



mainroads
WESTERN AUSTRALIA

Clearing Assessment Report – CPS 818

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Western Australia.*

Bridge 0091 Replacement

September 2022

EOS Number:1602

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Amendments

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	Environment Officer	Draft v1	28/09/2022
Reviewer:	CRSP	Rev 0	04/10/2022
Author:	Environment Officer	Rev 1	19/10/2022
Reviewer	CRSP	Rev 1	20/10/2022
Author	Environment Officer	Rev 2	20/10/2022
Reviewer	CRSP	Rev 2	20/10/2022

1 PURPOSE

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

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

2 SCOPE

2.1 Project Scope

Project Name: Bridge 0091 Replacement

Project Purpose / Components: Bridge 091 is 87 years old, with a 28-year-old reinforced concrete overlay. Both the bridge and overlay are approaching the end of their design life. In 2013, traffic counts were recorded as 434 vpd.

The bridge has been identified for replacement due to:

- Overlay is requiring replacement;
- Several bridge elements are inadequate for the required load rating vehicles, requiring strengthening or replacement;
- Substandard bridge width for such a highway;
- Substandard guardrail and terminals;
- Restricted headroom limiting inspection of the structure;
- Improving clearance not viable as this will cause undermining of the bedlog abutments.

A net present value assessment for refurbishing the bridge has been undertaken by Main Roads. This concluded that it would be more cost effective to replace the structure, rather than refurbish and upgrade.

The scope of work comprises the following:

- Construction of temporary side track;
- Demolition and disposal of the existing bridge;
- Construction of the replacement single span concrete precast plank bridge (0091A);
- Construction of bridge approaches including embankment construction, pavement construction and sealing; and
- Removal of temporary side track when bridge works are completed (Temporary Bailey Bridge will be removed by Main Roads).

The proposed clearing undertaking using CPS 818 is : up to 0.2 ha

The proposed temporary clearing undertaking using CPS 818 is: 0 ha

Project Location(s): The project area is located on South Western Highway in the Shire of Manjimup SLK 348.22 to 348.45 as shown in Figure 1.

- MGA reference: GDA 2020
- Latitude: 116.5185944°E
- Longitude: 34.6938300°S

The location of the proposed works is at Figure 1.

Rev 1

This CAR was first approved on 4 October 2022 (D22#1086027). A minor change in clearing footprint was required and subsequently this CAR has been amended to reflect these changes. The proposed change in location does not alter the total area required to be cleared and does not affect the negligible environmental risk associated with the project activities.

Rev 2

Following amendments made under Rev 1 and endorsement by CRSP (20/10/2022) the CAR was further amended to account for the additional removal of three Karri trees (DHB>50cm, no hollows). All three Karri trees were initially proposed for retention however given unforeseen impacts to roots during side track construction the trees are required to be removed due to ongoing safety concerns for the community. Further advice has been sought from fauna specialist SW Environmental who concluded the risk to Threatened fauna to be negligible given lack of hollows present in the trees in question (D22#1125362). Recommended mitigation measures proposed by SW Environmental will be communicated to relevant Main Roads personnel and contractors.

The CAR has subsequently been updated to reflect these changes. The proposed additional removal of DBH trees does not alter the total area required to be cleared and does not affect the negligible environmental risk associated with the project activities.

2.2 Assessment Report Scope

The desktop assessment area, see Figure 2, is confined to a local area of a 20 km.

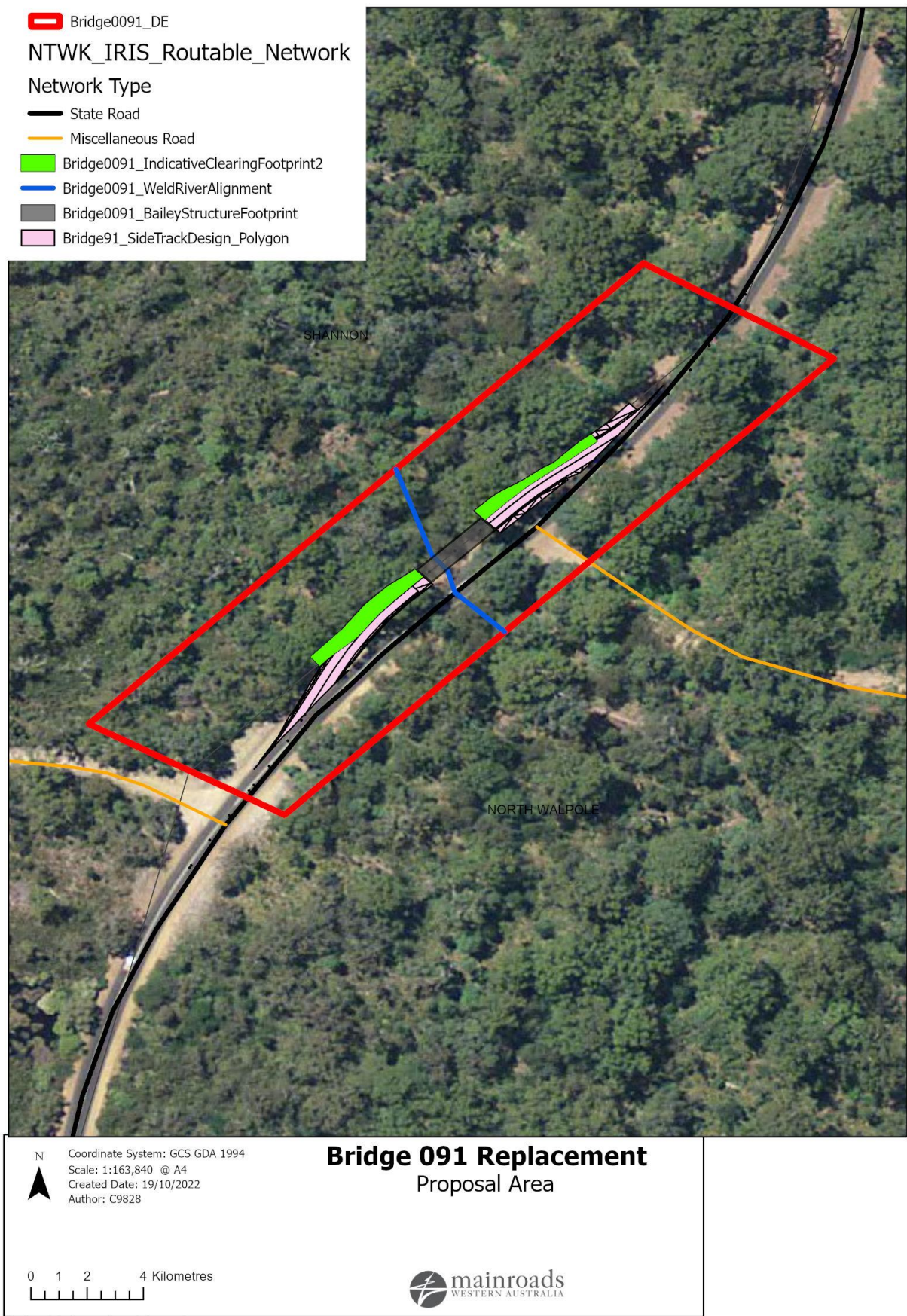


Figure 1. Project Area

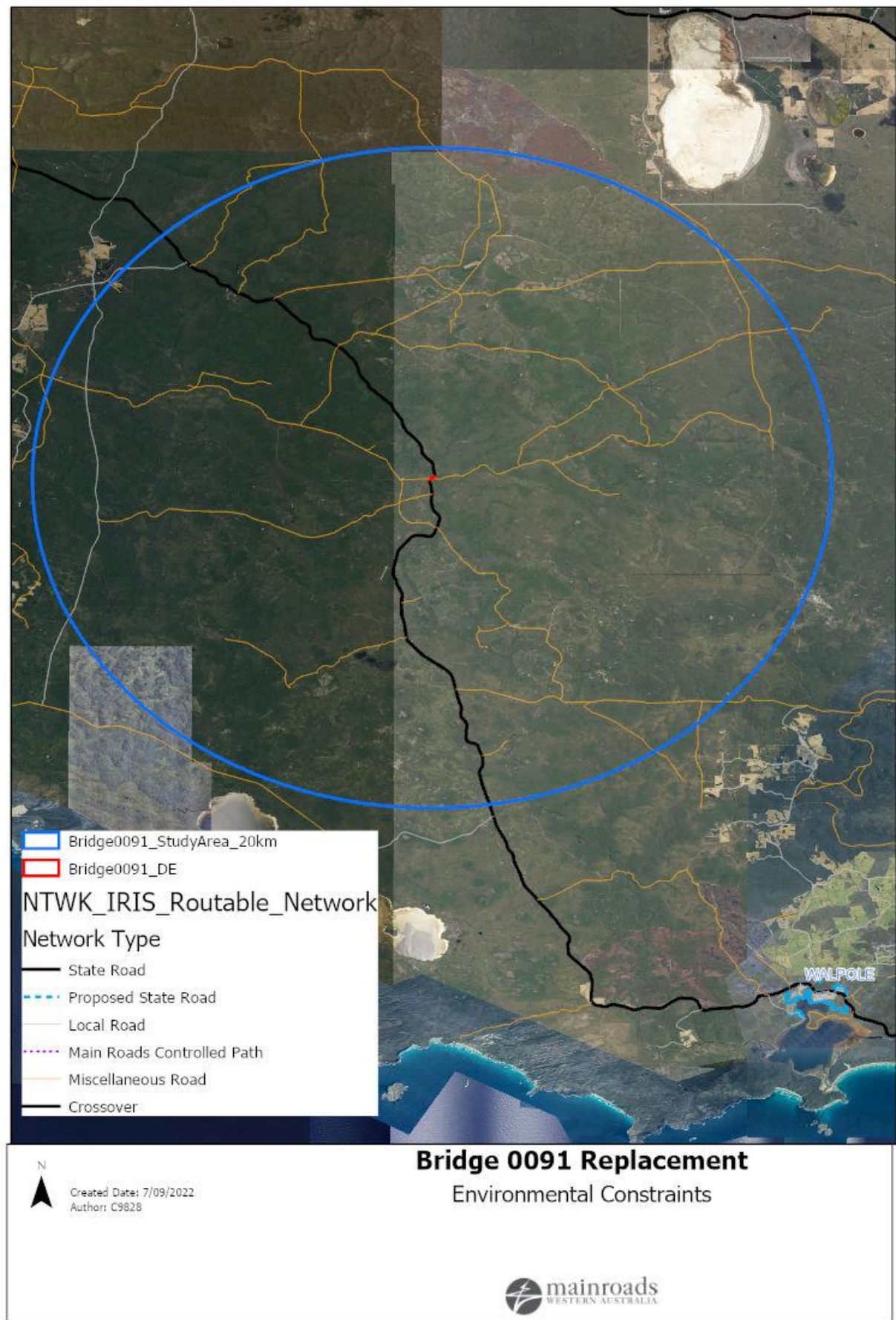


Figure 2. Assessment Area

2.3 Alternatives to clearing

The replacement and widening of the bridge itself will not require any clearing however slight clearing will be required in order to establish a one lane side track during the construction works. This side track is required to allow safe traffic flow while the bridge is being replaced and therefore is essential. The side track has intentionally been located on the side of the road which will require the least amount of clearing however minimal clearing is required.

2.4 Measures to Avoid, Minimise, Reduce and Manage Project Clearing Impacts

The design and management measures implemented to avoid and minimise the clearing impacts by the project are provided in Table 1.

Table 1. Measures undertaken to Avoid, Minimise, Reduce and Manage the Project Clearing Impacts

Design or Management Measure	Discussion and Justification
Steepen batter slopes	The use of 2:1 slope of the side track batters instead of 4:1 has allowed for the reduction in clearing including reductions in the number of DBH>50 cm trees requiring removal.
Installation of safety barriers	A W-beam guardrail has been incorporated into the design of the side track to allow for the steeper batter slopes and reductions in the number of DBH>50 cm trees requiring removal.
Simplification of design to reduce number of lanes and/or complexity of intersections	The design of the side track has intentionally been included as one 4 m lane with portable traffic light infrastructure during construction. This is appropriate given the levels of traffic using the road as well as ensures the clearing footprint is minimised.
Preferential use of existing cleared areas for access tracks, construction storage and stockpiling	The side track has been aligned to only impact vegetation on the west side of South West Highway and has intentionally been located predominantly within the existing cleared area on the bridge's west side. The west side of the bridge was chosen as it will require the least amount of clearing and no impacts to riparian vegetation.

2.5 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 (see Section 1.3), Main Roads has also had regard to the below instruments.

Other Legislation of relevance 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* (RIWI Act)
- *Aboriginal Heritage Act 1972* (WA)
- *Town Planning and Development Act 1928*

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 (DEC, December 2014)
- Procedure: Native vegetation clearing permits (DWER, October 2019)
- Environmental Offsets Guidelines (Government of Western Australia, August 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
- Approved Recovery Plans for threatened species
- EPBC Act Referral guidelines for the three threatened black cockatoo species
- Strategic advice - EPA

3 SUMMARY OF SURVEYS

A preliminary environmental site assessment was undertaken by Main Roads Environment Officer on 25 August 2022 and a further site inspection including targeted flora assessment was conducted on 23 September 2022 by Main Roads internal Botanist (D22#992638).

No fauna were directly observed however chewed marri nuts were found adjacent to vegetation. Bite marks appear to be associated with the common Australian Ringneck Parrot (*Barnardius zonarius*) (Photo 8, WA Museum 2018). Within the proposed clearing area there are 6 trees with DBH > 50cm. None appeared to contain hollows.

The targeted searching focused on areas within the proposed clearing area (demarcated in the field) although traverses through adjacent areas were also completed. Details on the vegetation composition (dominant species) and condition were recorded opportunistically across the survey area. Condition rating used the standard scale for the South West (EPA 2016).

The majority of the development envelope has been cleared for the existing road and road verges. Several common weed species were recorded within the cleared road verge including *Hypochaeris glabra*, *Cynodon dactylon*, *Cotula turbinata*, *Conyza sumatrensis*, *Solanum nigricans*, *Brassica* sp. and *Poa annua*. No declared plants or WoNS were observed.

Native vegetation is present adjacent to cleared areas. The native vegetation present within the development envelope is in Excellent condition (EPA 2016). The native vegetation was described as: Tall open forest of *Eucalyptus diversicolor*, *Corymbia calophylla* and *Eucalyptus marginata* over tall closed shrubland of *Acacia pentadenia* and *Trymalium odoratissimum* over shrubland of *Lepidosperma effusum*, *Boronia gracilipes* and *Leucopogon australis*.

Other species observed included: *Pteridium esculentum*, *Leucopogon verticillatus*, *Tetrarrhena laevis*, **Hypochaeris glabra*, *Agonis flexuosa*, *Lomandra* sp., **Cynodon dactylon*, *Lomandra sonderi*, *Lomandra pauciflora*, *Opercularia apiciflora*, *Tetraria capillaris*, *Allocasuarina decussata*, *Tremandra diffusa*, *Eucalyptus patens*, *Taxandria parviceps*, *Podocarpus drouynianus*, *Andresonia caerulea*, *Acacia pulchella*, *Johnsonia lupulina* and *Patersonia occidentalis*.

No Threatened flora were observed within the proposed clearing area (or the development envelope where searched). Based on the results of the site inspections and taking into consideration the habitats and search effort, Threatened flora are considered unlikely to occur within the proposed clearing area.

4 VEGETATION DETAILS

4.1.1 Project Site Vegetation Description

The proposal area has historically been predominantly cleared for the existing bridge and South West Highway however native vegetation exists as roadside vegetation which extends into the adjacent Mount Frankland National Park. Native vegetation was in Excellent condition (EPA 2016) and consisted of a tall open forest of *Eucalyptus diversicolor*, *Corymbia calophylla* and *Eucalyptus marginata* over tall closed shrubland of *Acacia pentadenia* and *Trymalium odoratissimum* over shrubland of *Lepidosperma effusum*, *Boronia gracilipes* and *Leucopogon australis*.

Tables 2 and 3 provide details of the Pre-European Vegetation Associations within the project area and the remaining extents of these associations.

For a full description of the existing vegetation, refer to the Site Inspection Report in Appendix A.

Table 2. Summary of Project Area's Mapped Pre-European Vegetation Associations

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Vegetation Association 1 described as a Tall forest; karri (<i>Eucalyptus diversicolor</i>)	Clearing of up to 0.2 ha for installation of a side track around an existing bridge on South West Highway.	Excellent (EPA 2016)	Vegetation description and condition determined from Main Roads site visit on 25 August and 23 September 2022.
Vegetation Association 3 described as a Medium forest: jarrah-marri			

Table 3. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves*
Veg Assoc No. 1	Statewide	72,410.06	56,328.07	77.79	64.99
	IBRA Bioregion Warren	69,118.21	53,852.13	77.91	65.35
	IBRA Sub-region Warren	69,118.21	53,852.13	77.91	65.35
	Local Government Authority Shire of Manjimup	40,510.27	38,092.84	94.03	91.40
Veg Assoc No. 3	Statewide	2,661,404	1,803,437	67.76	55.23
	IBRA Bio region Warren	250,262.10	195,318.18	78.05	67.41
	IBRA Sub-region Warren	250,262.10	195,318.18	78.05	67.41
	Local Government Authority Shire of Manjimup	287,389.56	238,176.00	82.88	78.48

*Figure based on % of current extent (as a proportion of Pre-European Extent)

4.1.2 Vegetation Complexes and Representation

Table 4 provides details of the Pre-European Vegetation Complex within the project area and the remaining extents of these associations.

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

Hedde/Mattiske Veg Complex	Pre-European Extent (ha)	Current Extent	% Remaining
Granite Valleys - Vh3	12,446.73	10,812.30	86.87

5 ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

In assessing whether the project's proposed clearing is likely to have a significant impact on the environment, the project was assessed against the ten Clearing Principles (Environmental Protection Act 1986, Schedule 5).

Each principle has been assessed in accordance with DWER's 'A Guide to the Assessment of Applications to Clear Native Vegetation' and other relevant CPS Decision Reports prepared by DWER (Government of Western Australia, 2014).

The proposed clearing is not likely to be at variance with the 10 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
Comment <u>Flora and Vegetation</u> The area under application consists primarily of an overstorey of karri and marri, with a range of understorey species. Similar vegetation in same or better condition is extensively available in the local area. No riparian vegetation is proposed to be cleared. According to Main Roads shapefiles, there are 7 known records of Threatened flora and 24 Priority flora within the 20 km study area, none of which are within the proposal area. In addition, Main Roads have consulted with DBCA who confirmed that no Threatened or priority flora species have been recorded in proximity to the proposal area according to their records. Furthermore, the targeted flora survey by Main Roads botanist recorded no Threatened or Priority flora during the field survey and none are considered likely to occur. One state listed Priority 1 ecological community buffer is mapped as occurring over the proposal area being the '<i>Reedia spathacea</i> - <i>Empodisma gracillimum</i> - <i>Schoenus multiglumis</i> dominated peat paluslopes and sandy mud floodplains of the Warren Biogeographical Region' ecological community. This community is associated with a wetland to the southwest of the proposal area. No vegetation resembling this ecological community was recorded within, or adjacent to the proposal area during Main Roads site inspections and the soil and hydrological conditions of the proposal area are not considered suitable for this community. <u>Fauna</u> Database searches identified 27 significant fauna species with potential to occur in the study area, of which 15 species have been recorded within 20 km of the study area. These include: • Baudin's Black-Cockatoo (<i>Calyptorhynchus baudinii</i>) – Endangered under EPBC Act and BC Act • Carnaby's Black Cockatoo (<i>Calyptorhynchus latirostris</i>) – Endangered under EPBC Act and BC Act • Forest Red-tailed Black-Cockatoo (<i>Calyptorhynchus banksii naso</i>) – Vulnerable under EPBC Act and BC Act • Balston's Pygmy Perch (<i>Nannatherina balstoni</i>) – Vulnerable under EPBC Act and BC Act • Carters freshwater mussel (<i>Westralunio carteri</i>) - Vulnerable under EPBC Act and BC Act • Mud minnow (<i>Galaxiella munda</i>) – Vulnerable under BC Act • Western Ringtail Possum (<i>Pseudocheirus occidentalis</i>) – Critically Endangered under EPBC Act and BC Act • Numbat (<i>Myrmecobius fasciatus</i>) - Endangered under EPBC Act and BC Act • Woylie (<i>Bettongia penicillata ogilbyi</i>) – Endangered under EPBC Act and Critically Endangered under BC Act

- Quokka (*Setonix brachyurus*) - Vulnerable under EPBC Act and BC Act
- Chuditch (*Dasyurus geoffroii*) - Vulnerable under EPBC Act and BC Act
- South-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) – DBCA Priority 4
- Western false pipistrelle (*Falsistrellus mackenziei*) – DBCA Priority 4
- Quenda, southwestern brown bandicoot (*Isododon fusciventer*) – DBCA Priority 4
- Western brush wallaby (*Macropus irma*) – DBCA Priority 4

Threatened black cockatoo species

Desktop searches identified that all three black cockatoo species have been recorded within the 20 km survey area however the nearest record is approximately 4.9 km to the northwest of the proposal area and the nearest confirmed breeding area buffer is approximately 10.68 km to the south east. There are no confirmed nesting or roosting sites within 20 km of the proposal area.

A total of six DBH>50 cm trees (no hollows) are within the clearing footprint. Chewed marri nuts with bite marks were noted during the site inspection however these were attributed to the common Australian Ringneck Parrot (*Barnardius zonarius*) and not Threatened black cockatoos (WA Museum 2018). Nonetheless the vegetation within the proposal area and adjacent 31,000 ha Mount Frankland National Park would provide potential foraging (high quality) and potential roosting/nesting habitat to all three Threatened Black Cockatoos.

Given the lack of evidence of Threatened black cockatoos within the proposal area, distance to confirmed breeding and roosting areas as well as the available surrounding habitat, the proposal to remove six DBH trees (no hollows) and up to 0.2 ha of quality foraging habitat is not likely to have a significant impact of any of the Threatened black cockatoo species.

Aquatic species

The proposed clearing area contains no habitat for aquatic species (Balston's Pygmy Perch, Carters freshwater mussel and Mud minnow).

Western Ringtail Possum

The proposal area contains some habitat that appears superficially suitable for the Western Ringtail Possum of the Southern Forests (i.e., Marri and Karri dominated forests adjacent to riparian vegetation) and is within the predicted range of Western Ringtail Possum. However, the proposal area does not fall within any of the three key management zones for the species being located approximately 20 km south of the Southern Forest Zone and approximately 30 km north of the South Coast zone. In addition, Main Roads ArcGIS shapefiles show no records within 20 km of the proposal area. A total of six DBH>50 cm trees (no hollows) are within the clearing footprint. Given the distance to key management zones, lack of records within 20 km as well as the available surrounding habitat, the proposal to remove six DBH trees (no hollows) and 0.2 ha of native vegetation is not likely to have a significant impact on the Western Ringtail Possum.

Numbat and Woylie

The proposal area is outside of the expected range for the Numbat and Woylie however vegetation within and adjacent to the proposal area fits the broad range of habitats used by these species. There is one very old record of a Numbat from 1989 approximately 900m south of the proposal area indicating that the species may have frequented the area historically however this is the only record within 20 km. There are no records of the Woylie within the 20 km of the proposal area. The proposal area is outside the expected range of both species'.

Quokka

The proposal area is within the known range of the Quokka and there are a large number of records within the study area the closest of which is approximately 50 m south of the proposal area. The proposal area

does contain suitable habitat (Karri/Marri forest and riparian habitats with sedge dominated understorey) however this is not unique the surrounds given adjacent Mount Frankland National Park. <i>Chuditch</i> Chuditch habitat is largely restricted to the southwest forests of WA, of which the proposal area is located. Numerous records show the species within 20km of the study area with the closest approximately 10 km to the south east. No suitable dens or habitat logs were located within the clearing footprint during the site inspection and based on this, even if Chuditch occurred in the local area, it would likely be only an occasional visitor to the proposed clearing area. <i>Priority fauna</i> All four priority fauna have been sporadically recorded to some level across the 20 km study area, with the exception of Quenda which has been recorded close to the proposal area (approximately 150 m north of the proposal area). The proposal area contains habitat suitable for these species. Overall, the proposed clearing area is very small in size in the local context, linear in nature and immediately adjacent to an existing road. There are no significant flora or ecological communities or riparian vegetation within the proposed clearing area. The clearing area includes six trees with DBH > 50cm but these trees include no hollows. While the vegetation is potentially suitable habitat for a range of fauna species, including significant fauna, the lack of hollows and proximity to disturbance created by the road means that fauna would be expected to prefer the adjacent 31,000 ha of national park over the proposed clearing area. Therefore the biodiversity of the proposed clearing area is not considered high in the local context. Given the above, this project is not likely to be at variance to this Clearing Principle.
Methodology Main Roads Site Inspection 25 August and 23 September 2022 DBCA shapefiles Main Roads GIS Shapefiles PMST report (D22#992679)

(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
Comment Database searches identified 27 significant fauna species with potential to occur in the study area, of which 15 species have been recorded within 20 km of the study area. These include: • Baudin's Black-Cockatoo (<i>Calyptorhynchus baudinii</i>) – Endangered under EPBC Act and BC Act • Carnaby's Black Cockatoo (<i>Calyptorhynchus latirostris</i>) – Endangered under EPBC Act and BC Act • Forest Red-tailed Black-Cockatoo (<i>Calyptorhynchus banksii naso</i>) – Vulnerable under EPBC Act and BC Act • Balston's Pygmy Perch (<i>Nannatherina balstoni</i>) – Vulnerable under EPBC Act and BC Act • Carters freshwater mussel (<i>Westralunio carteri</i>) - Vulnerable under EPBC Act and BC Act • Mud minnow (<i>Galaxiella munda</i>) – Vulnerable under BC Act • Western Ringtail Possum (<i>Pseudocheirus occidentalis</i>) – Critically Endangered under EPBC Act and BC Act • Numbat (<i>Myrmecobius fasciatus</i>) - Endangered under EPBC Act and BC Act

- Woylie (*Bettongia penicillata ogilbyi*) – Endangered under EPBC Act and Critically Endangered under BC Act
- Quokka (*Setonix brachyurus*) - Vulnerable under EPBC Act and BC Act
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- South-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*) – DBCA Priority 4
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- Quenda, southwestern brown bandicoot (*Isoodon fusciventer*) – DBCA Priority 4
- Western brush wallaby (*Macropus irma*) – DBCA Priority 4

Threatened black cockatoo species

Desktop searches identified that all three black cockatoo species have been recorded within the 20 km survey area however the nearest record is approximately 4.9 km to the northwest of the proposal area and the nearest confirmed breeding area buffer is approximately 10.68 km to the south east. There are no confirmed nesting or roosting sites within 20km of the proposal area.

A total of six DBH>50 cm trees (no hollows) are within the clearing footprint. Chewed marri nuts with bite marks were noted during the site inspection however these were attributed to the common Australian Ringneck Parrot (*Barnardius zonarius*) and not Threatened black cockatoos (WA Museum 2018). Nonetheless the vegetation within the proposal area and adjacent 31,000 ha Mount Frankland National Park would provide potential foraging (high quality) and potential roosting/nesting habitat to all three Threatened Black Cockatoos.

Given the lack of evidence of Threatened black cockatoos within the proposal area, distance to confirmed breeding and roosting areas as well as the available surrounding habitat, the proposal to remove six DBH trees (no hollows) and 0.2 ha of quality foraging habitat is not likely to have a significant impact of any of the Threatened black cockatoo species.

Aquatic species

The proposed clearing area contains no habitat for aquatic species (Balston's Pygmy Perch, Carters freshwater mussel and Mud minnow).

Western Ringtail Possum

The proposal area contains some habitat that appears superficially suitable for the Western Ringtail Possum of the Southern Forests (i.e., Marri and Karri dominated forests adjacent to riparian vegetation) and is within the predicted range of Western Ringtail Possum. However, the proposal area does not fall within any of the three key management zones for the species being located approximately 20 km south of the Southern Forest Zone and approximately 30 km north of the South Coast zone. In addition, Main Roads ArcGIS shapefiles show no records within 20 km of the proposal area. A total of six DBH>50 cm trees (no hollows) are within the clearing footprint. Given the distance to key management zones, lack of records within 20 km as well as the available surrounding habitat, the proposal to remove six DBH trees (no hollows) and 0.2 ha of native vegetation is not likely to have a significant impact on the Western Ringtail Possum.

Numbat and Woylie

The proposal area is outside of the expected range for the Numbat and Woylie however vegetation within and adjacent to the proposal area fits the broad range of habitats used by these species. There is one very old record of a Numbat from 1989 approximately 900m south of the proposal area indicating that the species may frequented the area historically however this is the only record within 20 km. No records of the Woylie within the 20 km of the proposal area. The proposal area is outside the expected range of both species' and therefore the proposal area is not considered critical habitat for either species. The proposal to remove 0.2 ha of native vegetation outside of the predicted range of both species is considered unlikely to result in a significant impact.

<i>Quokka</i> The proposal area is within the known range of the Quokka and there are a large number of records within the study area the closest of which is approximately 50 m south of the proposal area. The proposal area does contain suitable habitat (Karri/Marri forest and riparian habitats with sedge dominated understorey) however this is not unique the surrounds given adjacent Mount Frankland National Park and no impacts are proposed on the creek zone and associated riparian vegetation including sedge. All debris is to be pushed upslope and away from the riparian zone to prevent obstruction of fauna movement within the riparian system. Given the avoidance of riparian vegetation and the large extent of similar and better habitat adjacent within Mount Frankland National Park, the proposal to remove 0.2 ha of native vegetation is considered unlikely to be significant to the Quokka. <i>Chuditch</i> Chuditch habitat is largely restricted to the southwest forests of WA, of which the proposal area is located. Numerous records show the species within 20km of the study area with the closest approximately 10 km to the south east. No suitable dens or habitat logs were located within the clearing footprint during the site inspection. Although the proposal area is within the larger regional area that supports the Chuditch, given the lack of suitable dens and habitat logs, lack of nearby records and large amounts of nearby habitat (i.e., 31,000 ha Mount Frankland National Park), the removal of 0.2 ha of native vegetation is considered unlikely to have a significant impact on the Chuditch. <i>Priority fauna</i> All four priority fauna have been sporadically recorded to some level across the 20 km study area, with the exception of Quenda which has been recorded close to the proposal area (approximately 150 m north of the proposal area). Although the proposal area contains habitat used by these species, given the minimal clearing involved (0.2 ha) and the availability of similar or better habitat directly adjacent within the 31,000 ha Mount Frankland National Park, the works are unlikely to result in a significant impact to any of these species. Given the above, the proposal area does not comprise the whole or a part of, or is necessary for the maintenance of, a significant habitat for indigenous fauna, it is not likely to be at variance to this Clearing Principle.
Methodology Main Roads Site Inspection 25 August and 23 September 2022 DBCA shapefiles Main Roads GIS Shapefiles PMST report (D22#992679)

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

Proposal is not at variance to this Principle
Comment According to Main Roads shapefiles, there are 7 known records of Threatened flora within the 20 km study area. There are no known records of Threatened flora within the proposal area. Main Roads have consulted with DBCA who confirmed that no Threatened flora species have been recorded in proximity to the proposal area according to their records. Furthermore, the targeted flora survey by Main Roads botanist recorded no Threatened flora during the field survey and none are considered likely to occur. Given the above, this project is not at variance to this Clearing Principle.
Methodology

Main Roads Site Inspection 25 August and 23 September 2022
 DBCA shapefiles
 Main Roads GIS Shapefiles
 PMST report (D22#992679)

(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

Comment

Desktop assessments identified no state listed Threatened Ecological Communities (TECs) within the 20 km search area.

Given the above, this project is not at variance to this Clearing Principle.

Methodology

Main Roads Site Inspection 25 August and 23 September 2022
 DBCA shapefiles
 Main Roads GIS Shapefiles

(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

Comment

Two vegetation associations are mapped across the proposal area being 'Vegetation Association 1: Tall forest; karri (*Eucalyptus diversicolor*)' and 'Vegetation Association 3: Medium forest: jarrah-marri'. One vegetation complex 'Granite Valley – Vh3' was mapped across the proposal area and is described as 'Tall open forest of *Eucalyptus diversicolor*-*Eucalyptus guilfoylei* on slopes and woodland of *Eucalyptus rudis* - *Banksia littoralis* on lower slopes in hyperhumid and perhumid zones. The site inspection of the proposal area conducted by Main Roads Environment Officers determined that the vegetation within the proposal area primarily comprises of tall open forest of *Eucalyptus diversicolor*, *Corymbia calophylla* and *Eucalyptus marginata* over tall closed shrubland of *Acacia pentadenia* and *Trymalium odoratissimum* over shrubland of *Lepidosperma effusum*, *Boronia gracilipes* and *Leucopogon australis* and is therefore considered to be aligned with broad association and complex vegetation mapping.

As can be seen from the pre-European vegetation representation statistics below, the vegetation associations and vegetation complex are well represented at all scales including State, IBRA Bioregion, IBRA Sub-region and Local Government Authority. Furthermore, the vegetation associations are well above the 30% Statewide representation threshold. The vegetation in the proposal area is in the road reserve however is adjacent and connected to the Mount Frankland National Park. As can be seen in Figures 1 and 2 the local area (within 20 km is largely uncleared). Similarly, whilst the watercourse and adjacent vegetation would provide value for local and regional ecological connectivity, the proposal will not break or degrade any ecological linkages beyond that already in place from the South West Highway.

Given the above, the small extent of clearing proposed is not likely to compromise a significant remnant within an extensively cleared area. The proposed clearing is therefore not likely to be at variance with this Principal.

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

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Vegetation Association 1 described as a Tall forest; karri (<i>Eucalyptus diversicolor</i>)	Clearing of up to 0.2ha for installation of a side track around an existing bridge on South West Highway.	Excellent (EPA 2016)	Vegetation description and condition determined from Main Roads site visit on 25 August and 23 September 2022.
Vegetation Association 3 described as a Medium forest: jarrah-marri			

Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves*
Veg Assoc No. 1	Statewide	72,410.06	56,328.07	77.79	64.99
	IBRA Bioregion Warren	69,118.21	53,852.13	77.91	65.35
	IBRA Sub-region Warren	69,118.21	53,852.13	77.91	65.35
	Local Government Authority Shire of Manjimup	40,510.27	38,092.84	94.03	91.40
Veg Assoc No. 3	Statewide	2,661,404	1,803,437	67.76	55.23
	IBRA Bio region Warren	250,262.10	195,318.18	78.05	67.41
	IBRA Sub-region Warren	250,262.10	195,318.18	78.05	67.41
	Local Government Authority Shire of Manjimup	287,389.56	238,176.00	82.88	78.48

Vegetation Complexes and Representation

Hedde/Mattiske Veg Complex	Pre-European Extent (ha)	Current Extent	% Remaining
Granite Valleys - Vh3	12,446.73	10,812.30	86.87

Methodology

Aerial photography
Main Roads Site Inspection 25 August and 23 September 2022
EPA (2016)
Government of Western Australia (2022a & 2022b)
Perth Biodiversity Project (2013)

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

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

Comment

The proposed bridge works intercept the Weld River, a perennial watercourse which flows as a tributary into the Deep River approximately 15 km south east of the proposal area. The works will require the removal of 0.2 ha of roadside vegetation to facilitate the installation of a side track. None of the

vegetation proposed for removal is growing on the bed and banks of the watercourse. No riparian vegetation is proposed to be removed. Given the above, the proposed works are not likely to be at variance with this Principle.
Methodology Main Roads Site Inspection 25 August and 23 September 2022 DWER and DBCA shapefiles

(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 to this Principle
Comment The site inspection confirmed that no rocky outcrops, limestone or steep topography is present within or adjacent to the proposal area. Mapping (DPIRD-064) indicates that the proposal area occurs on the Walpole Hills System which is characterised by loamy gravel, loamy earth, sandy gravel and loamy duplex. This was also confirmed by observations during the site visit. The proposed vegetation clearing will be scheduled to prioritise completion of works within dry conditions. Given the timing of the works, topography of the site and soil type, no water logging or water erosion issues are expected. Standard environmental management, including the requirements for silt curtains and other sediment control measures will be incorporated into the CEMP, in particular to protect the riparian zone of the Weld River. Given the above and considering the proposed clearing is very small scale and linear nature, the clearing is not likely to cause appreciable land degradation. Therefore, the proposed works are not likely to be at variance with this Principle.
Methodology Main Roads Site Inspection 25 August and 23 September 2022 Soil Landscape Mapping (DPIRD-064) shapefile (Accessed 07/09/2022)

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

Proposed clearing is not likely to be at variance to this Principle
Comment The vegetation proposed to be cleared is in a road reserve that runs through the Mount Frankland National Park. The works will require the removal of a narrow band of this roadside vegetation (up to 0.2 ha) to facilitate the installation of a side track. All vegetation for removal is located within the road reserve and no vegetation within the boundary of the national park will be impacted by the proposal. As per the comments under Principal (e) the vegetation proposed to be removed is unlikely to be a significant remnant, given the small extent of clearing proposed in an area which is largely uncleared (Figures 1 & 2) and national park which is approximately 31,000 ha in size. Similarly, whilst the watercourse and adjacent vegetation would provide value for local and regional ecological connectivity, the proposal will not break or degrade any ecological linkages beyond that already in place from the South West Highway.

Given the above and nature of the works, the proposed clearing is considered unlikely to have an impact on the environmental values of the Mount Frankland National Park. Therefore the proposed works are not likely to be at variance with this Principle.
Methodology DBCA shapefiles EPA (2016) Main Roads Site Inspection 25 August and 23 September 2022

(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
Comment The proposal area is not within a Public Drinking Water Supply Catchment, Surface Water Irrigation or proclaimed groundwater area. The proposed bridge works intercepts the Weld River, a perennial watercourse which flows as a tributary into the Deep River approximately 15 km south east of the proposal area. The works will require the removal of 0.2 ha of roadside vegetation to facilitate the installation of a side track. None of the vegetation proposed for removal is growing on the bed and banks of the watercourse. Surface water quality is unlikely to be negatively impacted by the removal of 0.2 ha of vegetation which is not riparian vegetation. No water abstraction is proposed as part of the works. Standard environmental management, including the requirements for silt curtains and other sediment control measures will be incorporated into the CEMP to further prevent the risk of sedimentation or water quality changes. The removal of up to 0.2 ha of native vegetation is unlikely to impact groundwater levels or quality. Furthermore, the works will not involve dewatering or excavation below the water table. The clearing of native vegetation is therefore not likely to be at variance with this Principle.
Methodology Main Roads Site Inspection 25 August and 23 September 2022 DWER and DBCA shapefiles

(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
Comment One mapped watercourse (the Weld River) crosses the proposal area. None of the vegetation proposed for removal is growing on the bed and banks of the watercourse. The proposal area is in a moderate rainfall area, with the nearby town of Shannon (10 km from proposal area) receiving an annual average of 1024 mm (Bureau of Meteorology Australia, 2022), primarily during winter months. Mapping (DPIRD-064) indicates that the proposal area occurs on the Walpole Hills System which is characterised by loamy gravel, loamy earth, sandy gravel and loamy duplex. This was also confirmed by observations during the site visit. Proposed works are scheduled to occur in spring and summer months, when river flows and rainfall are at their least. The proposal area is located in a shallow valley, sloping down from the south and west towards the bridge site and also sloping from the north to the south.

The gradually sloping terrain, small clearing footprint, loamy and gravel soils, and spring/summer construction period are factors that will reduce the potential to cause, or exacerbate, the incidence or intensity of flooding. Therefore, this proposal is unlikely to be at variance to this Clearing Principle.

Methodology

Main Roads Site Inspection 25 August and 23 September 2022

Soil Landscape Mapping - DPIRD-064 (Accessed 12/09/2022)

6 ADDITIONAL ACTIONS REQUIRED

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

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

Impact of Clearing	Yes/No or NA	Further Action Required
1. The CAR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles. Where the clearing is at variance or may be at variance to Clearing Principle (f) and no other Clearing Principle, and the area of the proposed clearing is less than 0.5 hectares in size and the Clearing Principle (f) impacts only relate to: (i) a minor non-perennial watercourse(s); (ii) a wetland(s) classed as a multiple use management category wetland(s); and/or (iii) a wetland that is not a defined wetland; the preparation of an Assessment Report, as required by condition 6(e), is not required.	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. The project involves clearing for temporary works (as defined by CPS 818).	No	No further action required.
4 a. Project is within Region that: - Has rainfall greater than 400mm and - Is South of the 26th parallel and - Works are in 'Other than dry conditions' and - Works have potential for uninfested areas to be impacted	Yes	Comply with the Dieback Management Process D20#56909.

Impact of Clearing	Yes/No or NA	<i>Further Action Required</i>
4b. Does the proposed works require clearing within or adjacent to DBCA estate in non-dry conditions?	No	No further action required.
5. 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.
6. The vegetation within the area to be cleared and/or the surrounding vegetation in a good or better condition and weeds likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition	No	The CEMP will include hygiene management to mitigate the risk of introducing weed species and dieback to the proposal area. Weed control requirements prior to commence of works will be included in the CEMP, to reduce the risk of exacerbating existing common weed species present within the proposal area.

7 STAKEHOLDER CONSULTATION

Under the requirements of CPS 818/15 stakeholder consultation is required when clearing is likely to be 'at variance' or 'maybe at variance' with the Clearing Principles. The proposed clearing is not likely to be at variance with the 10 Clearing Principles.

8 VEGETATION MANAGEMENT

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum.

9 REFERENCES

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