

OFFICIAL



mainroads
WESTERN AUSTRALIA

Clearing Assessment Report/ Vegetation Management Plan (VMP)

—
CPS 818

*We're working for
Western Australia.*

Collie Williams Road (M066) Improve Sightlines
South West Region
EOS 3441

Contents

1	PROPOSAL	5
1.1	Purpose and Justification	5
1.1.1	Main Roads Approach to Road Safety and the Environment	5
1.2	Proposal Scope	5
1.3	Proposal Location	6
1.4	Clearing Details	6
1.5	Alternatives to Native Vegetation Clearing Considered During Proposal Development	11
1.6	Measures to Avoid, Minimise, Reduce and Manage Proposal Clearing Impacts	11
1.7	Approved Policies and Planning Instruments	13
2	SCOPE AND METHODOLOGY ASSESSMENT OF CLEARING	14
2.1	Report Terminology and Sources	14
2.2	Desktop Assessment	14
2.3	Surveys and Assessments	14
3	SURVEY RESULTS	15
3.1	Summary of Biological Assessment (Main Roads 2024)	15
4	VEGETATION DETAILS	18
4.1	Proposal Site Vegetation Description	18
5	ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES	20
6	VEGETATION MANAGEMENT	35
7	REHABILITATION, REVEGETATION & OFFSETS	36
7.1	Revegetation and Rehabilitation	36
7.2	Offset Proposal	36
8	STAKEHOLDER CONSULTATION	36
9	COMPLIANCE WITH CPS 818	37
10	REFERENCES	39
11	APPENDICES	41
	Appendix 1: CPS 818 condition 8 (e) (iii) Biological Surveys and Field Assessment Executive Summary and Report Conclusions	41
	Appendix 2: Vegetation Management Plan	44
	Appendix 2.1: General vegetation management actions for clearing	46

List of Figures

Figure 1. Proposal Area	7
Figure 2. Study Area	8
Figure 3. Clearing Area	9

List of Tables

Table 1. Measures Undertaken to Avoid, Minimise, Reduce and Manage the Proposal Clearing Impacts 12

Table 2. Summary of Biological and Targeted Surveys Relevant to the Proposal 15

Table 3. Pre-European Vegetation Representation 19

Table 4. Vegetation Complexes (Heddle/Mattiske) within the Development Envelope..... 19

Table 5. Summary of Additional Management Actions Required by CPS 818.....37

Document Control

Report Compilation & Review	Name and Position	Document Revision	Date
Author	Environment Officer	Draft	20/10/2024
Review	Senior Environment Officer	Draft	23/10/2024
Author	Environment Officer	Rev 0	24/10/2024
Review	Senior Environment Officer	Rev 0	25/10/2024

1 PROPOSAL

1.1 Purpose and Justification

Main Roads South West Region are proposing works to improve sightlines along Collie Williams Road at the intersection of the Collie Battery project (Figure 1). The works are required to provide improved sight lines and road user safety given land use has intensified and heavy vehicle traffic entering and exiting Collie Williams Road has increased. The proposal is part of Main Roads Western Australia's ongoing efforts to improve road infrastructure and ensure the safety of motorists across the South West Region.

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 and enhancing 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

The proposed works include:

- Land acquisition and accommodation works (fencing) on land to the north west
- Removal of selected vegetation

- Relocation of services (Telstra)
- Earthworks to flatten the batter on the north west side of Collie Williams Road to improve sightlines around the curve.

1.3 Proposal Location

The proposal area is located on Collie Williams Road (M066) between 14.9 to 15.2 SLK in the Shire of Collie as shown in Figure 1. The central coordinate of the proposal is 116.2924076°E and 33.307784°S. The Study Area is a 10 km radius of the proposal area as is shown on Figure 2.

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818:

0.09 ha.

Areas of Native Vegetation Clearing:

The areas of native vegetation to be cleared are shown in Figure 3.

Type of Native Vegetation:

The vegetation composition comprises scattered *Eucalyptus marginata* (jarrah) and *Corymbia calophylla* (marri) primarily over cleared road reserve and paddocks and other common weeds. Scattered native shrubs are present on the top of the existing road batter in a highly degraded, narrow and small slivers of vegetation which are largely composed of weeds and are flanked by the existing road formation and agricultural paddocks. Plates 1 and 2 are shown below to provide images of the subject vegetation and highly disturbed context.



Figure 1. Proposal Area

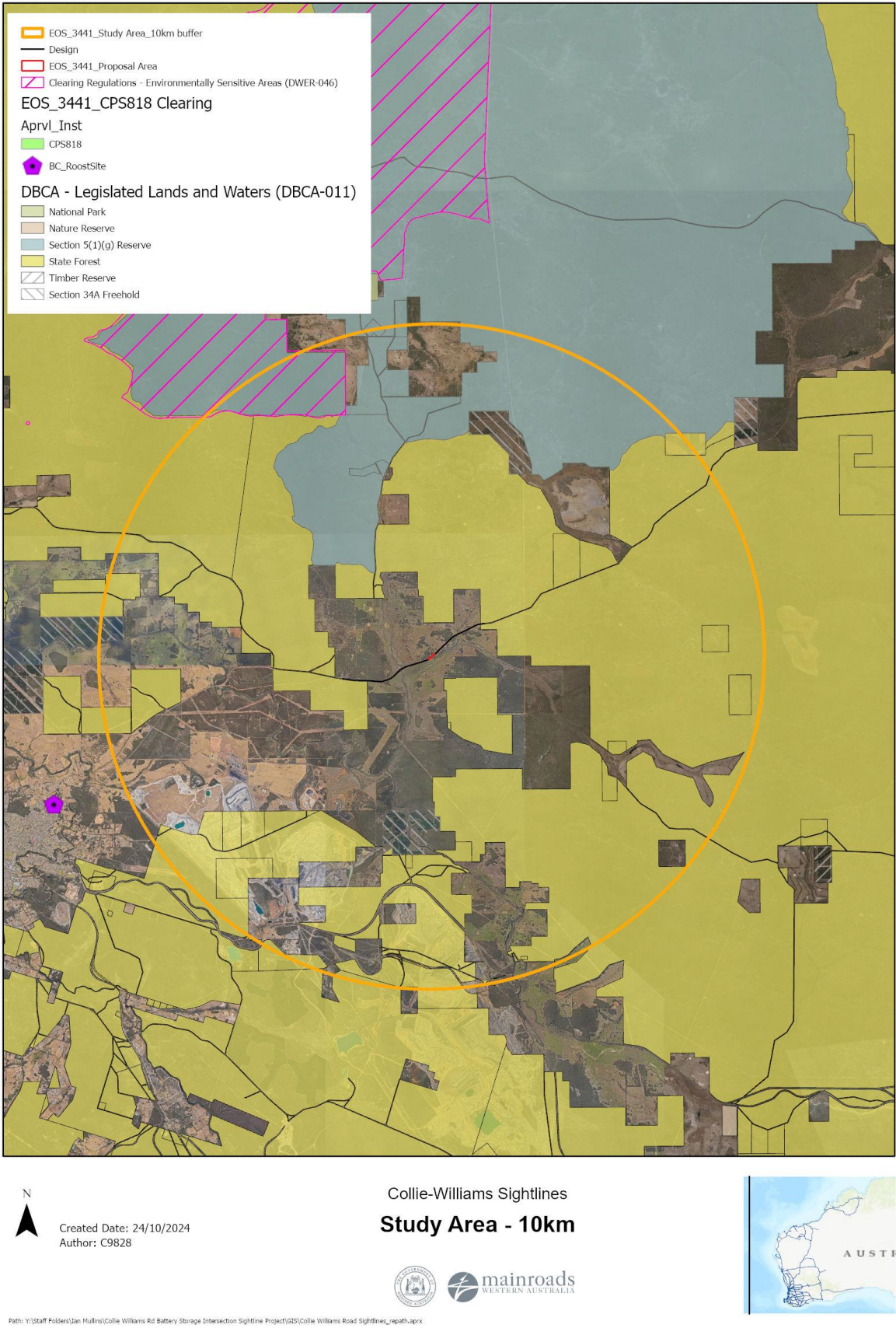


Figure 2. Study Area



Figure 3. Clearing Area



Plates 1 & 2: Street view showing highly degraded vegetation comprising scattered trees over primarily cleared road reserve and paddocks and other common weeds with scattered native shrubs.

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 and sightlines, however this will potentially result in a poorer safety outcome and may result in future fatalities or serious injuries and further degradation of the State road asset.
- 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 requirement to upgrade the intersection and the presence of the Water Corporation pipeline on the south side of Collie Williams Road, the proposed works can only be located on the north side of Collie Williams Road.
Alternative alignment located within pasture or degraded areas	Locating the intersection within pasture areas would require more overall clearing and therefore it was not considered further. Trees are being removed for sightlines only.
Steepen batter slopes	Earthworks are proposed to flatten the batter on the north west side of Collie Williams Road to improve sightlines around the curve. The works are required to provide improved sight lines and road user safety given land use has intensified and heavy vehicle traffic entering and exiting Collie Williams Road has increased.
Installation of barriers	The installation of safety barriers would not reduce the clearing footprint. Thus, this is not a suitable measure to avoid clearing vegetation.

1.7 Approved Policies and Planning Instruments

The clearing of native vegetation in Western Australia is regulated under the 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&D Act)
- *Soil and Land Conservation Act 1945* (WA)
- *Rights in Water and Irrigation Act 1914* (WA) (RIWI Act)
- *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 (DER, 2014)
- Procedure: Native vegetation clearing permits (Government of WA, October 2021)
- 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
- Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black cockatoo (Department of Agriculture, Water and the Environment (DAWE) (2022)
- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan (Department of Parks and Wildlife, 2013)

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.

To comply with CPS 818, 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 *Environmental Protection Act 1986* (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** – 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.
- **Proposal Area** – The total footprint of the proposal including both cleared and uncleared areas. This is based on the current design. It usually includes a buffer to allow for constructability and the movement of machinery during construction.
- **Study Area** – Area covered by the Desktop Assessment. The Study Area for the proposal is confined to a local area of a 10 km radius.
- **Survey Area** – Area covered by the Biological Survey, which is typically larger than the Proposal Area.

2.2 Desktop Assessment

A desktop assessment of the Proposal 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:

- Environmental Site Inspection, including targeted flora and habitat tree assessment (Main Roads, 2024)

The assessments conducted are outlined in Table 2 and a summary of the findings are presented in Section 3.1

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

Consultant & Survey Name	Survey Details
Main Roads (2024) – Environmental Site Inspection Report for Clearing Assessment Report (CAR)	Survey Area: Proposal Area. Type: Environmental Site Inspection including targeted flora survey and habitat tree assessment. Timing: 27 July and 26 September 2024. No significant survey limitations were noted. Timing was appropriate, rainfall preceding the survey was sufficient, there were no access limitations or disturbances (e.g. no recent fire), the proportion of flora recorded was sufficient, and identifications were able to be undertaken to rule out significant flora Survey Results Shapefile TRIM Ref: NA Document TRIM Ref: D24#1104323

3 SURVEY RESULTS

In accordance with CPS 818 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 of Biological Assessment (Main Roads, 2024)

A Main Roads Environment Officer undertook an initial site inspection on 27 July 2024 to:

- Discuss design, walk the clearing line, identify diameter at breast height trees, inspect for black cockatoo habitat features (hollows, foraging evidence, roosting evidence), assessment of vegetation type/condition, flora species (including weeds) and taking representative photos.
- Discussed on-site with Project Manager all opportunities to limit clearing requirements.

A follow-up site inspection was undertaken by a Main Roads Ecologist and Senior Environment Officer, and an Environment Officer on 26 September 2024 during the recommended spring survey season for the southwest. Prior to the site inspection, a desktop review was undertaken of the environmental characteristics of the site, including searches of DBCA databases and federal PMST (10 km search radius) for significant flora, ecological communities and fauna with potential to occur. In the field, the entire Proposal Area was covered on foot to confirm previous site inspection findings and collect further data on flora, vegetation and fauna. Vegetation type and condition were described, all observed flora species were recorded and a targeted survey for conservation significant flora was undertaken. Fauna assessment included habitat tree assessment to identify trees with DBH ≥ 50 cm, presence of hollows, foraging evidence or other signs of use by threatened black cockatoos.

No significant survey limitations were noted. Both officers have experience in undertaking similar surveys in the southwest, sufficient background information on the flora and vegetation of the area was available, the timing was appropriate, rainfall preceding the survey was sufficient, there were no access limitations or disturbances (e.g. no recent fire), the proportion of flora recorded was sufficient, and identifications were able to be undertaken to rule out significant flora.

The Proposal Area is located in the Northern Jarrah Forest subregion of the Jarrah Forest IBRA Region near the border of the Southern Jarrah Forest subregion. The Proposal Area is also located on the Darling Plateau and the Pindalup downstream valleys phase soil unit (DPIRD-027) which is

characterised by shallow minor valleys (5-10m) dominated by broad (75-250m) swampy floors. Soils are loamy gravels, deep sands, with saline and non-saline wet soils on the valley floors.

In broad scale vegetation mapping (DPIRD-006, DBCA-047) the Proposal Area has been mapped as:

- Vegetation Association 1114 ('shrublands tree-heath; paperbark over teatree thickets'), and
- Vegetation Complex Swamp ('mosaic of low open woodland of *Melaleuca preissiana* - *Banksia littoralis*, closed scrub of *Myrtaceae* spp., closed heath of *Myrtaceae* spp. and sedgeland of *Baumea* and *Leptocarpus* spp. on seasonally wet or moist sand, peat and clay soils on valley floors in all climatic zones').

However, the Proposal Area is also adjacent to the mapped extent of more upland vegetation:

- Vegetation Association 3 ('medium forest; jarrah-marri'), and
- Vegetation Complex Pindalup ('open forest of *Eucalyptus marginata* subsp. *thalassica* - *Corymbia calophylla* on slopes and open woodland of *Eucalyptus wandoo* with some *Eucalyptus patens* on the lower slopes in semiarid and arid zones').

The Proposal Area is located on the northern side of Collie Williams Road with the Collie Battery project located on the southern side of the road. The Proposal Area is primarily cleared road reserve with scattered trees over paddocks in an area with a long history of agriculture. Scattered native shrubs are present on the top of the existing road batter in some areas however these areas are degraded, narrow and small slivers of vegetation which are largely composed of weeds and are flanked by the existing road formation and agricultural paddocks.

There are no watercourses within or adjacent to the Proposal Area. The nearest watercourse, Pollard Creek, is over 120 m to the south east within the same land as the Collie Battery Project and is separated from the Proposal Area by Collie Williams Road.

With regard to local and regional ecological linkages, the proposed works are within a highly modified landscape with primarily cleared road reserve and scattered trees over paddocks. There are no local linkage corridors, with the local area consisting of some small and larger patches of vegetation separated by areas of cleared agricultural land. The nearest South West Regional Ecological Linkage line is over 900 m to the west associated with the Bingham River, and vegetation within the Proposal Area is not contiguous with this linkage corridor, separated by a large cleared agricultural area.

The Proposal Area has been largely cleared and extensively disturbed in the past through road construction and agricultural activities. Native vegetation is limited to scattered individuals along a narrow strip (approx. 1 m wide) at the top of the road batter, between the road and a fenceline. Grassed pasture areas are present on the other side of the fence.

The vegetation composition of the area has been extensively modified in the past and currently comprises scattered *Eucalyptus marginata* (jarrah) and *Corymbia calophylla* (marri) over scattered native shrubs particularly Grasstrees (*Xanthorrhoea preissii*), Zamia (*Macrozamia riedlei*) and Prickly Moses (*Acacia pulchella*), over grassland of common weed species. The vegetation was not representative of the mapped Vegetation Association 1114 or Swamp Complex, but rather a degraded form of the adjacent upland Vegetation Association 3 and Pindalup Complex.

The entire Proposal Area was traversed on foot and no significant flora species were recorded. A likelihood of occurrence assessment for significant flora, with post-survey likelihood of occurrence for all being 'unlikely'.

There are no known records of significant ecological communities within a 10 km radius of the Proposal Area and therefore none are considered likely to occur. Further, as the vegetation in the Proposal Area is in Completely Degraded condition, it is unlikely to be representative of any significant ecological community.

Fauna habitat included remnant scattered trees over predominantly cleared understorey/weedy grassland. Three *Eucalyptus marginata* (jarrah) trees and one *Corymbia calophylla* (marri) tree all with DBH >50cm (no hollows) were identified within the Proposal Area. Further, there were nine smaller trees (DBH <50cm, no hollows) including jarrah (eight trees) and marri (one tree). Evidence of black cockatoo foraging was recorded within the Proposal Area and red-tailed black cockatoos were heard outside the Proposal Area. No evidence of black cockatoo roosting or nesting was observed. No evidence of other conservation significant fauna species was observed.

4 VEGETATION DETAILS

4.1 Proposal Site Vegetation Description

The Proposal Area is located in the Northern Jarrah Forest subregion of the Jarrah Forest IBRA Region near the border of the Southern Jarrah Forest subregion. The Proposal Area is also located on the Darling Plateau and the Pindalup downstream valleys phase soil unit (DPIRD-027) which is characterised by shallow minor valleys (5-10m) dominated by broad (75-250m) swampy floors. Soils are loamy gravels, deep sands, with saline and non-saline wet soils on the valley floors.

In broad scale vegetation mapping (DPIRD-006, DBCA-047) the Proposal Area has been mapped as:

- Vegetation Association 1114 ('shrublands tree-heath; paperbark over teatree thickets'), and
- Vegetation Complex Swamp ('mosaic of low open woodland of *Melaleuca preissiana* - *Banksia littoralis*, closed scrub of *Myrtaceae* spp., closed heath of *Myrtaceae* spp. and sedgeland of *Baumea* and *Leptocarpus* spp. on seasonally wet or moist sand, peat and clay soils on valley floors in all climatic zones').

However, the Proposal Area is also adjacent to the mapped extent of more upland vegetation:

- Vegetation Association 3 ('medium forest; jarrah-marri'), and
- Vegetation Complex Pindalup ('open forest of *Eucalyptus marginata* subsp. *thalassica* - *Corymbia calophylla* on slopes and open woodland of *Eucalyptus wandoo* with some *Eucalyptus patens* on the lower slopes in semiarid and arid zones').

The vegetation was not representative of the mapped Vegetation Association 1114 or Swamp Complex, but rather a degraded form of the adjacent upland Vegetation Association 3 and Pindalup Complex.

Table 3 and Table 4 provide details of the remaining extents of these associations and complexes.

The Proposal Area is located on the northern side of Collie Williams Road with the Collie Battery project located on the southern side of the road. The Proposal Area is primarily cleared road reserve with scattered trees over paddocks in an area with a long history of agriculture. Scattered native shrubs are present on the top of the existing road batter in some areas however these areas are degraded, narrow and small slivers of vegetation which are largely composed of weeds and are flanked by the existing road formation and agricultural paddocks.

The vegetation composition of the area has been extensively modified in the past and currently comprises scattered *Eucalyptus marginata* (jarrah) and *Corymbia calophylla* (marri) over scattered native shrubs particularly Grasstrees (*Xanthorrhoea preissii*), Zamia (*Macrozamia riedlei*) and Prickly Moses (*Acacia pulchella*), over grassland of common weed species. A comprehensive list of flora species recorded across the Proposal Area is provided in the site inspection report (Main Roads, 2024).

Table 3. Pre-European Vegetation Representation

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. 3	Statewide	2,661,405	1,803,437	68	81
	IBRA Bioregion Jarrah Forest	2,390,591	1,606,102	67	81
	IBRA Sub-region Northern Jarrah Forest	908,099	723,445	79	84
	Local Government Authority Shire of Collie	158,906	130,832	82	89

Table 4. Vegetation Complexes (Hedde/Mattiske) within the Proposal Area

Hedde/Mattiske Veg Complex	Pre-European Extent (ha)	Current Extent (ha)	% Remaining
Vegetation Complex Pindalup - Pn	167,151	128,358	76

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 Principle (b) and is not at variance, or not likely to be at variance, to the remaining Clearing Principles.

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

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

The Proposal Area has been largely cleared and extensively disturbed in the past through road construction and agricultural activities. Native vegetation is limited to scattered individuals along a narrow strip (approx. 1 m wide) at the top of the road batter, between the road and a fenceline. Grassed pasture areas are present on the other side of the fence.

The Site Inspection Report by Main Roads (2024) identified 0.09 ha of native vegetation within the Proposal Area. The vegetation composition of the area has been extensively modified in the past and currently comprises scattered *Eucalyptus marginata* (jarrah) and *Corymbia calophylla* (marri) over scattered native shrubs particularly Grasstrees (*Xanthorrhoea preissii*), *Zamia* (*Macrozamia riedlei*) and Prickly Moses (*Acacia pulchella*), over grassland of common weed species.

There are no known records of Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) within the Study Area, therefore none are considered likely to occur within the Proposal Area. Furthermore, as the vegetation in the Proposal Area is in Completely Degraded condition, it is unlikely to be representative of any TEC or PEC. The entire Proposal Area was traversed on foot and no significant flora species were recorded. A likelihood of occurrence assessment for significant flora is provided in the site inspection report (Main Roads, 2024), with post-survey likelihood of occurrence for all species being 'unlikely'.

The site inspection recorded 31 vascular flora species of which 10 were introduced. No Threatened or Priority flora species were recorded during the site inspection. Of the 11 conservation significant species identified by the desktop study as potentially occurring within the Proposal Area, following the site inspection all were considered unlikely based on lack of suitable habitat, vegetation type and condition within the Proposal Area and distance to nearest records.

As discussed further under Principle (b), the Proposal Area provides suitable habitat for the three black cockatoo species, namely:

- Carnaby's Black Cockatoo (*Zanda latirostris*) – Endangered under the BC Act and EPBC Act;
- Baudin's Black Cockatoo (*Zanda baudinii*) – Endangered under the BC Act and EPBC Act; and
- Forest Red-tailed Black Cockatoo (*Calyptrorhynchus banksii naso*) – Vulnerable under the BC Act and EPBC Act.

The Proposal Area is likely to have lower environmental value in comparison to native vegetation within the local area, given the presence of large patches of intact DBCA-Managed State Forest (See Figure 2). The removal of 0.09 ha of native vegetation does not sever any local or regional ecological linkages, with the

closest regional linkages located approximately 900 m west and associated with the Bingham River. Given the proposed clearing is adjacent to existing roads and in Degraded to Completely Degraded condition, separated from good or better condition vegetation by disjunct isolated trees and interspersed with cleared agricultural areas, it does not provide a high regional ecological value.

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

Methodology

- Main Roads (2024)
- DCCEEW (2024a)
- DCCEEW (2024b)
- Government GIS shapefiles:
 - DBCA Threatened Fauna Searches shapefiles (Accessed September 2024)
 - South West Ecological Linkages (WALGA) (Accessed September 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.

The Proposal Area contains 0.09 ha of native vegetation in Completely Degraded condition. The fauna habitat types available match the vegetation noted in the site inspection comprising scattered *Eucalyptus marginata* (jarrah) and *Corymbia calophylla* (marri) over scattered native shrubs particularly Grasstrees (*Xanthorrhoea preissii*), *Zamia* (*Macrozamia riedlei*) and Prickly Moses (*Acacia pulchella*), over grassland of common weed species.

The vegetation is highly degraded and offers limited to negligible habitat for threatened species. This includes three *Eucalyptus marginata* (jarrah) trees and one *Corymbia calophylla* (marri) tree all with DBH >50cm (no hollows). Further, there are nine smaller trees (DBH <50cm, no hollows) including jarrah (eight trees) and marri (one tree). The 0.09 ha of native vegetation is considered low to moderate quality foraging habitat for black cockatoos.

According to DBCA record data there are 17 species of Threatened and priority fauna with known records within the 10 km Study Area, including:

- Western Ringtail Possum (WRP) (*Pseudocheirus occidentalis*) – Critically Endangered under the BC Act and EPBC Act
- Woylie (*Bettongia penicillata ogilbyi*) - Critically Endangered under the BC Act and Endangered under the EPBC Act
- Carnaby's Black Cockatoo (*Zanda latirostris*) – Endangered under the BC Act and EPBC Act
- Baudin's Black Cockatoo (*Zanda baudinii*) – Endangered under the BC Act and EPBC Act
- Black-Stripe Minnow (*Galaxiella nigrostriata*) - Endangered under the BC Act and EPBC Act
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable under the BC Act and EPBC Act
- Quokka (*Setonix brachyurus*) - Vulnerable under the BC Act and EPBC Act
- Greater Bilby (*Macrotis lagotis*) - Vulnerable under the BC Act and EPBC Act
- Carter's Freshwater Mussel (*Westralunio carteri*) – Vulnerable under the BC Act and EPBC Act
- Chuditch, Western Quoll (*Dasyurus geoffroii*) – Vulnerable under BC Act and EPBC Act
- South-western Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*) – Conservation Dependent under the BC Act
- Peregrine Falcon (*Falco peregrinus*) - Specially Protected - Other Specially Protected under the BC Act
- Quenda (*Isoodon fusciventer*) – Priority 4 (DBCA Listing)
- Dell's Skink (*Ctenotus delli*) - Priority 4 (DBCA Listing)
- Tammar Wallaby (*Notamacropus eugenii derbianus*) - Priority 4 (DBCA Listing)
- Western Brush Wallaby (*Notamacropus irma*) - Priority 4 (DBCA Listing)
- Water-Rat (*Hydromys chrysogaster*) - - Priority 4 (DBCA Listing)

Mammals

The Proposal Area is outside of the WRP Swan Coastal Plain and Southern Forest Management Zones (DPaW, 2017) and vegetation within the Proposal Area is not mapped as suitable habitat by DBCA (DBCA-049). According to the DBCA Threatened Fauna Database, the species is known from two records within the 10 km Study Area, the nearest of which is over 6.9 km west of the Proposal Area. The vegetation within the Proposal Area is represented as road reserve passing adjacent to cleared land and although contains potentially suitable habitat, is isolated habitat due to roads and agriculture and does not contain Peppermint trees commonly associated with the species. Native vegetation within the Proposal Area lacks continuity with any more significant areas of habitat and thus reduces its likelihood to represent linkage habitat. Furthermore, as the Proposal Area lacks any Peppermint trees it is therefore lacking as core habitat. In addition, given the fragmented and degraded nature of the vegetation in a largely agricultural context, would suggest it is unlikely the Proposal Area would be used by the species as secondary or linkage habitat.

Woylies originally inhabited a wide range of landscapes. In the western deserts, Indigenous people reported that they occupied sand plains and dunes with *Triodia* spp. (spinifex) hummock grassland. The remnant subpopulations in south-western Australia inhabit woodlands and adjacent heaths with a dense understorey of shrubs, particularly *Gastrolobium* spp. (poison pea) (DCCEEW, 2024b). The woylie's distribution is severely fragmented, with the nearest known records over 9.2 km to the north east of the proposal area. Given the lack of nearby records, as well as the degraded, open and disturbed habitat within the proposal area presence of woylie is considered unlikely. It is not considered likely that the removal of 0.09 ha of native vegetation will have a significant direct or indirect impact on any populations of Woylie or more broadly, the persistence of the species.

There are no Quenda, Chuditch, Quokka, Water-Rat, Tammar Wallaby or Western Brush Wallaby records within 5 km of the Proposal Area. Quenda inhabit scrubby, often swampy, vegetation with dense cover up to 1 m high and often feed in adjacent forest and woodland that is burnt on a regular basis (DBCA, 2017). Chuditch habitat is largely restricted to the southwest forests of Western Australia and generally requires suitable dens or habitat logs to be present (DCCEEW, 2024b). The main habitat for mainland populations of the Quokka is dense riparian vegetation or other swampy areas (DCCEEW, 2024b). Water-Rat also occupy habitats in the vicinity of permanent water, particularly riparian vegetation (DBCA, 2012a). Tammar Wallaby inhabit dense, low vegetation for daytime shelter and open grassy areas for feeding; whilst Western Brush Wallaby prefer open forest or woodland, particularly favouring open, seasonally wet flats with low grasses and open scrubby thickets (DBCA, 2012b). Given the paucity of records in proximity to the Proposal Area, lack of ideal habitat for these species as well as the small, isolated and degraded vegetation in the Proposal Area, the presence of these species and subsequent impacts to habitat or individuals is considered unlikely.

Historically, bilbies occurred in a wide range of climatic zones, soil, vegetation types, and landforms across much of Australia including eucalypt open forest and woodland in south-western Western Australia (DCCEEW, 2024b). In the south west the bilby is considered to be locally extinct, with one single record over 7.2 km to the south east dating back to 1910. The presence of the species and subsequent impacts to habitat or individuals is considered highly unlikely.

There are two records of the South-western Brush-tailed Phascogale within the Study Area, the nearest of which is located approximately 9.2 km to the north east of the Proposal Area. The species prefers dry sclerophyll forests and open woodlands that contain hollow bearing trees but sparse ground cover (DBCA, 2012c). There are no hollow bearing trees within the Proposal Area. Given the limited habitat available and lack of records, the presence of the species and subsequent impacts to habitat or individuals is considered highly unlikely.

Birds

The Proposal Area is on the edge of the predicted breeding range of Baudin's Black Cockatoo, the known range (including breeding range) for Carnaby's Black Cockatoo and the modelled distribution for the Forest Red-tailed Black Cockatoo (DAWE, 2022). Evidence of black cockatoo foraging was recorded in the form of chewed marri nuts within the Proposal Area and red-tailed black cockatoos were heard outside the Proposal Area. No evidence of black cockatoo roosting or nesting was observed during site inspection by Main Roads Environmental Specialists during September 2024. A targeted assessment identified four DBH trees within the Proposal Area which will require clearing, none of which had hollows.

The 0.09 ha of native vegetation to be removed (largely Jarrah and marri over weeds) offers low to moderate quality foraging resources for threatened black cockatoos. The 0.09 ha of vegetation to be cleared represents 0.00027% of the 33,662.7 ha of native vegetation within 12 km (DPIRD-005) which is likely to be better quality foraging, roosting and breeding habitat for black cockatoos given it is mostly large tracts of DBCA-Managed State Forest. There are no known black cockatoo breeding sites within 66 km of the Proposal Area (DBCA-063) and known roosting sites are all greater than 12 km from the Proposal Area (DBCA-064).

The overall proposed native vegetation clearing of 0.09 ha will result in the removal of vegetation containing black cockatoo habitat as outlined below:

- Up to 0.09 ha of native vegetation within the Proposal Area assessed as low to moderate quality foraging habitat (Figure 3).
- Four trees with DBH > 500 mm, which is potential breeding habitat.
- No trees will be removed that are known roosting sites.
- No trees will be removed that contain hollows.
- No vegetation within 12 km of a known black cockatoo roosting site (DBCA-064).
- No vegetation within 66 km of a known black cockatoo nesting site (DBCA-063).

The above-listed impacts are considered relevant to all three black cockatoo species. The removal of up to 0.09 ha of low to moderate quality foraging habitat for black cockatoos is unlikely to have a significant impact to the persistence of these species in a local or regional context. The 0.09 ha of vegetation to be cleared represents 0.00027% of the 33,662.7 ha of native vegetation within 12 km (DPIRD-005) which is likely to be better quality foraging, roosting and breeding habitat for black cockatoos given a majority of this vegetation is in large tracts of DBCA-Managed State Forest. The removal of up to 0.09 ha of low to moderate quality foraging habitat, over a linear road length of 230 m, adjacent to a busy road and in Degraded to Completely Degraded condition compared to better quality native vegetation in the Study Area, is not likely to have a significant impact on any populations of black cockatoos or more broadly, the persistence of these species.

There is one record of Peregrine Falcon from 2012 over 7.7 km to the south of the Proposal Area. Whilst the species may occasionally fly over the Proposal Area, given mobility of this species, lack of numerous or nearby records it is considered impacts to individuals or the wider species are unlikely.

Reptiles

The preferred natural habitats of Dell's Skink are forest and rocky areas. The nearest record of the species is over 8.6 km to the south west of the Proposal Area. In addition to the lack records, given the degraded nature of the Proposal Area, of which there is a small and isolated patch of degraded understory without rocky areas, the presence of this species and subsequent impacts to habitat or individuals is considered unlikely.

Aquatic species

The proposed clearing area contains no habitat for aquatic species (Carters freshwater mussel and Black-Stripe Minnow).

The proposed clearing is unlikely to result in the long-term decline or significantly reduce the available habitat for any conservation significant species. The proposed clearing is adjacent to an existing highway and the clearing will not result in the fragmentation of an existing fauna population, nor interrupt any breeding cycles.

The proposed clearing is at variance to this Principle, as the Proposal Area contains 0.09 ha of native vegetation assessed as low to moderate quality foraging habitat for threatened black cockatoos.

Methodology

- DAWE (2022)
- DBCA (2012a)
- DBCA (2012b)
- DBCA (2017)
- DCCEEW (2024a)
- DCCEEW (2024b)

- DPaW (2017)
- Main Roads (2024)
- Government GIS shapefiles:
 - Black Cockatoo Breeding Sites - Buffered (DBCA-063) (Accessed September 2024)
 - Black Cockatoo Roosting Sites - Buffered (DBCA-064) (Accessed September 2024)
 - DBCA Threatened Fauna Searches shapefiles (Accessed September 2024)
 - Western Ringtail Possum Habitat Suitability (DBCA-049) (Accessed September 2024)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.

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

As part of a desktop assessment, three BC Act-listed Threatened flora species were considered to have a moderate (possible) likelihood of occurrence, including:

- *Caladenia lodgeana* (Lodge's Spider-orchid) – Critically Endangered
- *Caladenia leucochila* (Collie Spider Orchid) - Endangered
- *Diuris micrantha* (Dwarf Bee-orchid) – Vulnerable

The site inspection by Main Roads (2024) included targeted survey for conservation significant flora by a Main Roads Ecologist experienced in undertaking similar surveys in the South West. Sufficient background information on the flora and vegetation of the area was available, the timing was appropriate, rainfall preceding the survey was sufficient, there were no access limitations or disturbances (e.g. no recent fire), the proportion of flora recorded was sufficient, and identifications were able to be undertaken to rule out significant flora.

No Threatened flora species were recorded during the field survey, with all three Threatened species listed above considered unlikely to occur within the Survey Area or Proposal Area following the site inspection (Main Roads, 2024).

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

Methodology

- EPA (2016)
- Main Roads (2024)
- Government GIS shapefiles:
 - DBCA Threatened Flora Searches shapefiles (Accessed September 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 not likely to be at variance to this Principle.

There are no known records of Threatened Ecological Communities (TECs) within the Study Area and therefore none are considered likely to occur in the Proposal Area. Furthermore, as the vegetation in the Proposal Area is in Completely Degraded condition, it is unlikely to be representative of any TEC (Main Roads, 2024).

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

Methodology

- EPA (2016)
- Main Roads (2024)
- Government GIS shapefiles:
 - DBCA Threatened Ecological Community database search (Accessed September 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.

The area proposed to be cleared is up to 0.09 ha of completely degraded roadside vegetation comprising scattered *Eucalyptus marginata* (jarrah) and *Corymbia calophylla* (marri) over scattered native shrubs particularly Grasstrees (*Xanthorrhoea preissii*), *Zamia* (*Macrozamia riedlei*) and Prickly Moses (*Acacia pulchella*), over grassland of common weed species.

In broad scale vegetation mapping (DPIRD-006, DBCA-047) the Proposal Area has been mapped as:

- Vegetation Association 1114 ('shrublands tree-heath; paperbark over teatree thickets'), and
- Vegetation Complex Swamp ('mosaic of low open woodland of *Melaleuca preissiana* - *Banksia littoralis*, closed scrub of *Myrtaceae* spp., closed heath of *Myrtaceae* spp. and sedgelands of *Baumea* and *Leptocarpus* spp. on seasonally wet or moist sand, peat and clay soils on valley floors in all climatic zones').

However, the Proposal Area is also adjacent to the mapped extent of more upland vegetation:

- Vegetation Association 3 ('medium forest; jarrah-marri'), and
- Vegetation Complex Pindalup ('open forest of *Eucalyptus marginata* subsp. *thalassica* - *Corymbia calophylla* on slopes and open woodland of *Eucalyptus wandoo* with some *Eucalyptus patens* on the lower slopes in semiarid and arid zones').

As determined from the site inspection, the vegetation is not representative of the mapped Vegetation Association 1114 or Swamp Complex, but rather a degraded form of the adjacent upland Vegetation Association 3 and Pindalup Complex (Main Roads, 2024).

Pre-European Vegetation and Vegetation Complex (Havel and Mattiske, 2000) mapping within the Proposal Area is as below.

Summary of Proposal Area's Mapped Pre-European Vegetation Associations

Pre-European Association(s)	Vegetation	Clearing Description	Vegetation Condition	Comments
Vegetation Association 3 described as a 'medium forest; jarrah-marri' (Government of Western Australia, 2019a).		Clearing of up to 0.09 ha for improvement of sightlines.	Completely Degraded condition (EPA, 2016)	Vegetation description and condition determined from Environmental Site Inspection (Main Roads, 2024).

Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 3	Statewide	2,661,405	1,803,437	68	81
	IBRA Bioregion Jarrah Forest	2,390,591	1,606,102	67	81
	IBRA Sub-region Northern Jarrah Forest	908,099	723,445	79	84
	Local Government Authority Shire of Collie	158,906	130,832	82	89

Vegetation Complexes (Hedde/Mattiske) within the Proposal Area

Hedde/Mattiske Complex	Veg	Pre-European Extent (ha)	2013 Vegetation Extent	% Remaining
Vegetation Complex Pindalup – Pn (Government of Western Australia, 2019b).		167,151	128,358	76

The National Objectives and Targets for Biodiversity Conservation recognise that the retention of 30% or more of the pre-clearing extent of each ecological community is necessary if Australia's biological diversity is to be protected (Commonwealth of Australia, 2001) except in constrained areas (Perth & Peel) where 10% representation should be maintained.

There is approximately 76% of the Pindalup complex remaining and 89% of Vegetation Association 3 within DBCA Managed Land within the Shire of Collie. Statewide there is 68% of Vegetation Association 3 remaining, 81% of which is located in the DBCA reserve system.

Based on the above, the vegetation within the Proposal Area is not considered significant as a remnant of in an area that has been extensively cleared and therefore the proposed clearing is not likely to be at variance to this Principle.

Methodology

- Aerial photography
- Commonwealth of Australia (2001)
- EPA (2016)
- Government of Western Australia (2019a)
- Government of Western Australia (2019b)
- Havel and Mattiske (2000)
- Main Roads (2024)
- Government GIS shapefiles:
 - Pre-European Vegetation (DPIRD-006) (Accessed September 2024)
 - Vegetation Complexes – South West forest region of Western Australia (DBCA-047) (Accessed September 2024)

(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 at variance to this Principle.

There are no watercourses or wetlands within or in close proximity to the Proposal Area. The nearest watercourse, Pollard Creek, is over 120 m south east and is separated from the Proposal Area by Collie Williams Road.

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

Methodology

- Aerial photography
- Main Roads (2024)
- Government GIS shapefiles:
 - Geomorphic Wetlands South West (DBCA-040) (Accessed September 2024)
 - Ramsar Wetlands (DBCA-010) (Accessed September 2024)
 - Important Wetlands (DBCA-045) (Accessed September 2024)
 - Hydrography Linear (DWER-031) (Accessed September 2024)
 - RIWI Act Rivers (DWER-036) (Accessed September 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 likely to be at variance to this Principle.

The Proposal Area is located on the Darling Plateau and the Pindalup downstream valleys phase soil unit (DPIRD-027) which is characterised by shallow minor valleys (5-10m) dominated by broad (75-250m) swampy floors. Soils are loamy gravels, deep sands, with saline and non-saline wet soils on the valley floors. The Proposal Area is not mapped within an area or soils which are at risk of water erosion (DPIRD-013).

At a local and regional level, the CSIRO Acid Sulfate Soils (ASS) risk mapping indicates that sulfidic material may occur in inland lakes, waterways, wetlands and riparian zones. The Proposal Area does not contain any of these features within or adjunct. The removal of 0.09 ha of native vegetation will not result in acidification of the Proposal Area or surrounding local environment.

The clearing will occur in a previously disturbed, roadside environment and includes the reinstatement of roadside drainage. The proposed clearing is very minor in scale and located in a highly modified environment and is therefore not likely to cause appreciable land degradation.

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

Methodology

- Main Roads (2024)
- Government GIS Shapefiles:
 - Soil Landscape Mapping (DPIRD-027) (Accessed September 2024)
 - Water Erosion Risk (DPIRD-013) (Accessed September 2024)
 - Acid Sulfate Soil Risk Map (DWER-055) (Accessed September 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 likely to be at variance to this Principle.

A search of ArcGIS shapefiles indicates the Proposal Area is not within or adjacent to any conservation areas. The nearest DBCA Managed Land is Muja State Forest, located over 730 m south east of the Proposal Area. The nearest ESA, associated with Lane Pool Reserve, is over 7.2 km north of the Proposal Area.

The Proposal Area is on the edge of a busy road on highly disturbed land cleared for agricultural activities. The vegetation proposed for clearing does not provide a buffer for, or ecological linkage to, any adjacent or nearby conservation areas.

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

Methodology

- Aerial photography
- Government GIS Shapefiles:
 - DBCA Legislated Lands and Waters (DBCA-011) & Lands of Interest (DBCA-012) (Accessed September 2024)
 - South West Ecological Linkages (WALGA) (Accessed September 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 likely to be at variance to this Principle.

The Proposal Area is not within a Public Drinking Water Supply Catchment or proclaimed groundwater area, however, is within a proclaimed surface water area (Collie River Irrigation District Sub-Area No 2). The proposal area is also located within the *Country Areas Water Supply Act 1947* (CAWS Act) Wellington Dam Catchment Area, Zone A, a high salinity risk part of the catchment.

There are no watercourses within or adjacent to the Proposal Area. The nearest watercourse, Pollard Creek, is over 120 m to the south east and is separated from the Proposal Area by Collie Williams Road. As such, none of the vegetation proposed for removal is growing on the bed and banks of a watercourse. The works require the removal of up to 0.09 ha of roadside vegetation in Completely Degraded condition. Surface water quality is unlikely to be negatively impacted by the removal of 0.09 ha of vegetation which is not riparian vegetation.

The removal of up to 0.09 ha of vegetation is unlikely to impact groundwater levels or quality or increase salinity risk.

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

Methodology

- Aerial photography
- Main Roads (2024)
- Government GIS shapefiles:
 - RIWI Act Surface Water and Irrigation Districts (DWER-037) (Accessed September 2024)
 - RIWI Act Groundwater Areas (DWER-034) (Accessed September 2024)
 - Public Drinking Water Source Areas (DWER-033) (Accessed September 2024)
 - CAWSA Part 2A Clearing Control Catchments (DWER-004) (Accessed September 2024)
 - Hydrography Linear (DWER-031) (Accessed September 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 likely to be at variance to this Principle.

The proposal requires the removal of up to 0.09 ha of roadside vegetation in a previously disturbed environment across a 230 m stretch of road. The minor additional area of sealed road is unlikely to make a notable difference to the quantity of runoff entering the road drainage system. Works will tie into the existing roadside drainage.

Given the minor removal of up to 0.09 ha of vegetation over a linear road length of 230 m, the proposed clearing is unlikely to exacerbate the incidence or intensity of flooding.

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

Methodology

- Main Roads (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 & OFFSETS

7.1 Revegetation and Rehabilitation

No temporary clearing will be undertaken as part of the Proposal activities.

7.2 Offset Proposal

In accordance with CPS 818/17 Condition 11(a), to offset the residual impacts from clearing 0.09 ha of low to moderate quality foraging habitat for threatened black cockatoo species, Main Roads has developed an offset proposal in accordance the current WA environmental offsets Policy.

The proposed offset consists of a financial contribution. Main Roads will work with DWER on the finalisation of the offset proposal.

8 STAKEHOLDER CONSULTATION

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

9 COMPLIANCE WITH CPS 818

Table 5 summarises what further pre-clearing impact assessment is required in accordance with CPS 818.

Table 5. 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 has been 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 or (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 and (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.	No	Standard Vehicle and Plant management actions from Annexure 204B (TABLE 204B.9.1), <u>Hygiene Checklists</u> and <u>Vehicle, Plant and Machinery Hygiene Register Template</u> will be applied
5b. Do the proposed works require clearing within or adjacent to DBCA managed lands in non-dry conditions?	No	No further action required.

Impact of Clearing	Yes/No or NA	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.	NA	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

Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.

Department of Agriculture, Water and the Environment (DAWE) (2022) *Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black cockatoo*. Canberra, Australian Capital Territory.

Department of Biodiversity, Conservation and Attractions (DBCA) (2012a) Fauna Profiles – Water Rat. Available online from: <http://www.dbca.wa.gov.au> Accessed October 2024.

Department of Biodiversity, Conservation and Attractions (DBCA) (2012b) Fauna Profiles – Tammar Wallaby. Available online from: <http://www.dbca.wa.gov.au> Accessed October 2024.

Department of Biodiversity, Conservation and Attractions (DBCA) (2012c) Fauna Profiles – Brush-tailed Phascogale. Available online from: <http://www.dbca.wa.gov.au> Accessed October 2024.

Department of Biodiversity, Conservation and Attractions (DBCA) (2017) Fauna Notes – Living with Quenda. Available online from: <http://www.dbca.wa.gov.au> Accessed October 2024.

Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2024a) Protected Matters Search Tool Report. Available online from: <http://www.environment.gov.au/epbc/pmst/index.html> Accessed October 2024.

Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2024b). Species Profile and Threats Database. Available online from: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>. Accessed October 2024.

Department of Environment Regulation (2014) *A guide to the assessment of applications to clear native vegetation under Part V Division 2 of the Environmental Protection Act 1986*. Department of Environment Regulation. Perth, Western Australia.

Department of Parks and Wildlife (DPaW) (2017) Western Ringtail Possum (*Pseudocheirus occidentalis*) Recovery Plan. Wildlife Management Program No. 58. Department of Parks and Wildlife, Perth, WA.

Environmental Protection Authority (2016) *Technical Guide – Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment* (eds. K Freeman, G Stack, S Thomas and N Woolfrey). Perth, Western Australia.

Government of Western Australia (2011) *WA Environmental Offset Policy*. Perth Western Australia.

Government of Western Australia (2014) *WA Environmental Offset Guidelines*. Perth, Western Australia.

Government of Western Australia (2019a) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report) Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth. Available online from:
<https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>

Government of Western Australia (2019b) 2018 South West Vegetation Complex Statistics. Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth. Available online from: <https://catalogue.data.wa.gov.au/dataset/dbca>

Havel, J.J. and Mattiske, E.M. (2000) *Vegetation Mapping of South West Forest Regions of Western Australia*. Prepared for CALMSCIENCE, Department of Conservation and Land Management and Environment Australia

Main Roads (2024) Site Inspection Report Collie Williams Road (M066) Improve Sightlines. October 2024

11 APPENDICES

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

Biological Assessment

Executive Summary

Main Roads Environment Officer undertook an initial site inspection on 27 July 2024 to:

- Discuss design, walk the clearing line, identify diameter at breast height trees, inspect for black cockatoo habitat features (hollows, foraging evidence, roosting evidence), assessment of vegetation type/condition, flora species (including weeds) and taking representative photos.
- Discussed on-site with PM all opportunities to limit clearing requirements.

A follow-up site inspection was undertaken by Main Roads Ecologist and Senior Environment Officer, and Environment Officer on 26 September 2024 during the recommended spring survey season for the southwest. Prior to the site inspection, a desktop review was undertaken of the environmental characteristics of the site, including searches of DBCA databases and federal PMST (10 km search radius) for significant flora, ecological communities and fauna with potential to occur. In the field, the entire proposal area was covered on foot to confirm previous site inspection findings and collect further data on flora, vegetation and fauna. Vegetation type and condition were described, all observed flora species were recorded and a targeted survey for conservation significant flora was undertaken. Fauna assessment included habitat tree assessment to identify trees with DBH ≥ 50 cm, presence of hollows, foraging evidence or other signs of use by threatened black cockatoos.

No significant survey limitations were noted. Both officers have experience in undertaking similar surveys in the southwest, sufficient background information on the flora and vegetation of the area was available, the timing was appropriate, rainfall preceding the survey being sufficient, there were no access limitations or disturbances (e.g. no recent fire), the proportion of flora recorded was sufficient, and identifications were able to be undertaken to rule out significant flora.

The proposal area is located in the Northern Jarrah Forest subregion of the Jarrah Forrest IBRA Region near the border of the Southern Jarrah Forest subregion of the Jarrah Forest IBRA region. The proposal area is also located on the Darling Plateau and the Pindalup downstream valleys phase soil unit (DPIRD-027) which is characterised by shallow minor valleys (5-10m) dominated by broad (75-250m) swampy floors. Soils are loamy gravels, deep sands, with saline and non-saline wet soils on the valley floors.

In broad scale vegetation mapping (DPIRD-006, DBCA-047) the proposal area has been mapped as:

- Vegetation Association 1114 ('shrublands tree-heath; paperbark over teatree thickets'), and
- Vegetation Complex Swamp ('mosaic of low open woodland of *Melaleuca preissiana* - *Banksia littoralis*, closed scrub of *Myrtaceae* spp., closed heath of *Myrtaceae* spp. and sedgeland of *Baumea* and *Leptocarpus* spp. on seasonally wet or moist sand, peat and clay soils on valley floors in all climatic zones').

However, the proposal area is also adjacent to the mapped extent of more upland vegetation:

- Vegetation Association 3 ('medium forest; jarrah-marri'), and
- Vegetation Complex Pindalup ('open forest of *Eucalyptus marginata* subsp. *thalassica* - *Corymbia calophylla* on slopes and open woodland of *Eucalyptus wandoo* with some *Eucalyptus patens* on the lower slopes in semiarid and arid zones').

The proposal area is located on the northern side of Collie Williams Road with the Collie Battery project located on the southern side of the road. The proposal area is primarily cleared road reserve with scattered trees over paddocks in an area with a long history of agriculture. Scattered native shrubs are present on the top of the existing road batter in some areas however these areas are degraded, narrow and small slivers of vegetation which are largely composed of weeds and are flanked by the existing road formation and agricultural paddocks.

There are no water courses within or adjacent to the proposal area. The nearest watercourse, Pollard Creek is over 120 m to the south east within the same land as the Collie Battery Project and is separated from the proposal area by Collie Williams Road.

With regard to local and regional ecological linkages, the proposed works are within a highly modified landscape with primarily cleared road reserve and scattered trees over paddocks. There are no local linkage corridors, with the local area consisting of some small and larger patches of vegetation separated by areas of cleared agricultural land. The nearest South West Regional Ecological Linkage line is over 900 m to the west associated with the Bingham River, and vegetation within the proposal area is not contiguous with this linkage corridor, separated by a large cleared agricultural area.

The proposal area has been largely cleared and extensively disturbed in the past through road construction and agricultural activities. Native vegetation is limited to scattered individuals along a narrow strip (approx. 1 m wide) at the top of the road batter, between the road and a fenceline. Grassed pasture areas are present on the other side of the fence.

The vegetation composition of the area has been extensively modified in the past and currently comprises scattered *Eucalyptus marginata* (jarrah) and *Corymbia calophylla* (marri) over scattered native shrubs particularly Grasstrees (*Xanthorrhoea preissii*), Zamia (*Macrozamia riedlei*) and Prickly Moses (*Acacia pulchella*), over grassland of common weed species. The vegetation was not representative of the mapped Vegetation Association 1114 or Swamp Complex, but rather a degraded form of the adjacent upland Vegetation Association 3 and Pindalup Complex.

The entire proposal area was traversed on foot and no significant flora species were recorded. A likelihood of occurrence assessment for significant flora, with post-survey likelihood of occurrence for all being 'unlikely'.

There are no known records of significant ecological communities within 10 km radius of the proposal area and therefore none are considered likely to occur. Further, as the vegetation in the proposal area is in Completely Degraded condition, it is unlikely to be representative of any significant ecological community.

Fauna habitat included remnant scattered trees over predominantly cleared understorey/weedy grassland. Three *Eucalyptus marginata* (jarrah) trees and one *Corymbia calophylla* (marri) tree all with DBH >50cm (no hollows) were identified within the proposal area. Further, there were 9 smaller trees (DBH <50cm, no hollows) including jarrah (8 trees) and marri (1 tree). Evidence of

black cockatoo foraging was recorded within the proposal area and red-tailed black cockatoos were heard outside the proposal area. No evidence of black cockatoo roosting or nesting was observed. No evidence of other conservation significant fauna species was observed.

Conclusions

The site inspection identified limited ecological values within the proposal area. Native vegetation was largely limited to remnant jarrah with some marri over weedy grasses/pasture with scattered native shrubs, calculated as a total of 0.09 ha. Native vegetation was assessed as in Completely Degraded condition (where present). Based on the species present and the vegetation condition, the remaining vegetation is not representative of any Threatened or Priority Ecological Community and this is supported by lack of any known records of significant ecological communities within 10 km.

No flora species of significance are known to occur in the proposal area or within 5 km (DBCA restricted records), with closest records approximately 7 km away. No significant flora species were observed in the field during the targeted flora survey. No flora of significance are considered likely to occur in the proposal area due to the extensive nature of previous disturbance, minimal native understorey, high weed cover, and the overall poor condition of the vegetation remaining.

Fauna habitat values are also considered to be limited due to the poor condition of vegetation and limited diversity in structure. Jarrah and marri offer foraging resources to threatened black cockatoos however no evidence of roosting or suitable hollows for threatened black cockatoos were observed.

The vegetation to be removed is located immediately adjacent to an existing road, and similar or better quality habitat is widely available in adjacent areas.

Appendix 2: Vegetation Management Plan

COLLIE WILLIAMS ROAD (M066) IMPROVE SIGHTLINES

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 Collie Williams Road (M066) Improve Sightlines project.

The proposed works include:

- Land acquisition and accommodation works (fencing) on land to the north west
- Removal of selected vegetation
- Relocation of services (Telstra)
- Earthworks to flatten the batter on the north west side of Collie Williams Road to improve sightlines around the curve

Total native vegetation clearing for the proposal is 0.09 ha and will be conducted under CPS 818.

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.

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 4.1: 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
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 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.