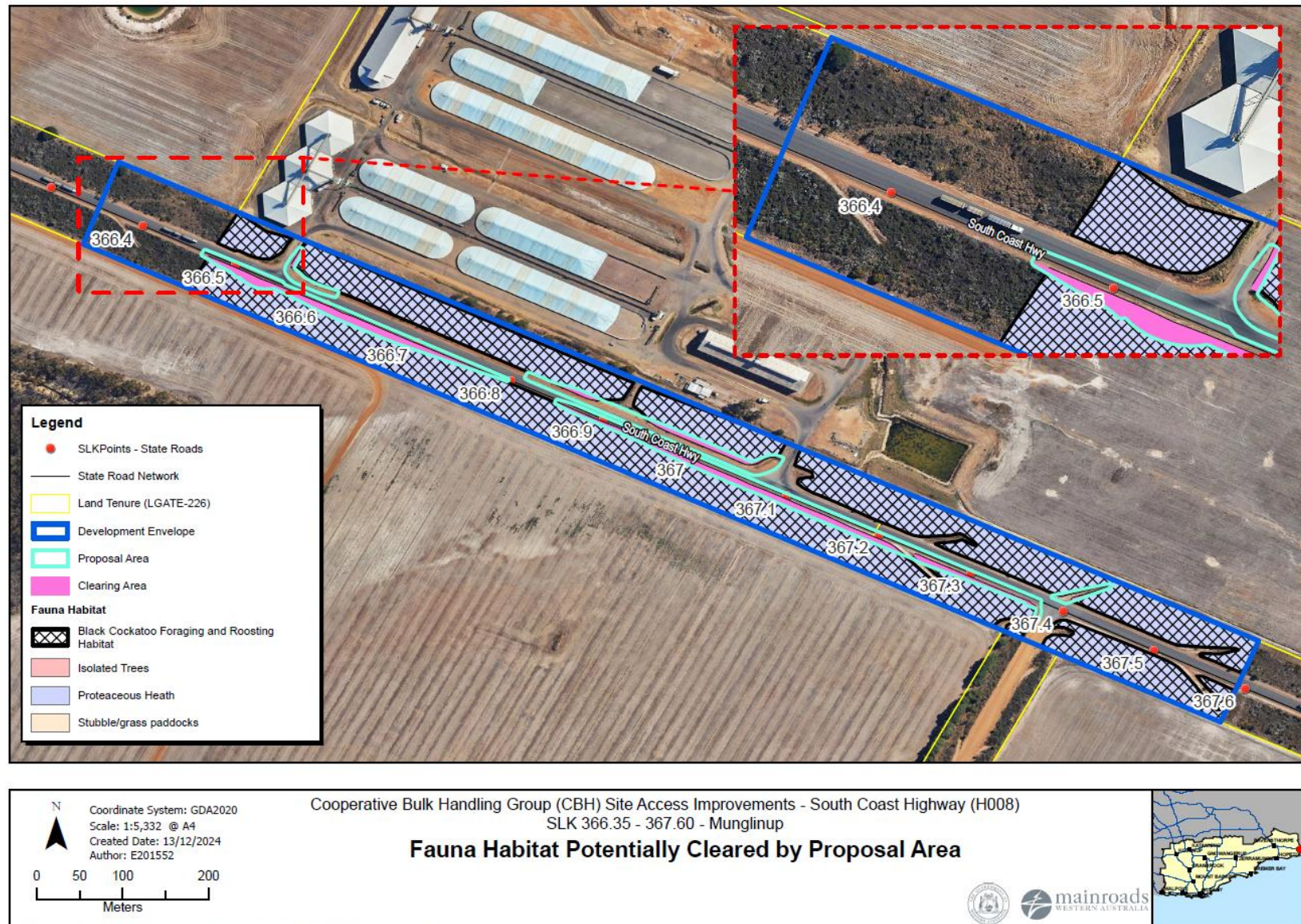


Figure 4 Fauna Habitat Potentially Cleared by the Proposal Area for CBH Site Access Improvements

4 DESKTOP ASSESSMENT OF VEGETATION

4.1 Desktop Vegetation Description

Table 8 and **Table 9** provide details of the vegetation types within the DE and the remaining extents of these associations. **Table 10** outlines the Native Vegetation Clearing Area amount.

ArcGIS desktop assessments identified the DE to be within a mapped distribution of the '*Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia*' (EN). The BDS surveys corroborate this as they identified the vegetation unit within the proposed DE as Kwongkan Shrubland (KSH), which meets the criteria for '*Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia*' (EN).

For a full description of the existing vegetation, refer to the *Bio Diverse Solutions (2022) Reconnaissance Flora, Vegetation and Basic Fauna Survey Report: CBH Munglinup Receival Site 10754 - South Coast Hwy Munglinup WA 6450* and the *Bio Diverse Solutions (2023) Reconnaissance and Targeted Flora and Vegetation Survey Report: CBH Munglinup Receival Site 10754 - South Coast Hwy Munglinup WA 6450*.

Table 8. Summary of Vegetation Types within Development Envelope

Vegetation Unit	Area (ha)
Kwongkan Shrubland (KSH)	8.71ha
Invasive Novel Ecosystem (INE)	0.58ha
Total	9.30ha

The DE is within the Esperance Plains Bioregion and Recherche (ESP02) subregion and contains one vegetation association:

Table 9. Pre-European Vegetation Representation (Beard 1975)

Pre-European Vegetation Association	Scale	Pre-European Extent (ha)	Current Extent (ha)	% Remaining	% Current Extent in DBCA Managed Land (proportion of pre-European Extent)
Veg Assoc No. 47	Statewide WA	1,033,054.74	370,435.09	35.86	49.99
	IBRA Bioregion Esperance Plains	959,935.91	336,492.07	35.05	18.58
	IBRA Sub-region Recherche	413,535.24	62,275.32	15.06	1.74
	Local Government Authority Ravensthorpe	328,155.16	149,850.14	45.66	21.04

As outlined within **Section 3.1**, recent orthorectified aerial imagery and the VD stringline from the Proposal's Ground Survey (i.e. the extent of the previously disturbed maintenance/construction zone within the South Coast Highway Road corridor) was used to refine the BDS data and remove cleared areas that were previously mapped as containing vegetation. Kwongkan TEC accounts for 8.71ha of the proposed DE with the proposed earthworks footprint requiring the clearing of up to 0.50 ha of the TEC. Introduced and invasive species were also identified by BDS within "Degraded" and "Completely Degraded" areas of the DE. The area and condition of vegetation within the clearing area is presented in **Table 10**.

Table 10 Summary of Vegetation Condition within Clearing Area

Vegetation Condition	Area (ha)	Percentage within DE (%)
Excellent	0.44	4.69%
Very Good	0.038	0.41%
Good	0.009	0.09%
Degraded	0.018	0.20%
Completely Degraded (Invasive Novel Ecosystem)	0.0001	0.00%
Total	0.50	5.39%

5 ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

In assessing whether the Proposal's proposed clearing is likely to have a significant impact on the environment, the Proposal was assessed against the ten Clearing Principles (EP Act, Schedule 5).

Each principle has been assessed in accordance with the former Department of Environment Regulation (now Department of Water and Environmental Regulation (DWER) '*A Guide to the Assessment of Applications to Clear Native Vegetation*' (Department of Environment Regulation, 2014) and other relevant clearing permit application decision reports prepared by DWER.

The proposed clearing is at variance to Clearing Principle (B) and (D) and likely to be at variance with Clearing Principle A) of the ten Clearing Principles.

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Proposed clearing is likely to be at variance to this Principle.

Assessment

Vegetation and Flora

The Native Vegetation Clearing Area will impact up to 0.50ha of the Kwongkan Shrubland vegetation unit (KSH), which meets the criteria for 'Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia' (Endangered under the EPBC Act 1999). This vegetation unit has condition ratings that range from "Degraded" to "Excellent". The amount of Native Vegetation Clearing and their conditions are outlined on **Table 10**. However, this proposed clearing only marginally reduces the extent of the Kwongkan TEC in the immediate area given DE contains 8.71ha of the TEC. The reduction of the 8.71ha of Kwongkan TEC to 8.21ha, represents a 5.74% decrease. The Clearing Area retains 38m-40m of the 40m width of the Kwongkan TEC available within the road corridor, therefore it is unlikely to significantly affect the biological diversity within the immediate area of the function road reserve as an ecological corridor. Furthermore, the clearing of 0.50 ha of Kwongkan TEC is not significant on a local or regional scale given that 9,106.14ha of the TEC remains within 10km from the DE, and an estimated 504,749.8ha remains in the Southwest of WA according to DBCA restricted TEC datasets.

A total of 243 flora taxa representing 93 families and 246 genera were identified from the two BDS surveys (2022 and 2023). Both surveys did not locate any Threatened or Priority flora, with the targeted flora survey (BDS 2023) suggesting in their post field survey likelihood of occurrence assessment that all targeted significant flora identified during their desktop assessment are unlikely to occur due them being undetected after adequate survey effort.

Fauna and Fauna Habitat

Carnaby's Cockatoo sightings and feeding debris have been recorded within the DE by BDS (2022). BDS has classified the vast majority of vegetation within the DE as "Proteaceous Heath", noted as comprising Carnaby's Cockatoo foraging habitat and Quenda foraging habitat and shelter. The Clearing Area will directly impact 0.50ha of the Proteaceous Heath Fauna Habitat, which represents only 6.13% of the total Proteaceous Heath Habitat within the DE. Seven significant trees were identified from the survey area by BDS (2022; although five of these are within the DE, none are within the proposed earthworks footprint (Clearing Area), and none contained hollows or displayed the potential to develop hollows. The nearest known Black Cockatoo roosting site is 16.3km south of the DE, and the nearest breeding area is 75.5km east of the DE. The DE is also outside the Western Ringtail Possum Management Zone.

The BDS (2022) noted evidence for Quenda occurrence in the form of diggings and scat within the DE. Evidence in the form of tracks for *Notamacropus Irma* (Western Brush Wallaby) are also recorded to be within the DE; however, it is outside of the Clearing Area. The BDS (2022) reports a small amount of scat was detected for the Western Brush Wallaby; however, they suggest that due to the low activity of the species the individual detected is transient.

The Native Vegetation Clearing Area is a part of vegetation corridor which could potentially be used by species as movement corridors or ecological linkages in between the East Naernup Nature Reserve (~2.2km west of the DE) and the Munglinup Nature Reserve (~6.5km southeast of the DE). However, as the proposed works comprise minor areas of clearing in a linear strip adjacent to the existing road formation, fragmentation of the remnant native vegetation is avoided, retaining a 38m-40m width of the native vegetation within this corridor. Therefore, impacts are not considered significant.

Due to the location of the proposed clearing area within Kwongan TEC and the suitability of the habitat for significant species, the proposed clearing is likely to be at variance with this principle.

Methodology

- Reconnaissance flora, vegetation and basic fauna survey (BDS 2022)
- Reconnaissance and targeted flora and vegetation survey (BDS 2023)
- DCCEEW Protected Matters Search Tool Report
- Government GIS Shapefiles:
 - DBCA Threatened and Priority Ecological Community database search (Accessed December 2024)
 - DBCA Threatened and Priority flora database search (Accessed December 2024)

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna .

Proposed clearing is at variance to this Principle.

Assessment

The DE comprises of 8.71ha of "Proteaceous Heath" habitat, representing "High Quality" Carnaby's Cockatoo foraging habitat and *Isoodon fusciventer* (Quenda) foraging habitat and shelter (BDS 2022). Furthermore, it is a potential shelter and foraging habitat for the fork-tailed swift (MI), tammar wallaby (P4), heath rat (VU), dibbler (EN) and western whip bird (EN). Based on MRWA GIS analysis of the vegetation within the DE, the maximum amount of the Proteaceous Heath Fauna habitat to be cleared is 0.50 ha, comprising narrow strips adjacent to the existing road (**Figure 4**).

As outlined in clearing principle a), BDS has also mapped five significant trees within the DE; however, none are situated within the Native Vegetation Clearing Area and none contain hollows or exhibited the potential to develop hollows. Based on DBCA BC Breeding and Roosting layers, the nearest roosting site is 16.3km south of the DE, and the nearest BC breeding site is 75.5km east of the DE, reducing the value of the foraging habitat for Black Cockatoo Species within the DE.

Furthermore, the clearing of 0.50ha of foraging habitat is not significant on a local or regional scale given that an estimated 9,106.14ha of TEC remains within 10km from the DE, and an estimated 504,749.8ha remains in the Southwest of WA according to the restricted DBCA TEC layer.

BDS (2022) also provides evidence for Quenda occurrence as it states that diggings and scat have been recorded within the DE. Evidence in the form of tracks for *Notamacropus Irma* (Western Brush Wallaby) are also recorded to be within the DE; however, it is outside of the Proposal Area. The BDS (2022) also report a small amount of scat was detected for the Western Brush Wallaby; however, they suggest that due to the low activity of the species the individual detected is transient.

The Native Vegetation Clearing Area is a part of vegetation corridor which could potentially be used by species as movement corridors or ecological linkages in between the East Naernup Nature Reserve (~2.2km west of the DE) and the Munglinup Nature Reserve (~6.5km southeast of the DE). However, as the proposed works comprise minor areas of clearing in a linear strip adjacent to the existing road formation, fragmentation of the remnant native vegetation is avoided, retaining a 38m-40m width of the native vegetation within this corridor. Therefore, impacts are not considered significant.

The proposal is at variance to this principle.

Methodology

- Reconnaissance flora, vegetation and basic fauna survey (BDS 2022)
- Reconnaissance and targeted flora and vegetation survey (BDS 2023)
- Government GIS Shapefiles:
 - DBCA Threatened and Priority fauna database search (Accessed December 2024)
- Species specific conservation listing advice and recovery plans

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.**Proposal is not at variance to this Principle.****Assessment**

BDS (2022 & 2023) report that no Threatened flora was recorded during the two surveys. The likelihood of occurrence assessment conducted post-survey of the targeted flora assessment (BDS 2023), concluded that none of the targeted Threatened flora are considered likely, or possible to occur, due to adequate search effort. Further, the DBCA Threatened and Priority Flora, and the DBCA WA Herbarium shapefiles indicate that no Threatened Flora have been recorded to be within the Native Vegetation Clearing Area.

Based on the above, the proposed clearing is not at variance to this principle.

Methodology

- Reconnaissance flora, vegetation and basic fauna survey (BDS 2022)
- Reconnaissance and targeted flora and vegetation survey (BDS 2023)
- Government GIS shapefiles:
 - DBCA Threatened and Priority flora database search (Accessed December 2024)

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Proposed clearing is at variance to this Principle.

Assessment

ArcGIS desktop assessments identified the DE, and consequently, the Native Vegetation Clearing Area to be within a mapped distribution of the '*Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia*', which is listed as endangered and protected under the EPBC 1999 Act). BDS (2022) corroborate this as they identified the vegetation unit within the proposed DE as Kwongkan Shrubland (KSH), which meets the criteria for '*Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia*' (EN). Spatial data from BDS indicates that Kwongkan TEC accounts for 8.71ha of the proposed DE, with the proposal requiring the clearing of up to 0.50 ha of the TEC.

The clearing of 0.50ha of Kwongkan TEC is not significant on a local and regional scale given that an estimated 9,106.14ha of TEC remains within 10km from the DE, and an estimated 504,749.8ha remains in the Southwest of WA according to the restricted DBCA TEC layer.

Methodology

- Reconnaissance flora, vegetation and basic fauna survey (BDS 2022)
- Reconnaissance and targeted flora and vegetation survey (BDS 2023)
- Government GIS shapefiles:
 - DBCA Threatened Ecological Community database search (Accessed December 2024)

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Proposed clearing is not likely to be at variance to this Principle.

Assessment

The Native Vegetation Clearing Area is situated within the Esperance Plains Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and the Recherche (ESP02) subregion. The Native Vegetation Clearing Area has been broadly mapped as Vegetation Association 47, which is described as "*Proteaceous scrub and mallee heaths on sandplain overlying Eocene sediments; rich in endemics.*" **Table 9** in **Section 4.1** summarises the extent of pre-European Vegetation association 47 remaining.

The current extent of Vegetation Association 47 is higher than 30% for pre-European extent for Statewide, IBRA Bioregion, and LGA. The proposed clearing of up to 0.50ha of remnant vegetation that is representative of Vegetation Association 47 represents <0.0001 of the extent remaining within the Shire of Ravensthorpe. The proposed clearing will not lead to the remaining extent of Vegetation Association 47 below the threshold of 30% at a local, regional or State scale.

The proposed clearing is not likely to be at variance to this principle.

Methodology

- Aerial photography
- Reconnaissance flora, vegetation and basic fauna survey (BDS 2022)
- Reconnaissance and targeted flora and vegetation survey (BDS 2023)
- Government GIS shapefiles:
 - Pre-European vegetation (Accessed December 2024)
- Statewide Vegetation Statistics (Government of Western Australia 2018)

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Proposed clearing is not likely to be at variance to this Principle.

Assessment

The Native Vegetation Clearing Area does not intersect or is within:

- an Internationally Important Wetland (i.e. RAMSAR)
- a Nationally Important Wetland;
- any mapped South Coast Significant Wetlands

The nearest water course to the Native Vegetation Clearing Area is ~670m to the east (a minor, non-perennial watercourse).

The Native Vegetation Clearing Area is adjacent to a proclaimed groundwater area under *The Rights in Water and Irrigation Act 1914* (RIWI Act) – the Kondinin-Ravensthorpe Groundwater Area. The proposed works do not require ground disturbance with a depth that will impact the water table or include dewatering or drainage modifications; no anticipated impacts to the Kondinin-Ravensthorpe Groundwater Area.

Based on the above, the proposed clearing is not likely to be at variance with this principle.

Methodology

- Reconnaissance flora, vegetation and basic fauna survey (BDS 2022)
- Reconnaissance and targeted flora and vegetation survey (BDS 2023)
- Government GIS shapefiles:
 - Geomorphic Wetlands (Accessed December 2024)
 - Ramsar Wetlands (Accessed December 2024)
 - Important Wetlands (Accessed December 2024)
 - Watercourses (Accessed December 2024)
 - RIWI Act Rivers (Accessed December 2024)

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Proposed clearing is not at variance to this Principle.

Assessment

BDS (2022) state that the survey area is situated within the Munglinup System (245Mu), described as *"Gently undulating plain and rises on Tertiary marine sediments wrapping around occasional highs of Proterozoic gneiss"*.

The Native Vegetation Clearing Area is mapped as having:

- a low salinity risk (L1 - <3% of map unit has a moderate to high salinity risk or is presently saline)
- a low flood risk of L1 (<3% of map unit has a moderate to high flood risk)
- A low waterlogging risk of L1 (<3% of map unit has a moderate to very high waterlogging risk)
- A low water erosion risk of L1 (<3% of map unit has a high to extreme water erosion risk)
- A wind erosion risk of H2 (>70% of map unit has a high to extreme wind erosion risk)

As outlined above, soils within the Native Vegetation Clearing Area have a low risk of land degradation other than wind erosion. However, the proposed clearing is for road improvements which will be exposed for short periods of time prior to being sealed, land degradation through wind erosion is very unlikely.

The Native Vegetation Clearing Area is also within an area that is mapped as having an extremely low probability of occurrence for Acid Sulphate Soils (CSIRO ASRIS); with the closest high probability area being ~900m southeast from the Native Vegetation Clearing Area.

The proposed clearing will temporarily expose the natural soils which may increase the risks related to erosion. However, the minimal amount of clearing proposed, is not likely to cause appreciable land degradation.

The proposal is not at variance to this Principle.

Methodology

- Reconnaissance flora, vegetation and basic fauna survey (BDS 2022)
- Government GIS Shapefiles:
 - Acid Sulfate Soil Risk Map (Accessed December 2024)
 - Soil landscape land quality – Water Erosion Risk (Accessed December 2024)
 - Soil landscape land quality – Wind Erosion Risk (Accessed December 2024)
 - Soil landscape land quality – Salinity Risk (Accessed December 2024)
 - Soil landscape land quality – Waterlogging Risk (Accessed December 2024)
 - Soil landscape land quality – Flood Risk (DPIRD-007) (Accessed December 2024)

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**Proposed clearing is not at variance to this Principle.****Assessment**

A search of ArcGIS shapefiles indicates that the closest Nature Reserve or Conservation area is located ~2.2km west; the East Naernup Nature Reserve. The Munglinup Nature Reserve is also situated ~6.5km southeast. Due to the separation distance from the Proposal Area to the nearest conservation areas, impacts are not anticipated.

The clearing is not at variance to this Principle.

Methodology

- Reconnaissance flora, vegetation and basic fauna survey (BDS 2022)
- Government GIS Shapefiles:
 - DBCA Legislated Lands and Waters & Lands of Interest (Accessed December 2024)
 - DBCA Lands of Interest (Accessed December 2024)

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Proposed clearing is not at variance to this Principle.

Assessment

Analysis of ArcGIS shapefiles reveals there are no Public Drinking Water Source Areas (PDWSAs), or catchments proclaimed under the *Country Areas Water Supply Act 1947* (CAWS Act) within 10km of the proposed DE. However, the proposed DE is adjacent to (but not within) a proclaimed groundwater area under *The Rights in Water and Irrigation Act 1914* (RIWI Act) – the Kondinin-Ravensthorpe Groundwater Area. The proposed clearing works do not require ground disturbance to a depth that will impact the water table or include dewatering or drainage modifications; no anticipated impacts to the Kondinin-Ravensthorpe Groundwater Area.

The nearest water course (minor, non-perennial) to the DE is ~519m east. Furthermore, the DE does not intersect nor is it in proximity to any permanent rivers or wetlands. The DE is within a mapped area of “L1 - <3% of map unit has a moderate to high salinity risk or is presently saline”. The DE is also within an area that is mapped as having an extremely low probability of ASS occurrence, with the nearest high probability area being situated ~900m southeast from the DE.

The Proposal is surrounded by highly disturbed and degraded areas related to existing agricultural activities, development, and roads. The small amount of native vegetation clearing proposed is unlikely to cause direct or indirect deterioration in surface or groundwater quality.

The proposed clearing is not at variance to this Principle based on the above reasons.

Methodology

- Reconnaissance flora, vegetation and basic fauna survey (BDS 2022)
- Government GIS Shapefiles:
 - RIWI Act, Surface Water Areas and Irrigation Districts (Accessed December 2024)
 - CAWSA Part 2A Clearing Control Catchments (Accessed December 2024)
 - RIWI Act, Groundwater Areas (Accessed December 2024)
 - Soil landscape land quality - Salinity Risk (Accessed December 2024)
 - Groundwater Salinity Statewide (Accessed December 2024)
 - Acid Sulfate Soil risk mapping (Accessed December 2024)

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Proposed clearing is not at variance to this Principle.

Assessment

According to BDS (2022), the survey area is situated within the Munghlinup System (245Mu), with system being described as *"Gently undulating plain and rises on Tertiary marine sediments wrapping around occasional highs of Proterozoic gneiss"*.

BDS (2022) report that the closest open Bureau of Meteorology (BoM) site is Munghlinup West (Station #012044). Based on climate data from this BoM station, the average annual rainfall the region receives is 430.6 (BoM 2024), the majority of which falls between the months of May to October.

The Proposed DE is located within an area categorised as "L1 - <3% of map unit has a moderate to high flood risk" and "L1 - <3% of map unit has a moderate to very high waterlogging risk". Existing established drainage associated with the road corridor will not be altered. The minimal area of clearing proposed along an already cleared highway is unlikely to result in an increased risk of flooding.

The nearest water course to the Native Vegetation Clearing Area is ~670m to the east, and it does not intersect or is in proximity to any permanent rivers or wetlands.

Based on the above, the proposed clearing is not at variance with this principle.

Methodology

- Reconnaissance flora, vegetation and basic fauna survey (BDS 2022)
- BoM Website (Accessed December 2024)
- Government GIS Shapefiles:
 - Soil landscape land quality - Waterlogging Risk (Accessed December 2024)
 - Soil landscape land quality - Flood Risk (Accessed December 2024)

6 VEGETATION MANAGEMENT

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum. A Vegetation Management Plan (VMP) has been developed to manage and minimise vegetation clearing for the Proposal (refer to Appendix 2).

7 REHABILITATION, REVEGETATION AND OFFSETS

7.1 Revegetation and Rehabilitation

No temporary clearing will be undertaken as part of the Proposal activities and therefore no revegetation or rehabilitation will be conducted under CPS 818.

7.2 Offset Proposal

In accordance with CPS 818 condition 11(a), to offset the residual impacts from clearing 0.50ha of Carnaby's Cockatoo Foraging Habitat (also representing Kwongan TEC), Main Roads has developed an offset proposal in accordance the current WA environmental offsets Policy.

Main Roads will work with DWER to finalise this proposal.

8 STAKEHOLDER CONSULTATION

Main Roads will undertake stakeholder consultation in accordance with CPS 818 Condition 8.

9 COMPLIANCE WITH CPS 818

Table 11 summarises what further pre-clearing impact assessment is required in accordance with CPS 818.

Table 11. Summary of Additional Management Actions Required by CPS 818

Impact of Clearing	Yes/No or NA	Further Action Required
1. The CAR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.	Yes	1. Clearing Report to be published on website and submissions sought for 21 days. 2. Submissions invited from relevant parties, including the LGA, the owner or occupier of the land and other stakeholders in accordance with Condition 8 of CPS 818. 3. VMP has been completed, refer to Appendix 2. 4. An offset proposal for approval by DWER will be prepared. 5. Summary of submissions and a statement addressing each of those submissions to be published on website.
2. Clearing is at variance or may be at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality <u>or</u> (j) the incidence of flooding.	No	No further action required.
3. Clearing is at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality <u>and</u> (j) the incidence of flooding.	No	No further action required.
4. The Proposal involves clearing for temporary works (as defined by CPS 818).	No	No further action required.
5a. Proposal is within a Region that: • has rainfall greater than 400mm; and, • is South of the 26th parallel; and, • works are necessary in 'Other than dry conditions'; and, • works have potential for uninfested areas to be impacted.	Yes	Works will be within a region that has rainfall greater than 400mm and is within the South of the 26 th parallel. However, works will be undertaken within dry conditions and will be conducted in accordance with standard management actions from MRWA PEMR's and MRWA Vehicle and Plant Hygiene Checklist will be completed.

Impact of Clearing	Yes/No or NA	Further Action Required
5b. Do the proposed works require clearing within or adjacent to DBCA managed lands in non-dry conditions?	No	No further action required.
6. Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback.	No	No further action required.
7. Weeds are likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.	No	No further action required.
8. Did an environmental specialist conduct the survey or field assessment?	Yes	The Environmental Specialist undertaking the biological assessments was suitably qualified and had more than three years' experience.
9. Did an environmental specialist prepare the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal?	Yes	The Environmental Specialist preparing the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal was suitably qualified and had more than three years' experience.

10 REFERENCES

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11 APPENDICES

Appendix 1: CPS 818 condition 8 (e) (iii) Biological Surveys and Field Assessment Executive Summary and Report Conclusions

Bio Diverse Solutions (2022) Reconnaissance Flora, Vegetation and Basic Fauna Survey Report: CBH Munglinup Reveal Site 10754 - South Coast Hwy Munglinup WA 6450

Executive Summary

Cooperative Bulk Handling (CBH, herein referred to as “the client”) commissioned Bio Diverse Solutions as Environmental Consultants to undertake an out-of-season reconnaissance flora, vegetation and basic fauna survey for a total of 68.93 ha at their Munglinup Reveal Site 10754, South Coast Highway within the Shire of Ravensthorpe. The reconnaissance surveys were required to assess the environmental impacts on native vegetation and fauna that may result from the proposed site expansion. The development envelope and specific plans had not been finalised at the time of the survey, and represent a due diligence for incorporation into this planning process.

Two vegetation units were recorded during the survey, namely vegetation unit 1: Kwongan Shrubland (KSH), and vegetation unit 2: Invasive Novel Ecosystem (INE). Vegetation unit 2: INE was almost entirely restricted to the area internal to CBH reveal site, consisting of the bare open areas previously cleared that contained vegetation, in a completely degraded state. Additionally, within a large portion of this area was cleared, consisting of buildings and infrastructure. Vegetation unit 1: KSH was entirely restricted to the road reserve of South Coast Highway, and ranged from an ‘Excellent’ to ‘Degraded’ condition. A total of 173 flora species were recorded, comprised of 152 native species and 21 introduced species. All recorded introduced species were listed as ‘Permitted – s11’ under the Biosecurity and Agriculture Management Act 2007, and no Weeds of National Significance were detected (IPAC, 2017). No conservation-significant flora was identified. There was a sedge observed to have striking similarity to the Endangered *Conostylis lepidospermoides*, however the specimen contained insufficient taxonomic information to be confirmed. A targeted spring survey is recommended for the detection of numerous Priority and Threatened flora identified in the desktop assessment. 14 species identified in the desktop assessment as ‘Likely’ or ‘Possible’ to occur had significant limitations impacting their detectability, such as due to flowering period not occurring at the time of the survey. This specifically relates to a sedge species that bore similarities to threatened *Conostylis lepidospermoides*, but was not flowering at the time of the survey. Lastly, Vegetation Unit 1: KSH was considered to bear significant resemblance to the TEC (Federal EPBC Act 1999) / PEC (State BC Act 2018) ‘Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province (Kwongan)’, with further targeted vegetation Surveys required to definitively determine.

A total of 58 species of fauna were recorded including five amphibians, 25 birds, 10 mammals, three reptiles and 15 invertebrates. Of the 58 species detected, one was listed as Threatened (Carnaby’s Cockatoo) and two were Priority listed (quenda and western brush wallaby). No migratory species were detected. Seven introduced species were also detected, including one that has not previously been detected in the Esperance area (*Milax gagates*), with its closest known record near Albany. Six fauna habitat types were identified within the survey area, including open paddock, disturbed drainage areas, constructed dams, sedge fringed wetlands, and proteaceous heath. Of these habitats, the proteaceous heath and wetland/ dam areas provide the highest quality habitat for fauna in the survey area.

The proteaceous heath habitat type contains a significant diversity of feed species for Carnaby’s Cockatoo and birds were sighted and heard feeding within and adjacent to the survey area, and evidence of feeding was found scattered throughout this habitat type. The level of current observed and historical evidence of

feeding activity, and the diversity and quantity of food species suggests that the proteaceous heath habitat type is a high quality and preferred feeding area for Carnaby's Cockatoo. Isolated yates within the survey area provided potential roosting habitat for Carnaby's Cockatoo however, there was no evidence of roosting detected and none of the significant trees recorded contained hollows nor had the potential to form hollows suitable for use by breeding cockatoos. Results from application of the 'Foraging Habitat Tool' (DoEE, 2017b) indicate that foraging habitat for Carnaby's Cockatoo within the survey area falls within the category of 'high quality', which supports field observations. The total area of high-quality foraging habitat available for Carnaby's Cockatoo within the proteaceous heath occurs over an area of 9.9 ha. The EPBC Act 1999 Referral Guidelines for Three Threatened Black Cockatoo Species stipulate that a proposal should be referred for assessment if more than 1 ha of high-quality habitat is to be removed. Work requiring disturbance of the proteaceous heath habitat type will need to be referred for assessment under the EPBC Act 1999.

The proteaceous heath habitat type also contains high quality shelter and feeding habitat for quenda (P4) and western brush wallaby (P4), which were detected within the survey area, as well as potential shelter and foraging habitat for the fork-tailed swift (MI), tammar wallaby (P4), heath rat (VU), dibbler (EN) and western whip bird (EN). The roadside vegetation is likely to be an important movement corridor for all of these species if they are present in the survey area or the surrounding reserves.

The ephemeral and permanent wetland areas and dams within the survey area contain potential (low quality) habitat for a range of migratory wading birds, including the curlew sandpiper (*Calidris ferruginea*, CR/MI), pectoral sandpiper (*Calidris melanotos*, MI), red-necked stint (*Calidris ruficollis*, MI). These species spend winter in Australia and are highly detectable where they are present. They were not present during dawn surveys and are considered unlikely to use the area. The wetland areas also contain potential habitat for three species of migratory bird that are known to be outside of Australia during the survey period. These include the pacific golden plover (*Pluvialis fulva*, MI), wood sandpiper (*Tringa glareola*, MI), and marsh sandpiper (*Tringa stagnatilis*, MI). Given these species were not likely to have been detected during the survey, it should be assumed that they are possible visitors to the area during their non-breeding periods. For each of these species however, habitat within the survey area is low quality and unlikely to provide significant feeding resources. High levels of fox activity observed onsite are likely to further reduce the favourability of potential habitat.

The BDS Reconnaissance Flora, Vegetation and Basic Fauna Survey Report (2022) does not include a conclusion.

Bio Diverse Solutions (2023) Reconnaissance and Targeted Flora and Vegetation Survey Report: CBH Munglinup Receiving Site 10754 - South Coast Hwy Munglinup WA 6450

Executive Summary

Cooperative Bulk Handling (CBH), herein referred to as "the client" commissioned Bio Diverse Solutions as Environmental Consultants to undertake a reconnaissance and targeted flora and vegetation survey during the spring flowering season at the proposed CBH Munglinup Receiving Site 10754 expansion at South Coast Highway, Munglinup WA 6450. The purpose of this survey is to provide environmental assessment data for the planning and development of the proposed site, including determining whether any Threatened or Priority flora species or ecological communities were present or are likely to be present within the survey area, and an assessment of the vegetation units and their condition. An out-of-season survey was conducted in July 2022, outlining the need for a spring targeted flora and vegetation survey due to numerous spring-flowering species likely to have been undetectable in winter and quadrat analysis required for analysis of Threatened ecological community criteria. Therefore, the targeted component of this spring survey was conducted within the area previously surveyed during the out-of-season reconnaissance survey (BDS, 2022). An additional area, outside of the original out-of-season July reconnaissance survey area, had also been

identified as requiring surveying. It was within this additional area that the reconnaissance component of the spring survey was conducted. This report provides additional information and is complimentary to the July reconnaissance survey conducted (BDS, 2022). It documents and summarises key results from both surveys, and presents the analysis of the spring reconnaissance and targeted survey.

Two vegetation units were recorded during the out-of-season July reconnaissance survey, namely Vegetation Unit 1: Kwongkan Shrubland (KSH), and Vegetation Unit 2: Invasive Novel Ecosystem (INE). All vegetation within the additional survey area was recorded as Vegetation Unit 1: KSH. Vegetation Unit 2: INE was entirely restricted internally to CBH receival site, which was not assessed during the spring reconnaissance and targeted survey. Vegetation Unit 1: KSH was located within the road reserve of South Coast Highway, and ranged from an 'Excellent' to 'Completely Degraded' condition, with small buffer areas experiencing edge effects adjacent to agricultural property, the road and CBH receival site.

An additional 70 flora species were identified during the spring reconnaissance and targeted survey, resulting in a total of 243 flora species being recorded across the two surveys within the survey area. This comprised of 213 (additional 61 from spring survey) native species and 30 (additional nine from spring survey) introduced species. This represents an extremely high level of species richness, representing biological diversity. No species of priority or threatened flora were detected within the survey area, with all flora species listed as non-threatened. All recorded introduced species were listed as 'Permitted – s11' under the under the Biosecurity and Agriculture Management Act 2007, and no Weeds of National Significance were detected (IPAC, 2017).

Some limitations were present when assessing the presence of species identified as 'likely' or 'possible' to occur on the desktop assessment. These related to limitations that were not altered by surveying the area at a different time. In particular, the north-eastern portion of the road reserve (present within the area covered by the out-of-season July reconnaissance survey) was recently burnt and currently in an early stage of regeneration. Some species targeted within this area may have been present only within the soil seed bank. Where germinants were present, they may not of not have been identifiable due to the absence of key identifying characters. Additionally, two species of non-vascular flora were identified within the desktop assessment, namely P2 *Amanita inculta* mushroom and P3 *Xanthoparmelia subimitatrix* lichen. These were beyond the expertise of surveyors and further specialist surveys may be required to determine if present.

A targeted vegetation survey was conducted specifically within Vegetation Unit 1: KSH to determine whether vegetation met the Threatened (Endangered under the EPBC Act 1999) / Priority (P3 under the BC Act 2016) Ecological Community 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (Kwongkan)'. Vegetation Unit 1: KSH had been identified during the out-of-season July reconnaissance survey as likely to meet Kwongkan TEC / PEC, with further quadrat analysis required. This was conducted during the spring reconnaissance and targeted survey. All quantitative and qualitative criteria for Kwongkan TEC / PEC was met by Vegetation Unit 1: KSH. A total of 15.55 ha of Kwongkan TEC / PEC within Vegetation Unit 1: KSH was present within the survey area.

The BDS Reconnaissance and Targeted Flora and Vegetation Survey Report (2023) does not include a conclusion.

Appendix 2: Vegetation Management Plan

Cooperative Bulk Handling Group (CBH) Site Access Improvements – South Coast Highway (H008) SLK 366.35 - 367.60, Munglinup.

Purpose and Scope

This Vegetation Management Plan (VMP) has been prepared by Main Roads for the purpose of managing native vegetation clearing impacts associated with the Cooperative Bulk Handling Group (CBH) Site Access Improvements – South Coast Highway (H008) SLK 366.35 - 367.60, Munglinup.

The Proposal requires localised widening and access modifications to South Coast Highway (H008) SLK 366.35 - 367.60 to accommodate for the CBH facility's increased grain storage capacity. The modifications to site access at the CBH Munglinup Bin, comprise of a turning bulge and localised windings at the site exit and a declaration/slip lane and localised widening at the site entry. Two existing culverts along the main alignment requiring removal and replacement and the existing culvert at the site exit requiring extending. Ground disturbing activities required for the works include, the preparation of the foundation, construct embankment and pavement layers, cut and reshape drains, removal of two culverts and installation of two culverts.

The Proposal will require up to 0.50ha clearing of remnant native vegetation within a 12.42ha Development Envelope (DE).

In specified circumstances, Main Roads VMP is required to be approved by Department of Water and Environmental Regulation (DWER) as a condition of the Main Roads Statewide Clearing Permit CPS 818/17.

Actions, and their relevant timeframes, from this VMP will be documented within the relevant Tender Documentation (Specifications), such as:

- Specification 204 Environmental Management
- Specification 301 Vegetation Clearing and Demolition
- Specification 303 Materials and Water
- Specification 304 Revegetation
- Specification 304 Rehabilitation of Disturbed Areas.

Once the Contract has been awarded, the Superintendent's Contract Management Team (or equivalent roles) are to ensure that the requirements are implemented by the Contractor.

Avoiding, Mitigating and Managing the Impacts of Clearing

A number of measures were undertaken to during the development and design of the proposal to reduce its impact the environment.

For further information on the alternatives that were considered during the proposal development, please go to Section 1.5 of the Clearing Assessment Report for the proposal.

For further information on the measures undertaken to avoid, minimise, reduce and manage the proposal's clearing impacts, please go to Section 1.6 of the Clearing Assessment Report for the proposal.

VMP Actions

General vegetation management actions to be undertaken is shown in Appendix 2.1: General Vegetation Management Actions for Clearing.

Appendix 2.1: General vegetation management actions for clearing

Management Action	Responsibility	Timing
The Contractor must ensure plant, machinery and equipment, is cleaned down prior to arrival to the site.	Superintendent	During construction
Vehicle hygiene inspection checklists will be utilised to manage potential weed/dieback spread on earth-moving machinery.	Superintendent	During construction
No known dieback infested soil, mulch, fill or other material will be permitted into the works area.	Superintendent	During construction
All Clearing must be undertaken in such a way to allow fauna to move out of the Clearing area.	Superintendent	During construction
The Limits of Vegetation Clearing will be demarcated on site prior to the commencement of clearing to prevent entry into areas of native vegetation.	Superintendent	During construction
Natural drainage pathways will not be obstructed from stockpile gravel, crushed rock and excavated material.	Superintendent	During construction
All recently cleared, exposed and loose surface areas shall be protected from wind, water and soil erosion.	Superintendent	During construction
The Contractor will ensure that clearing of native vegetation is only undertaken in dry conditions, unless otherwise approved and / or directed by the Superintendent.	Superintendent	During construction
All Special Environmental Areas will be pegged in accordance with Main Roads' Drawing 201928-0001-1 Construction Peg Colour Code (https://www.mainroads.wa.gov.au/globalassets/technical-commercial/technical-library/standard-contract-drawings/vegetation/construction-environmental-management/201928-0001-construction-peg-colour-code-drawing.pdf?v=49bd3b).	Superintendent	During construction
The Contractor must develop and detail a Site induction training program as part of the CEMP that includes as a minimum, the significant environmental impacts, actual or potential, of work activities associated with the Contract	Superintendent	During construction

The following specific actions shall also be implemented and will be the responsibility of the Superintendent to ensure they are completed prior to clearing commencing, unless otherwise specified:

- Prepare and implement a Construction Environmental Management Plan.
- A ground disturbance process is developed and implemented by the Contractor and signed off by the Main Roads Superintendent.
- The Contractor is to ensure that a suitably qualified ecologist with species experience in Black Cockatoos is on-site during clearing of Black Cockatoo Foraging Habitat.

The above actions will be documented within Specifications 204 and 301.

Main Roads' preclearing **Hold Point** applies to all projects that require vegetation clearing, as documented within Specification 301 (301.12 PRE-CLEARING PROCESS). Accordingly, all Hold Point actions must be signed off prior to clearing commencing. This Hold Point comprises the following actions:

1. Prior to the commencement of any clearing operations, the Contractor must certify for the Superintendent's verification and approval that the following activities have been completed in accordance with the relevant specification:
 - a) The pegging of limits of vegetation clearing has been undertaken.
 - b) The pegged vegetation clearing area does not exceed the Limits of Vegetation Clearing.
 - c) Mature trees have been conserved as far as practicable.
 - d) The pegging of special environmental areas has been undertaken.
 - f) All pre-clearing weed control has been undertaken.
 - g) All pre-clearing fauna operational controls have been undertaken.
 - h) All pre-clearing dieback operational controls have been undertaken.
 - i) Suitable and unsuitable topsoil zones have been identified.
 - j) Vegetation and topsoil stockpile locations have been identified.
 - o) All clearing machinery is compliant with controls.

Monitoring and Maintenance Program

The Superintendent's Contract Management Team shall monitor the implementation of management actions that are a **Hold Point**. **Hold Point** actions must be signed off by the Superintendent's Representative to confirm it has occurred and recorded within the Superintendent's Contract Management Plan.

Non-Compliance

Non-compliance with management actions will trigger corrective actions, preventative actions and/or an incident investigation. Non-compliances will be recorded with Main Roads incident management system and reviewed by Main Roads Manager Environment.

The need for reporting non-compliances with VMP management actions to DWER will be determined as part of an incident investigation.