



mainroads
WESTERN AUSTRALIA

Clearing Assessment Report – CPS 818

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Western Australia.*

M031 Northam Cranbrook Road

82.37-86.40 SLK Tranche 6/7

March 2024

2978

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Redacted D24#1323014
D23#333070

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Amendments

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	Senior Environment Officer	Rev A	12/04/2023
Reviewer:	Senior Environment Officer	Rev 0	27/04/2023
Author:	Senior Environment Officer	Rev 1	04/03/2024
Reviewer:	Senior Environment Officer	Rev 1	06/03/2024

1 PROPOSAL

1.1 Purpose and Justification

Main Roads Western Australia proposes to upgrade Northam Cranbrook Road between the town sites of Beverley and Brookton (SLK 82.37 to 86.40). The Proposal will greatly improve road user safety by reducing the estimated Killed or Seriously Injured crash rate by more than 50%, as well as increase the efficiency of freight movements.

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 1.6.

1.2 Proposal Scope

Main Roads proposes to upgrade a 4.03 km section of Northam Cranbrook Road between the town sites of Beverley and Brookton. The upgrade will comprise the following components:

- Overlay and widening Northam Cranbrook Road to achieve 10 m seal on a 10 m wide formation.

- Widening of the road to Left Hand Side (east) to reduce the amount of native vegetation clearing.
- Extension of culverts to cater for the widened road formation.
- Pavement overlay, rehabilitation or reconstruction.
- New road delineation, signage and line marking.
- Upgrade drainage infrastructure and improve road drainage.

1.3 Proposal Location

The Clearing Area is located on Northam Cranbrook Road, Brookton, 82.54 - 84.53 SLK, approximately 14 km north of the townsite of Brookton, in the Shire of Beverley.

- Latitude: -32.245519
- Longitude: 116.987759

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818: 0.1107 ha

Areas of Native Vegetation Clearing:

The areas of native vegetation to be cleared are shown in Figures 1a and 1b.

The desktop Study assessment area is confined to a local area of a 10 km radius, as shown in Figure 2.

Type of Native Vegetation:

The type of vegetation to be cleared under this Proposal are:

- Single tree - *Acacia* (0.000598 ha),
- Single dead stump - York Gum (*E. loxophleba*) (0.000326 ha),
- *Tecticornia pergranulata* low samphire shrubland (0.10534 ha),
- *Eucalyptus loxophleba* woodland (0.001836),
- *Eucalyptus wandoo* woodland (0.002583 ha)



Figure 1a: Clearing Area



Figure 1b: Clearing Area



Figure 2: Study Area

1.5 Alternatives to Native Vegetation Clearing Considered During Proposal Development

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

- Preferentially widening the alignment in cleared or planted vegetation areas in the existing road reserve.
- 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 a poorer safety outcome and may result in future fatalities or serious injuries and further degradation of the State road asset.
- Reducing the speed limit to minimise clearing requirements, while still balancing safety (driver fatigue) and freight efficiency.
- 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	The upgrade and widening of Northam Cranbrook Road has been aligned to only impact vegetation on the east of the existing road. This results in less clearing of native vegetation and allows for the avoidance of Threatened flora species (<i>Acacia brachypoda</i>) on the western side of the road.
Alternative alignment located within pasture or degraded areas	The upgrade and widening of Northam Cranbrook Road to the east of the existing road is within planted and native vegetation assessed as being in Degraded to Completely Degraded condition. The vegetation on the western side of the road is generally in a better condition.
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.
Steepen batter slopes	Due to the traffic volumes, vehicle type and posted speeds, any changes to the batters are unlikely to be significant.
Installation of barriers	The area where the two overstorey individuals are proposed to be cleared are too close to the road to allow for the safe and effective use of safety barriers.
Installation of kerbing	Kerbing has been designed where possible but will have limited impact on the construction footprint at the trees' locations due to the offsets required for road safety and drainage requirements.
Use of existing cleared areas for access tracks, construction storage and stockpiling	Existing cleared areas are proposed to be used for access tracks, construction storage, site offices and stockpiling.

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*
- *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 Referral guidelines for the three threatened black cockatoo species
- Approved Conservation Advice (including listing advice) for the Eucalypt Woodlands of the Western Australian Wheatbelt (Department of the Environment, 2015)
- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan (Department of Parks and Wildlife, 2013)

A Development Application is not required for this Proposal.

2 SCOPE AND METHODOLOGY OF CLEARING ASSESSMENT

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 and is less than the development envelope. 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 10km 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. Results from searches can be found in Appendix 1.

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 9.

2.3 Surveys and Assessments

The following survey was undertaken to inform this CAR:

- Ecoscape (2022). Detailed and targeted flora and vegetation, and Basic fauna survey.

A summary of the methodology and the results of the above survey is provided in Section 3.

3 SUMMARY OF SURVEYS

3.1 Overview of Surveys

Biological and targeted surveys conducted for the proposal are outlined in Table 2. A summary of the findings in these reports are presented in Sections 3.2, 3.3 and 3.4.

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

Consultant & Survey Name	Survey Details
Ecoscape (2022) M031 Northam-Cranbrook Road Widening SLK 57 -99 Biological Survey	Survey Area: The survey area is a linear corridor, 42 km long (between 57-99 SLK) and 40 m wide (generally 20 m either side of the Northam Cranbrook Road centreline), occupying 159.93 ha. Type: Desktop assessment, Detailed flora and vegetation survey and Basic fauna survey, including identifying key sensitivities of and impacts to Threatened and Priority Flora, Fauna and Ecological Communities. Timing: 18 and 28-31 October 2021. Survey Results Shapefile TRIM Ref: D23#341807 Document TRIM Ref: D22#1051365

3.2 Summary of Flora and Vegetation Survey

- 238 vascular flora species were recorded during the field survey from 26 floristic quadrats including:
 - one Threatened Flora, *Acacia brachypoda*; 92 plants within the survey area, with an additional 88 in adjacent areas.
 - four Priority Flora, *Eremophila* sp. Beverley (K. Kershaw KK 2438) (P1), *Anigozanthos bicolor* subsp. *exstans* (P3), *Eutaxia rubricarina* (P3) and *Lepidosperma* sp. Meckering (R. Davis WW 27-32) (P3) within the survey area.
- 46 introduced species including three Declared Pest plants (**Echium plantagineum*, **Moraea miniata* and **Tamarix aphylla*) within the survey area.
- Nine native vegetation types were recorded within the survey area including three patches considered to meet the criteria for inclusion in the Wheatbelt Woodlands TEC and the equivalent PEC. The trees to be removed would not be deemed to be TEC/PEC due to road reserve width and vegetation condition.
- One vegetation type was *Tecticornia pergranulata* low samphire shrubland/forbland, which is considered to be riparian vegetation.
- A substantial proportion of the survey area (67.93%) was devoid of native vegetation (cleared or revegetation).
- Native vegetation varied in condition across the survey area from Completely Degraded to Very Good, with only 4.73 ha (2.96%) in Good or Very Good condition.

3.3 Summary of Fauna Survey

- One fauna habitat type: Woodland, with four subtypes (Rock Sheoak; York Gum; Flooded Gum, Wandoo/Salmon Gum) and Rehabilitation/Planted, is present across the survey area.
- No conservation-listed species were recorded in the field. Following post survey re-evaluation of the desktop likelihood assessment, one conservation listed species may occur in the Proposal area: Carnaby's Cockatoo.
- 441 trees of suitable diameter to be considered as Black Cockatoo habitat trees in the survey area - 18 Class 3 trees (trees with suitable hollows), 129 Class 4 trees (trees with unsuitable hollows) and 294 Class 5 trees (trees that do not have suitable hollows but are sufficiently large to form them in the future).
- The Woodland habitat in the survey area was considered to represent low-moderate quality foraging habitat due to the lack of preferred foraging species.
- The Phascogale habitat assessment determined 4.7 ha of poor-quality habitat in the survey area, reducing the likelihood of occurrence from 'May occur' to 'Unlikely to occur'.

3.4 Survey data in relation to the Proposal area

Key findings in relation to the survey area within the Proposal area include:

- No recorded TEC/PEC in or adjacent to the Proposal area,
- No recorded conservation significant species are in or adjacent to the Proposal area,
- The Proposal area is not in or near a mapped ESA,
- The vegetation condition in the Proposal area is mapped as Degraded.

4 VEGETATION DETAILS

4.1 Proposal Site Vegetation Description

The Proposal area comprises one tree and one stump (0.000924 ha) located in an area of mapped planted vegetation (clearing of planted vegetation is not considered to constitute clearing of native vegetation, however in this instance, the trees have been treated as native vegetation due to Main Roads conservative approach to clearing and consideration that these trees may represent remnant

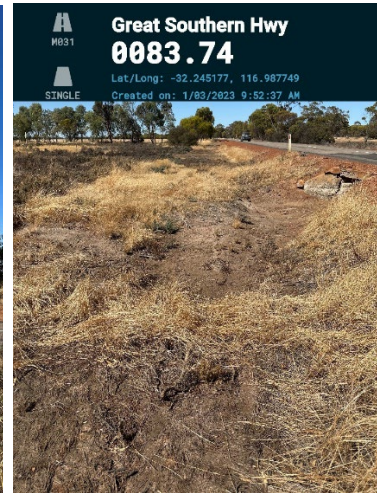
vegetation), *Eucalyptus loxophleba* (0.002 ha) and *Eucalyptus wandoo* woodland (0.003 ha) adjacent to the maintenance zone and 0.1053 ha of *Tecticornia pergranulata* low samphire shrubland/forbland, as shown in the images below:



Acacia Tree



York Gum Stump



Tecticornia shrubland



Eucalyptus loxophleba woodland



Eucalyptus wandoo woodland

EcoScape (2022) mapped the condition of the *Tecticornia* vegetation unit as 'Degraded'. The condition of the vegetation adjacent to the tree, stump and woodland vegetation was assessed on 1 March 2023 by Main Roads Environmental Officers and considered to be Degraded to Completely Degraded to the high presence of weeds and grasses and lack of understorey.

Table 3 and Table 4 provide details of the vegetation types, the amount of clearing in the Proposal area and extent within the survey area and the remaining extents of these associations.

Table 3. Summary of Vegetation Types within Clearing Area

Vegetation Type	Extent within Clearing Area (ha)	Total Extent Mapped (ha) within Survey Area
<i>Tecticornia pergranulata</i> low samphire shrubland/forbland	0.10534	0.828
Revegetation/planted	0.000924	13.296
<i>Eucalyptus loxophleba</i> woodland	0.001836	23.822
<i>Eucalyptus wandoo</i> woodland	0.002583	13.706

Table 4. 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. 352: Medium woodland; York gum	Statewide	1724,268	142,012	19.61	8.92
	IBRA Bioregion Avon Wheatbelt	63,0577	108,887	17.27	9.36
	IBRA Sub-region AVW2	337,871	36,295	10.74	2.13
	Local Government Authority Shire of Beverley	73.497	8,996	12.24	12.08

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 (f) and not at, 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
Assessment The Proposal requires the clearing of 0.1107 ha of native vegetation along Northam Cranbrook Road in the Shire of Beverley. EcoScape (2022) identified two vegetation units, described as follows: • <i>Tecticornia pergranulata</i> low samphire shrubland/forbland (0.1053 ha) • Revegetation/planted (one tree and one stump treated as native vegetation due to Main Roads conservative approach and consideration that the trees may represent remnant vegetation) (0.000924 ha). • <i>Eucalyptus loxophleba</i> woodland (0.0018), • <i>Eucalyptus wandoo</i> woodland (0.0026 ha).

EcoScape (2022) assessed the condition of the *Tecticornia* vegetation unit to be in a Degraded condition. On 1 March 2023, a site assessment by Main Roads Environmental Officers determined that the vegetation adjacent to the tree/stump and woodland is in a Completely Degraded to Degraded condition, due to the absence of native under-storey/mid-storey vegetation, and the abundance of introduced weed species.

According to the Main Roads GIS layer, the Proposal area is not located within an Environmentally Sensitive Area (ESA).

Threatened and Priority Ecological Communities and Flora Species

Fourteen nationally listed Threatened flora species, and one Threatened Ecological Community were identified from the DCCEEW Protected Matters Search Tool Report (PMST).

Ecoscape (2022) in its Likelihood of Occurrence assessment determined the only flora species that may occur were (T) and one *Eutaxia rubricarina* (P3).

Ecoscape (2022) recorded (T) and one *Eutaxia rubricarina* (P3) within the survey area. The Proposal area is located at 82.54, 82.81 and 83.60-83.82 SLK (LHS/east). The closest conservation significant flora species is south of the Proposal area. No impacts are expected.

No Threatened flora species were recorded within the Proposal area and based on the survey effort and assessment of habitats present, none are considered likely or possible to occur.

Ecoscape (2022) undertook a TEC assessment within its survey area (between 57-99 SLK) and recorded three patches of PEC/TEC (*Eucalypt Woodlands of the Western Australian Wheatbelt*) in sections of road reserve between 75.6-75.82 SLK (LHS) and 76.9 – 77.5 SLK (both sides). As the Proposal area is located at 82.54, 82.81 and 83.60-83.82 SLK (LHS), some 5.04 km south of the recorded TEC, then works are highly unlikely to impact on areas of TEC/PEC.

Reserves and Linkages

According to Main Roads GIS DBCA Lands and Waters layer, the closest Conservation Reserve (R16584/C Class) is located 2.9 km north west of the Proposal area. As works will remain within the road reserve, impacts on the Nature Reserve are not anticipated.

As it is proposed to clear an isolated tree and stump, up to 0.6m of woodland and an approximately five metre strip of *Tecticornia* shrubland (understory), is unlikely that the removal of this vegetation will change any linkages that may exist.

Fauna

According to DBCA GIS Threatened Fauna layer, only three conservation significant fauna species have been recorded within the 10km Study area, with the closest record to the Proposal area (Carnaby's Cockatoo (*Calyptorhynchus latirostris*)) recorded approximately 2km north east in 1966.

Ecoscape (2022) in its Likelihood of Occurrence assessment determined the only fauna species that may occur was Carnaby's Black Cockatoo. All the other species were unlikely or highly unlikely to occur.

The Proposal area is within the modelled distribution and breeding range of Carnaby's Black Cockatoo, but outside of the modelled distribution of Forest Red-tailed and Baudin's Black Cockatoos.

The Proposal area contains one suitable DBH 'tree' (those greater than 500 mm DBH) – a dead York Gum stump at 82.81 SLK. The stump does not contain any suitable hollows for black cockatoo breeding.

As only one overstorey species (Acacia), minor mid storey woodland land, regrowth and groundcover species are proposed to be cleared, there is limited Carnaby's Black Cockatoo roosting, feeding and nesting habitat within the Proposal area. Ecoscape (2022) reported that the survey area (57-99 SLK) is considered to be low value foraging habitat for Carnaby's Cockatoo (when using the Bamford (2020) foraging value tool). No individuals were recorded utilising habitat during Ecoscapes' survey and during the site inspection, and no foraging debris or night roosting evidence was recorded.

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

Methodology

DBCA GIS Shapefiles

DCCEEW Protected Matters Search Tool Report (PMST)
EcoScape (2022)

(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 indigenous to Western Australia.

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

According to DBCA GIS Threatened Fauna layer, the only four records in the Study area were:

Fauna (Study area)	Distance from Proposal area
<i>Calyptrorhynchus sp.</i> (White-tailed Black Cockatoo) (EN)	2 km north east
<i>Oxyura australis</i> (Blue-billed Duck) (P4)	9.3 km west
<i>Actitis hypoleucos</i> (Common Sandpiper) (MI)	9.2 km east
<i>Phascogale calura</i> (Red-tailed Phascogale) (CD/VU)	9.8 km south

Eight nationally listed Threatened fauna species (comprising six birds, and two mammals), were identified from the PMST.

Ecoscape (2022) in its Likelihood of Occurrence assessment determined the only fauna species that may occur was Carnaby's Black Cockatoo (*Calyptrorhynchus latirostris*). All the other species were unlikely or highly unlikely to occur.

Due to the small amount of clearing and predominately Degraded to Completely Degraded condition of the vegetation, it is unlikely the Proposal activities will have a significant impact on this, or any other species.

The Proposal area is within the modelled range of Carnaby's Black cockatoo. As only one overstorey species (Acacia) and groundcover species are proposed to be cleared, there is minimal if any Carnaby's Black cockatoo roosting, feeding and nesting habitat within the Proposal area. Ecoscape (2022) reported that the survey area (57-99 SLK) is considered to be low value foraging habitat for Carnaby's Cockatoo (when using the Bamford (2020) foraging value tool).

According to the DBCA GIS layer, one record exists (from 1966) for a *Calyptrorhynchus sp.* (White-tailed Black Cockatoo) within the 10km study area. No individuals were recorded utilising habitat during Ecoscapes' survey and during the site inspection, and no foraging debris or night roosting evidence was recorded.

The clearing of 0.001 ha of planted vegetation (considered by Main Roads to possibly represent remnant vegetation), 0.004 ha of minor mid storey woodland and 0.1053 ha of *Tecticornia* shrubland, predominantly in Degraded to Completely Degraded condition does not comprise the whole or a part of, or is not considered necessary for the maintenance of, a significant habitat for indigenous fauna.

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

Methodology

DBCA GIS Shapefiles
DCCEEW PMST
EcoScape (2022)
EPA (2016, 2019)

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

Proposed clearing is not at variance to this Principle
Ecoscape (2022) recorded (T) within the survey area. The Proposal area is located at 82.54, 82.81, 83.07-83.13, 83.60-83.82 and 84.45-84.53 SLK (LHS/east side of the road). No Threatened flora species were recorded within the Proposal area and based on the survey effort and assessment of habitats present, none are considered likely or possible to occur. Proposal clearing is not at variance to this Principle.
Methodology DBCA GIS shapefiles EcoScape (2022)

(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 at variance to this Principle
Ecoscape (2022) did not identify any vegetation in the Proposal area considered as representative of a State or Federally listed Threatened Ecological Community. Works are limited to within the Proposal area, and therefore, will not impact any Threatened Ecological Communities. Proposal clearing is not at variance to this Principle.
Methodology DBCA GIS shapefiles Ecoscape (2022)

(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 Proposal area is located within the western boundary of the Avon Wheatbelt Bioregion within the Katanning Sub-region. One vegetation association of Beard (1976) has been mapped over the Proposal area, namely: 352: Medium woodland; York gum. Vegetation Association 352 retains 19.61% of its pre-European extent at the Statewide scale, 17.27% at the IBRA bioregion scale, 10.74% at a Sub-region scale and 12.24% at a LGA level (Government of Western Australia, 2019) as shown in the tables below. The National Objectives and Targets for Biodiversity Conservation recognise that the retention of 30 per cent 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). Summary of Proposal area's Mapped Pre-European Vegetation Association			
Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Vegetation Association 352 described as Medium woodland; York gum (Government of Western Australia, 2019).	Clearing of up to 0.1107 ha for seal widening on Northam Cranbrook Road.	Completely Degraded to Degraded condition (EPA 2016)	Vegetation description and condition determined from EcoScape (2022)

Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 352	Statewide	1724,268	142,012	19.61	8.92
	IBRA Bioregion Avon Wheatbelt	63,0577	108,887	17.27	9.36
	IBRA Sub-region AVW2 (Katanning)	337,871	36,295	10.74	2.13
	Local Government Authority Shire of Beverley	73.497	8,996	12.24	12.08

At the local scale (10 km), approximately 17% (5,762 ha) of mapped remnant native vegetation remains.

Previous granted clearing permits where the application area supported vegetation that retained less than 30% of its extent but was not considered to be a significant remnant by DWER are as follows:

- CPS 7978 – Approximately 10 ha of vegetation in Good to Degraded condition was not considered to be a significant remnant as the majority of the application area was in a Degraded condition.
- CPS 6851 – Approximately 5 ha of vegetation in Degraded to Completely Degraded condition in a linear shape was not considered to be a significant remnant

The condition of the mapped Vegetation Association 352 in the Proposal area is Degraded to Completely Degraded. Vegetation in the Proposal area is not considered likely to comprise significant habitat for any ecological communities and is unlikely to provide foraging habitat for black cockatoos. Given the minor extent of clearing, comprising one tree, one stump, 0.0044 ha of woodland and 0.1053 ha of *Tecticornia* shrubland adjacent to an existing road, it is considered that clearing of 0.1107 ha is unlikely to significantly impact connectivity within other remnant vegetation in the local area or reduce the capacity of the remaining vegetation within the local area to act as an ecological linkage.

Further, the vegetation proposed to be cleared is not consistent with the mapped vegetation association, and likely to have predominantly developed in response to the local conditions (salt affected drainage lines).

The clearing for the Proposal is not likely to have a significant impact on the remaining extent of this Vegetation Association at the subregion, LGA or local (10km) level.

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

Methodology

Aerial photography
 DBCA GIS Shapefiles
 EcoScape (2022)
 EPA (2016, 2019)
 Government of Western Australia (2019)

(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 at variance to this Principle

According to Main Roads GIS Watercourse layer, the closest records to a watercourse from the Proposal area were:

Area.	SLK	Watercourse / distance
Tree	82.54	minor non-perennial 400m west

Stump	82.81	minor non-perennial 370m west
<i>Tecticornia</i> shrubland	83.61 – 83.82	minor non-perennial 360m west
<i>Eucalyptus loxophleba</i> woodland	83.07-83.13	minor non-perennial 490m west
<i>Eucalyptus wandoo</i> woodland	84.45-84.53	minor non-perennial 700m west

EcoScape (2022) mapped the *Tecticornia* shrubland as riparian. The Atlas of Living Australia reports that *Tecticornia pergranulata* are mostly located on the boundaries of salt lakes and salty swamps all across southern Australia.

EcoScape reported three vegetation types within the survey area, with *Tecticornia* shrubland being located within drainage lines. There were five drainage lines that intersected the survey area. Three of the drainage lines are unnamed minor drainage lines (which includes a portion of the Proposal area); the other two are larger and correspond with the Avon River South Branch crossing and Kellerberrin Brook. It is considered that the *Tecticornia* shrubland portion of the Proposal area is a wetland that is not a defined wetland.

A quadrat was established in *Tecticornia* shrubland by EcoScape (as shown below) adjacent and within a portion of the Proposal area. Of the seven species recorded in the quadrat, only three were native: *Sporobolus ramigerus*, *Tecticornia pergranulata*, and *Triglochin mucronata*. The vegetation condition was mapped as Degraded.



According to the Hydrology South GIS layer, the Proposal area through the *Tecticornia* shrubland is mapped as a 'wash area' with a minor drain flowing through it, as shown below. This is a minor non-perennial watercourse.



Proposal clearing is at variance to this Principle.

Methodology

Atlas of Living Australia <https://bie.ala.org.au/species/https://id.biodiversity.org.au/node/apni/2914307>
DOLA GIS Shapefiles

EcoScape (2022)

(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 Natural Resource Management risk mapping indicates the soil of the Proposal area has a low risk of water erosion, a moderate risk of wind erosion, a low to moderate risk of salinity, and a high water logging risk.

ASRIS mapping indicates that the Proposal area is located in an area with a low probability of Acid Sulphate Soils.

Given the small area of clearing (0.1107 ha), the linear nature of the clearing and sealing of areas for road construction, the proposed clearing is not likely to lead to an appreciable increase in land degradation. As clearing is proposed to occur in spring-summer, this will reduce the potential for waterlogging.

Accordingly, this Proposal is not likely to be at variance to this Principle.

Proposal clearing not likely to be at variance to this Principle.

Methodology

CSIRO, ASRIS mapping (<http://www.asris.csiro.au/mapping/viewer.htm>) (Accessed April 2023)

DPIRD Natural Resource Management Information (Accessed April 2023)

(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

According to Main Roads GIS DBCA Lands and Waters layer, the closest conservation reserve (R16584/C Class) is located 2.9 km north west of the Proposal area. As works will remain within the road reserve, and at a distance not likely to cause indirect impacts, no impact on the Nature Reserve is anticipated.

Proposal clearing is not at variance to this Principle.

Methodology

DBCA GIS shapefiles

(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 does not intersect with any mapped watercourses. The Proposal will require clearing of a tree, a stump, up to 0.6m strip of woodland and a five metre strip of *Tecticornia* shrubland located adjacent to the existing maintenance zone.

Given the degraded nature of the vegetation present, the clearing of this small amount of vegetation is unlikely to cause a deterioration in the quality of surface or underground water.

The Proposal area is more than 6.5 km (north) from a Public Drinking Water Source Area, and within a surface water area proclaimed under the RIWI Act. Proposal activities are unlikely to impact on these areas as is linear in nature and located adjacent to the maintenance zone.

Given the scale of clearing is relatively minor and linear in nature, no deterioration of surface or underground water levels or quality is expected to result from clearing.

Proposal clearing not likely to be at variance to this Principle.

Methodology

DWER GIS shapefiles
EcoScape (2022)

(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

This Proposal proposes to clear 0.1107 ha of vegetation over an approximately 2 km stretch of road.

Brookton (14 km south of the Proposal area) receives an average rainfall of 448mm per year (Bureau of Meteorology Australia, 2023), predominantly from May to September.

The Natural Resource Management risk mapping indicates the flood hazard in the Proposal area is moderate to high. The *Tecticornia* shrubland is located in valley floors of the Mortlock River and other similar creeks that predominantly contain sand over yellowish clay soils and are prone to salinity and waterlogging.

Given the minor nature of the clearing, the moderate annual rainfall, the relatively flat topography of the Proposal area, and that clearing is proposed to be conducted during the spring-summer months, the proposed clearing is unlikely to cause or exacerbate the incidence or intensity of flooding. The proposed clearing will not result in an increase in the incidence or intensity of flooding events.

Proposal clearing not likely to be at variance to this Principle.

Methodology

DPIRD Natural Resource Management Information (Accessed April 2023)

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.

7 STAKEHOLDER CONSULTATION

Main Roads is not required to undertake stakeholder consultation in accordance with CPS 818/15 Condition 8. Notwithstanding the above, Main Roads has consulted with the Shires of Brookton and Beverley about the proposed roadworks. Further, staff from the Main Roads Regional office will consult with landowners adjacent to the proposed works prior to works commencing.

8 COMPLIANCE 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	No further action required. Although the clearing is 'at variance' to Clearing Principle (f) and no other Clearing Principle, the area of the proposed clearing is less than 0.5 hectares in size and the Clearing Principle (f) impacts only relate to: i. minor non-perennial watercourses; and ii. a wetland that is not a defined wetland.
2. Clearing is at variance or may be at variance with Clearing Principle (g) land degradation, (i) surface or underground	No	No further action required.

Impact of Clearing	Yes/No or NA	Further Action Required
water quality or (j) the incidence of flooding.		
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 Principal Environmental Management Requirements (PEMRs) and <u>Hygiene Checklists</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.
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 (if applicable) was suitably qualified and had more than three years' experience.

9 REFERENCES

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10 APPENDICES

Appendix	Title
Appendix 1	Constraints Mapping

Appendix 1: Constraints Mapping



