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WESTERN AUSTRALIA

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

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Western Australia.*

South Western Highway (H009)
Placid Ark Roadhouse Improvements 2024
South West Region
EOS 3355

D24#580849
September 2024

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1 PROPOSAL

1.1 Purpose and Justification

The Placid Ark Roadhouse on South Western Highway (H009) in Coolup, ~11 km south of Pinjarra, requires maintenance works due to traffic safety concerns for vehicles entering/exiting the roadhouse (Figure 1). There have been several major crashes and one fatality in the last five years around this roadhouse. Specifically, three (3) Marri (*Corymbia calophylla*) trees require removal to facilitate improved sight lines for vehicles exiting the roadhouse to see any vehicles that may be travelling along South Western Highway.

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

In order to improve sight distances, an assessment was undertaken by the regional Asset Manager for Operations. Sight distances are measured at 5 m back from the hold line (in the absence of a hold line, 5 m back from major road project edge of seal). Driver eye height is taken at 1.1m on the side road/driveway to a point of 1.25 m above the through lane. The safe intersection sight distance is determined based on a 2.5 second reaction time and is therefore 300 m based on a speed of 110 km/hr at this location on South Western Highway. The inspection determined that several modifications are required including:

- removal of three (3) Marri (*Corymbia calophylla*) trees to ensure sight lines when looking south from northern driveway;
- relocate signs so they do not obstruct sightlines; and
- install holding lines at both driveways after trees are removed.

1.3 Proposal Location

The Clearing Area is located on South Western Highway, Coolup, ~69.61-69.69 SLK within the Shire of Murray as shown in Figure 1.

The central coordinate of the proposal is -115.8813691° E, 32.7270379° S.

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818: 0.004 ha or three trees.

Areas of Native Vegetation Clearing:

The areas of native vegetation to be cleared are shown in Figure 1. The 5 km Study Area is shown in Figure 2. A street view image of the proposed clearing is shown in Figure 3.

Type of Native Vegetation:

Three remnant Marri (*Corymbia calophylla*) only in a parkland cleared setting – i.e., completely degraded condition.

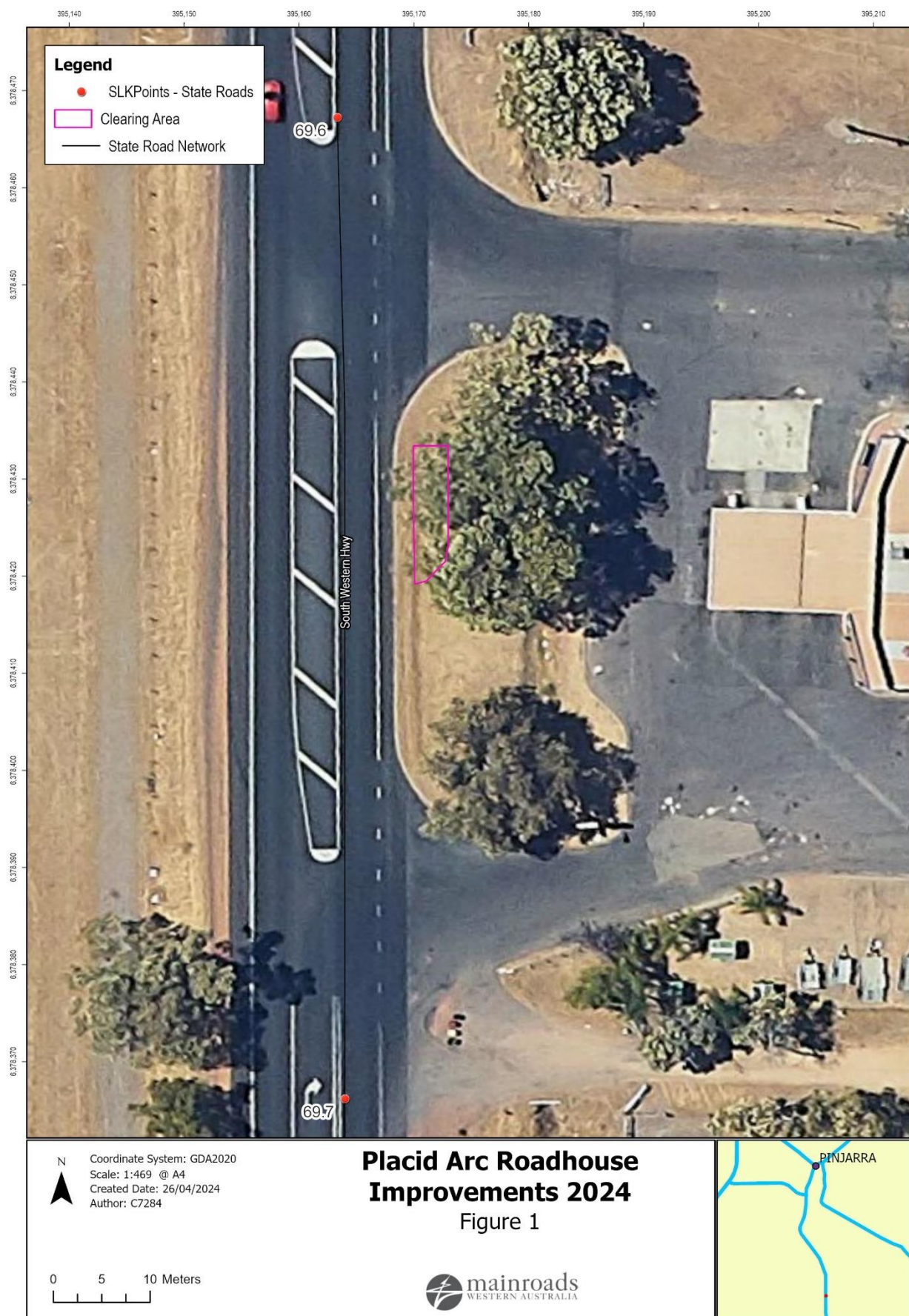


Figure 1. Clearing Area

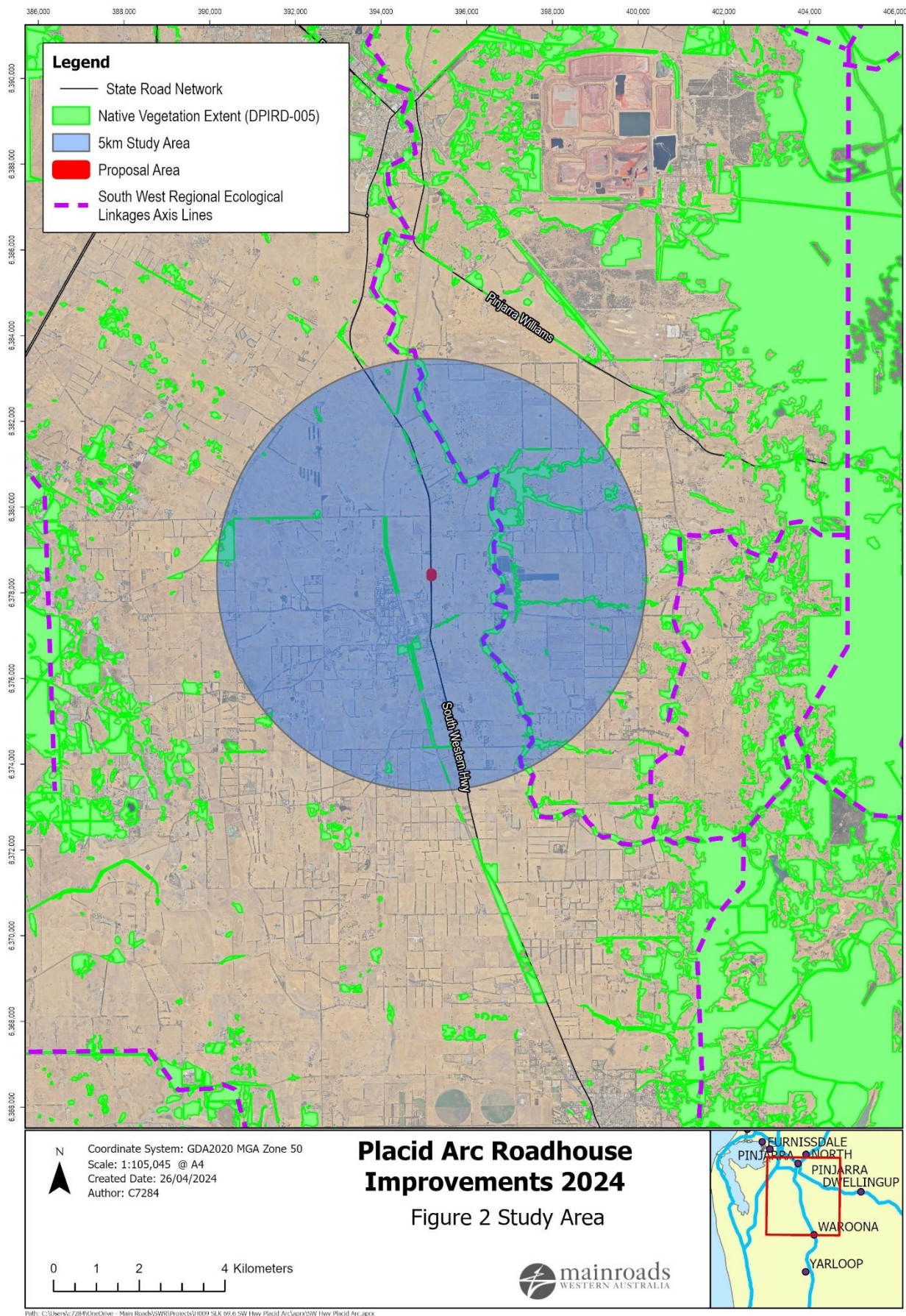


Figure 2. Study Area



Figure 3. Street view image of three Marri (*Corymbia calophylla*) proposed to be cleared.

1.5 Alternatives to Native Vegetation Clearing Considered During Proposal Development

The following alternatives to clearing were considered:

- do not improve sightlines; however, this will result in a poorer safety outcome and is highly likely to result in future fatalities, serious injuries and near misses and result in degradation of the State road asset;
- conduct maintenance works without the full implementation of safety inspection findings. This was immediately rejected as the purpose of the maintenance works are to improve road safety. The most efficient use of tax payer funding is to complete the works in one tranche; and
- reducing the speed limit to minimise clearing requirements, while still balancing safety (driver fatigue) and freight efficiency. Reducing speed limits is not a preferred option for Main Roads for this location as it is unlikely to be effective and reduces the efficacy of the state highway due to high volumes of traffic using this roadhouse.

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

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

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

Design or Management Measure	Discussion and Justification
Alignment to one side of existing road	Works are restricted to the eastern side of the road reserve to access the roadhouse. Up to seven trees were originally assessed for removal, but it has been reduced to three with the inclusion of relocation of signage and installation of holding lines at both driveways to ensure vehicles do not enter the traffic lanes prior to turning.
Alternative alignment located within pasture or degraded areas	Trees are being removed for sightlines only. Signage is being relocated to existing cleared areas.
Simplification of design to reduce complexity of driveways	Significant traffic volumes, including heavily vehicles, utilise South Western Highway to access the roadhouse. If the proposed works were not undertaken, this would result in no improvements in crash statistics, which is unacceptable to Main Roads on this dangerous section of the road network.
Installation of barriers	The installation of safety barriers would not improve sightlines. Thus, this is not a suitable measure to avoid clearing vegetation.
Installation of kerbing	Kerbing will have limited impact on the proposed works and therefore has not been considered further as it would not improve sightlines.
Mitigation Planting	To mitigate the loss of three trees that provide foraging habitat for black cockatoo species, Main Roads proposes to plant six (6) marri (<i>Corymbia calophylla</i>) trees within the South West Region Swan Coastal Plain to ensure the clearing will not result in a decline in foraging habitat on the Swan Coastal Plain.

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

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.
- EPA Advice: Carnaby's Cockatoo in Environmental Impact Assessment in the Perth and Peel Region. In accordance with section 16(j) of the Environmental Protection Act 1986. (EPA, 2019)
- Referral guideline for 3 WA threatened black cockatoo species (DCCEEW, 2022)

2 SCOPE AND METHODOLOGY ASSESSMENT OF CLEARING

Native vegetation will be cleared to accommodate the intersection upgrade. 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).

This 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 assessment:

- **Clearing Area** – The maximum amount of native vegetation to be cleared.
- **Study Area** – Area covered by the Desktop Assessment. The Study Area is a 5 km radius of the Clearing area.

2.2 Desktop Assessment

A desktop assessment 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. 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

A Site Inspection, including a Black Cockatoo Habitat Assessment (Main Roads 2024), was undertaken to inform this assessment as outlined in Table 2 and a summary of the findings are presented in Section 3.1.

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

Consultant & Survey Name	Survey Details
Main Roads (2024) Placid Ark Roadhouse Environmental Site Inspection	Survey Area: Proposed Clearing Area Type: A high-level Black Cockatoo breeding habitat assessment was completed through the measurement of the Diameter at Breast Height (DBH) of trees. Timing: March 2024 Survey Results Shapefile TRIM Ref: NA Document TRIM Ref: D24#501620

3 SURVEY RESULTS

3.1 Summary of Biological Assessments

A site visit was conducted for the project area to undertake a Black cockatoo assessment. A high-level Black Cockatoo breeding habitat assessment was completed through the measurement of the Diameter at Breast Height (DBH) of trees within the clearing area given the potential to be utilised by Black Cockatoos. Methodology followed that in Main Roads (2023). Three remnant *Corymbia calophylla* (marri) were identified within the clearing area. One tree was less than 500 DBH, however the other two *Corymbia calophylla* are suitable DBH trees without hollows. The trees are located in a parkland cleared area in a completely degraded condition.

4 VEGETATION DETAILS

4.1 Proposal Site Vegetation Description

Remnant native vegetation in the clearing area is completely degraded, consisting of three *Corymbia calophylla* (Marri) trees (Main Roads 2024).

The Proposal area is located within the pre-European Pinjarra (968) Vegetation Association. This Vegetation Association is characterised by *Eucalyptus marginata* (Jarrah), *Corymbia calophylla* (marri) and *Eucalyptus wandoo* (wandoo). Table 3 provide details of the remaining extent of vegetation association 968.

Table 3. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European Extent (ha)	Current Extent (ha)	% Remaining	% Current Extent in DBCA Managed Land (proportion of pre-European Extent)
Veg Assoc 968	Statewide	296,877.84	95,048.82	32.02	18.79
	IBRA Bioregion Swan Coastal Plain	136,188.20	9,017.32	6.62	1.84
	IBRA Sub-region Perth	136,188.20	9,017.32	6.62	1.84
	Local Government Authority Shire of Murray	170,583.58	4,135.26	8.69	27.7

4.2 Vegetation Complexes and Representation

The following vegetation complexes within the Proposal area are provided in Table 4.

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

Heddle/Mattiske Veg Complex	Pre-European Extent (ha)	Current Extent (ha)	% Remaining
Guildford	90,513.13	4,607.91	5.09

5 ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

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

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

The proposed clearing is at variance with Principle b, and not at or not likely to be at variance with the remaining Clearing Principles.

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

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

Assessment:

The area proposed to be cleared consists of three remnant *Corymbia calophylla* (marri) trees. Of the trees, two are suitable DBH trees and one is >500 mm.

A search of the Threatened and Priority Flora and WA Herbarium databases identified that there is one conservation significant flora species recorded within the 5km study area, *Synaphea* sp. Pinjarra Plain (A.S. George 17182), listed as Endangered.

DBCA Database searches identified four Threatened Ecological Communities (TEC) and a further Priority Ecological Community (PEC) within the 5km study area:

- *Corymbia calophylla* — *Kingia australis* woodlands on heavy soils (floristic community type 3a as originally described in Gibson et al. 1994) (TEC – Critically Endangered);
- *Corymbia calophylla* — *Eucalyptus marginata* woodlands on sandy clay soils of the southern Swan Coastal Plain (floristic community type 3b as originally described in Gibson et al. 1994) (TEC – Endangered);
- *Corymbia calophylla* — *Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain (floristic community type 3c as originally described in Gibson et al. 1994) (TEC – Endangered);
- Dense shrublands on clay flats (floristic community type 9 as originally described in Gibson et al. 1994) (TEC – Endangered); and
- Banksia Woodlands of the Swan Coastal Plain ecological community (Priority 3).

The Protected Matters search identified an additional two TECs:

- *Empodisma* peatlands of southwestern Australia; and
- Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community.

No Threatened or Priority flora species were recorded during the site inspection (Main Roads 2024). No TECs or PECs were recorded during the site inspection. No Threatened or Priority species or communities have the potential to occur. The lack of diversity reflects the completely degraded nature of the vegetation and the long history of disturbances.

As discussed further under Principle b, the Proposal area provides suitable habitat for the three Black Cockatoo species, namely:

- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable under BC Act 2016 and EPBC Act 1999 – Known to occur;
- Carnaby's Black Cockatoo (*Zanda latirostris*) – Endangered under BC Act 2016 and EPBC Act 1999 – Likely to occur; and
- Baudin's Black Cockatoo (*Zanda baudinii*) – Endangered under BC Act 2016 and EPBC Act 1999 – Likely to occur.

The clearing area has similar or worse values to native vegetation occurring within the local area. Small patches of intact vegetation remain on the Swan Coastal Plain, with larger intact vegetation areas to ~9km east in the Jarrah Forest. The removal of 0.004 ha of native vegetation does not sever any local or regional ecological linkages. The closest regional linkage is ~ 1.5 km to the east along the Murray River. Given the proposed clearing is adjacent to an existing highway and vegetation is in a completely degraded condition, separated from good or better condition vegetation by disjunct isolated trees and planted vegetation interspersed with cleared areas, it does not provide a high regional ecological value.

As the clearing area does not comprise a high level of biodiversity, being limited to one species only, the proposed clearing is not likely to be at variance with this principle.

Methodology

- DCCEEW Protected Matters Search Tool Report (April 2024)
- Government GIS Shapefiles:
 - DBCA Threatened and Priority Ecological Community database search (April 2024)
 - DBCA Threatened and Priority flora database search (April 2024)
 - DBCA WA Herbarium Flora database search (April 2024)
 - DBCA Threatened and Priority fauna database search (April 2024)
 - South West Regional Ecological Linkages Axis Lines (April 2024)
- Main Roads Site Inspection (2024)

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

Proposed clearing is at variance to this Principle.

Assessment

The area proposed to be cleared consists of three remnant *Corymbia calophylla* (marri). Of the trees, two are suitable DBH trees.

Database searches identified that there are 10 conservation significant fauna species recorded within the 5km study area, being:

- Forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Threatened;
- Baudin's cockatoo (*Zanda baudinii*), Threatened;
- Carnaby's cockatoo (*Zanda latirostris*), Threatened;
- Red-necked stint (*Calidris ruficollis*), Migratory;
- Peregrine falcon (*Falco peregrinus*), Specially Protected – Other;
- Common Greenshank (*Tringa nebularia*), Specially Protected, Conservation Dependent;
- Phascogale (*Phascogale tapoatafa wambenger*), Specially Protected, Conservation Dependent;
- Rakali – water rat (*Hydromys chrysogaster*), Priority 4;
- Quenda (*Isodon fusciventer*), Priority 4; and
- Blue-billed duck (*Oxyura australis*), Priority 4.

No significant fauna species were recorded during the site inspection (Main Roads 2024). There is no aquatic habitat therefore, rakali and the blue-billed duck will not occur. The red-necked stint, peregrine falcon and common greenshank may be a seasonal vagrant to the area, but there is no significant habitat for these species. Quenda and Phascogale are unlikely to occur due to the discontinuous nature of the vegetation and the absence of native understorey species.

Signs of Black cockatoo foraging were observed during the site inspection, namely chewed *Corymbia calophylla* (marri) nuts. Black cockatoos prefer foraging habitat that includes jarrah and marri woodlands and vegetation dominated by proteaceous plant species such as *Banksia*, *Hakea* and *Grevillea* species. The clearing area provides suitable habitat for the three Black Cockatoo species, namely:

- Forest Red-tailed Black Cockatoo (*Calyptrorhynchus banksii naso*) – Vulnerable under BC Act 2016 and EPBC Act 1999 – Known to occur;
- Carnaby's Black Cockatoo (*Zanda latirostris*) – Endangered under BC Act 2016 and EPBC Act 1999 – Likely to occur; and
- Baudin's Black Cockatoo (*Zanda baudinii*) – Endangered under BC Act 2016 and EPBC Act 1999 – Likely to occur.

The overall native vegetation clearing will result in the removal of Black Cockatoo habitat as follows:

- 0.004 ha of low to medium quality foraging habitat *Corymbia calophylla* (marri);
- three *Corymbia calophylla* (marri) trees of which two are suitable DBH trees;
- no known roosting trees;
- no trees that contain suitable hollows; and
- does not comprise vegetation with 12 km of a known black cockatoo breeding site.

Given the above, the proposed clearing area provides low to medium quality foraging habitat for the conservation significant black cockatoos. However, no known roosting or suitable breeding trees are proposed to be cleared. There is a known roost site ~1.5 km to the south-south west; however, the overall health of trees is questionable due to termite damage and plant disease (Marri Canker (*Quambalaria coyrecup*)). Older evidence of foraging was observed; therefore, Black Cockatoo species are likely to utilise foraging habitats within the local area on occasion. Due to the isolated nature of the trees proposed to be cleared adjacent to a busy highway, the completely degraded condition of vegetation and in the context of the wider Swan Coastal Plain, clearing for the proposal is unlikely to significantly impact on foraging resources for the three Black Cockatoo species.

Methodology

- DCCEE Protected Matters Search Tool Report
- Main Roads Site Inspection (March 2024)
- DBCA Threatened and Priority fauna database search (April 2024)

(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

A search of the Threatened and Priority Flora and WA Herbarium databases identified that there is one conservation significant flora species recorded within the 5km study area, *Synaphea* sp. Pinjarra Plain (A.S. George 17182), listed as Endangered. The Protected Matters search identified a further 13 species with the potential to occur.

No Threatened flora were recorded during the Site Inspection (Main Roads 2024). Due to the completely degraded nature of the area proposed to be cleared, Threatened flora do not occur and therefore the proposed clearing is not at variance to this principle.

Methodology

- DCCEEW Protected Matters Search Tool Report (April 2024)
- DBCA Threatened and Priority flora database search (April 2024)
- Main Roads Site Inspection (2024)

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

Proposed clearing is not at variance to this Principle.

Assessment

Database searches identified four TECs and one PEC within or likely to occur within the 5km study area:

- *Corymbia calophylla* — *Kingia australis* woodlands on heavy soils (floristic community type 3a as originally described in Gibson et al. 1994) (TEC – Critically Endangered);
- *Corymbia calophylla* — *Eucalyptus marginata* woodlands on sandy clay soils of the southern Swan Coastal Plain (floristic community type 3b as originally described in Gibson et al. 1994) (TEC – Endangered);
- *Corymbia calophylla* — *Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain (floristic community type 3c as originally described in Gibson et al. 1994) (TEC – Endangered);
- Dense shrublands on clay flats (floristic community type 9 as originally described in Gibson et al. 1994) (TEC – Endangered); and
- Banksia Woodlands of the Swan Coastal Plain ecological community (Priority 3).

The Protected Matters search identified a further two TECs:

- *Empodisma* peatlands of southwestern Australia
- Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community

No TECs were recorded during the Site Inspection (Main Roads 2024). Due to the completely degraded nature of the area proposed to be cleared, no TECs occur and therefore the proposed clearing is not at variance to this principle.

Methodology

- DCCEEW Protected Matters Search Tool Report (April 2024)
- DBCA Threatened and Priority Ecological Community database search (April 2024)
- Main Roads Site Inspection (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 National Objectives and Targets for Biodiversity Conservation recognise that the retention of 30% or more of the pre-clearing extent of each ecological community is necessary if Australia's biological diversity is to be protected (Commonwealth of Australia 2001) except in constrained areas (Perth & Peel) where 10% representation should be maintained.

The Proposal area is located on the Swan Coastal Plain, an area that has been extensively cleared for agriculture and urban and industrial development. Within the Shire of Murray, there is around 5% of the Guildford complex remaining and approximately 28% of Vegetation Complex 968 within DBCA managed land.

Notwithstanding the above, the vegetation within the clearing area only consists of isolated remnant Marri (*Corymbia calophylla*) trees in a completely degraded condition. Whilst the clearing is mapped within the pre-European Vegetation Complex 968 area, the vegetation does not form any valuable ecological function of that complex due to being in a completely degraded condition.

The 0.004 ha of proposed clearing is not significant as a remnant due to:

- the very small area of isolated trees proposed to be cleared in the road reserve;
- the Completely Degraded nature of the vegetation, consisting of trees over a ground cover strata dominated by introduced weed species to the exclusion of native species; and
- surrounding cleared farmland.

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

Methodology

- Main Roads Site Inspection (March 2024)
- Aerial photography
- Government GIS shapefiles:
 - Pre-European vegetation (April 2024)
 - Vegetation complexes (April 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

The clearing area is located within a Palusplain that is characterised as a multiple use wetland according to the Geomorphic Wetlands Swan Coastal Plain dataset. Multiple Use Wetlands are characterised as wetlands with few remaining important attributes and functions. The Palusplain within which the Proposal is located is highly modified from the long history of agricultural activities and the existing South Western Highway. The proposed maintenance works will not change any natural wetland functions. The clearing area contains trees species which are not limited in their distribution to watercourses or wetland environments, and the site inspection did not indicate that there are growing in association with these environments.

As the vegetation is in a completely degraded condition, the proposed clearing will not have a significant impact on the environmental values of the palusplain and does not contain species growing in association with a watercourse or wetland. Therefore the clearing is not at variance to this principle.

Methodology

- Government GIS Shapefiles:
 - Geomorphic Wetlands (Accessed April 2024)
- Main Roads Site Inspection (March 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 clearing area occurs within the Pinjarra 213Pj land subsystem, which consists of 'Poorly drained coastal plain with variable alluvial and aeolian soils. Variable vegetation includes Jarrah, marri, wandoo, paperbark sheoaks and rudis. The sandy soils present within the clearing area can be prone to wind erosion. The clearing area is within unit H1 – 50 – 70% of the unit has a high to extreme wind erosion risk. However, given the minor nature of the proposed clearing in a completely degraded condition adjacent to an existing highway, the proposed clearing is not likely to cause appreciable land degradation in the form of wind erosion.

The DWER/ASRIS Acid Sulfate Soil (ASS) risk mapping indicates that the area is classified as a low probability of occurrence. Given a lack of drainage lines and the flat topography, the flood risk is low and water erosion is highly unlikely to occur (located within the mapped L1 area). There is a negligible salinity risk, mapped within the L1 unit - <3% of the unit has a moderate to high salinity risk or salinity is present.

Therefore, the proposed clearing is not likely to be at variance with this Principle.

Methodology

- Government GIS Shapefiles:
 - Acid Sulphate Soil Risk Map (April 2024)
 - Soil landscape land quality – Water Erosion Risk (April 2024)
 - Soil landscape land quality – Wind Erosion Risk (April 2024)
 - Soil landscape land quality – Salinity Risk (April 2024)
 - Soil landscape land quality – Waterlogging Risk (April 2024)
 - Soil landscape land quality – Flood Risk (DPIRD-007) (April 2024)
- Main Roads Site Inspection (March 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 100 metres of the clearing area. The closest DBCA Managed Land is A class Reserve R 6268 over 5.5 km to the east.

Therefore, the proposed clearing is not at variance to this Principle.

Methodology

- Government GIS Shapefiles:
 - DBCA Legislated Lands and Waters & Lands of Interest (April 2024)
- Main Roads Site Inspection (March 2024)

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

Proposed clearing is not at variance to this Principle.

Assessment

According to available databases, there are no watercourses within the proposed clearing area or in close proximity. The clearing is located within the Murray Groundwater area proclaimed under Section 26B(1) of the RIWI act 1914.

The DWER/ASRIS ASS risk mapping indicates that the area is classified as a low probably of occurrence. The soils have a moderate to high salinity risk or is presently saline. Observations during the site inspection is that it is unlikely the clearing area is currently saline due to the species present.

No groundwater abstraction is proposed. Furthermore, given the isolated nature of the proposed clearing, the completely degraded vegetation condition, the proposed clearing is highly unlikely to increase groundwater salinity or cause deterioration in the quality of groundwater.

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

Methodology

- Government GIS Shapefiles:
 - Soil landscape land quality - Salinity Risk (April 2024)
 - Acid Sulphate Soil risk mapping (April 2024)
- Main Roads Site Inspection (March 2024)

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

Proposed clearing is not at variance to this Principle.

Assessment

According to available databases, the local area has a moderate to high flood risk and a high water repellence risk. The area is located in the South west region and experiences a mean rainfall of ~604 mm per annum (based on the Mandurah weather station), predominately in the winter months from cold fronts crossing the south coast.

As discussed in Principle f, the clearing area is located on the Swan Coastal Plain within a Palusplain that has been highly modified from historic agriculture and industrial developments. The limited clearing is unlikely to cause or exacerbate the incidence or intensity of flooding.

The small extent of the proposed clearing 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 completely degraded condition, the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding and the proposed clearing is not at variance to this Principle.

Methodology

- BoM Website (April 2024)
- Government GIS Shapefiles:
 - Soil landscape land quality - Waterlogging Risk (April 2024)
 - Soil landscape land quality - Flood Risk (April 2024)
- Main Roads Site Inspection (March 2024)

6 VEGETATION MANAGEMENT

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum. A Vegetation Management Plan (VMP) has been developed to manage and minimise vegetation clearing for the Proposal (refer to Appendix 1).

7 REHABILITATION, REVEGETATION & OFFSETS

7.1 Revegetation and Rehabilitation

No temporary clearing will be undertaken as part of the Proposal activities and therefore no revegetation and rehabilitation is proposed.

7.2 Offset Proposal

In accordance with CPS 818/17 condition 11(a), to offset the residual impacts from clearing 0.004 ha of foraging habitat for threatened black cockatoo species, Main Roads has developed an offset proposal in accordance the current WA environmental offsets Policy.

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

8 STAKEHOLDER CONSULTATION

Condition 8 of CPS 818 requires Main Roads WA to invite submissions from a number of parties when the proposed clearing is considered likely to be seriously at variance, at variance or may be at variance with one or more clearing principles.

The CAR will be published on the Main Roads Website for a period of 21 days. As part of this process Main Roads will invite submissions from the Placid Ark Roadhouse owners, DWER and the Shire of Murray.

9 COMPLIANCE WITH CPS 818

Table 5 summarises what further pre-clearing impact assessment is required in accordance with CPS 818/17.

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

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

Impact of Clearing	Yes/No or NA	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 site inspection was undertaken by a qualified zoologist and botanist
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 professional preparing the Assessment Report and any other associated documentation including the VMP, is suitably qualified and has over 20 years' experience.

10 REFERENCES

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

Bureau of Meteorology Australia. (2024). Climate Averages for Australian Sites – Mandurah– Available online from [Climate Data Online - Map search \(bom.gov.au\)](https://climate.bom.gov.au/map-search/) Accessed April 2024.

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

Environmental Protection Authority (EPA) (2019). *EPA Advice: Carnaby's Cockatoo in Environmental Impact Assessment in the Perth and Peel Region*. In accordance with section 16(j) of the *Environmental Protection Act 1986*.

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

Government of Western Australia (2014a). *A guide to the assessment of applications to clear native vegetation Under Part V Division 2 of the Environmental Protection Act 1986*. Department of Environmental Regulation.

Main Roads Western Australia 2023, Environmental Factsheet: Technical Guidance Protecting Black Cockatoos – Baudin's Cockatoo, Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo. Unpublished factsheet (D19#1011841).

Main Roads WA (2024). Site Inspection Report for Placid Ark Roadhouse. March 2024.

11 APPENDICES

Appendix 1: Vegetation Management Plan

SOUTH WESTERN HIGHWAY (H009) PLACID ARK ROADHOUSE IMPROVEMENTS

Purpose and Scope

This Vegetation Management Plan (VMP) has been prepared by Main Roads for the purpose of managing native vegetation clearing impacts associated with the South Western Highway Placid Ark Roadhouse Improvements.

The roadhouse improvements involve the clearing of three trees and other treatments to improve sightlines and safety of the roadhouse entry and exists.

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

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

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

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

Avoiding, Mitigating and Managing the Impacts of Clearing

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

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

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

VMP Actions

General vegetation management actions to be undertaken is shown in Appendix 1.1: General Vegetation Management Actions for Clearing.

Appendix 1.1: General vegetation management actions for clearing

Management Action	Responsibility	Timing
The Contractor must ensure plant, machinery and equipment, is cleaned down prior to arrival to the site.	Superintendent	During construction
Vehicle hygiene inspection checklists will be utilised to manage potential weed/dieback spread on earth-moving machinery.	Superintendent	During construction
No known dieback infested soil, mulch, fill or other material will be permitted into the works area.	Superintendent	During construction
All Clearing must be undertaken in such a way to allow fauna to move out of the Clearing area.	Superintendent	During construction
The Limits of Vegetation Clearing will be demarcated on site prior to the commencement of clearing to prevent entry into areas of native vegetation.	Superintendent	During construction
All recently cleared, exposed and loose surface areas shall be protected from wind, water and soil erosion.	Superintendent	During construction
The Contractor must develop and detail a Site induction training program as part of the Contractor Environmental Management Plan that includes as a minimum, the significant environmental impacts, actual or potential, of work activities associated with the Contract	Superintendent	During construction

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

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

Prior to the commencement of any clearing operations, the Contractor must certify for the Superintendent's verification and approval that the following activities have been completed in accordance with the relevant specification:

- a) The pegging of limits of vegetation clearing has been undertaken.
- b) The pegged vegetation clearing area does not exceed the Limits of Vegetation Clearing.
- c) Suitable and unsuitable topsoil zones have been identified.
- d) Vegetation and topsoil stockpile locations have been identified.
- e) All clearing machinery is compliant with controls.

Monitoring and Maintenance Program

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

Non-Compliance

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

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