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WESTERN AUSTRALIA

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

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Western Australia.*

Bridge 3197 – Bridge Replacement
Wheatbelt Region
EOS 1452

Document Control for Template

Owner	Director Environment and Heritage
Custodian	Principal Environment Officer Policy
Document Number	D13#601143
Issue Date	14/02/2024
Review Frequency	Annual

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Document Control

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	[Redacted] Environment Officer	Draft v1	27/08/2024
Reviewer:	Environment Contractor	Dravt_v1	28/08/2024
Author:	[Redacted] Environment Officer	Rev 01	30/08/2024
Reviewer:	Environment Contractor	Final	05/09/2024

1 PROPOSAL

1.1 Purpose and Justification

Main Roads proposes to replace Bridge 3197 due to its poor condition, unsuitable road geometry and the fact that the narrow width between kerbs is only suitable for a single lane.

Annual inspection reports from March 2017 have identified the necessity of replacing Bridge 3197 due to its condition. In 2019, the Detailed Inspection Report (DIR) identified termite damage to the stringers, piers and deck, splits, rot and signs of compression failure in the timber halfcaps, significant rot in a number of stringers and signs of rot, termite damage and localised failure in the timber decking, among other issues.

York-Williams Road is an open road and thus has a default speed limit of 110 km/hr. Although the bridge meets the minimum requirements for dry serviceability 20-year ARI event and wet serviceability 50-year ARI event, the existing vertical road geometry has a compound vertical curve with a minimum K value of 6 (suitable for 60 km/h), which does not conform to the road geometry required for the design speed of an open road. To improve the vertical geometry the road surface level must be raised.

Considering the generally poor condition of the bridge, the narrow width and the non-conforming road geometry, Main Roads proposes to replace the existing bridge with an appropriate structure that complies with current load requirements.

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

Main Roads proposes to demolish and replace Bridge 3197 with a 1200 mm deep T-Roff beam, single span structure. The replacement will include raising the deck level to meet the road design requirement, reinforced concrete abutments, wing walls and steel guardrails.

The bridge replacement will comprise the following components:

- Site clearance to accommodate geotechnical investigation.
- Development of a laydown area required for lifting plant and piling equipment.
- Establishment of an access track to provide access to the base of the bridge.
- Demolition and removal of existing timber bridge structure.
- Foundation preparation and compaction including footing installation.
- Installation of footings, prestressed/precast elements.
- Rock pitching at both upstream and downstream ends.
- Embankment construction behind each wing wall.
- Channel excavation/reshaping likely required.

1.3 Proposal Location

The Clearing Area is located on York-Williams Road approximately 15km southwest of Beverley, SLK 11.65 to SLK 12.04, in the Shire of Beverley as shown in Figure 1.

The central coordinate of the Proposal is - 32.1656216, 116.7983531.

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818:

0.142 ha

Areas of Native Vegetation Clearing:

The areas of native vegetation to be cleared are shown in Figure 2.

Type of Native Vegetation:

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

- *Eucalyptus* mid open woodland vegetation type (W01), dominated by *Eucalyptus loxophleba* subsp. *loxophleba* and *Eucalyptus rudis* subsp. *rudis*, with an understorey primarily comprised of tall sparse *Acacia* shrub layer or low sparse shrub layer, together with infestations of introduced grasses.
- Open Eucalypt woodland containing remnant upper Stratum but cleared of native understorey described as 'Parkland Cleared'.



Figure 1. Clearing Area



Figure 2. Vegetation within Clearing 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:

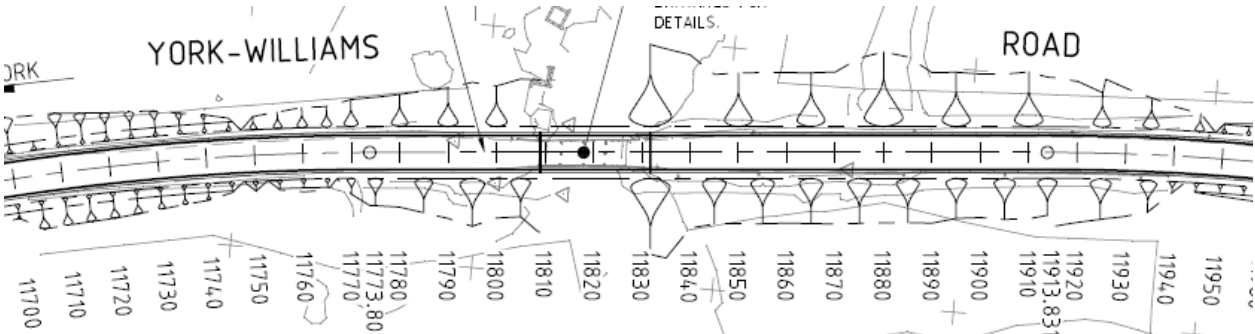
- Do not replace the bridge, however this will result in further degradation and possible failure of the State road asset, potentially result in a poorer safety outcome and may result in future fatalities or serious injuries.
- Main Roads retains frangible vegetation where a clear zone is to be established 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. A design speed below the national standard has been selected that improves the current alignment while minimising the impact area. Further details on design speed are provided in Table 1.

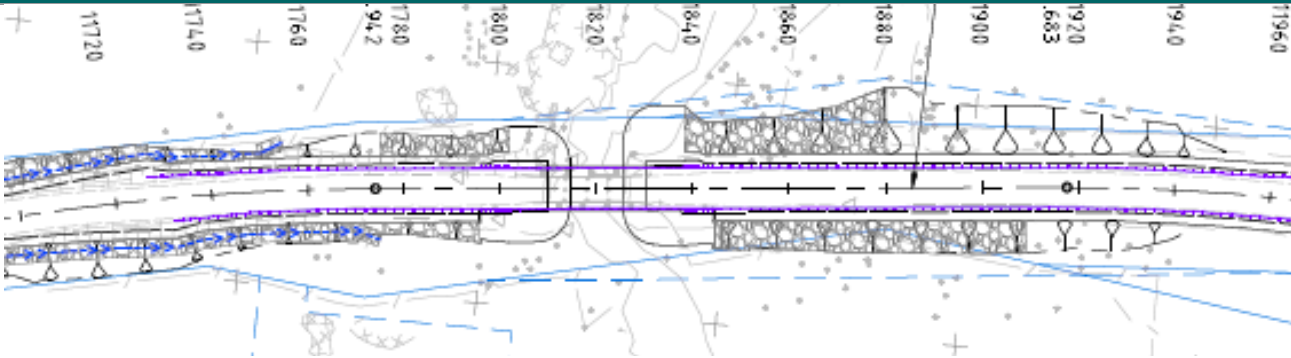
1.6 Measures to Avoid, Minimise, Reduce and Manage Proposal Clearing Impacts

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
Simplification of design with speed reduction	Although York – Willams Road is an open road with a default speed limit of 110 km/h, the current alignment of Bridge 3197 contains a compound vertical curve with a minimum K value of 6, which is only suitable for 60 km/h. It was determined that a design suitable for a 110 km/h speed limit was not possible without a significant increase to the Proposal footprint, which did not meet the design brief. Instead, an 80 km/design speed was proposed, which improves the current alignment while minimising the impact area. A design drawing was not provided for the 110 km/h design speed as it was determined early on to be unable to meet the design brief. Given the lack of drawing, the area of clearing reduction cannot be estimated; however, three DBH trees will be retained due to a combination of the reduced design and the steepening of the batter slopes.
Modification of design for retention of trees	As the design proposes to raise the road substantially to correct the substandard vertical geometry, high fill batters (0.3 m to >3 m) are proposed for much of the project extent. The Austroads (2023) guidelines state that the desirable maximum slope is 4:1 for a rock fill batter and 6:1 for an earth fill batter, which, considering the height of the proposed fill, would result in batter widths greater than 12 m to 18 m either side of the road pavement in some sections. The 3:1 slope proposed by the 15% design reduced the potential footprint, but opportunities were sought to further minimise impacts. The design was modified to further steepen batter slopes and install rock pitching and safety barriers. The decision to apply these changes prevents the clearing of five suitable Diameter at Breast Height (DBH) trees. These modifications and the subsequent reduction of impact are described in further detail below.
Steepen batter slopes	The steepening of Proposal fill batters from 3:1 slopes in the 15% design to up to 2:1 slopes in the final design will enable the retention of three DBH trees.

Design or Management Measure	Discussion and Justification
	 Three DBH trees to be retained due to steepening of batters.  15% road design (page 122 of IFC bridge design report)

Design or Management Measure	Discussion and Justification
	 IFC design  IFC design and potential fauna habitat trees to be retained.

Design or Management Measure	Discussion and Justification
Installation of barriers and rock pitching	Safety barriers have been incorporated from SLK 11.72 to SLK 11.98 that allow for a steeper batter slope, with rock pitching incorporated where the fill batter has been steepened to a slope greater than 1:3. The combination of barriers and rock pitching will enable the retention of three DBH trees. The extension of the barrier on the RHS to SLK 11.98 allows two additional DBH trees to be retained.  Two DBH Trees to be retained due to proposed barrier installation.

Design or Management Measure	Discussion and Justification
	The drawing illustrates the proposed bridge structure and its integration with the surrounding road. The top portion shows the 'Initial 15% road design' with a road profile and elevation data. The bottom portion shows the 'IFC design incorporating rock pitching and guard rails extending on the RHS to SLK 11.98 (Drainage design SLK 11.94 to 11.85 to be finalised)'. The drawing includes labels for 'YORK-WILLIAMS ROAD', 'BRIDGE 3197. REFER TO STRUCTURAL DRAWINGS FOR DETAILS.', 'YORK', 'WILLIAMS', and 'EXTENT OF WORKS'. Elevation data points are provided along the road profile, ranging from 11680 to 11980. The drawing also shows the 'RMC01' structure and the 'YORK-WILLIAMS ROAD' crossing the bridge.

Design or Management Measure	Discussion and Justification
	 IFC design and five potential fauna habitat trees to be retained, including two overlapping at SLK 11.96.
Use of existing cleared areas for access tracks, construction storage and stockpiling	The site laydown area is proposed to be established in one of the three adjacent cleared paddocks. No clearing will be undertaken to establish the laydown. Further Proposal clearing will be avoided as the site office, materials storage areas and construction vehicles/machinery will be located on previously cleared areas.
Diversion of traffic during construction	A side track is typically proposed for bridge construction projects to allow the road to remain open, which would have required vegetation clearing and impacts to the water course in addition to that required for the bridge construction. During the design stage it was identified that traffic could be diverted to other roads without significantly impacting travel time for motorists; thus, it was decided that the Proposal footprint would be minimised by constructing without a side track. As no design was produced for a side track, the amount of clearing reduction cannot be calculated.

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.
- Referral guideline for 3 WA threatened black cockatoo species (DCCEEW, 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 (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.
- **Study Area** – Area covered by the Desktop Assessment. The Study Area for the Proposal is confined to a local area of a 20 km radius.
- **Survey Area** – Area covered by the Biological Survey, which is typically larger than the Clearing Area.
- **Context Area** – Area mapped as part of the Biological Survey that gives context to the Survey Area.

2.2 Desktop Assessment

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

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

2.3 Surveys and Assessments

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

- *Wheatbelt Bridges Package 2 Biological Survey (Ecologia 2021).*

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

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

Consultant & Survey Name	Survey Details
Ecologia (2021) Wheatbelt Bridges Package 2 Biological Survey	Survey Area: The Survey Area comprised 0.97 ha over Bridge 3197 on York Williams Road over Talbot Brook, approximately 15km southwest of Beverley, (SLK 11.65 to SLK 12.04). It was 320 m and 25 m to 40 m wide. Type: Detailed flora and vegetation survey, a basic fauna and fauna habitat assessment and a black cockatoo habitat assessment. The survey identified and mapped the dominant vegetation units, assessed vegetation condition, surveyed vascular plant species within bounded quadrats. Low-intensity fauna sampling was also undertaken to identify any significant vertebrate fauna within the Survey Area. Timing: Detailed flora and vegetation surveys, vertebrate fauna survey, fauna habitat assessment and black cockatoo habitat assessment were conducted concurrently from 2nd to 3rd of November 2020. Survey Results Shapefile TRIM Ref: D21#929509 Document TRIM Ref: D21#929486

3 SURVEY RESULTS

3.1 Summary of Flora and Vegetation Surveys

The width of the road reserve was surveyed between SLK 11.66 and SLK 11.98 on York – Williams Road. Vegetation type mapping was extrapolated within a 500 m buffer of the Survey Area (the 'Context Area'). The survey mapped two vegetation types, not including highly disturbed areas. The Survey Area was dominated by *Eucalyptus* mid open woodland and *Casuarina* low to mid open woodland, with an area of revegetation/regrowth comprised of *Acacias* and introduced species. The remainder of the Survey Area is comprised of highly disturbed/cleared areas. The vegetation condition ranged from 'Degraded' to 'Completely Degraded' and large areas surveyed had been impacted by past anthropogenic disturbances such as clearing, grazing and farming.

Ecologia (2021) completed a TEC/PEC assessment that determined that vegetation within the Survey Area did not meet the criteria for Eucalypt Woodlands of the Western Australian Wheatbelt (Eucalypt Woodlands TEC, synonymous with the state PEC - Eucalypt Woodlands PEC), and that no other TEC/PEC occurred.

Twenty-two flora taxa including subspecies and varieties representing nine families and 18 genera were recorded from the Ecologia (2021) Survey Area. This total comprised 14 native species and eight introduced species. No Threatened or Priority listed flora, Weeds of National Significance (WONS) or Declared Pests were recorded within the Survey Area. Overall, the floristic richness of sampled areas is low due to the high degree of disturbance throughout the Survey Area.

A small section of the 0.142 ha Clearing Area occurs outside of the Survey Area, totalling 0.026 ha. Vegetation condition and fauna habitat types in this area have been extrapolated using the adjoining vegetation mapping and Google Street View images. According to Ecologia (2021) and extrapolated data, vegetation within the proposed Clearing Area is comprised of 0.056 ha of *Eucalyptus* mid open woodland in a Degraded condition along with 0.086 ha of isolated trees lacking native understorey, described as 'Parkland Cleared', in a Completely Degraded condition.

3.2 Summary of Fauna Surveys

The Ecologia (2021) survey identified three fauna habitat types; Open Eucalypt Woodlands, Drainage Line and Revegetation. Large sections of the surveyed area have previously been disturbed and where native vegetation remains, fauna habitat was assessed as 'Poor' to 'Good'. Ten fauna species consisting entirely of native birds were recorded during the survey. No signs of Threatened or Priority fauna were recorded at the time of the survey. Ecologia (2021) considered that two species were 'Likely' and three species were 'Possible' to occur within the Survey Area based on suitable habitat conditions; Baudin's Cockatoo (*Zanda baudinii*) and Carnaby's Cockatoo (*Zanda latirostris*), listed as Endangered under the EPBC Act and BC Act, Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*), listed as Vulnerable under the EPBC Act and BC Act, Blue-billed duck (*Oxyura australis*), listed as Priority 4 under the BC Act, and South-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) listed as Conservation Dependant under the BC Act.

The Ecologia (2021) Survey Area contained 11 trees with a suitable Diameter at Breast Height (DBH) for Threatened Black Cockatoos, including four trees with unsuitable hollows and none containing suitable hollows for breeding. None of these trees showed any recent or historical signs of breeding or roosting by Carnaby's Cockatoo, nor was any breeding or roosting observed within the Survey Area. While some of the habitat types within the Survey Area contained suitable foraging species, none were considered to provide high quality foraging habitat for a Carnaby's Cockatoo. No evidence of foraging was recorded during the survey.

The proposed Clearing Area comprises 0.142 ha of low quality foraging vegetation and two trees with no suitable hollows for Threatened Black Cockatoos. The locations of these trees are provided in Appendix 1.

4 VEGETATION DETAILS

4.1 Proposal Site Vegetation Description

Only the *Eucalyptus* mid open woodland vegetation type occurs within the Clearing Area. This vegetation type is in a Degraded to Completely Degraded condition, dominated by *Eucalyptus loxophleba* subsp. *loxophleba* and *Eucalyptus rudis* subsp. *rudis*. The understorey was generally comprised of a tall sparse *Acacia* shrub layer or low sparse shrub layer, together with infestations of introduced grasses.

Vegetation type mapping was extrapolated within a 500 m buffer of the Survey Area. Where vegetation condition within the Clearing Area was not mapped, condition was extrapolated from adjacent surveyed areas, aerial imagery, Google Street View imagery and confirmed in a subsequent site inspection. Street View imagery has been provided in Appendix 2.

Overall, the floristic richness of the Survey Area is low due to the high degree of disturbance.

Table 3 and Table 4 provide details of the vegetation types and their condition within the Clearing Area and the remaining extents of these associations.

For a full description of the existing vegetation, refer to the Biological Report (Ecologia 2021).

Table 3. Summary of Vegetation Types within Clearing Area

Vegetation Type	Extent within Clearing Area (ha)	Total Extent Mapped (ha) within Survey Area
W01: <i>Eucalyptus</i> mid open woodland vegetation type	Surveyed area: 0.08 ha Context area: 0.007 ha Total: 0.087	Surveyed area: 0.27 ha Context area: 10.196 ha Total: 10.466 ha

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	Statewide	724,268.73	142,012.22	19.61	8.92
	IBRA Bioregion Avon Wheatbelt	630,577.61	108,887.52	17.27	9.36
	IBRA Sub-region Katanning	337,871.73	36,295.58	10.74	2.13
	Local Government Authority Shire of Beverley	73,497.97	8,996.93	12.24	12.08
Veg Assoc No. 25	Statewide	13,765.49	6,849.45	49.76	0.63
	IBRA Bioregion Avon Wheatbelt	8,925.29	2,126.69	23.83	1.47
	IBRA Sub-region Katanning	8,925.29	2,126.69	23.83	1.47
	Local Government Authority Shire of Beverley	6,168.70	1,333.78	21.62	No data

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 not likely to be at variance with the ten 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

One vegetation type occurs within the Clearing Area:

- W01: *Eucalyptus* mid open woodland vegetation type, dominated by *Eucalyptus loxophleba* subsp. *loxophleba* and *Eucalyptus rudis* subsp. *rudis*, with an understorey primarily comprised of tall sparse *Acacia* shrub layer or low sparse shrub layer, together with infestations of introduced grasses. This vegetation type is in a Degraded to Completely Degraded condition (Ecologia 2021).

The remainder of the Clearing Area is comprised of areas of vegetation that have been cleared of native understorey but contain some remnant upper stratum, mapped as 'Parkland Cleared' Ecologia (2021).

Vegetation Association (VA) 352 and VA 25 have been mapped over the Clearing Area (Beard 1976):

- 19.61% of the pre-European extent of VA 352 remains, with 8.92% of the current extent in DBCA managed land.
- 49.76% of the pre-European extent of VA 25 remains, with 0.63% of the current extent in DBCA managed land.

Although VA 352 has less than the 30% threshold Statewide guideline value remaining, the degraded to completely degraded condition of the vegetation in the Clearing Area reduces its significance, as detailed in Principle (e).

None of the vegetation types described by Ecologia (2021) within the Survey Area are representative of communities that correspond to any state (BC Act) or Commonwealth (EPBC Act) listed Threatened Ecological Community (TEC) or any state listed Priority Ecological Community (PEC).

The adjacent riparian vegetation within the Talbot Brook drainage line provides limited connectivity to nearby remnants; however, the clearing of narrow, linear sections of non-riparian roadside vegetation will not break the linkage provided by the drainage line.

Prior to the field survey, Ecologia undertook a likelihood of occurrence assessment of significant flora taxa. 17 taxa were considered 'Likely' and 23 taxa were considered 'Possible' to occur.

Twenty two flora taxa including subspecies and varieties representing nine families and 18 genera were recorded within the Ecologia (2021) Survey Area. This total comprised 14 native species and eight introduced species. No EPBC Act, BC Act-listed Threatened or Priority-listed species were recorded at Bridge 3197 during the field survey. Following the field survey, the Significant plant species identified by the Ecologia (2021) desktop assessment as potentially occurring within the Survey Area were considered unlikely to be present based on the absence of suitable habitat.

The Ecologia (2021) survey identified three fauna habitat types within the Survey Area: Open Eucalypt Woodlands, Drainage Line and Revegetation. Large sections of the surveyed area have previously been

disturbed and where native vegetation remains, fauna habitat was assessed as 'Poor' to 'Good'. Open Eucalypt Woodlands is the only habitat type present within the proposed Clearing Area.

Ten fauna species consisting entirely of native birds were recorded during the survey. No signs of Threatened or Priority fauna were recorded at the time of the survey. Ecologia (2021) considered that two Conservation Significant species were 'Likely' and three species were 'Possible' to occur within the Survey Area based on suitable habitat conditions; Baudin's Cockatoo (*Zanda baudinii*) and Carnaby's Cockatoo (*Zanda latirostris*), listed as Endangered under the EPBC Act and BC Act, Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*), listed as Vulnerable under the EPBC Act and BC Act, Blue-billed duck (*Oxyura australis*), listed as Priority 4 under the BC Act, and South-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) listed as Conservation Dependant under the BC Act.

Although the Blue-billed duck may possibly occur within the adjacent Talbot Brook outside of the summer months, the proposed Clearing Area is unlikely to contain habitat suitable for this species, as it is almost exclusively aquatic.

The South-western brush-tailed phascogale was not recorded in the Clearing Area by the biological survey, nor within the larger Survey Area. The nearest record of the species was located in 2018 approximately 15 kms to the west of the Clearing Area within a large patch of intact vegetation in close proximity to the much larger Wandoo National Park. It is likely that this record is associated with a population which exists within the National Park. No continuous ecological linkages exist between this record and the Clearing Area. No other records of the species exist within 30 km of the Clearing Area. For these reasons it is unlikely that the species will occur within the small 0.142 ha Clearing Area.

Two DBH trees are located in the Clearing Area, none of which contain hollows suitable for Black Cockatoo breeding. None of these trees showed any recent or historical signs of breeding or roosting by Carnaby's Cockatoo, nor was any breeding or roosting observed within the Survey Area. Although within the mapped distribution of Carnaby's Cockatoo, due to the distance from known breeding or roosting locations, it is unlikely that should hollows suitable for black cockatoo breeding develop in the future, that they would be preferentially utilised by black cockatoo species for breeding. Foraging habitat within the Clearing Area is considered to be low quality as very few plant species known to be utilised as food sources by Black Cockatoos and no species of *Banksia*, *Hakea* or *Grevillea* (key foraging resources) occur (Ecologia 2021). No evidence of foraging was recorded during the survey.

The proposed clearing is not likely to impact Black Cockatoos as outlined in Principle (b), given the small quantity of clearing, lack of suitable hollows, lack of evidence of use by or presence of Black Cockatoos and low quality of foraging habitat.

The native vegetation proposed to be cleared is not considered to comprise a high level of biological diversity, with limited landscape connectivity and no Significant flora and fauna species or TEC/PECs likely to be significantly impacted.

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

Methodology

- Biological Survey (Ecologia 2021)
- DCCEE Protected Matters Search Tool Report (12/07/2024)
- Department of Natural Resources and Environment (2002)
- Government GIS Shapefiles:
 - DBCA Threatened and Priority Ecological Community database search (Accessed 02/08/2024)
 - DBCA Threatened and Priority flora database search (Accessed 02/08/2024)
 - Bush Forever (Region Scheme - Special Areas) (Accessed 02/08/2024)
 - Ecological Linkages (Accessed 22/08/2024)
- Main Roads Site Inspection (13/08/2024)
- Department of Primary Industries and Regional Development Soil Landscape Mapping (Accessed 22/08/2024)
- Statewide Vegetation Statistics (Government of Western Australia 2019)

(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.

Assessment

A search of Main Roads GIS Significant Fauna layers identified 19 State Significant species within the 20 km Study Area. These include one Critically Endangered (CR), four Endangered (EN), six Vulnerable (VU), two Priority three (P3) and three Priority four (P4) species. Also included are Specially protected species comprised of one Migratory (MI) and two Conservation Dependant (CD).

The closest record is *Hydromys chrysogaster* (P4) (2023), located approximately 3.7 km southeast of the Clearing Area.

The Ecologia (2021) survey identified three fauna habitat types within the Survey Area: Open Eucalypt Woodlands, Drainage Line and Revegetation. Large sections of the surveyed area have previously been disturbed and where native vegetation remains, fauna habitat was assessed as 'Poor' to 'Good'. Open Eucalypt Woodlands is the only habitat type present, comprising the whole Clearing Area, with isolated trees within the mapped 'Parkland Cleared' sections and vegetation occurring within the unsurveyed portion (0.026 ha) of the Clearing Area providing lower quality habitat for fauna.

Ten fauna species consisting entirely of native birds were recorded during the survey. No Threatened (BC Act), Specially Protected or Priority listed fauna species were recorded at the time of the survey. Ecologia (2021) considered that two Conservation Significant species were 'Likely' and three species were 'Possible' to occur within the Survey Area based on suitable habitat conditions:

- Blue-billed duck (*Oxyura australis*), listed as Priority 4 under the BC Act.
- South-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) listed as Conservation Dependant under the BC Act.
- Baudin's Cockatoo (*Zanda baudinii*), listed as Endangered under the EPBC Act and BC Act
- Carnaby's Cockatoo (*Zanda latirostris*), listed as Endangered under the EPBC Act and BC Act,
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*), listed as Vulnerable under the EPBC Act and BC Act.

Oxyura australis (Blue-billed duck) (P4)

This species occupies freshwater swamps, lakes, salt lakes and estuaries within the south-east and south-west parts of Australia (Johnstone and Storr 1998) and may possibly occur within the adjacent Talbot Brook. The species is almost completely aquatic and is rarely seen on land. The proposed Clearing Area does not contain vegetation associated with a watercourse or wetland, therefore, it is unlikely that the Clearing Area contains significant vegetation for this species.

Phascogale tapoatafa wambenger (South-western brush-tailed phascogale) (CD)

Ecologia (2021) considered the likelihood of occurrence of the South-western brush-tailed phascogale to be 'Possible' due to the presence of potential habitat within the Clearing Area. However, potential habitat was in generally 'Poor' to 'Degraded' condition and the preferred hollow bearing Eucalypts are sparsely distributed. The South-western brush-tailed phascogale was not recorded in the Survey Area by the biological survey, nor within the larger Survey Area. The nearest record of the species was located in 2018 approximately 15 kms to the west of the Clearing Area within a large patch of intact vegetation in close proximity to the much larger Wandoo National Park. It is likely that this record is associated with a population which exists within the National Park. No continuous ecological linkages exist between this record and the Clearing Area. No other records of the species exist within 30 km of the Clearing Area. For these reasons it is unlikely that the species will occur within the small 0.142 ha Clearing Area.

Black Cockatoo species

The Ecologia (2021) Survey Area contains 11 trees with a suitable DBH for Threatened Black Cockatoos, none of which contain suitable nesting hollows for Black Cockatoos.. None of these trees showed any recent or historical signs of breeding or roosting by Carnaby's Cockatoo, nor was any breeding or roosting observed within the Survey Area.

Given the appropriate timing of the survey, lack of confirmed breeding records within the Survey Area, low quality of foraging habitat recorded within the Survey Area, and absence of tall trees with 'known' or 'probable' breeding hollows, Ecologia determined that it is unlikely that Black Cockatoos are currently utilising any of the trees identified as potential breeding or roosting habitat with the Clearing Area.

Foraging habitat within the Clearing Area is considered to be low quality as very few plant species known to be utilised as food sources by Black Cockatoos and no species of *Banksia*, *Hakea* or *Grevillea* (key foraging resources) occur (Ecologia 2021). The species recorded do not provide high quality foraging habitat for Black Cockatoos and no evidence of foraging was recorded during the survey.

0.142 ha of low quality foraging habitat and two DBH trees are proposed to be cleared. An assessment of the potential proposed clearing impacts is provided below:

- Breeding, nesting or night roosting habitat:
 - The nearest unconfirmed breeding area is approximately 20.1 km west of the Clearing Area.
 - The nearest confirmed breeding area is over 50 km to the northwest.
 - The nearest night roosting site is 14.3 km from the Clearing Area.
 - No primary or secondary evidence of black cockatoos were recorded during the current survey.
 - No known nesting or night roosting trees will be cleared.
 - No suitable nesting trees to be cleared, with the hollow trees confirmed to be unsuitable.
 - No clearing or degradation of any part of a vegetation community known to contain breeding habitat will be cleared.

The distance to confirmed breeding and night roosting sites reduces the likelihood that vegetation within and surrounding the Clearing Area will be utilised. Given the lack of evidence of Black Cockatoos recorded, the distance to known Black Cockatoo habitat and that the trees are confirmed to have no suitable hollows, the removal of two DBH trees is unlikely to impact threatened Black Cockatoo species.

- Loss of foraging habitat:
 - Ecologia (2021) determined that foraging habitat within the Clearing Area is low quality, with vegetation in a Degraded to Completely Degraded condition.
 - Given the lack of preferred species, the low priority of *E. loxophleba* and *E. rudis* for Carnaby's Cockatoos and the vegetation condition, vegetation within the Clearing Area provides poor foraging value.
 - Foraging habitat is not within close proximity to known breeding sites or night roosting habitat, having no suitable hollows within and being 14.3 km from the nearest night roosting site and over 20.1 km from the nearest breeding area. Given the distance to confirmed breeding and night roosting sites, the significance of any potential foraging habitat is reduced.

The distance to confirmed breeding and night roosting sites reduces the value of foraging vegetation within the Clearing Area and the likelihood that vegetation within and surrounding the Clearing Area will be utilised. Given the distance to known black cockatoo habitat and the small quantity of vegetation (0.142 ha) providing poor foraging value, the proposed clearing is unlikely to impact Threatened Black Cockatoo species.

A recent PMST Report (2024) was generated that identified a further four species not captured in Ecologia's desktop assessment:

Aphelocephala leucopsis (Southern Whiteface) (VU)

This species lives open woodlands and shrublands dominated by *Acacias* or *Eucalypts* with an understorey of grasses or shrubs. The Clearing Area may contain suitable habitat for foraging; however, this species is

considered sedentary and there are no records of this species within the 20 km Study Area. Given the species' sedentary nature and the lack of nearby records, it is unlikely that this species will occur within the Clearing Area.

Calidris acuminata (Sharp-tailed Sandpiper) (CR)

No record of this species occurs within the 20 km Study Area. Although this species is tolerant of grassland and may feed on pasture after rainfall, it prefers temporary or flooded wetland areas, feeding along the edge of water on mudflats, coastal and inland wetlands and sewage ponds. Given the lack of preferred habitat and the absence of any nearby records, this species is likely to only overfly the Clearing Area.

Myrmecobius fasciatus (Numbat) (EN)

The single record of Numbat in the 20 km Study Area is from 1974 within the townsite of Kulin. The nearest current population is a translocated subpopulation occurring in Boyagin Nature Reserve, over 30 km south of the Clearing Area. Given the distance to the nearest population and the lack of landscape connectivity, this species is unlikely to occur.

Westralunio carteri (Carter's Freshwater Mussel) (VU)

Carter's Freshwater Mussel occurs in coastal freshwater rivers and lakes between Moore River in the north and the Waychinicup River in the south. Given the lack of suitable habitat within the Clearing Area, this species is unlikely to occur.

The Clearing Area provides limited landscape connectivity to other patches of remnant bushland, being narrow patches of roadside vegetation in a Degraded to Completely Degraded condition.

The small quantity (0.142 ha) of native vegetation, including two DBH trees, proposed to be cleared is unlikely to comprise significant habitat for fauna indigenous to Western Australia, given the minor quantity, the condition of vegetation and the low foraging values.

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

Methodology

- Biological Survey (August 2021)
- DCCEE Protected Matters Search Tool Report (12/07/2024)
- Government GIS Shapefiles:
 - DBCA Threatened and Priority fauna database search (Accessed 02/08/2024)
 - DBCA Black Cockatoo Breeding Sites database search (Accessed 02/08/2024)
 - DBCA Black Cockatoo Roost Sites database search (Accessed 02/08/2024)
 - DBCA Carnaby's Cockatoo Confirmed and Unconfirmed Breeding Areas database searches (Accessed 02/08/2024)
 - WALGA Ecological Linkages database searches (Accessed 22/08/2024)
- Main Roads Site Inspection (13/08/2024)
- Species specific conservation listing advice and recovery plans

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

Proposal is not at variance to this Principle.

Assessment

Given that the Biological Survey was undertaken in 2021, an additional desktop assessment was undertaken on 17 July 2024 to ensure any changes to Threatened flora data was captured. A search of Main Roads GIS Flora and Herbarium layers identified seven threatened (T) species within the 20 km Study Area, all of which had been captured in the Ecologia (2021) assessment. The nearest Threatened flora species, *Eleocharis keigheryi* (2008), is recorded over 14.6 km southeast of the Clearing Area.

No EPBC Act or BC Act-listed Threatened species were recorded at Bridge 3197 during the field survey. Vegetation within the Survey Area had low species diversity, being in a Degraded to Completely Degraded condition due to an understory dominated by introduced weed species to the exclusion of natives. Following the field survey, the significant plant species identified by the Ecologia desktop assessment as potentially occurring within the Survey Area were considered unlikely to be present based on the absence of suitable habitat.

Given the distance between the closest known records of Threatened species and the Clearing Area and Ecologia's findings during its fieldwork, the risk of impact from the proposed clearing to Threatened flora species is low.

The proposed clearing is **not at variance** to this Principle.

Methodology

- Biological Survey (August 2021)
- Florabase (Accessed 17/07/2024)
- Government GIS shapefiles:
 - DBCA Threatened flora database search (Accessed 17/07/2024)
 - WAHerbarium database search (Accessed 17/07/2024)
- Species specific conservation listing advice and recovery plans

(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.

Assessment

A search of Main Roads GIS TEC layer identified two TECs within the 20 km Study Area:

- Eucalypt Woodlands of the Western Australian Wheatbelt.
- Perched wetlands of the Wheatbelt region with extensive stands of living Swamp Sheoak (*Casuarina obesa*) and Paperbark (*Melaleuca strobophylla*) across the lake floor.

Ecologia (2021) undertook a TEC assessment as part of its desktop and field survey. The desktop assessment identified the two communities listed above and that the likelihood of occurrence within the Survey Area was 'Possible'.

The field survey found that the patches of potential Eucalypt Woodlands TEC include dominant/co-dominant contra-indicators, or the vegetation was in 'Degraded' or 'Completely Degraded' condition, which does not meet the criteria for the TEC. The site visit undertaken on 13th August determined that the unsurveyed sections of the Clearing Area are in similar condition to adjacent surveyed areas and do not meet the criteria for the Eucalypt Woodlands TEC.

Melaleuca strobophylla was not recorded in quadrats, sampling sites or opportunistic collections by Ecologia (2021), therefore it was determined that the Perched wetlands of the Wheatbelt region does not occur within the Survey Area.

Given that no TECs occur within the Clearing Area, the proposed clearing is **not at variance** to this Principle.

Methodology

- Biological Survey (August 2021)
- Community specific conservation listing advice and recovery plans
- Government GIS shapefiles:
 - DBCA Threatened Ecological Community database search (Accessed 22/08/2024)
- Main Roads Site Inspection (13/08/2024)

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

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

Assessment

The *Eucalyptus* mid open woodland vegetation type shares the dominant species (*Eucalyptus loxophleba* subsp. *loxophleba*) with the pre-European vegetation association 352 described as medium woodland; York gum. This vegetation type comprises 0.056 ha (39.53%) of the proposed Clearing Area.

Pre-European Vegetation Association	Scale	Pre-European Extent (ha)	Current Extent (ha)	% Remaining	% Current Extent in DBCA Managed Land
352	Statewide	724,268.73	142,012.22	19.61	8.92
	IBRA Bioregion Avon Wheatbelt	630,577.61	108,887.52	17.27	9.36
	IBRA Sub-region Katanning	337,871.73	36,295.58	10.74	2.13
	Local Government Authority Shire of Beverley	73,497.97	8,996.93	12.24	12.08

Vegetation within the Clearing Area is described as providing 'Poor' to 'Good' quality habitat; however, it is in a Degraded to Completely Degraded condition with a high ratio of introduced flora taxa (46%). The Clearing Area has low species diversity due to an understory dominated by introduced weed species to the exclusion of natives. No Conservation Significant flora taxa or ecological communities occur within or in proximity to the Clearing Area, as detailed in Principle (a) and (c). Although over the larger Survey Area the vegetation has been mapped as mid open woodland, the vegetation in the Clearing Area is more representative of isolated trees over regrowth *Acacias* and weeds, as shown in Appendix 2. It is therefore not a good representative of VA 352.

Within the 20 km Study Area there is 9,016 ha of native vegetation extent mapped as VA 352, with the largest contiguous patches being:

- 821.8 ha of VA 352 within a 839 ha patch in the Wandoo National Park 15 km to the southwest.
- 248.2 ha of VA 352 within a 1,332.3 ha patch in the Wandoo National Park 15 km to the southwest.
- 573.3 ha patch of VA 352 following the Avon River 11.8km to the northeast.
- 313.2 ha patch of VA 352 following the Dale River 3.8 km to the south.

A remnant patch of vegetation (mapped as VA 352) occurring immediately east of the Clearing Area extends over 143.2 ha in association with the Talbot Brook and Dale River.

Given the extent and context of these remnants, being contiguous patches larger than 100 ha and occurring within a nature reserve or in association with a minor river or a main stream, vegetation in these patches are likely to be in better condition, providing higher quality habitat and corridors for fauna to traverse.

The Clearing Area occurs within a highly fragmented landscape with limited connectivity to other patches of remnant vegetation (Ecologia 2022). Clearing of 0.142 ha of scattered trees with an understorey comprising almost entirely of weeds to the exclusion of native species is unlikely to currently represent the woodland habitat of the pre-european vegetation association VA352 and is therefore not considered to be significant as a remnant of native vegetation in an area that has been extensively cleared.

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

Methodology

- Biological Survey (August 2021)
- Government GIS shapefiles:
 - Pre-European vegetation (Accessed 22/08/2024)
- Main Roads Site Inspection (13/08/2024)
- Statewide Vegetation Statistics (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 not at variance to this Principle.**Assessment**

No wetlands or watercourses have been recorded intersecting the Clearing Area. Talbot Brook, a non-perennial stream, passes between the north and south sections of the proposed clearing, approximately 14 m to the south and 80 m to the north, respectively.

The *Eucalyptus* woodland vegetation type found within the Clearing Area does not grow in association with the Talbot Brook watercourse as this vegetation type occurs above the predicted elevation of the one in 50-year flood event as outlined in the Waterways Assessment (D19#53355). The vegetation growing in association with Talbot Brook differs from the vegetation proposed to be cleared, being a *Casuarina* low to mid open woodland dominated by *Casuarina obesa* with associated *Melaleuca raphiophylla* and *Eucalyptus rudis* subsp. *rudis* trees.

Given that the vegetation type within the Clearing Area is not growing in, or in association with, a watercourse or wetland, the proposed clearing is **not at variance** to this Principle.

Methodology

- Arup (2018) RN1019 - Bridge 3197 Waterways Assessment.
- Biological Survey (August 2021)
- Government GIS shapefiles:
 - Geomorphic Wetlands (Accessed 22/08/2024)
 - Ramsar Wetlands (Accessed 22/08/2024)
 - Important Wetlands (Accessed 22/08/2024)
 - Hydrography Linear (Accessed 22/08/2024)
 - RIWI Act Rivers (Accessed 22/08/2024)
- Main Roads Site Inspection (23/08/2024)

(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.

Assessment

The proposed Clearing Area is separated into two sections for levels of risk for land degradation.

Northern section of clearing:

This section of clearing occurs within the Jelcobine 256 Jc System, which consists of 'Isolated steep low hills with undulating low granite hills and isolated lateritic remnants in the Zone of Rejuvenated Drainage. Gravels, and grey shallow to deep sandy duplexes.'

Risk Levels:

- Salinity Risk – <3% of map unit has a moderate to high salinity risk or is presently saline.
- Water Erosion – 3-10% of map unit has a high to extreme water erosion risk.
- Waterlogging – <3% of map unit has a moderate to very high waterlogging risk.
- Wind erosion – 3-10% of map unit has a high to extreme wind erosion risk.
- Land Instability – <3% of map unit has a moderate to high hazard.
- Flood – <3% of map unit has a moderate to high flood risk.

Southern section of clearing:

This section of clearing occurs within the Avon Flats 256Af System, which consists of 'Alluvial flats, in the northern Zone of Rejuvenated Drainage, with brown loamy earth, grey non-cracking clay and brown deep sand.'

Risk Levels:

- Salinity Risk – 10-30% of map unit has a moderate to high salinity risk or is presently saline.
- Water Erosion – 3-10% of map unit has a high to extreme water erosion risk.
- Waterlogging – >70% of map unit has a high water repellence risk.
- Wind erosion – 10-30% of map unit has a high to extreme wind erosion risk.
- Land Instability – <3% of map unit has a moderate to high hazard.
- Flood – >70% of map unit has a moderate to high flood risk.

Based on the above risk levels, clearing of native vegetation within the local area may lead to a small increase in salinity, a moderate increase in water repellence and an increased risk of flooding.

The proposed clearing is in a moderate rainfall area, receiving a mean annual rainfall of 416.20 mm (Bureau of Meteorology Australia, 2022), occurring generally in the winter months.

The ASRIS Acid Sulfate Soils (ASS) Map indicates that there is a low probability of ASS occurrence within the Clearing Area. Activities associated with the proposed clearing require excavation and dewatering, though they are unlikely to trigger management under the DWER ASS Guidelines. Accordingly, ASS is unlikely to be a significant issue. An ASS Management Plan will be developed if predicted disturbance exceeds DWER trigger levels.

The proposed clearing is 0.142 ha in narrow, linear sections. The clearing will be undertaken over a short period (<6 months) during the summer months, with cleared areas subsequently being sealed or covered by non-dispersive materials. Works associated with this Proposal have been designed to avoid interruption of any natural drainage and surface run-off patterns, with drains designed to direct surface runoff towards the existing natural drainage line.

Due to the small scale, duration and timing of clearing and the design of the associated works, the proposed clearing is unlikely to lead to a long-term increase in salinity, water repellence or risk of flooding.

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

Methodology

- Biological Survey (August 2021)
- Government GIS Shapefiles:
 - Acid Sulphate Soil Risk Map (Accessed 22/08/2024)
 - Soil landscape land quality – Water Erosion Risk (Accessed 22/08/2024)
 - Soil landscape land quality – Wind Erosion Risk (Accessed 22/08/2024)
 - Soil landscape land quality – Salinity Risk (Accessed 22/08/2024)
 - Soil landscape land quality – Surface Acidity (Accessed 22/08/2024)
 - Soil landscape land quality – Waterlogging Risk (Accessed 22/08/2024)
 - Soil landscape land quality – Flood Risk (DPIRD-007) (Accessed 22/08/2024)
- Main Roads Site Inspection (13/08/2024)

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

Proposed clearing is not at variance to this Principle.

Assessment

A search of government databases indicates no nature reserves, conservation areas or Bush Forever Sites are located within or adjacent to the Clearing Area. The nearest conservation area is an Environmentally Sensitive Area associated with the Perched wetlands of the Wheatbelt region TEC approximately 7.8 km southeast of the Clearing Area. The nearest National Park is Wandoo National Park, located 10 km to the west, which also contains the nearest mapped ecological linkage.

Clearing of vegetation within the Clearing Area will not break any ecological linkages or impact the environmental values of any nearby conservation areas. Therefore, the proposed clearing is **not at variance** to this Principle.

Methodology

- Biological Survey (August 2021)
- [Environmental Offsets Register](#)
- Government GIS Shapefiles:
 - DBCA Legislated Lands and Waters & Lands of Interest (Accessed 22/08/2024)
 - DWER Environmentally Sensitive Areas (Accessed 22/08/2024)
 - Geomorphic Wetlands (conservation category wetlands only) (Accessed 22/08/2024)
 - Ramsar Wetlands (Accessed 22/08/2024)
 - Important Wetlands (Accessed 22/08/2024)
- Main Roads Site Inspection (13/08/2024)

(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.

Assessment

A search of government databases indicates the Clearing Area does not occur within or adjacent to a Public Drinking Water Source Area, Groundwater Area, or CAWS Catchment Area. The Clearing Area does occur within the Avon River Catchment Area surface water area proclaimed under the *RIWI Act 1914*.

The soil profile in northern section of the Clearing Area is described as gravels and grey shallow to deep sandy duplexes, while the southern section has brown loamy earth, grey non-cracking clay and brown deep sand. The local area has a low risk of water erosion and a low to moderate risk of wind erosion. Adjacent to the proposed Clearing Area is a riparian area associated with the non-perennial Talbot Brook, however, the proposed clearing does not include the removal of riparian vegetation.

The Clearing Area is in an area classified as having a Low Probability of Occurrence of Acid Sulfate Soils.

Minor dewatering may be required for works associated with the proposed clearing. Works associated with the proposed clearing have been designed to minimise interruption to any natural drainage and surface runoff patterns (Arup 2019; Arup 2024). Pavement runoff will be redirected to natural drainage lines via new table drains. The works are planned to occur in the Summer months to minimise the quantity of dewatering required and reduce potential water erosion of cleared surfaces.

The proposed clearing is 0.142 ha in narrow, linear roadside sections. The clearing will be undertaken over a short period (<6 months), with cleared areas subsequently being sealed or covered by non-dispersive materials. It is unlikely that this Proposal will cause deterioration in the quality of surface or underground water given the small quantity of clearing and that works are planned to occur during Summer to minimise dewatering and runoff.

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

Methodology

- Biological Survey (August 2021)
- Government GIS Shapefiles:
 - RIWI Act, Surface Water Areas and Irrigation Districts (Accessed 22/08/2024)
 - CAWSA Part 2A Clearing Control Catchments (Accessed 22/08/2024)
 - RIWI Act, Groundwater Areas (Accessed 22/08/2024)
 - Soil landscape land quality - Salinity Risk (Accessed 22/08/2024)
 - Groundwater Salinity Statewide (Accessed 22/08/2024)
 - Soil Mapping (Accessed 22/08/2024)
 - Acid Sulphate Soil risk mapping (Accessed 22/08/2024)
 - Soil landscape land quality - Subsurface Acidification Risk (Accessed 22/08/2024)
- Main Roads Site Inspection (13/08/2024)

(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.

Assessment

The Clearing Area is located in an area that has been highly modified from agriculture. According to available databases, the local area varies in flood and water repellence risk, with low risk in the north and moderate to high risk in the south. The surrounding region has a mean annual rainfall of 416.20 mm (Monthly Rainfall - 010515 - Bureau of Meteorology (bom.gov.au)).

The elevation of the Clearing Area is above the one in 50-year Average Recurrence Interval (ARI) contour line. Works associated with the proposed clearing have been designed to minimise interruption to any natural drainage and surface run-off patterns (Arup 2019; Arup 2024). Pavement runoff will be redirected to natural drainage lines via new table and spoon drains.

The small extent of the proposed clearing in narrow, linear roadside sections is not anticipated to adversely impact surface water inflows into either the Clearing Area or its surrounds. In addition, due to the linear nature of the proposed Clearing Area in a Degraded to Completely Degraded condition, the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

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

Methodology

- Arup (2019) Bridge 3197A York-Williams Road over Talbot Brook, Shire of Beverley. IFC Design Report.
- Arup (2024) Technical Note. Bridge 3197 (York-Williams Road) Replacement & Road Upgrades.
- Arup (2018) RN1019 - Bridge 3197 Waterways Assessment.
- Biological Survey (August 2021)
- BoM Website (Accessed 22/08/2024)
- Government GIS Shapefiles:
 - Soil Mapping (Accessed 22/08/2024)
 - Contours (Accessed 22/08/2024)
 - Soil landscape land quality - Waterlogging Risk (Accessed 22/08/2024)
 - Soil landscape land quality - Flood Risk (Accessed 22/08/2024)
- Main Roads Site Inspection (13/08/2024)

6 REHABILITATION, REVEGETATION & OFFSETS

6.1 Revegetation and Rehabilitation

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

6.2 Offset Proposal

No offset proposal is required as the proposed clearing will not result in significant residual impacts to native vegetation within the region.

7 COMPLIANCE WITH CPS 818

Table 6 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 CDR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.	No	No further action required.
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 (D17#859669)</u> and <u>Vehicle, Plant and Machinery Hygiene Register Template (D23#179551)</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.	No	No further action required.
7. Weeds are likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.	No	No further action required.
8. Did an environmental specialist conduct the survey or field assessment?	Yes	The Environmental Specialist undertaking the biological assessments was suitably qualified and had more than three years' experience.
9. Did an environmental specialist prepare the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal?	Yes	The Environmental Specialist preparing the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal was suitably qualified and had more than three years' experience.

8 REFERENCES

Arup (2018). *Final Waterways Report. RN 1019 Bridge 3197 York-Williams Road over Talbot River Beverly*. Unpublished report prepared for Main Roads Western Australia.

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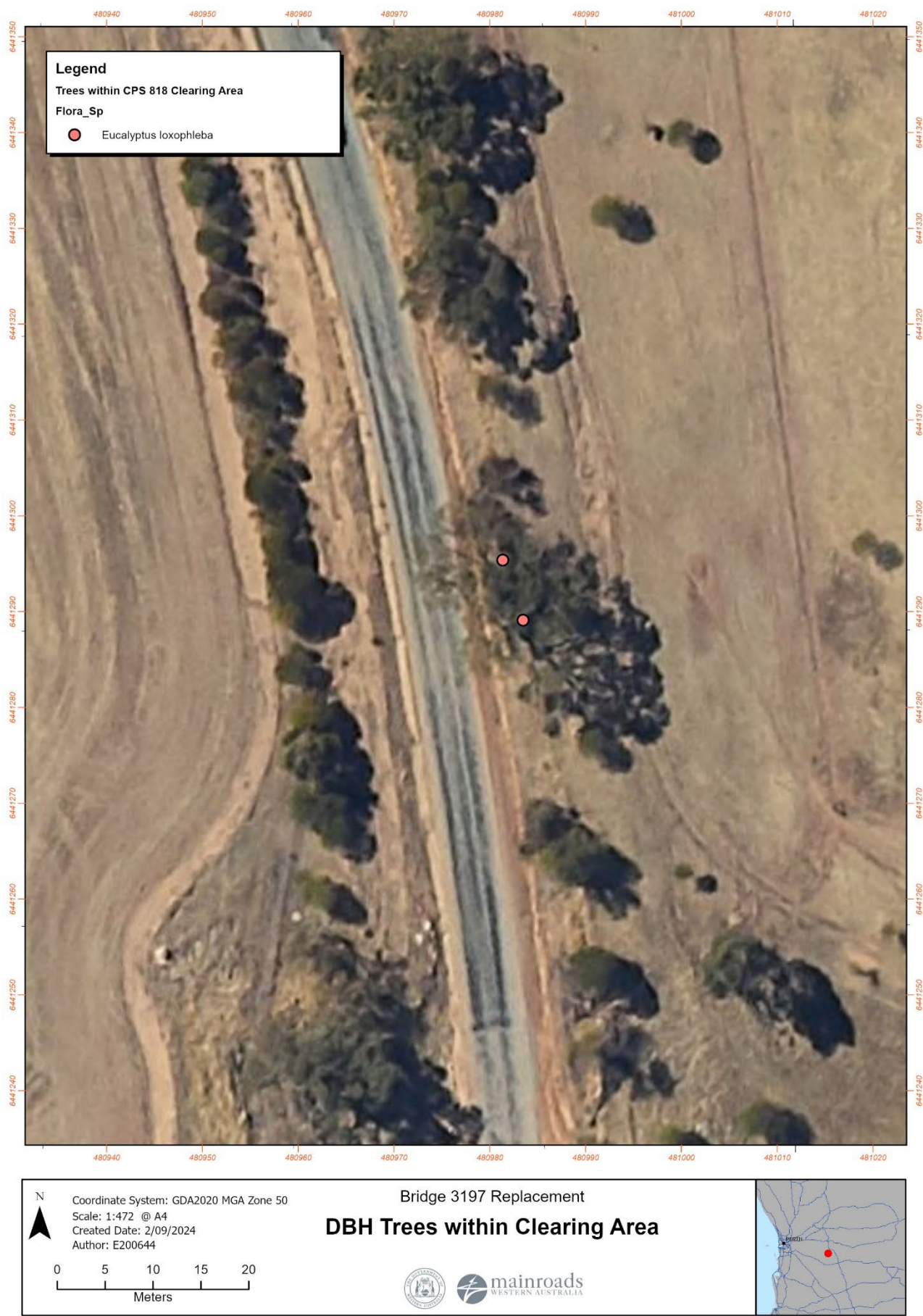
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9 APPENDICES

Appendix 1: Potential Habitat Trees



Appendix 2: Streetview Images of Mapped Locations

Google Streetview images of vegetation within the proposed Clearing Area that have been mapped as 'Parkland Cleared' and '*Eucalyptus* Mid Open Woodland' by Ecologia (2021) have been provided in this section. These images are current as of November 2023.

Locations mapped as Parkland Cleared:



SLK 11.68 – Left hand side of carriageway (LHS) – Isolated trees, regrowth vegetation and understorey of weeds.



SLK 11.7 – LHS – Overstorey trees, regrowth vegetation and understorey of weeds.



SLK 11.73 – LHS – Overstorey trees, regrowth vegetation and understorey of weeds.



SLK 11.76 – LHS – Isolated juvenile trees and understorey of weeds.



11.78 SLK – LHS – Isolated juvenile trees and understorey of weeds.



SLK 11.8 – LHS – Left hand side of patch is mapped as Parkland Cleared & right hand side of patch is *Eucalyptus* mid open woodland.



SLK 12 – LHS – Regrowth and dead vegetation within road reserve adjacent to cleared paddock.



SLK 12.2 – LHS – Regrowth vegetation within road reserve.

Locations mapped as *Eucalyptus* mid open woodland:



SLK 11.78 – Right hand side of carriageway (RHS) – Overstorey trees with understorey of weeds. DBH tree on left hand side to be retained.



SLK 11.8 – RHS – Juvenile trees, regrowth vegetation and understorey of weeds.



SLK 11.92 – LHS – Overstorey trees, regrowth vegetation and understorey of weeds.



SLK 11.92 – RHS – Overstorey tree, regrowth vegetation and understorey of weeds. Mature tree in rear to be retained.



SLK 11.95 – LHS – Isolated tree with understorey of weeds.