COTERRA ENVIRONMENT

Native Vegetation Clearing Permit Amendment Application

Kargotich / Abernethy Road Intersection – Shire of Serpentine Jarrahdale

Rev 0 August 2025

CALIBRE | COMMITMENT | COLLABORATION

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Contents

Tables

Plates

Figures

Appendices

1 Introduction

1.1 Background

The Shire of Serpentine Jarrahdale (the proponent) is seeking to amend an existing clearing permit (CPS 10600; Appendix 1) to facilitate the construction of a roundabout at the intersection of Kargotich Road and Abernethy Road. Construction of this roundabout will necessitate the clearing of an additional 0.82 ha of native vegetation, beyond that which was approved under CPS 10600 (Figure 1).

CPS 10600 was originally granted to the proponent to facilitate upgrades to Kargotich Road, to address traffic and safety concerns and to support current and future traffic load. While these upgrades originally included the proposed roundabout at the Kargotich / Abernethy Road intersection, delays in relevant land transfer processes meant that the roundabout was omitted from the original clearing permit application. These land transfer processes have now concluded, and the Shire is seeking to amend CPS 10600 to provide for the necessary additional clearing.

The proposed roundabout is part of the Shire of Serpentine Jarrahdale's Hypergrowth Roads Program, an $18 million State Government Commitment to build a safer road network in the Shire. Through careful analysis of the Shire's road network and Main Roads WA crash data, Kargotich Road ranked as the second highest priority for roads that require urgent upgrade and improvement in the Shire. The roundabout forms part of Kargotich Road Stage 2 upgrades. Further information on the Hypergrowth Roads Program is available online via https://www.sjshire.wa.gov.au/Profiles/sj/Assets/ClientData/Hypergrowth_Document_FA_WEB.pdf.

Roundabouts are well established as highly effective in enhancing road safety, particularly at high-speed intersections, by minimising collision angles and dissipating impact energy (Main Roads WA, 2025; Road Safety Commission, 2024).

1.2 Shire of Serpentine Jarrahdale

The management of native vegetation within the Shire of Serpentine Jarrahdale is underpinned by the Shire's Local Biodiversity Strategy (2019). The strategy focuses on 6,333 ha of local natural areas and local reserves and is structured around five 'focus areas' with targets to retain, protect and enhance the values of the specific focus areas. These being:

- Natural Areas
- Locally Characteristic Species
- Vegetation Complexes
- Specific Features
- Consultation and Education

With specific regard to native vegetation, the Shire has committed to protecting, retaining and enhancing a minimum area of each vegetation type found in the Shire, equating to a total area of approximately 1,690 ha. It is noted that via its Local Biodiversity Strategy (2019), the Shire has committed to the protection of 20 ha of the Beermullah Vegetation Complex (see section 3.3.1) within its local parks and reserves.

The Shire's Local Biodiversity Strategy is also supported by a number of other strategies and policies which intersect with the strategy in terms of common goals and management actions. These include:

- Biodiversity Incentives Strategy (2010)
- Climate Change Strategy and Local Action Plan (2023-2025)
- Natural Assets Management Plan (2016)

- Weed and Pest Management Plan (2017)
- Urban and Rural Forest Strategy (2018-2028)
- State of the Environment Report (2019).

At a statutory level, the Shire's *Local Planning Policy 4.16: Tree Retention and Planting* serves to preserve and enhance landscape character, and to protect and retain significant trees contributing to biodiversity and amenity of the Shire, in accordance with the Shire's Local Planning Scheme No. 3. Additionally, *Local Planning Policy 2.7: Biodiversity Planning Policy* provides for the Shire's approach toward the assessment of impacts on natural areas, as identified in the Local Biodiversity Strategy.

The clearing of native vegetation at the intersection of Kargotich and Abernethy Roads to facilitate the proposed roundabout has been minimised to the fullest extent possible, in accordance with the Shire's own biodiversity commitments.

1.3 Purpose of this report

This report has been prepared in support of an application to amend the existing Kargotich Road clearing permit (CPS 10600), to incorporate the required clearing for a roundabout at the Kargotich and Abernethy Road intersections, under 51KA of the *Environmental Protection Act 1986* (EP Act).

2 Proposed Clearing

2.1 Schedule

Works are proposed to be undertaken in the warmer and drier months between 2025 and 2026, with clearing occurring over an approximately two week period in November, and broader construction works being undertaken from November to February. This approach will minimise the risk of unnecessary topsoil disturbances and water runoff into adjacent retained vegetation.

2.2 Proposed works

Roundabout construction works will involve the clearing of existing vegetation, bulk earthworks, installation of subbase, road base (limestone and crushed rock) and asphalt within a defined area. Design of the proposed upgrades has been undertaken to minimise the extent of clearing required, such as that the majority of works will be undertaken within existing cleared areas, only.

2.3 Clearing methodology

2.3.1 Pre-clearing

Prior to clearing, the works area will be clearly demarcated to ensure over-clearing does not occur. Construction contractors will be provided with an Environment Induction Note to:

- Ensure knowledge of the environmental values within and adjacent to the proposed clearing area, and the importance of minimising construction related impacts
- Adequately implement measures to protect the environment, including the use of dust minimisation strategies
- Comply with local, state and federal environmental legislation

2.3.2 Clearing

Clearing will be undertaken by mechanical removal. Dust emissions from the proposed works will be mitigated through the use of a watercart where necessary, thereby ensuring that indirect impacts to proximal retained vegetation will be minimised to the fullest extent practicable. Works will also be undertaken during the drier months of the year, to ensure no interactions between the proposed works and any surface water flows. Protocols for environmental incidents which may occur during the course of clearing (such as contingency actions in the event of fauna strike) will be implemented and communicated to construction contractors.

2.4 Alternatives Considered

The proposed roundabout and upgrades to Kargotich Road more broadly have been proposed as a means of addressing the substantial recent and future urban development and increased road use in the Byford and Mundijong areas. Kargotich Road is an important access route that links newly developed residential areas and existing infrastructure within the Perth Metropolitan Region, and serves as a major connectivity link with the West Mundijong Industrial Area. The north-south link of Kargotich Road provides access to Rowley Road in the north, Thomas Road mid-way and Mundijong Road in the south, while Abernethy Road serves as an east-west connection between Byford and Mundijong and the Kwinana Freeway, which in turn provides access to the Perth CBD and significant industrial areas such as Kwinana.

Roundabouts in particular have long been highly regarded for their safety merits of meeting Safe Systems design principles by reducing vehicular speed through the intersection, minimising the number of conflict points within an intersection, and minimising the angle of the conflict (Main Roads 2025).

Recognising that between 2025 and 2019 there were four recorded crashes in the vicinity of this intersection (one hospital, one major, and two minor; Shire of Serpentine Jarrahdale n.d.), it is reasonable to expect that were no upgrade to the intersection made, then road safety would be substantially poorer as a result.

2.5 Actions undertaken under CPS 10600

CPS 10600 provides for the clearing of no more than 3.31 ha of native vegetation, within the approved clearing area. To-date, the Shire has cleared approximately 1.7 ha of native vegetation within this area, equating to approximately 50% of the maximum extent permitted. All clearing was undertaken between the 10th and 20th of February 2025.

Further information on the Shire of Serpentine Jarrahdale's compliance with the conditions of CPS 10600 can be provided upon request.

3 Existing Environment

3.1 Topography, Geology and Soils

The proposed clearing area's topography ranges from 16 metres Australian Height Datum (m AHD) in the west to 20 m AHD in the east (Landgate, 2025a).

The soils within the proposed clearing area are primarily Sandy Clay (Cs), characterised as white-grey to brown, fine to coarse-grained, subangular to rounded sand, clay of moderate plasticity gravel and silt layers near scarp (Jordan, 1986). All soils within the proposed clearing area are mapped as having Moderate to Low Acid Sulfate Soil (ASS) risk occurring within 3 m of natural soil surface (Landgate, 2025a).

Additionally, the Department of Primary Industries and Regional Development (DPIRD) has identified the following soil phases within the project area (DPIRD, 2025):

- Pinjarra P5 phase (213Pj_P5) – Poorly drained flats, commonly with gilgai microrelief and with deep black-grey to olive-brown cracking clays with subsoils.
- Pinjarra P7 phase (213Pj_P7) – Seasonally inundated swamps and depressions with very poorly drained variable acidic mottled yellow and grey sandy duplex and effective duplex soils.

Land degradation details for both the Pinjarra P7 and Pinjarra P5 phases are provided in Table 1.

Table 1: Land Degradation Risk Categories

Land Degradation Risk Category	213Pj_P5	213Pj_P7
Water Erosion	Less than 3% of the map unit has very high to extreme hazard	Less than 3% of the map unit has very high to extreme hazard
Wind Erosion	Less than 3% of the map unit has a high to extreme hazard	3-10% of map unit has high to extreme hazard
Flood Hazard	Less than 3% of the map unit has a moderate to high hazard	Less than 3 of the map unit has a moderate to high hazard
Salinity Risk	50-70% of map unit has a moderate hazard	3-10% of map unit has moderate hazard
Water logging and Inundation	More than 70% of the map unit has a moderate to very high risk	More than 70% of map unit has a moderate to very high risk

Source: DPIRD (2025)

The highest risk category is waterlogging and inundation for both soil types and the second highest is salinity risk which is associated with the Pinjarra P5 phase soil.

3.2 Hydrology

3.2.1 Groundwater

The proposed clearing area falls within the Serpentine groundwater area and is underlain by the Superficial Swan, Leederville and Yarragadee North aquifers (DWER, 2025b).

Regional groundwater mapping does not extend to the proposed clearing area, however the closest available mapping data to the north of Thomas Road indicates that the minimum depth to groundwater is approximately 5 m (DWER, 2025a). Based on known topography, this equates to approximately 19 m AHD, in this area.

There are no Public Drinking Water Source Areas (PDWSA) within or adjacent the proposed clearing area. The closest known PDWSA is a Priority 2 area, specifically the Jandakot Underground Water Pollution Control Area (approximately 7.7 km west).

3.2.2 Surface Water

The proposed clearing area is intersected by Beenyup Brook, a small artificial drain that runs along the northern side of Abernethy Road. This drain passes directly under the Kargotich Road and Abernethy Road intersection (the project area) and continues almost to the end of Abernethy Road (Landgate 2025a) (Plate 3-1).

Beenyup Brook eventually discharges into the Birriga main drain, which typically flows during August and September. This drain ultimately flows into the Serpentine River system, which then links to the Peel-Harvey Estuary (Department of Water, 2008).

The section of Beenyup Brook that passes under Kargotich Road, specifically between Abernethy Road, appears to be a modified watercourse. It functions similarly to other drains within the Upper Serpentine River Catchment, which were constructed primarily for the drainage of agricultural land (DWER, 2018). The Beenyup Brook is predominantly influenced by surrounding agricultural land uses, and is largely devoid of remnant native vegetation (Treewest, 2022).

Plate 3-1: Beenyup Brook drain

Plate 3-2: Kargotich Road Bridge

Source: Coterra Environment (2025)

3.2.3 Wetlands

The entirety of the proposed clearing area lies within a Multiple Use Wetland (MUW), as mapped by the Department of Biodiversity. Conservation and Attractions (DBCA) (Landgate, 2025a). MUWs are classified as the lowest management priority for development on the Swan Coastal Plain as 'Wetlands with few remaining important attributes and functions' (EPA, 2008, Table 2)

Table 2: Wetland Characteristics and Management Objectives

Management Category	General Description	Management Objective
Multiple Use	Wetlands with few remaining important attributes and functions	Use, development and management should be considered in the context of ecologically sustainable development and best management practice catchment planning through land care.

Management Category	General Description	Management Objective
Resource Enhancement	Wetlands which may have been partially modified but still support substantial ecological attributes and functions	Priority wetlands. Ultimate objective is to manage, restore and protect towards improving their conservation value. These wetlands have the potential to be restored to Conservation category. This can be achieved by restoring wetland function, structure and biodiversity. Protection is recommended through a number of mechanisms.
Conservation	Wetlands which support a high level of attributes and functions	Highest priority wetlands. Objective is to preserve and protect the existing conservation values of the wetlands through various mechanisms including: • reservation in national parks, crown reserves and State owned land, • protection under Environmental Protection Policies, and • wetland covenanting by landowners. No development or clearing is considered appropriate. These are the most valuable wetlands and any activity that may lead to further loss or degradation is inappropriate.

Source: EPA (2008)

3.3 Flora and Vegetation

3.3.1 Pre-European Vegetation

Broadscale mapping of pre-European vegetation within Western Australia has been undertaken by Beard (1975) as vegetation system associations, and of the south west by Heddle et al (1980) as vegetation complexes.

The proposed clearing area falls within a single mapped vegetation system association, being Pinjarra_968. This vegetation system association is described as being a southwest woodland of *Eucalyptus marginata* (Jarrah), *Corymbia calophylla* (Marri), and *Eucalyptus wandoo* (Wandoo). There is approximately 6.69% of this system association with Western Australia, and 4.6% remaining within the Shire of Serpentine Jarrahdale (Government of Western Australia (GoWA) 2019a).

The proposed clearing area contains one vegetation complex, being the Beermullah Complex. This is described as a mixture of low open forest of *Casuarina obesa* (Swamp Sheoak) and open woodland of Marri - Wandoo - Jarrah. Minor components include closed scrub of *Melaleuca* species and occurrence of *Callitris pyramidalis* (Swamp Cypress) (GoWA, 2019b). There is approximately 6.67% of the Beermullah vegetation complex remaining on the Swan Coastal Plain and within the Perth Metropolitan Region (GoWA, 2019b).

The Environmental Protection Authority (EPA) uses vegetation complexes as the basis for regional representation of biodiversity and has an overall objective to seek retention of at least 30% of the pre-clearing extent of each ecological community (EPA, 2015). The EPA does have a modified objective to seek retention of at least 10% of the pre-clearing extent of each ecological community within constrained areas such as the Perth Metropolitan Region. While the proposed clearing area is located within the Perth Metropolitan Region and is therefore considered to be in a constrained area, the remaining extent of the Beermullah complex does not meet the 10% target.

It is noted that via its Local Biodiversity Strategy (2019), the Shire has committed to the protection of 20 ha of the Beermullah Complex within its local parks and reserves.

3.3.2 Site Assessment

As part of a Black Cockatoo habitat assessment conducted by Bamford Consulting Ecologists (BCE, 2023), Vegetation and Substrate Associations (VSAs) were identified and mapped across a 22.72 ha survey area, including the majority (0.76 ha; 93%) of the proposed clearing area (Figure 1). VSAs offer a more detailed understanding of environmental context than vegetation types alone, by also considering soils, other substrates and landforms.

Generally, the VSAs across the survey area were considered to be typical of rural environments, featuring open grassy areas and patches of remnant and planted vegetation with weedy understoreys. Six VSAs were identified within the broader survey area, of which only one (VSA1) is present within the proposed clearing area (BCE, 2023). This is described as:

- Sheoak stands (VSA 1) – Closed dense stand of Sheoak with no midstorey and understorey consisting of invasive grasses and weeds.

Coterra Environment undertook a site assessment on 1st of July 2025 to evaluate whether the remaining 0.06 ha (7%) of unsurveyed vegetation was consistent with adjacent surveyed areas. The assessment confirmed that the unsurveyed vegetation is indeed consistent with surveyed vegetation, in that the only native species observed were Sheoaks, with an understory comprising exclusively of introduces grasses and annual weeds. Imagery illustrating this monoculture is presented in Plate 3-3 and Plate 3-4.

Plate 3-3: Unsurveyed vegetation

Plate 3-4:Unsurveyed vegetation

Source: Coterra Environment (2025)

3.4 Fauna and Habitat

A desktop assessment of conservation significant fauna that could potentially occur within the project area and within a 10 km buffer was undertaking utilising the Department of Biodiversity Conservation and Attractions (DBCA) Naturemap Database and the DCCEEW Protected Matters Search Tool. A total of 14 Threatened, 14 Priority, 17 Migratory and two specially protected fauna were identified to potentially occur within the proposed clearing area or associated buffer (Appendix 2).

Based on a review of known distributions and habitat requirements, the following conservation significant fauna were considered to potentially occur within the proposed clearing area:

- Carnaby's Black Cockatoo (CBC; *Zanda latirostris*): ranked as Endangered under the Biodiversity Conservation Act 2016 (BC Act) and EPBC Act.
- Baudin's Black Cockatoo (BBC; *Zanda baudinii*): ranked as Endangered under the BC Act and EPBC Act.

- Forest Red-tailed Black Cockatoo (FRTBC; *Calyptorhynchus banksia naso*): ranked as Vulnerable under the BC Act and EPBC Act.

3.4.1 Black Cockatoo Habitat Assessment

To assess the value of vegetation along Kargotich Road (including the majority of the proposed clearing area) as habitat for black cockatoos, a dedicated assessment was completed by Bamford Consulting Ecologists (BCE) in 2023. The assessment specifically examined the availability of potential foraging, breeding, and roosting habitat for all three black cockatoo species potentially occurring within the project area.

3.4.1.1 Foraging Habitat

In terms of potential foraging habitat, VSAs within the survey area were assigned a foraging habitat score out of ten for each black cockatoo species. The scoring considered vegetation composition, the project area's broader context and the density of foraging species. Of the six VSAs identified within the survey area, only one was identified within the proposed clearing area, being VSA 1. The value of this VSA as foraging habitat for each species of black cockatoo is presented in Table 3 below.

Table 3: Black Cockatoo foraging habitat score

VSA	Foraging Score (out of 10)		
	Carnaby's Black Cockatoo	Baudin's Black Cockatoo	Forest Red-tailed Black Cockatoo
1	2	2	6

As per the foraging habitat methodology presented in Bamford (2023), VSA's with a foraging habitat score of less than 3 are considered to have no to low foraging value for black cockatoos. Examples of habitat which may score as such include urban areas with scattered trees, open paddocks with known food source weeds, and areas with foliage cover of less than 5% (such as bare ground or surface water bodies). On this basis, VSAs scoring 2 or less out of are not considered to represent suitable foraging habitat for the respective species. The proposed clearing is therefore anticipated to result in a loss of potential foraging habitat for Forest Red-tailed Black Cockatoos, only.

3.4.1.2 Potential Breeding Habitat

A total of 30 trees with a Diameter at Breast Height (DBH) greater than 500 mm were identified within the surveyed area (BCE, 2023), including 19 planted Eucalypts and 11 Flooded Gums. All of these trees were classified as 'category 5', in that they lacked any hollows which could be suitable for black cockatoo breeding (BCE, 2023). Of the 30 potential breeding trees identified within the survey area, only 11 potential breeding trees are located within the proposed clearing area (Figure 1).

The nearest confirmed black cockatoo breeding activity is located approximately 4.2 km northeast of the proposed clearing area in Lambert Lane Nature Reserve.

3.4.1.3 Potential Roosting Habitat

The closest mapped confirmed roost site is located 6.2 km to the west of the proposed clearing area (Landgate, 2025a). This roost (roost code DEC28) is listed as being a roost for CBC. No roosting sites were identified within the survey area or proposed clearing area (Bamford 2023).

3.5 Conservation Areas and Ecological Linkages

There are no zoned reserves or other conservation areas which intersect with or are adjacent to the proposed clearing area. Ther nearest conservation area is Bush Forever site 65 associated with Abernethy Road Bushland, Oakford approximately 510 m east of the project boundary.

The proposed clearing area partially intersects one Regional Ecological Linkage, as mapped by the Western Australian Local Government Association (WALGA), being link ID 67. This linkage runs east-west across predominately agricultural land, suggesting that where present, native vegetation serves as a stepping stone for avian fauna, as opposed to an intact linkage in its own right. Notwithstanding, the small extent of clearing proposed is not anticipated to result in adverse impacts on the area's limited function as a linkage.

The proposed clearing area is not mapped within any Environmentally Sensitive Area (ESA) as defined under the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005*. The closest mapped ESA is approximately 175 m to the east.

3.6 Heritage

3.6.1 Indigenous Heritage

A search of the Department of Planning, Lands and Heritage (DPLH) Aboriginal Heritage Enquiry System revealed no known Registered Sites or other Aboriginal Heritage Places within or in close proximity to the proposed clearing area. The nearest registered Aboriginal Heritage site, identified as South-East Corridor/Cardup Siding (Place ID 396), is located approximately 2.6 km to the east and is recorded as an artefacts/scatter site (DPLH, 2025).

3.6.2 Other Heritage

A review of the State Heritage Office's InHerit database confirmed no local heritage places exist within or in proximity to the proposed clearing area. The closest identified heritage place is Yoothamurra Homestead (Place Number 27298), located approximately 19 km west of the proposed clearing area.

4 Assessment Against Native Vegetation Clearing Permit Clearing Principles

An assessment of the proposed vegetation clearing against the ten native vegetation clearing principles contained in Schedule 5 of the EP Act is summarised in Table 4. Based on the outcomes of the assessment, it is considered that the development is not at variance with seven out of ten clearing principles. The proposed clearing is considered unlikely to be at variance with two of the clearing principles (b) and (e), and may be at variance with principle (f). It should be noted however that while technically at variance with principle (f), the proposed clearing aligns with the intended management objective for a MUW.

Table 4: Assessment Against Clearing Principles

Clearing principle	Discussion	Assessment
a. Native vegetation should not be cleared if it comprises a high level of biological diversity	The proposed clearing area contains one native species only, being Sheoaks. All vegetation identified within the proposed clearing area is considered to be in a relatively degraded condition. Historical aerial imagery dating from 1953 indicates that the proposed clearing area and its surrounds has been historically cleared for agricultural purposes (Landgate, 2025b) On this basis, the proposed clearing is not considered to be at variance with this principle.	The proposed clearing is not considered to be at variance with this principle.
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	Vegetation within the proposed clearing area is considered to provide the following faunal habitat values, only: • 0.82 ha of foraging habitat for Forest Red-tailed Black Cockatoos • 11 potential breeding trees, none which contain hollows suitable for breeding by black cockatoos. It is noted that extensive potential foraging breeding habitat for black cockatoos is available in dedicated conservation areas in proximity to the proposed clearing area, which include: • Cardup Nature Reserve – Located 3.5 km southeast • Jandakot Regional Park – Located 3.5 km northwest • Bush Forever site 65 – Located less than 1 km immediately east Considering the degraded condition of vegetation within the proposed clearing area, the absence of suitable breeding habitat for black cockatoos, the suitability of this vegetation as foraging habitat for only one species of cockatoo, and the prevalence of suitable habitat in proximity to the proposed clearing area, vegetation within the proposed clearing area is not considered to be significant. On this basis, the proposed clearing is considered unlikely to be at variance with this principle.	The proposed clearing is considered unlikely to be at variance with this principle.
c. Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora	No rare (threatened or priority) native flora has been identified within the proposed clearing area based on the site inspection undertaken by Coterra Environment and the assessment undertaken by Bamford Consulting Ecologists (BCE, 2023). Vegetation within the proposed clearing area appears to be in a relatively degraded condition, with an understorey dominated by introduced grasses and other weed species. Historical aerial imagery indicates that the proposed clearing area and surrounds was historically cleared for agricultural purposes, with regrowth and planted vegetation comprising predominantly of native and non-native trees. Where native vegetation is present, diversity appears limited to monocultural stands of Sheoak, only.	This proposed clearing is not considered to be at variance with this principle.

Clearing principle	Discussion	Assessment
	It is considered highly unlikely that rare flora have been able to persist in the proposed clearing area following this significant disturbance. Remaining habitat is not considered to be suitable for any rare flora. Furthermore, the dominance of weed species in the understorey provides threats to most of rare flora as they compete for space, nutrients and water. On this basis, the proposed clearing will not result in the clearing of rare flora.	
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	In addition to the black cockatoo habitat assessment undertaken of the proposed clearing area in 2023, a site visit was undertaken by Coterra Environment in July 2025 to evaluate the likelihood of conservation significant vegetation occurring within the proposed clearing area. Generally, the proposed clearing area was observed to be in a degraded condition, with a ubiquitous understory of introduced grasses and other weed species. VSA 1 (the only VSA identified in the proposed clearing area) contained only one native species, being Sheoak. On this basis, no conservation ecological communities are anticipated to be directly or indirectly impacted by the proposed clearing.	The proposed clearing is not considered to be at variance with this principle.
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	One vegetation complex has been mapped across the proposed clearing area, being the Beermullah complex. There is approximately 6.67% of this vegetation complex remaining on the Swan Coastal Plain (GoWA, 2019b). Native vegetation within the proposed clearing area which may be representative of this vegetation complex was observed to be in a generally degraded condition during a site inspection undertaken by Coterra Environment in July 2025. The predominant native species within the proposed clearing area (Sheoak) is not considered to be a conservation significant species. Historical imagery of the proposed clearing area and surrounds indicates that native vegetation has been predominately cleared for agricultural purposes prior to at least 1953, suggesting all native vegetation currently present represents either planted or regrowth vegetation. It is noted that Bush Forever site 65 which is located less than 1 km east of the site contains relatively intact and protected vegetation representative of the Beermullah complex. On this basis, vegetation within the project area is not considered significant as a remnant of native vegetation.	The proposed clearing is considered unlikely to be at variance with this principle.
f. Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland	The proposed clearing area intersects with a regionally mapped MUW as defined by DBCA (Armadale palusplain UFI 16,189). The proposed intersection upgrade will align with the management objectives of MUWs.	The proposed clearing may be at variance with this principle; however, it should be noted that the proposed works align with the

Clearing principle	Discussion	Assessment
	An artificial watercourse intersects the proposed clearing area, being Beenyup Brook drain. Vegetation in proximity to this watercourse (which functions and is maintained as a drain) is limited to stands of Sheoaks only (VSA1) which is not considered to be a conservation significant species. Recognising the artificial nature of these drains, and the limited extent and degraded nature of vegetation growing in and in association with them, the proposed clearing is not considered to be significant.	intended management objective for a MUW.
g. Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation	Historical aerial imagery dating from 1953 shows an extensive record of clearing and land alteration for agricultural purposed within the area. The resulting road verge is dominated by introduced weeds and grasses, which is consistent with the open paddocks adjacent to the proposed clearing area. The proposed clearing of native vegetation is not anticipated to result in any further appreciable land degradation. The proponent has also committed to undertaking the proposed works in the warmer months of September to May, thereby minimising the risk of unnecessary topsoil disturbance and water runoff.	The proposed clearing is not considered to be at variance with this principle.
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	There are no nearby conservation areas which have the potential to be directly or indirectly impacted by the proposed clearing.	The proposed clearing is not considered to be at variance with this principle.
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	The proposed works are limited to the construction of road infrastructure, only. No changes to surface water flows, or emissions to the environment (including groundwater) of any kind are anticipated.	The proposed is not considered to be at variance with this principle.
j. Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding	The proposed works are limited to the construction of a road infrastructure, only. No changes to surface water flows or groundwater levels of any kind are anticipated.	The proposed is not considered to be at variance with this principle.

5 Conclusion

Construction of a roundabout at the intersection of Kargotich and Abernethy Roads will significantly improve road user safety and in conjunction with broader upgrades to Kargotich Road, will serve to future-proof the local road network in anticipation of ongoing urban residential development in the area.

The native vegetation which will be cleared to facilitate the roundabout is generally degraded, comprising of only one native species (Sheoak) and dominated by introduced grasses and weeds. While this vegetation offers some limited foraging habitat for Forest Red-tailed Black cockatoos, the low species diversity and the presence of large, intact conservation areas nearby mean that these values are not considered to be significant.

An assessment against the ten clearing principles demonstrates that the proposed clearing is considered to not be at variance with seven of the principles, it is unlikely to be at variance with two principles (b and e), and may be at variance with one principle (f). However, it is noted that this potential variance relates to the presence of a MUW, and the proposed clearing is considered to align with the management objective for MUWs.

Based on these considerations, the proposed clearing is not anticipated to be significant at either a local or regional scale.

6 References

Beard, J.S. (1975). *The Vegetation Survey of Western Australia*. Plant Ecology 30, 179–187 (1975). [Online]. Available at: https://doi.org/10.1007/BF02389706.

Department of Environmental Protection (DEP) (2000). *Bush Forever: Volume 2 Directory of Bush Forever Sites*. Government of Western Australia, Perth, Western Australia. [Online]. Available at: www.wa.gov.au/system/files/2023-06/directory-of-bush-forever-sites-volume2.pdf.

Department of Planning, Lands and Heritage (DPLH) (2024). *Aboriginal Cultural Heritage Inquiry System.* [Online]. Government of Western Australia, Perth, Western Australia [Online]. Available at: Department of Planning, Lands and Heritage (dplh.wa.gov.au).

Department of Primary Industries and Regional Development (DPIRD) (2025). *Natural Resource Information (WA).* Government of Western Australia, Perth, Western Australia. [Online]. Available at: Natural Resource Information (WA).

Department of Water (2008). *Byford townsite drainage and water management plan*. Government of Western Australia, Perth. [Online]. Available at: https://www.wa.gov.au/system/files/2022-12/Byford-townsite-drainage-and-water-management-plan.pdf

Department of Water and Environmental Regulation (DWER) (2025a). *Perth Groundwater Map*. Government of Western Australia, Perth, Western Australia. [Online]. Available at: Perth Groundwater Map.

Department of Water and Environmental Regulation (DWER) (2025b). *Water Register.* Government of Western Australia, Perth, Western Australia. [Online]. Available at: Water Register.

Department of Water and Environmental Regulation (DWER) (2018). *Peel-Harvey estuary Catchment Report: Upper Serpentine River*. Government of Western Australia. [Online] Available at: https://www.wa.gov.au/system/files/2022-06/Upper_Serpentine_River_2018.pdf

Environmental Protection Authority (EPA) (2008). *Guidance Statement No.33 – Environmental Guidance for Planning and Development*. Government of Western Australia, Perth, Western Australia. [Online]. Available at: GS33-270508.pdf (epa.wa.gov.au).

Environmental Protection Authority (EPA) (2015). *Guidance Statement No. 3 – Separation Distances between Industrial and Sensitive Land Uses.* Government of Western Australia, Perth, Western Australia. [Online]. Available at: GS3-Separation-distances-270605.pdf

Environmental Protection Authority (EPA) (2016). *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment*. Government of Western Australia, Perth, Western Australia. [Online]. Available at: EPA Technical Guidance - Flora and Vegetation survey_Dec13.pdf.

Government of Western Australia (2019a). *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019.* WA Department of Biodiversity, Conservation and Attractions, Perth, Western Australia. [Online]. Available at: DBCA Statewide Vegetation Statistics - 2018 Statewide Vegetation Statistics - Full report - data.wa.gov.au.

Government of Western Australia (2019b). *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, Western Australia. [Online]. Available at: DBCA South West Vegetation Complex Statistics - 2018 South West Vegetation Complex Statistics Report - data.wa.gov.au.

Heritage Council of Western Australia (2023). *Yoothamurra Homestead.* Government of Western Australia, Perth, Western Australia. [Online]. Available at: inHerit – State Heritage Office

Jordan J.E. (1986). *Armadale Part Sheets 2033 I and 2133 IV, Perth Metropolitan Region. 1:50,000. Environmental Geology Series*. Geological Survey of Western Australia, Perth, Western Australia.

Keighery, B. (1994). *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of Western Australia (Inc.), Perth, Western Australia.

Landgate (2025a). *Shared Land Information Platform (SLIP) – Locate V5*. Government of Western Australia, Perth, Western Australia. [Online]. Available at: Locate V5 (slip.wa.gov.au).

Landgate (2025b). *Map Viewer Plus*. Government of Western Australia, Perth, Western Australia. [Online]. Available at: Landgate Map Viewer Plus.

Main Roads Western Australia (MRWA) (2025). *Signalised Roundabouts Guidelines*. Government of Western Australia, Perth, Western Australia. [Online]. Available at: https://www.mainroads.wa.gov.au/49c5d5/globalassets/technical-commercial/technical-library/road-and-traffic-engineering/traffic-management/intersection-control-selection/signalised-roundabouts-guidelines.pdf

Road Safety Commission (2024). *Safe Roads – The Safe Road System*. Government of Western Australia, Perth, Western Australia. [Online]. Available at: https://www.wa.gov.au/organisation/road-safety-commission/safe-roads

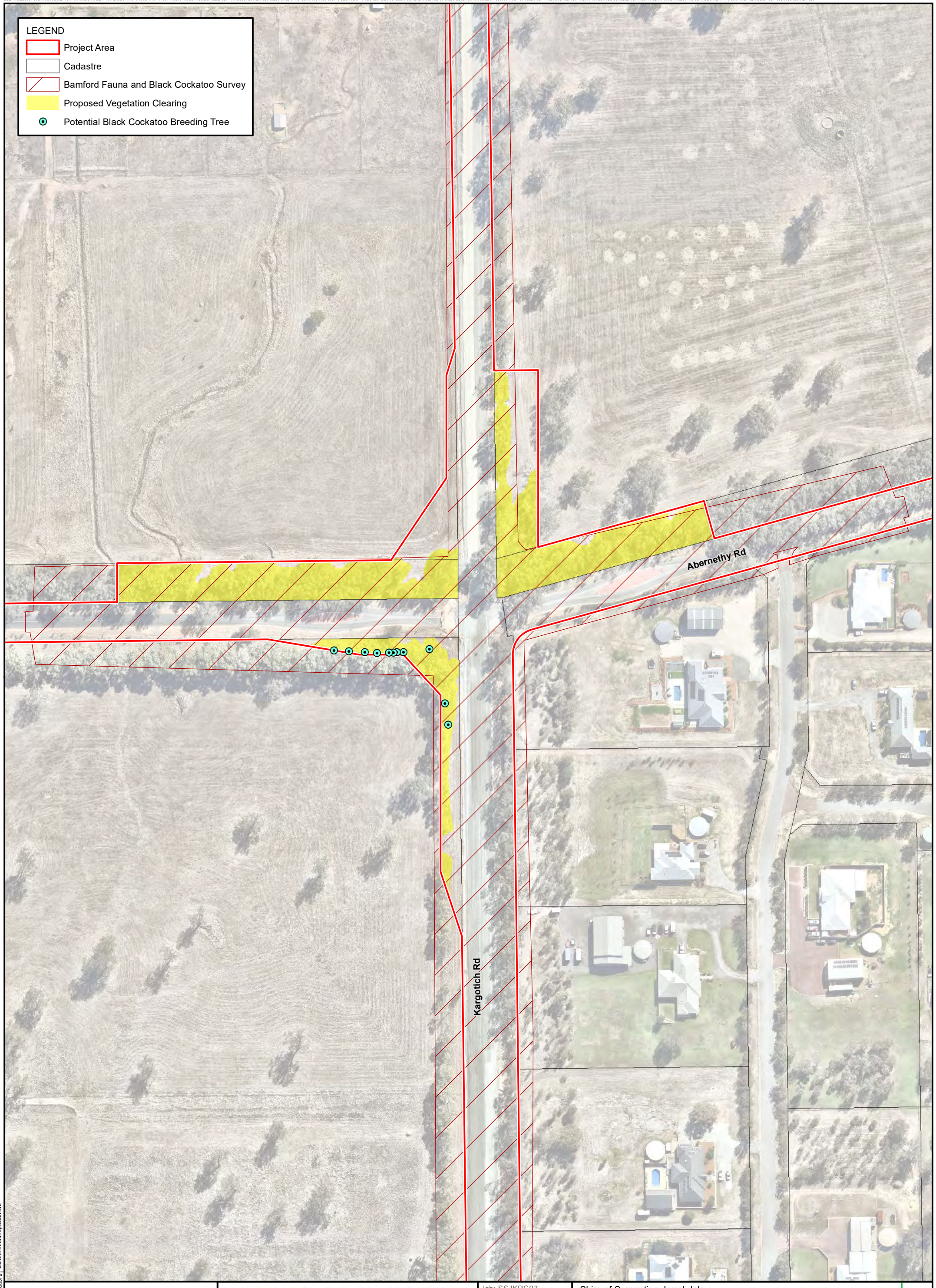
Shepherd, D. P., Beeston, G. R., and Hopkins, A. J. (2002). *Native Vegetation in Western Australia: Extent, Type and Status* (Report 249). Department of Primary Industries and Regional Development, Government of Western Australia. Perth, Western Australia. Available at: https://library.dpird.wa.gov.au/rmtr/235.

Shire of Serpentine Jarrahdale (2019). *Local Biodiversity Strategy: Update Report 2019*. [Online]. Available at: https://www.sjshire.wa.gov.au/assets/Uploads/OCM/OCM-2019/OCM-14-October-2019/10.2.3.1.pdf

Shire of Serpentine Jarrahdale (n.d.). *Hypergrowth Road Network Implementation Plan: Growing a safer road network, together*. Available online via: https://www.sjshire.wa.gov.au/Profiles/sj/Assets/ClientData/Hypergrowth_Document_FA_WEB.pdf

Treeswest Pty Ltd (2022). Arboricultural assessment on mature trees on a 10 km section of Kargotich Road, Oakford, between Rowley Road, north and Bishop Road, South. Unpublished report prepared for Talis Consultants.

Figures



N

0 10 20 40 60 80 m

Scale: 1:1,700 @ A3
GDA2020 MGA Zone 50

Source: Cadastre - Landgate
Orthophoto - NearMaps, 19.04.2025

COTERRA ENVIRONMENT

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Shire of Serpentine Jarrahdale
NATIVE VEGETATION CLEARING PERMIT AMENDMENT
KARGOTICH ROAD INTERSECTION UPGRADES

PROPOSED ADDITIONAL CLEARING AREA

Figure 1

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Appendix 1 CPS 10600