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

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Forrest Highway New Intersection to Glen Iris
Forrest Highway (H057)
South West Region
EOS 3089

D25#94335
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Document Control

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1 PROPOSAL

1.1 Purpose and Justification

A new intersection is required approximately 200m west of the existing Forrest Highway and Vittoria Road intersection, together with a new access road between Forrest Highway and Jeffrey Road, providing an alternative access to the nearby suburb of Glen Iris, helping to improve traffic flow and catering for future growth in the area.

More than 30,000 vehicles per day currently pass through the existing Forrest Highway and Vittoria Road intersection. The intersection experiences significant congestion at peak periods due to:

- Vehicles accessing the Bunbury Farmers Market, with traffic entering and exiting onto Vittoria Road towards Forrest Highway and, at times, impacting highway traffic.
- Large numbers of pedestrians visiting the market at peak times, crossing at various points along Vittoria Road.
- School drop-off and pick-ups on Vittoria Road.

In 2018, the City of Bunbury undertook a community engagement process to identify and prioritise street-level improvements for Glen Iris, resulting in formulation of the Glen Iris Community Enhancement Action Plan and a Community Enhancement Action Plan (2019). Further consultation was arranged by the Bunbury Development Committee and undertaken as part of the Glen Iris District Structure Plan process around 2020. The Glen Iris Planning Study considered nine alternative transport options and the resulting final option was adopted in the final district structure plan in December 2023 (Glen Iris District Structure Plan).

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 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 0.

1.2 Proposal Scope

The project proposes to:

- Construct a new unconstrained intersection with Forrest Highway, 200 m to the west of the current Vittoria Road.
- Construct a new access road between Forrest Highway and Jeffrey Road providing an alternative access to Glen Iris.

Construction includes:

- Widening of Forrest Highway to three lanes on the north and southbound approach to the new intersection.
- A new roundabout at Jeffrey Road where new road intersects.
- Stormwater drainage along Forrest Highway.
- Pedestrian facilities at the new intersection only (cut through's and ramps) to facilitate future connectivity.
- Clearing of isolated remnant vegetation.
- Preload settlement prone insitu materials under proposed road (N-S link from Forrest Highway to Jeffrey Road).

1.3 Proposal Location

The Clearing Area is located between Forrest Highway, Jeffrey and Vittoria Roads in Glen Iris in the City of Bunbury as shown in Figure 1. The central coordinate of the proposal is -33.3379974, 115.6770810.

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818: 0.205ha

Areas of Native Vegetation Clearing:
The areas of native vegetation to be cleared are shown in Figure 1.

Type of Native Vegetation:
The type of vegetation to be cleared under this Proposal is 15 isolated remnant *Eucalyptus rudis* (flooded gum) and a small section of *Typha orientalis* in a disconnected oxbow of Preston River as shown in Figure 1. The Study Area is shown in Figure 2 with the native vegetation remaining within 5km and representative photos of the Clearing Area in Figures 3 and 4.

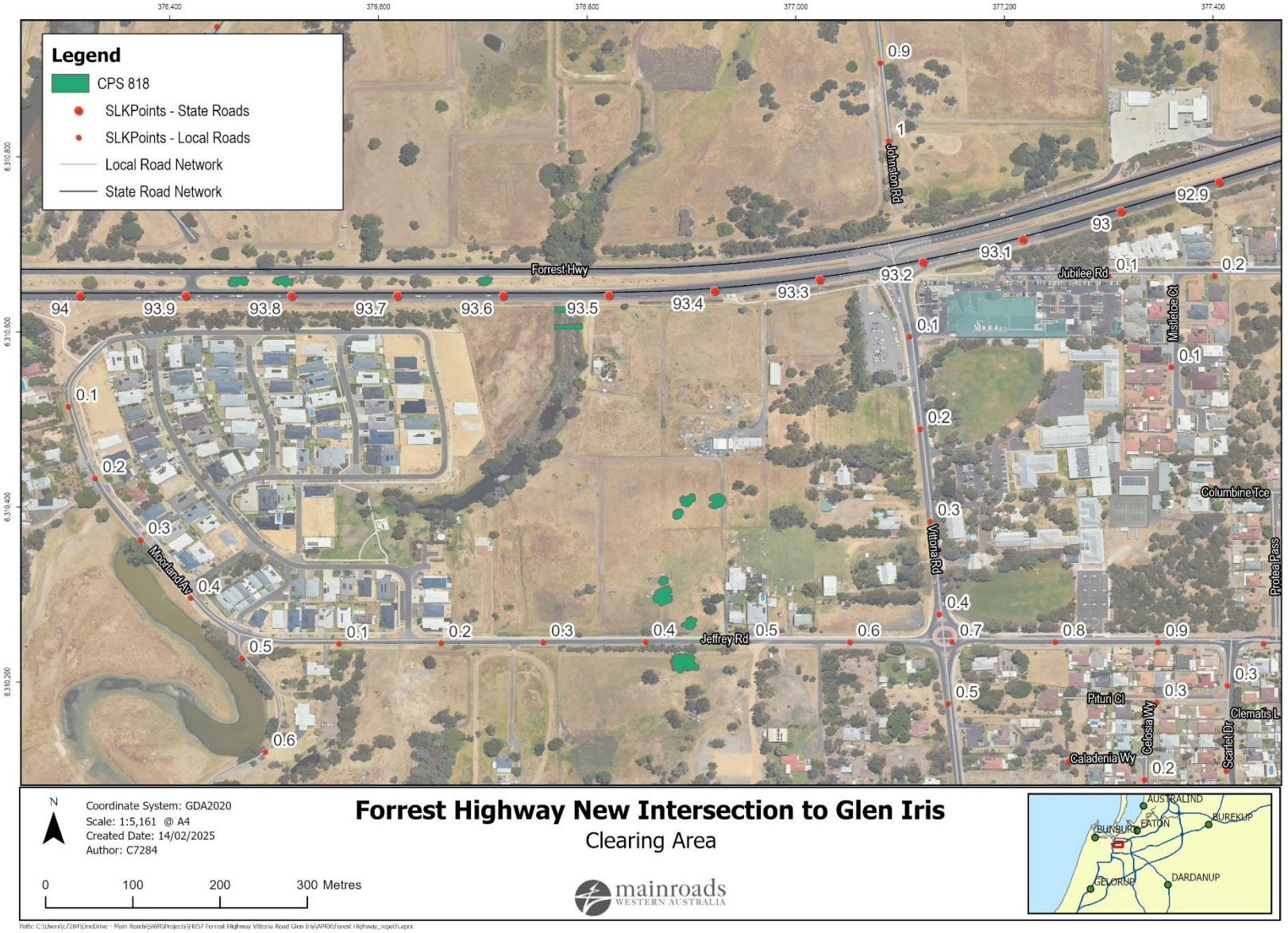

Figure 1. Clearing Area

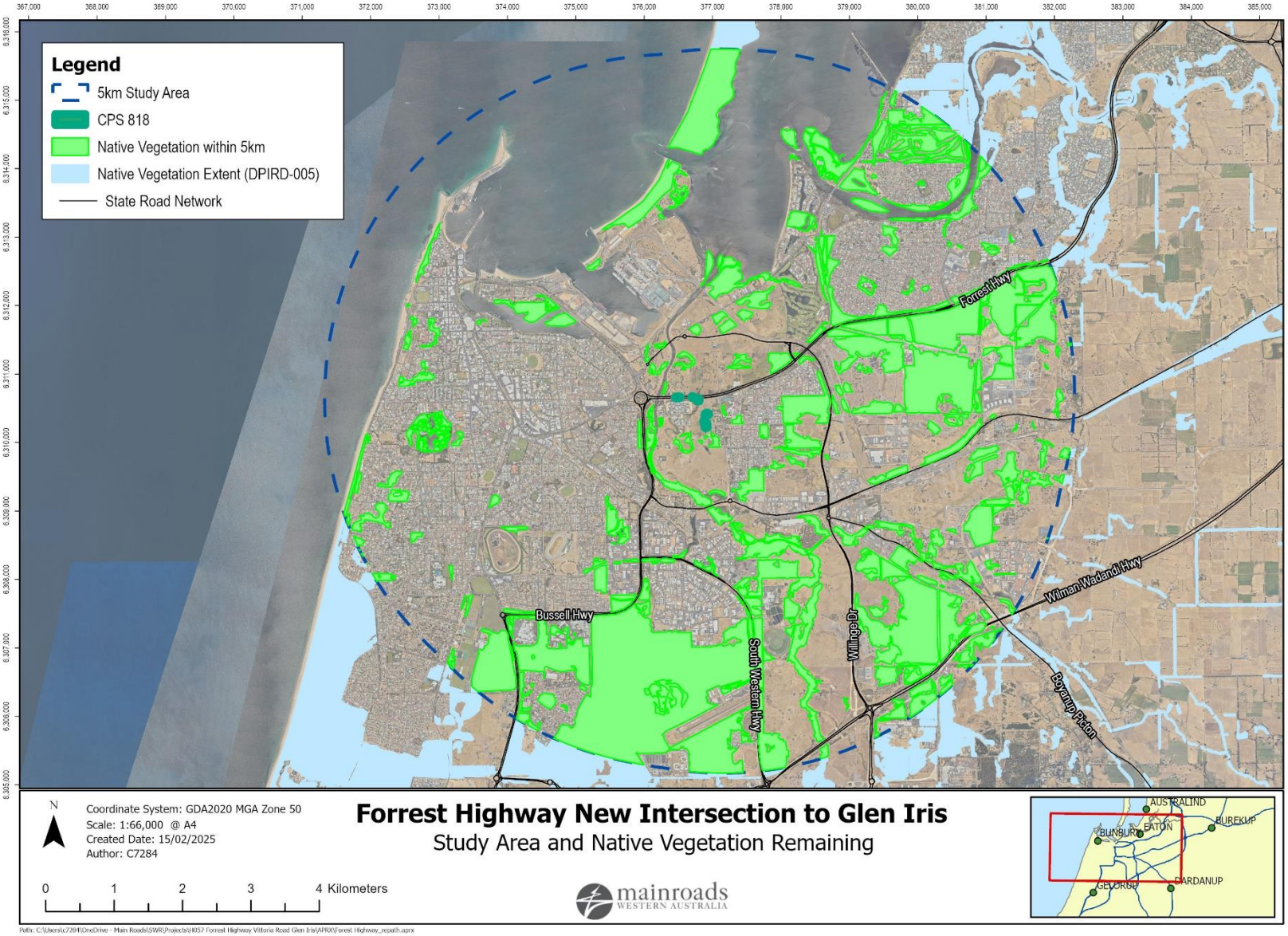

Figure 2. Study Area

Figure 3. Flooded gum (*Eucalyptus rudis*) in Clearing Area (ER6 in paddock with Arum lilies (*Zantedeschia aethiopica*) underneath and ER20 in Forrest Highway median)

Figure 4. Bulrush (*Typha orientalis*) in Clearing Area

1.5 Alternatives to Native Vegetation Clearing Considered During Proposal Development

The following concept design options and alternatives to clearing were considered during the development of the proposal:

- Do not upgrade the road, with no change to Forrest Highway/Vittoria Road intersection and no new alternative access to Glen Iris. However, this would result in a poorer safety outcome with potential future fatalities/serious injuries increased and/or complexity/failure of the intersection. Furthermore, this is not aligned with the Glen Iris District structure plan
- Upgrade the existing Forrest Highway and Vittoria Road at-grade intersection, including a new dedicated westbound acceleration lane along Forrest Highway from the Vittoria Road intersection. A new two-lane undivided bi-directional road was proposed, linking the Forrest Highway/Vittoria Road intersection to a new three-legged single lane roundabout, south-west of the intersection.
- Prohibit right turning onto Forrest Highway from the existing at-grade intersection and create a new two-lane undivided bi-directional road via Jeffrey Road that links Forrest Highway to Vittoria Road via a new roundabout, south-west of the intersection.
- Prohibit right turning onto Forrest Highway/Vittoria Road from the existing at-grade intersection and create a new two-lane undivided bi-directional road via Jeffrey Road that links to Forrest Highway south of the Eelup Roundabout.
- Close the existing intersection and construct a new intersection west of the existing intersection and only allow left turns into and from the Glen Iris area.
- Close the existing intersection and construct a new intersection west of the existing intersection that allows full connectivity to the Glen Iris area.

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
Alternative alignment located within pasture or degraded areas	The proposed alignment is preferentially located over former pasture areas and areas of planted non-native vegetation.
Simplification of design to reduce number of lanes and/or complexity of intersections	The proposed alignment simplifies overall clearing and disruption to the existing traffic flows on Vittoria Road by retaining the existing Forrest Highway/Vittoria Road intersection and creating a new intersection that is in an area that is not constrained environmentally or due to other land uses.
Use of existing cleared areas for access tracks, construction storage and stockpiling	Topsoil stripping and road embankment fill material will commence from March 2025 for a period of approximately three months. Stripped topsoil will be temporarily stockpiled for re-use on site in an adjacent paddock that is completely devoid of vegetation.

1.7 Approved Policies and Planning Instruments

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act, Main Roads has also had regard to the below instruments where relevant.

Other Legislation potentially relevant for assessment of clearing and planning/other matters:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P and 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.
- Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan (Department of Parks and Wildlife, 2013)
- 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 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). 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 Clearing Report:

- **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 5 km radius.

2.2 Desktop Assessment

A desktop assessment of the Development Envelope was undertaken by viewing internal datasets and other government agency managed databases, and consulting with relevant stakeholders where necessary. GIS layer viewing and mapping is done using ArcMap and/or Main Roads corporate mapping system known as iMaps. Referencing of the GIS layers accessed is done under the relevant methodology section of each clearing principle. Government managed databases were searched to locate additional information, which are found under References in Section 10.

2.3 Surveys and Assessments

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

- Site Inspection, including a high level Black Cockatoo hollow assessment
- Black cockatoo hollow assessment and diurnal Western Ringtail Possum survey

Biological surveys conducted for the proposal are outlined in Section 3 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 and Survey Name	Survey Details
Main Roads (2025) Environmental Site Inspection Report. Forrest Highway (H057) New Intersection to Glen Iris - EOS 3089	**Survey Area:** 10.60 ha **Type:** Site inspection to determine flora and vegetation and high level Black Cockatoo habitat assessment. **Timing:** May 2023, November 2024, January 2025 **Survey Results Shapefile TRIM Ref:** Remnant and regrowth trees D25#63377, Weeds D25#63389 **Document TRIM Ref:** D25#34222

Consultant and Survey Name	Survey Details
SW Environmental (2025) Forrest Highway (H057), Glen Iris: Black cockatoo hollow assessment and diurnal Western Ringtail Possum survey	**Survey Area:** 10.58 ha **Type:** Black Cockatoo hollow assessment and diurnal Western Ringtail Possum site assessment **Timing:** January 2025 **Survey Results Shapefile TRIM Ref:** D25#63058 **Document TRIM Ref:** D25#63028

3 SURVEY RESULTS

3.1 Summary and Analysis of Flora and Vegetation Surveys

Main Roads (2025) conducted a site inspection to determine the environmental and heritage values of the local area. The purpose of the initial site visit was to gain a high-level understanding of the project area and to determine if further environmental or heritage approvals are required. A follow up heritage survey was initiated following the site inspection in May 2023. In November 2024, a high-level Black cockatoo breeding habitat assessment was undertaken in accordance with Main Roads (2023) which included:

- measure circumference at breast height (for DBH calculation).
- a thorough inspection for hollows or habitat features present (visual observations from ground).
- observe signs of fauna use within the tree and on the ground and assess the condition of the trees.

Most of the project area is located on former farmland, with isolated remnant *Eucalyptus rudis* (flooded gum) and planted trees over pasture grasses and weeds. Some remnant native vegetation remains, but it has been significantly altered from the long agricultural history and urbanisation. To the north of Forrest Highway, the project area abuts the Bunbury Port Authority land.

Vegetation is entirely in degraded to completely degraded parkland cleared condition, reflecting the long agricultural and urban land uses of the Glen Iris area. There are pasture grasses and common agricultural weeds throughout, with Arum lilies (*Zantedeschia aethiopica*), a Declared Pest, observed in a few locations. *Opuntia stricta* (common prickly pear) was also likely planted for the old farm property and is a Declared Pest and a Weed of National Significance (WoNS). There are also Watsonia sp. along the south side of Jeffrey Road, *Foeniculum vulgare plants* (fennel) near the *Opuntia stricta* in the main paddock between Forrest Highway and Jeffrey Road and *Amaryllis belladonna* (Easter Lilies) in the paddocks to the north of Jeffrey Road.

3.2 Summary and Analysis of Fauna Surveys

SW Environmental (2025) conducted a targeted black cockatoo hollow assessment and Western Ringtail Possum (WRP) (*Pseudocheirus occidentalis*) site assessment, to identify suitable black cockatoo breeding hollows and WRP presence / absence, to inform the environmental assessment and approvals process. Eleven trees, Eucalyptus rudis (flooded gum), were identified by Main Roads as requiring hollow assessment.

A summary of the black cockatoo breeding and WRP values (presence/absence) of the survey area are provided below:

- The survey area does not contain any suitable black cockatoo breeding hollows.
- The site generally contains marginal WRP habitat value, due to fragmented nature of remnant vegetation, lack of connected midstorey in most areas and lack of feed species over most of the survey area.
- WRP scat was observed at three locations in planted or disturbed vegetation – within Melaleucas under the powerlines (also two empty dreys), within the patch of planted vegetation north of the Forrest Highway (circa 94.3 SLK) and in the road verge in planted shrubs on the right hand side of Vittoria Road verge (circa 0.5 SLK). No WRP individuals were observed.
  No evidence of WRP was located within the Clearing Area.

4 DESKTOP ASSESSMENT OF VEGETATION

4.1 Desktop Vegetation Description

Table 3 provides 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 Site Inspection Report at D25#34222.

Table 3. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European Extent (ha)	Current Extent (ha)	% Remaining	% Current Extent in DBCA Managed Land (proportion of pre-European Extent)
Veg Assoc No. 998	**Statewide**	51,015.33	18,492.63	36.25	48.68
	IBRA Bioregion Swan Coastal Plain	50,867.50	18,492.32	36.25	48.68
	IBRA Sub-region Perth	50,867.50	18,492.32	36.25	48.68
	Local Government Authority City of Bunbury	1,405.24	150.28	10.69	NA

4.2 Vegetation Complexes and Representation

There is one vegetation complex within the Clearing Area as provided in Table 4. The Yorngarillup Complex is described as:

> Woodland to tall woodland of *Eucalyptus gomphocephala* (Tuart) with *Agonis flexuosa* in the second storey. Less consistently an open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla (*Marri). South of Bunbury is characterized by *Eucalyptus rudis* (Flooded Gum)-*Melaleuca* species open forests (Heddle et al 1980).

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

Heddle/Mattiske Veg Complex	Pre-European Extent (ha)	Current Extent (ha)	% Remaining
Yoongarillup (56)	1,435.65	156.36	5.13

5 ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

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

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

The proposed clearing is at variance with principle f, not likely to be at variance with principles a, e, g, h, i and j and not at variance with principles c and d.

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

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

Assessment:

The area proposed to be cleared consists of 15 isolated remnant flooded gum (*Eucalyptus rudis*) trees and a small section (0.008 ha) of *Typha orientalis*. The Clearing Area is in a completely degraded condition and weedy throughout the paddocks and underneath remnant trees. The trees within the Forrest Highway reserve are parkland cleared amongst planted vegetation.

Database searches identified that there are fourteen Threatened flora species recorded or have the likelihood to occur within the 5km study area, being:

- *Diuris purdiei*
- *Synaphea* sp. Pinjarra Plain (A.S.George 17182)
- *Lambertia echinata* subsp. *occidentalis*
- *Petrophile latericola*
- *Austrostipa bronweniae*
- *Austrostipa jacobsiana*
- *Banksia squarrosa* subsp. *argillacea*
- *Chamelaucium* sp. S coastal plain (R.D.Royce 4872)
- *Eleocharis keigheryi*
- *Drakaea micrantha*
- *Diuris micrantha*
- *Diuris drummondii*
- *Morelotia australiensis*
- *Theylmitra variegata*

Database searches identified a further 15 Priority flora species within the study area; one Priority 1, one Priority 2, seven Priority 3 and six Priority 4 flora species.

Database searches identified 13 Threatened Ecological Communities (TEC) either listed under the BC Act, EPBC Act or both and an additional one Priority Ecological Community (PEC) within the 5km study area:

- *Corymbia calophylla - Xanthorrhoea preissii* woodlands and shrublands of the Swan Coastal Plain floristic community type 3c as originally described in Gibson et al. 1994) (TEC -Endangered BC and EPBC Acts)
- Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion - Melaleuca huegelii – M. systena shrublands of limestone ridges (floristic community type 26a as originally described in Gibson et al. 1994) (TEC - Critically Endangered – BC and EPBC Acts)
- *Empodisma* peatlands of southwestern Australia (TEC – Endangered EPBC Act)

- Herb rich shrublands in clay flats (floristic community type 7 as originally described in Gibson et al. 1994 (TEC – Endangered BC Act and Critically Endangered EPBC Act)
- Herb rich shrublands in clay flats (floristic community type 8 as originally described in Gibson et al. 1994 (TEC – Endangered BC Act and Critically Endangered EPBC Act)
- Dense shrublands on clay flats (floristic community type 9 as originally described in Gibson et al. 1994) (TEC – Endangered BC Act and Critically Endangered EPBC Act)
- Shrublands on dry clay flats (floristic community type 10a as originally described in Gibson et al. 1994) (TEC – Endangered BC Act and Critically Endangered EPBC Act)
- Shrublands on calcareous silts of the Swan Coastal Plain (floristic community type 18 as originally described in Gibson et al. 1994) (TEC – Critically Endangered BC Act)
- Claypans with mid dense shrublands of *Melaleuca lateritia* over herbs (PEC Priority 1 BC Act, TEC - Endangered EPBC Act).
- Banksia Woodlands of the Swan Coastal Plain ecological community (PEC Priority 3 - BC Act, TEC - Endangered EPBC Act)
- *Southern Banksia attenuata woodlands (*floristic community type 21b as originally described in Gibson et al. 1994) (PEC Priority 3 - BC Act, TEC – Endangered EBPC Act)
- Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community (PEC - BC Act, TEC - Critically Endangered EPBC Act)
- Subtropical and Temperate Coastal Saltmarsh (PEC BC Act Priority 3, TEC Vulnerable EPBC Act)
- Relictual White Mangrove Community (Leschenault Inlet) (PEC – Priority 1)

A total of 30 vascular plant species were recorded during the site inspection (Main Roads 2025). Of those, 22 (~73%) are introduced/planted species (weeds). No Threatened or Priority flora species or TECs or PECs were recorded during the site inspection (2025). 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. Whilst *Eucalyptus rudis* subsp. *cratyantha* (P4) is recorded in the study area, it does not grow in the local area and the WAHerb record is therefore erroneous (see site inspection D25#34222, French and Nicolle, 2024).

As discussed further under Principle b, the Clearing Area provides potential marginal habitat for the Western Ringtail Possum and three Black Cockatoo species (Carnaby's Black Cockatoo (*Zanda latirostris*), Baudin's Black Cockatoo (*Zanda baudinii*) and Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*)). 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. The removal of 0.205 ha of native vegetation does not sever any local or regional ecological linkages with the closest regional linkage about 3.7 km east and south of the Clearing Area. Given the proposed clearing is adjacent to existing roads and in completely degraded condition, separated from good or better condition vegetation by disjunct isolated remnant trees and planted vegetation interspersed with cleared areas, it does not provide a high regional ecological value.

As discussed in Principle e, the Clearing Area is in an area that has been cleared for agriculture, industrial and urban development. This is demonstrated by the low amount of the Yoongarillup Vegetation complex remaining within the City of Bunbury at around 5%, and around 10% of vegetation association 998. Yet, there is about 36.25% remaining statewide and 48.68% in DBCA managed land of vegetation association 998. As the Clearing Area does not comprise a high level of biodiversity and no longer represents any function ecological community or association, the proposed clearing is not likely to be at variance with this principle.

Methodology

- DCCEEW Protected Matters Search Tool Report (21 January 2025)
- Government GIS Shapefiles:
  - DBCA Threatened and Priority Ecological Community database search (Accessed January 2025)
  - DBCA Threatened and Priority flora database search (Accessed January 2025)
  - DBCA Threatened and Priority fauna database search (Accessed February 2025)
  - Bush Forever Area 2000 (DPLH-019) (Accessed February 2025)
  - WALGA South West Regional Ecological Linkages Axis Lines (Accessed February 2025)
- Main Roads Site Inspection (February 2025)
- 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 .

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

Assessment

The area proposed to be cleared consists of 15 isolated remnant flooded gum (*Eucalyptus rudis*) trees and a small section (0.008 ha) of *Typha orientalis*. The Clearing Area is in a completely degraded condition and weedy throughout the paddocks and underneath remnant trees. The trees within the Forrest Highway Road reserve are parkland cleared amongst planted vegetation.

Database searches identified that there are 16 Threatened fauna species recorded within the 5km study area, being:

- Western Ringtail Possum (*Pseudocheirus occidentalis*) – Critically Endangered BC Act and EPBC Act
- Great knot (*Calidris tenuirostris*) – Critically Endangered BC Act and EPBC Act & Migratory EPBC Act
- Eastern curlew (*Numenius madagascariensis*) - Critically Endangered BC Act and EPBC Act & Migratory EPBC Act
- Curlew sandpiper (*Calidris ferruginea*) - Critically Endangered BC Act and EPBC Act & Migratory EPBC Act
- Carnaby's Black Cockatoo (*Zanda latirostris*) – Endangered BC Act and EPBC Act
- Baudin's Black Cockatoo (*Zanda baudinii*) – Endangered BC Act and EPBC Act
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable BC Act and EPBC Act
- Carter's freshwater mussel (*Westralunio carteri*)– Vulnerable BC Act and EPBC Act
- Black-browed albatross *(Thalassarche melanophriss)* – Endangered BC Act, Vulnerable & Migratory EPBC Act
- Black-stripe minnow (*Galaxiella nigrostriata*) - Endangered BC Act and EPBC Act
- Chuditch (*Dasyurus geoffroii*) - Vulnerable BC Act and EPBC Act
- Fairy Tern (*Sternula nereis nereis*) - Vulnerable BC Act and EPBC Act
- Greater sand plover (*Charadrius leschenaultii*) – Vulnerable BC Act and EPBC Act & Migratory EPBC Act
- Indian yellow-nosed albatross (*Thalassarche carteri*) - Endangered BC Act, Vulnerable & Migratory EPBC Act
- Red knot (*Calidris canutus*) - Endangered BC Act and EPBC Act & Migratory EPBC Act
- Western whipbird (*Psophodes nigrogularis*) – Endangered BC Act

There are a further nine species that have been recorded - one species is conservation dependent, one is Priority 2, two Priority 3 and five Priority 4 the 5km study area. Marine mammals are excluded from the discussion as this is a terrestrial only Clearing Area.

No significant fauna species were recorded during the site inspection (Main Roads 2025). However, the Clearing Area provides some marginal habitat for four species

- Western Ringtail Possum (*Pseudocheirus occidentalis*) – Critically Endangered BC Act and EPBC Act
- Carnaby's Black Cockatoo (*Zanda latirostris*) – Endangered under BC Act 2016 and EPBC Act 1999
- Baudin's Black Cockatoo (*Zanda baudinii*) – Endangered under BC Act 2016 and EPBC Act 1999
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable under BC Act 2016 and EPBC Act 1999

There is no suitable aquatic habitat therefore Carter's freshwater mussel and the black-stripe minnow will likely not occur. The avian species may be seasonal vagrants to the area, but there is no significant habitat for the species. Chuditch are unlikely to occur due to the discontinuous nature of the vegetation and the absence of native understorey species.

The Clearing Area is within the known foraging and breeding range of Western Ringtail Possum and all three Black Cockatoo species. Evidence of Western Ringtail Possum and Black Cockatoos were observed outside of the Clearing Area. The site inspection and diurnal assessment by SW Environmental did not identify any hollows that were suitable for breeding by Black Cockatoos.

Populations of Western Ringtail Possum along the Swan Coastal Plain are associated with stands of myrtaceous trees, usually peppermint trees (*Agonis flexuosa*) growing near swamps, water courses or floodplains, and at topographic low points which provide cooler and often more fertile conditions (DPaW 2017). Habitat critical to survival comprises long unburnt mature remnant peppermint woodlands with high canopy continuity and high nutrient foliage with minimal periods of summer moisture stress, and habitat connecting patches of remnants (DPaW 2017). The closest potential habitat is approximately 130 m to the south and 200 m to the east, separated by cleared paddocks devoid of native vegetation, residential areas and roads.

The Clearing Area contains 15 flooded gum (*Eucalyptus rudis*) trees and an area of *Typha orientalis*. Evidence of the Western Ringtail Possum was recorded outside the Clearing Area in patches of more dense, continuous vegetation; however, no evidence of WRP was recorded within the Clearing Area. The trees within the Clearing Area are disconnected by large areas of open paddocks and the Forrest Highway, therefore there is no continuous canopy or understorey that is likely to support the species. It is also noted that there are larger patches of better-quality intact vegetation about 1 km to the east, and about 3 km to the south of the Clearing Area.

The Proposal area is directly adjacent to a known white-tailed Black Cockatoo roosting site and there is a white-tailed Black Cockatoo known breeding site approximately 5.3 km south of the Clearing Area. Whilst flooded gum (*Eucalyptus rudis*) may be utilised for breeding, no trees with suitable hollows occur in the Clearing Area.

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

- 15 *Eucalyptus rudis* (flooded gum), 14 of which are suitable DBH trees
- no *Agonis flexuosa* (peppermint) trees
- no known Black Cockatoo roosting trees
- no trees that contain suitable hollows for Black Cockatoos
- no vegetation known to support Black Cockatoo roosting
- no vegetation with 5 km of a known Black Cockatoo breeding site
- no vegetation that provides core habitat, primary corridors or supporting habitat for Western Ringtail Possum in patches greater than 0.2 ha

Given the above, the proposed Clearing Area provides medium quality foraging habitat for Black Cockatoos and no significant core or supporting habitat for Western Ringtail Possum. No known roosting or suitable breeding trees for either species are proposed to be cleared. Older evidence of Black Cockatoo

foraging was observed on Marri (*Corymbia calophylla*) outside of the Clearing Area; therefore, Black Cockatoo species may possibly utilise foraging habitats within the local area on occasion. Evidence of Western Ringtail Possum was also observed outside the Clearing Area, likely to be transient individuals. Due to the isolated nature of the parkland cleared trees, the completely degraded condition, the context of the wider Swan Coastal Plain and the proximity to better quality remnant vegetation, clearing for the proposal is unlikely to significantly impact on foraging resources for the three Black Cockatoo species or Western Ringtail Possum.

Methodology

- Government GIS Shapefiles:
  - DBCA Threatened and Priority fauna database search (Accessed February 2025)
  - Black Cockatoo Roosting sites (DBCA-064) (Accessed February 2025)
  - Forest Red Tailed Black Cockatoos Breeding Sites (Accessed February 2025)
  - White Tailed Black Cockatoos Breeding Sites (Accessed February 2025)
  - Western Ringtail Possum habitat suitability (DBCA-049) (Accessed February 2025)
- DCCEEW Protected Matters Search Tool Report (Janaury 2025)
- Main Roads Site Inspection (2025)

(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

Database searches identified that there are fourteen Threatened flora species recorded or have the likelihood to occur within the 5km study area, being:

- *Diuris purdiei*
- *Synaphea* sp. Pinjarra Plain (A.S.George 17182)
- *Lambertia echinata* subsp. *occidentalis*
- *Petrophile latericola*
- *Austrostipa bronweniae*
- *Austrostipa jacobsiana*
- *Banksia squarrosa* subsp. *argillacea*
- *Chamelaucium* sp. S coastal plain (R.D.Royce 4872)
- *Eleocharis keigheryi*
- *Drakaea micrantha*
- *Diuris micrantha*
- *Diuris drummondii*
- *Morelotia australiensis*
- *Theylmitra variegata*

No Threatened flora were recorded during the Site Inspection (2025). Due to the completely degraded nature of the area proposed to be cleared, Threatened flora do not occur or are likely to occur and therefore the proposed clearing is not at variance to this principle.

Methodology

- DCCEEW Protected Matters Search Tool Report (Janaury 2025)
- DBCA Threatened and Priority Ecological Community database search (Accessed January 2025)
- Main Roads Site Inspection (2025)

(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

Threatened ecological communities (TECs) returned in the database searches include:

- *Corymbia calophylla - Xanthorrhoea preissii* woodlands and shrublands of the Swan Coastal Plain floristic community type 3c as originally described in Gibson et al. 1994) (TEC -Endangered BC and EPBC Acts)
- Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion - Melaleuca huegelii – M. systena shrublands of limestone ridges (floristic community type 26a as originally described in Gibson et al. 1994) (TEC - Critically Endangered – BC and EPBC Acts)
- *Empodisma* peatlands of southwestern Australia (TEC – Endangered EPBC Act)
- Herb rich shrublands in clay flats (floristic community type 7 as originally described in Gibson et al. 1994 (TEC – Endangered BC Act and Critically Endangered EPBC Act);
- Herb rich shrublands in clay flats (floristic community type 8 as originally described in Gibson et al. 1994 (TEC – Endangered BC Act and Critically Endangered EPBC Act);
- Dense shrublands on clay flats (floristic community type 9 as originally described in Gibson et al. 1994) (TEC – Endangered BC Act and Critically Endangered EPBC Act);
- Shrublands on dry clay flats (floristic community type 10a as originally described in Gibson et al. 1994) (TEC – Endangered BC Act and Critically Endangered EPBC Act);
- Shrublands on calcareous silts of the Swan Coastal Plain (floristic community type 18 as originally described in Gibson et al. 1994) (TEC – Critically Endangered BC Act)
- Claypans with mid dense shrublands of *Melaleuca lateritia* over herbs (PEC Priority 1 BC Act, TEC - Endangered EPBC Act).
- Banksia Woodlands of the Swan Coastal Plain ecological community (PEC Priority 3 - BC Act, TEC - Endangered EPBC Act)
- *Southern Banksia attenuata woodlands (*floristic community type 21b as originally described in Gibson et al. 1994) (PEC Priority 3 - BC Act, TEC – Endangered EBPC Act);
- Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community (PEC - BC Act, TEC - Critically Endangered EPBC Act)
- Subtropical and Temperate Coastal Saltmarsh (PEC BC Act Priority 3, TEC Vulnerable EPBC Act)

No TECs were recorded during the Site Inspection (2025). Due to the completely degraded nature of the area proposed to be cleared, no TECs occur or are likely to occur and therefore the proposed clearing is not at variance to this principle.

Methodology

- DCCEEW Protected Matters Search Tool Report (Janaury 2025)
- DBCA Threatened and Priority Ecological Community database search (Accessed January 2025)
- Main Roads Site Inspection (2025)

(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 and Peel) where 10% representation should be maintained.

The Clearing Area is located on the Swan Coastal Plain, an area that has been cleared for agriculture, industrial and urban development. Within the City of Bunbury, there is around 5% of the Yoongarillup Vegetation complex remaining and around 10% of vegetation association 998. Yet, there is about 36.25% remaining statewide and 48.68% remains within DBCA managed land.

Notwithstanding the above, the vegetation within the Clearing Area only consists of isolated remnant including flooded gum (*Eucalyptus rudis*) trees and a section of *Typha orientalis* in a completely degraded condition. Whilst the clearing is mapped within the pre-European Vegetation Association 998 area, the vegetation does not form any valuable ecological function of that association due to being in a completely degraded condition.

The 0.205 ha of proposed clearing is not significant as a remnant due to:

- the very small area of isolated trees proposed to be cleared in parkland cleared paddocks and the road reserve; and
- 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

Therefore, due to condition and structure not representing vegetation association 998, the proposed clearing is therefore not likely to be at variance to this Principle.

Methodology

- Government GIS shapefiles:
  - Pre-European vegetation (DPIRD-006) (Accessed February 2025)
  - Vegetation complexes – Swan Coastal Plain (DBCA-046) (Accessed February 2025)
- Main Roads Site Inspection (2025)
- Statewide Vegetation Statistics (Government of Western Australia 2025)

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

Proposed clearing is at variance to this Principle.

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 Clearing Area is located is highly modified from the long history of agricultural, industrial and residential activities. The natural hydrology has been previously modified due to the realignment of the Preston River in the early 1900s to permit agricultural activities, and more recently, due to construction of the Forrest Highway. Clearing will not change any existing hydrology or natural wetland functions as the Clearing Area is surrounded by an artificial drainage network.

The Clearing Area contains species which are associated with watercourses and wetland environments, including Flooded gum (*Eucalyptus rudis*), Paperbark (*Melaleuca rhaphiophylla*) and understorey species *Machaerina articulata and Typha orientalis*. However, the vegetation is in a completely degraded condition. Whilst the proposed clearing is at variance to this Principle, the impacts are not likely to be significant and no direct and indirect impacts to any natural hydrological functions will occur.

Methodology

- Government GIS shapefiles:
  - Geomorphic Wetlands (Accessed February 2025)
  - Ramsar Wetlands (Accessed February 2025)
  - Important Wetlands (Accessed February 2025)
  - Watercourses (Accessed February 2025)
- Main Roads Site Inspection (2025)

(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 Spearwood S2c phase and Pinjarra P6c phase land subsystems. The Spearwood S2c phase consists of "Lower slopes (1-5%) of dune ridge with bleached or pale sands with a yellow-brown or pale brown subsoil (like S1c). It usually occurs on the eastern edge of the Spearwood Dunes". The Pinjarra P6c phase land subsystem consists of 'Poorly drained coastal plain with variable alluvial and aeolian soils. Variable vegetation includes Jarrah, marri, wandoo, paperbark sheoaks and flooded gum'.

The Clearing Area is mapped within two areas - 3% (L1) and 10-30% (M1) high to extreme wind erosion risk areas. However, given the minor nature of the proposed clearing in a completely degraded condition adjacent to an existing highway and residential areas, 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 Clearing Area is in a Class 1 area with a "*High to moderate risk of ASS occurring within 3m of the natural soil surface*". Most of the Clearing Area is in an area that has <3% moderate to high salinity risk or is presently saline, with the remainder between 3-10%. MRWA conducted a soil sampling event (12 test pit locations) in the local Clearing Area from depths of 250mm to 1250mm (D25#118318, D25#118323, D25#118338). ASS assessments indicate a

low likelihood of ASS. Furthermore, observations during the site inspection determined that it is unlikely the Clearing Area is currently saline due to the species present.

Given a lack of drainage lines and the flat typography, water erosion is highly unlikely to occur (located within the mapped L1 area). There is some minor salinity risk, mapped within the L1 unit – <3% and L2 unit – 3-10% has a moderate to high salinity risk or is presently saline. Nonetheless, species that are present within the Clearing Area are susceptible to salinity, therefore indicating it is not saline at present, nor was evidence present in the surrounding local area outside the Clearing Area. The removal of the vegetation is also highly unlikely to cause increased salinity given the surrounding remnant and planted vegetation keeping the groundwater table at depth.

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

Methodology

- Government GIS Shapefiles:
  - Acid Sulphate Soil Risk Map (Accessed February 2025)
  - Soil landscape land quality – Water Erosion Risk (Accessed February 2025)
  - Soil landscape land quality – Wind Erosion Risk (Accessed February 2025)
  - Soil landscape land quality – Salinity Risk (Accessed February 2025)
  - Soil landscape land quality – Waterlogging Risk (Accessed February 2025)
  - Soil landscape land quality – Flood Risk (DPIRD-007) (Accessed February 2025)
- Main Roads Site Inspection (February 2025)

(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 ArcGIS shapefiles indicates that there are no nature reserves, conservation areas or Bush Forever Sites located within 100 metres of the Clearing Area. The closest area of significance is the Picton Oxbox Lake south of Kaeshagen St, approximately 930 m to the south of the Clearing Area. This lake is a Resource Enhancement (RE) Wetland that is of interest to DBCA. Therefore, the proposed clearing is not at variance to this Principle.

Methodology

- Government GIS Shapefiles:
  - DBCA Legislated Lands and Waters & Lands of Interest (Accessed 5 February 2025)
- Main Roads Site Inspection (2025)

(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. The closest watercourse is the Preston River, approximately 100 m to the west. The clearing is not located within a Proclaimed Surface Water area but is located within the Bunbury Groundwater Area proclaimed under Section 26B(1) of the RIWI act 1914.

The DWER/ASRIS ASS risk mapping indicates that the Clearing Area is in a Class 1 area with a "*High to moderate risk of ASS occurring within 3m of the natural soil surface*". Most of the Clearing Area is located in an area that has <3% moderate to high salinity risk or is presently saline, with the remainder between 3-10%. MRWA conducted a soil sampling event (12 test pit locations) in the local Clearing Area from depths of 250mm to 1250mm (D25#118318, D25#118323, D25#118338). ASS assessments indicate a low likelihood of ASS. Furthermore, observations during the site inspection determine it is unlikely that the Clearing Area is currently saline due to the species present that do not grow in saline environments.

Groundwater salinities in the Clearing Area range between approximately 500 to 1,000 mg/L. Given the isolated clearing of vegetation in a completely degraded 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 (Accessed February 2025)
  - Acid Sulphate Soil risk mapping (Accessed February 2025)
- Main Roads Site Inspection (2025)

(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

According to available databases, the Clearing Area is predominately located in an area of <3% moderate to high flood risk, with the rest of the area in a 10-30% moderate to high flood risk. In addition, the majority of the Clearing Area is located in an area of >70% high water repellence risk, with the remainder 10-30% of map unit has a moderate to very high waterlogging risk. The area is located in the southwest region and experiences a mean rainfall of 733.7 mm per annum (based on the Bunbury 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, industrial and residential developments. Whilst the Clearing Area is located in an area that may flood and hold water during the wetter months, the limited clearing is unlikely to cause or exacerbate the incidence or intensity of flooding. The proposed clearing is intended to facilitate an upgrade to the road network, in addition to re-shaping table drains adjacent to the network, therefore increasing the efficiency of the road drainage network.

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 proposed Clearing Area being in a completely degraded condition, the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

Methodology

- BoM Website (Accessed February 2024)
- Government GIS Shapefiles:
  - Soil landscape land quality - Waterlogging Risk (Accessed February 2024)
  - Soil landscape land quality - Flood Risk (Accessed February 2024)
- Main Roads Site Inspection (Februrary 2025)

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 AND OFFSETS

7.1 Revegetation and Rehabilitation

No temporary clearing will be undertaken as part of the Proposal activities and therefore no revegetation or rehabilitation will be conducted under CPS 818.

7.2 Offset Proposal

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

8 STAKEHOLDER CONSULTATION

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

9 COMPLIANCE WITH CPS 818

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

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

Impact of Clearing	Yes/No or NA	Further Action Required
1. The CAR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.	**Yes**	No further action required as the clearing is '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 a wetland that is not a defined wetland.
2. Clearing is at variance or may be at variance with Clearing Principle (g) land degradation, (i) surface or underground 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.

Impact of Clearing	Yes/No or NA	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 isolated parkland cleared vegetation is proposed to be cleared, therefore standard Vehicle and Plant management actions from Annexure 204B (TABLE 204B.9.1), Hygiene Checklists *(D17#859669)* and Vehicle, Plant and Machinery Hygiene Register Template *(D23#179551)* will be applied.
5b. Do the proposed works require clearing within or adjacent to DBCA managed lands in non-dry conditions?	**No**	No further action required.
6. Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback.	**No**	No further action required.
7. Weeds are likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.	**No**	No further action required.
8. Did an environmental specialist conduct the survey or field assessment?	**Yes**	The Environmental Specialist undertaking the biological assessments was suitably qualified and had more than three years' experience.
9. Did an environmental specialist prepare the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal?	**Yes**	The Environmental Specialist preparing the Assessment Report and the VMP was suitably qualified and had more than three 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. (2025). Climate Averages for Australian Sites – Bunbury – Available online from http://www.bom.gov.au/climate/data/index.shtml. Accessed February 2025.

Commonwealth Scientific and Industrial Research Organisation, 2015. Australian Soil Resource Information System (ASRIS). Available online from http://www.asris.csiro.au. Accessed February 2025.

Department of the Environment (2013). *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance, Environment Protection and Biodiversity Conservation Act 1999*. Canberra, Australian Capital Territory.

Department of Climate Change, Energy, the Environment and Water. (2025). Protected Matters Search Tool Report. Available online from: http://www.environment.gov.au/epbc/pmst/index.html Accessed 21 January 2025.

Department of Climate Change, Energy, the Environment and Water. (2025). Species Profile and Threats Database. Available online from: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl Accessed 21 January 2025.

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

Environmental Protection Authority (2020). *Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*. Perth, Western Australia.

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.

French, M. and Nicolle, D (2024*) Eucalypts of Western Australia. The South West Coast and Ranges*. Second Edition. Perth, Western Australia.

Government of Western Australia. (2025). 2025 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of February 2025. WA Department of Biodiversity, Conservation and Attractions, Perth. Available online from: https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics

Government of Western Australia. (2025). 2025 South West Vegetation Complex Statistics. Current as of February 2025. WA Department of Biodiversity, Conservation and Attractions, Perth.
Government of Western Australia (2019). *Native Vegetation Clearing Permits. Application, assessment, and management requirements under Part V Division 2 of the Environmental Protection Act 1986.* Department of Water and Environmental Regulation.

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.

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

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

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

Heddle, E. M., Loneragan, O. W., and Havel, J. J (1980) *Atlas of Natural Resources Darling System, Western Australia*. Department of Conservation and Environment.

Main Roads WA. (2025). Environmental Site Inspection Report Forrest Highway (H057) New Intersection to Glen Iris – EOS 3089.

Natural Resource Management in WA. (2025). SLIP portal, Soil-Landscape Mapping. Available online from: http://maps.agric.wa.gov.au/nrminfo/framesetup.asp
Accessed January 2025.

Western Australian Herbarium. (199 8–) *FloraBase* - The Western Australian Flora. Department of Biodiversity, Conservation and Attractions. Available online from: https://florabase.dpaw.wa.gov.au/
Accessed January 2025.

Webb, A., Kinloch, J., Keighery, G., & Pitt, G. (2016). *The Extension of Vegetation Complex Mapping to Landform Boundaries with the Swan Coastal Plain Landform and Forested Region of South-west Western Australia.* Perth: Department of Biodiversity, Conservation and Attractions.

11 APPENDICES

Appendix 1: Vegetation Management Plan

FORREST HIGHWAY NEW INTERSECTION WITH GLEN IRIS

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 Forrest Highway New Intersection with Glen Iris.

The project proposes to:

- Construct a new unconstrained intersection with Forrest Highway 200 m to the west of the current Vittoria Road.
- Construct a new access road between Forrest Highway and Jeffrey Road providing an alternative access to Glen Iris.

Construction includes:

- Widening of Forrest Highway to three lanes on the north & southbound approach to the new intersection.
- A new roundabout at Jeffrey Road where new road intersects.
- Stormwater drainage along Forrest Highway.
- Pedestrian facilities at the new intersection only (cut through's and ramps) to facilitate future connectivity.
- Clearing of isolated remnant vegetation.
- Preload settlement prone insitu materials under proposed road (N-S link from Forrest Highway to Jeffrey Road).

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
Natural drainage pathways will not be obstructed from stockpile gravel, crushed rock and excavated material.	Superintendent	During construction
All recently cleared, exposed and loose surface areas shall be protected from wind, water and soil erosion.	Superintendent	During construction
The Contractor will ensure that clearing of native vegetation is only undertaken in dry conditions, unless otherwise approved and / or directed by the Superintendent.	Superintendent	During construction
All Special Environmental Areas will be pegged in accordance with Main Roads' Drawing 201928-0001-1 Construction Peg Colour Code (https://www.mainroads.wa.gov.au/globalassets/technical-commercial/technical-library/standard-contract-drawings/vegetation/construction-environmental-management/201928-0001-construction-peg-colour-code-drawing.pdf?v=49bd3b).	Superintendent	During construction
The Contractor must develop and detail a Site induction training program as part of the CEMP that includes as a minimum, the significant environmental impacts, actual or potential, of work activities associated with the Contract	Superintendent	During construction

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

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

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

a) The pegging of limits of vegetation clearing has been undertaken.

b) The pegged vegetation Clearing Area does not exceed the Limits of Vegetation Clearing.

c) Mature trees have been conserved as far as practicable.

d) The pegging of special environmental areas has been undertaken.

f) All pre-clearing weed control has been undertaken.

g) All pre-clearing fauna operational controls have been undertaken.

h) All pre-clearing dieback operational controls have been undertaken.

i) Suitable and unsuitable topsoil zones have been identified.

j) Vegetation and topsoil stockpile locations have been identified.

o) All clearing machinery is compliant with controls.

Monitoring and Maintenance Program

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

Non-Compliance

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

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

Revegetation

Revegetation will be undertaken in accordance with Condition 9 of CPS 818. Relevant requirements from Condition 9 have been incorporated into Project Revegetation Plan Template. The elements to be implemented by the Contractor will be incorporated into the relevant Specification 304.