



Clearing Permit – Draft Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9259/1
Permit type:	Purpose permit
Applicant name:	Western Power
Application received:	7 April 2021
Application area:	0.19 hectares of native vegetation within 0.45 hectare footprint
Purpose of clearing:	Installation of underground and aboveground power distribution line
Method of clearing:	Mechanical
Property:	Lot 73 on Deposited Plan 222180 Lot 394 on Deposited Plan 222180 Lot 550 on Deposited Plan 416002 Sewell Street Road Reserve (PIN 11291070) Richardson Street Road Reserve (PIN 11464577) Lefroy Street Road Reserve (PIN 11464572) Robinson Street Road Reserve (PIN 11464571) Williams Street Road Reserve (PIN 11464578)
Location (LGA area/s):	Shire of Brookton
Localities (suburb/s):	Brookton

1.2. Description of clearing activities

The application is to clear up to 0.19 hectares of native vegetation within a 0.45 hectare footprint. The proposed clearing is required for Western Power to construct an approximately 1 kilometre long distribution cable connection from its existing power pole on William Street to Lot 550 Sewell Street in Brookton. The infrastructure will comprise underground distribution cables and associated overhead distribution cables on power poles. The underground distribution cables will be installed via sideways drilling, requiring clearing of native vegetation for the launching (entry) and receipt (exit). Overhead distribution line will be constructed within an existing cleared access track, requiring incidental clearing associated with the removal of old power poles and installation of the new ones.

The local area referred to in this report is the area within 10 km radius from the proposed application area.

1.3. Decision on application

Decision:	Granted
Decision date:	17 August 2021
Decision area:	0.19 hectares of native vegetation within 0.45 hectares footprint as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for a total of 28 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E.1), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), supporting information from the applicant, relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration the purpose of the clearing to supply power to a Lot within Brookton. The Delegated Officer noted the applicant's effort to avoid and minimise clearing and associated impacts, with the majority of impacts associated with incidental clearing.

In particular, the Delegated Officer has determined that:

- The application area intersects patches of native vegetation mapped as the EPBC Act listed critically endangered 'Eucalypt Woodlands of the Western Australian Wheatbelt' (Eucalypt Woodlands) Threatened Ecological Community (TEC), which is synonymous with the Department of Biodiversity, Conservation and Attractions (DBCA) listed Eucalypt Woodlands Priority Ecological Community (PEC) (Priority 3). The patch intersecting the application area does not meet the key diagnostic characteristics of the Eucalypt Woodlands TEC. Given the extent of clearing, the condition of native vegetation, and the presence of several Eucalypt Woodlands TEC in better condition within the local context, the proposed clearing is unlikely to significantly impact on the of the TEC or PEC.
- The proposed clearing area is situated in an extensively cleared landscape. The local area and the mapped vegetation type retain approximately 14 percent of their original extents, which is below the national target of biodiversity conservation of a minimum 30 percent native vegetation cover. However, given the relatively small extent of clearing that would mostly be incidental, the proposed clearing is unlikely to result in a significant reduction to the vegetation cover within the local area or considered a significant remnant.
- Given the vegetation condition, historical disturbance, proximity of records of conservation significant flora and fauna and extent of clearing proposed, the vegetation within the application area is not likely to comprise significant habitat for conservation significant flora and fauna.
- The use of existing cleared areas (track, road) where practicable by the applicant will avoid and minimise the impacts and extent clearing, while also reducing the likelihood of land degradation and the introduction and spread of weeds and dieback.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures and commitments (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to lead to unacceptable impacts to the environment.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback; and
- undertake slow, progressive one directional clearing to allow any fauna individuals present to move into adjacent habitat ahead of the clearing activity.

1.5. Site maps

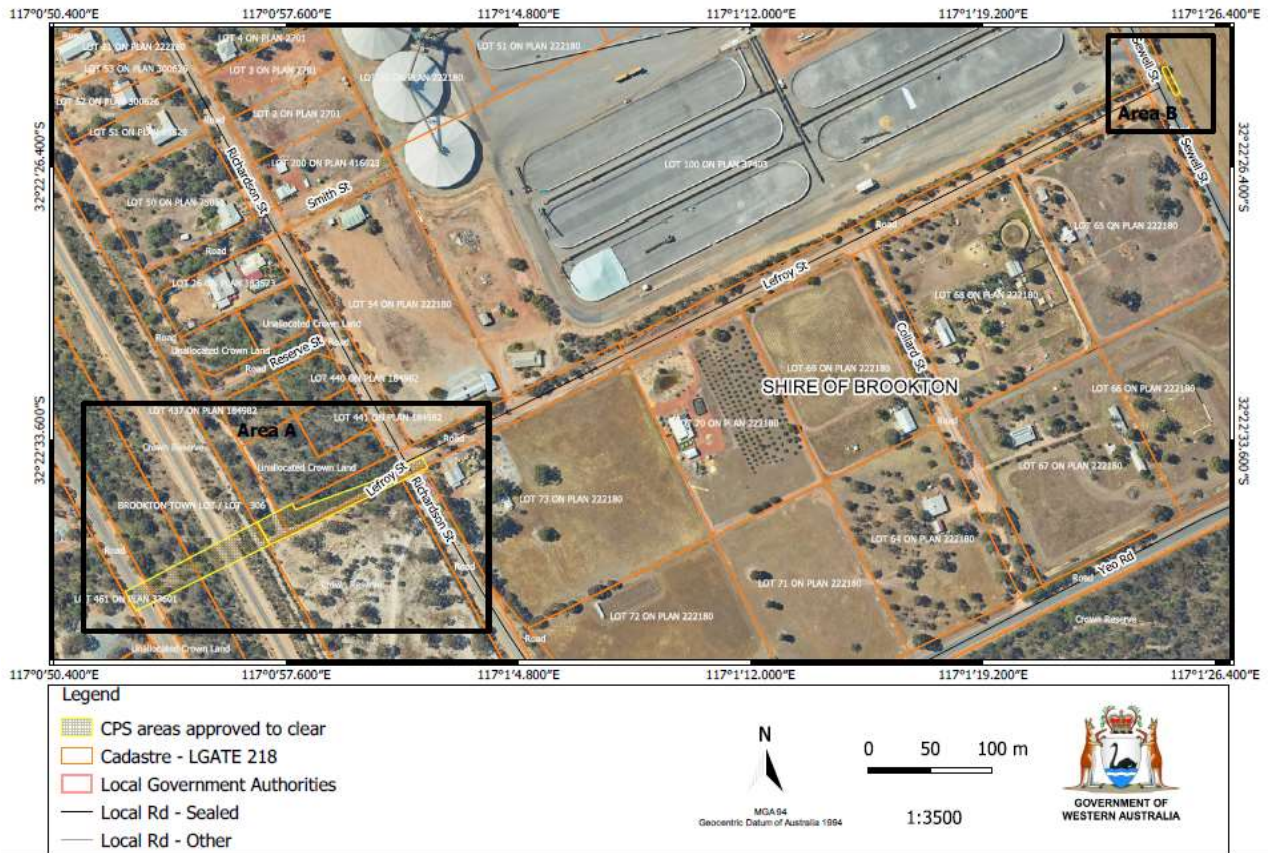


Figure 1.1 Map of the application areas. The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.



Figure 1.2 Map of Area A
The area crosshatched yellow indicates an area authorised to be cleared under the granted clearing permit.



Figure 1.3 Map of Area B
The area crosshatched yellow indicates an area authorised to be cleared under the granted clearing permit.

2 Legislative context

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

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Approved Conservation Advice for the Eucalypt Woodlands of the Western Australian Wheatbelt* (Commonwealth of Australia, 2016)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The Applicant provided measures and a commitment to avoid and minimise clearing of native vegetation and mitigate any potential impacts of clearing (Western Power, 2021a). These include:

- Installation of underground cables by sideway drilling to minimise clearing. Potential clearing activities is therefore limited to the 'entry' and 'exit' pit areas, each is 5 metre (m) x 5m (0.0025 hectare) in size. The proposed entry pit is on a cleared area; whilst the exit pit area contains two Acacia trees over baren ground, which will be rehabilitated after clearing.
- Use of existing cleared areas (track, road) where practicable, to access the site and undertake works.
- Use of cleared areas and other areas likely to be impacted from new works, when removing existing poles and distribution cables.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix B) identified the impacts of the proposed clearing may present a risk to the biological values of conservation significant flora, fauna, a mapped PEC/TEC and significant remnant vegetation in an extensively cleared landscape. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, as set out below.

3.2.1. Biological values (flora) – Clearing Principles (a) and (c)

Assessment

Biodiversity and conservation significant flora

Eleven conservation significant flora species have been recorded within the local area. Three of these species are listed as threatened (T) and the remaining listed as Priority 2, 3 and 4. Many of the records occur within DBCA tenure including Weam and Pingeculling Nature Reserves located approximately 7 kilometres (km) east of the application area. Although none of these records occur within the application area, the likelihood of their occurrence has been assessed based on soil type, habitat preference and proximity to the application area, as summarised in Appendix A. Whilst the application area exhibits soil and / or habitat characteristics similar to some of that of the priority flora, assessment has been focused on three species, i.e. *Caladenia williamsiae*, *Lasiopetalum rotundifolium* and *Thomasia montana*, not only because they are threatened species, but also due to their proximity to the application area and higher number of records.

C. williamsiae is native to Western Australia and known to be distributed across the Avon Wheatbelt Regions, with majority of records clustered within Weam Nature Reserve. It is known to occur on red sandy loam with proteaceous shrubland dominated by banksia. Whilst the application area occurs in similar mapped soils, the vegetation characteristics of the application area do not resemble the species' known habitat. Given the above, it is unlikely this species is present.

Lasiopetalum rotundifolium is a multiple stemmed subshrub 0.5 m high with pale pink flowers commonly found on orange-brown laterite and sand along wandoo and Acacia trees. Within the local area, the majority of the species' records occur within the Boyagin Nature Reserve, a conservation reserve located 10 km southwest of the application area. Whilst the application area exhibits similar habitat characteristics with that of *L. rotundifolium*, photographs supplied with the application do not indicate the presence of this species within the application area. It is unlikely that the species occurs within the application area. Given the number of records within conservation reserves, the and the limited extent of the proposed clearing, any inadvertent loss of the individuals would not likely result in a significant risk to the conservation values of the species.

Thomasia montana is a shrub of up to 2 m high and 0.4 m wide with purple flowers, commonly found on dry red loam soil in areas historically vegetated with *Eucalyptus wandoo* and *Allocasuarina huegeliana*, typical of the application area. The photographs supplied with the application, however, do not identify the species within the application area and surround. The records of the species range from Pingelly to York, with majority of records located within the Boyagin Nature Reserve. Given the extent of the proposed clearing, condition of the vegetation within the application area and the relatively extensive range of records, it is unlikely that individuals are present.

Whilst the priority flora recorded within the local area have affinities with the mapped soil and vegetation types, given the extent and nature of the proposed clearing, condition of the vegetation and information obtained from the photos submitted in support of the application, it is unlikely that individuals are present.

Priority Ecological Communities

The proposed clearing area transects two patches of mapped Eucalypt Woodlands TEC/PEC. These are two of the 626 patches mapped as the Eucalypt Woodlands TEC within the local area. The Eucalypt Woodland patches in the local area vary in size and condition, ranging from below 1 hectare to 1900 hectares, averaging approximately 6.5 hectares.

The presence of the Eucalypt Woodland TEC is assessed with reference to the Approved Conservation Advice for the Eucalypt Woodlands TEC (Commonwealth of Australia, 2016). According to the Conservation Advice, the key diagnostic characteristics of the Eucalypt Woodlands TEC include, but not limited to:

- Occurs in the Avon Wheatbelt Bioregion.
- The structure of the ecological community is a woodland in which the minimum crown cover of the tree canopy in a mature woodland is 10 per cent.
- The key species of the tree canopy are species of Eucalyptus. These are species that typically have a single trunk.
- A native understorey is present with variable composition, being a combination of grasses, other herbs and shrubs.

The patch of mapped Eucalypt Woodland TEC intercepting the application area at the south west end of Area A measures 2.3 hectares in size. According to a survey performed by GHD in March 2021 (GHD, 2021 b), it is in Good condition (Keighery, 1998). Representative photographs of this vegetation patch are presented in Appendix D. The vegetation types in this patch include *Eucalyptus wandoo* woodland over *Acacia acuminata* and *Allocasuarina campestris* tall shrubland over *Gastrolobium spinosum*, *Xanthorrhoea preissii* and *Styphelia* sp. low shrubland over *Borya sphaerocephala* herbland. This patch meets the key diagnostic characteristics of the Eucalypt Woodland TEC. The proposed clearing within this area only involves the removal of one old power pole with clearing in this area likely to only be incidental and minimal. A cleared track exists within this patch of vegetation so accessing the work site would not need further clearing. Therefore, it is unlikely that the proposed clearing would have a detrimental impact to the occurrence of the TEC, particularly in terms of vegetation cover.

The second patch of mapped Eucalypt Woodland TEC on the other end of Area A (north east) measures 1.7 hectares in size. Whilst vegetation in this patch is generally in Good condition, the patch along the track and fence line along Lefroy Street is in Degraded (Keighery, 1998) condition due to weed dominance. The vegetation in this patch include *Eucalyptus wandoo* isolated trees over *Acacia acuminata* and *Allocasuarina campestris* tall shrubland with occasional *Banksia sessilis* over *Austrostipa elegantissima* grassland. Due to its condition and dominance of weeds, the mapped TEC along the track and fence line does not meet the key diagnostic characteristics of the Eucalypt Woodland TEC. This area is where two old power poles are to be removed and two new power poles to be installed. Therefore, given the vegetation condition and extent of clearing, it is unlikely that the proposed incidental clearing will have detrimental impact on the vegetation patch or reduce its environmental values.

Whilst clearing in the vegetation patches will be limited to incidental clearing and may not remove any vegetation, works performed in this area may introduce and spread weeds and dieback into the nearby TECs. Weed and dieback management measures are therefore required to prevent and mitigate the potential impacts of clearing.

Conclusion

It is unlikely that any conservation significant flora will be present within the proposed clearing areas, with clearing areas kept to a minimum. The proposed clearing is unlikely to result in a long-term detrimental impact on the environmental values of the Eucalypt Woodland TEC patches.

Conditions

To address potential impacts to adjacent native vegetation from the proposed clearing, weed and dieback management measures will be required as a condition on the clearing permit to mitigate impacts to adjacent vegetation.

3.2.2. Biological values (fauna) – Clearing Principles (b)

Assessment:

According to available databases, 12 fauna of conservation significance have been recorded within the local area, comprising one extinct, one Priority 3, two Priority 4, three Endangered (E), one specially protected species (OS), one Critically Endangered (CR), two Vulnerable, and two conservation dependent fauna (CD). None of these records occur within the application area.

In determining the likelihood of conservation significant fauna occurring within the application area, considerations were given to number of records in the local area, preferred habitat types and typical home ranges, proximity of records to the application area, the type and condition of the vegetation within the application area and historical nature of the records. A summary of fauna recorded within the local area and their potential of occurrence within the application area is presented in Appendix A.

Calyptorhynchus latirostris (Carnaby's cockatoo) and *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo), collectively known as black cockatoos, for example, were only recorded once each at an area located more than 7 kilometres away from the application area. Many of these records, including *Acanthophis antarcticus* (Southern death adder), *Bettongia lesueur grai* (bettong) and *Isoodon fusciventer* (quenda), were also recorded from more than 40 years ago. Given the vegetation condition, the absence of hollow-bearing trees necessary for Black cockatoo species, historical disturbance of the application area, proximity of records and extent of clearing proposed, the vegetation within the application area is not likely to comprise significant habitat for Black cockatoos, Southern death adder, Bettong, Quenda or Peregrine falcon, nor be significant for the continued survival of these species.

Phascogale calura (Red-tailed Phascogale) and *Myrmecobius fasciatus* (Numbat) have been recorded more recently and frequently (58 and 18 records respectively) in the local area. The fauna species are known to be occurring in the wetter area of the Wheatbelt Region of Western Australia receiving more than 400 mm annual rainfall (Threatened Species Scientific Committee; 2016), like that of the application area. The application area and its immediate surround also exhibit the characteristics of Phascogale and Numbat habitats, that the likelihood of their presence in the application area cannot be ruled out. Records of these species within immediate proximity of the application area (the nearest is 1.8 km away from the application), however, were of historical records. The most recent records of these species were recorded in Weam Nature and Pingeculling Nature Reserves, where Red-tailed phascogale and Numbat were translocated from Dryandra State Forrest, located approximately 11 kilometres southwest of the application area, as part of the species' conservation actions. Given the above, it is very likely that the current population of Red-tailed phascogale and Numbat within the local area concentrate in the Reserves.

Although the application area and immediate surround may provide habitat for Red-tailed phascogale and Numbat, noting the distance between the Reserves and the application area, and the mostly cleared area in between, it is unlikely that the relocated Phascogale and Numbat forage outside the Reserves and into the application area.

Conclusion:

Given the vegetation condition, historical disturbance of the application area, proximity of records and extent of clearing proposed, the vegetation within the application area is not likely to comprise significant habitat for conservation significant fauna.

Condition:

No management conditions required for this environmental value.

3.2.3. Significant remnant vegetation and conservation areas - Clearing Principles (e)

Assessment

The local area retains approximately 14 percent of its original vegetation cover and the mapped vegetation type (Pingelly) retains approximately 14 per cent of the original extent (Government of Western Australia, 2019). This is inconsistent with the national target of biodiversity conservation of Australia to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750. Clearing of native vegetation within the local area could contribute to the further loss of vegetation.

The proposed clearing, however, is limited to incidental clearing for the purpose of accessing the power poles sites and potential removal of one or two acacia trees in Area B (Figure 5). Area B will also be rehabilitated and landscaped post clearing. Given the extent of clearing, the proposed clearing would not significantly reduce the current extent of native vegetation within the local context. The proposed clearing is not considered to be a significant remnant within an extensively cleared landscape.

Works performed in this area may introduce and spread weeds and dieback into the adjacent native vegetation that may impact on the quality of that vegetation. Weed and dieback management measures are therefore required to prevent and mitigate the potential impacts of clearing.

Conclusion

The proposed clearing is not considered to be a significant remnant within an extensively cleared landscape.

Conditions

To address potential impacts to adjacent native vegetation from the proposed clearing, weed and dieback management measures will be required as a condition on the clearing permit to mitigate impacts to adjacent vegetation.

3.3. Relevant planning instruments and other matters

The proposed clearing footprint intersects lands owned by the Public Transport Authority (the railway corridor) which is managed by Arc Infrastructure Pty Ltd. Both PTA and Arc Infrastructure provided written authorities for Western Power to access the land and apply for the clearing permit required for the project. Similarly, the Shire of Brookton as the land manager of the road reserves and Lot 394 on Deposited Plan 222180, within which the proposed clearing footprint is located, has also provided their authority. The Shire advised Western Power that a Development Approval under the *Planning and Development Act 2005* is not required for the works.

Several Aboriginal sites of significance have been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix B.

A.1. Site characteristics

Characteristic	Details
Local context	<p>The application area is in the intensive land use zone of the Wheatbelt region of Western Australia. It is surrounded by rural industry, farms, dwellings and intact remnant native vegetation, some of which are mapped as the Eucalypt Woodlands TEC.</p> <p>Aerial imagery indicates the local area has been heavily cleared, retaining approximately 13.88 per cent of the original native vegetation cover.</p> <p>The local area referred to in the assessment is defined as the area within 10 kilometres radius of the application area.</p>
Ecological linkage	<p>The application area is not located within any mapped formal ecological linkages; however, one of the two areas proposed to be cleared, i.e. Area B, is a small patch of vegetation comprising two <i>Acacia</i> trees over baren area along Sewell Street. It is unlikely that this vegetation serves any potential linkage function. This area will also be landscaped post clearing.</p>
Conservation areas	<p>The application area is not within a conservation area. The nearest conservation area is the Weam and Pingeculling Nature Reserves, located approximately 7 kilometres east and Southeast of the application area.</p>
Vegetation description	<p>Photographs and Vegetation survey report supplied the applicant (GHD, 2021b) indicate that the vegetation within application area A, north east of the railway, comprises of <i>Eucalyptus wandoo</i> isolated trees over <i>Acacia acuminata</i> and <i>Allocasuarina campestris</i> tall shrubland / open shrubland with occasional <i>Banksia sessilis</i> over <i>Austrostipa elegantissima</i> grassland. The vegetation in Area B along Sewel Street comprises two <i>Acacia acuminata</i> trees over weedy baren area. Representative photographs, descriptions and maps are available in Appendix D.</p> <p>The vegetation within the application area is typical of the Avon Wheatbelt bioregion's vegetation, and consistent with the mapped Pingelly Vegetation Complex, which is described as medium woodlands of Eucalypts and York Gum (Shepherd et al., 2001)</p> <p>The mapped vegetation type retains approximately 13.69 per cent of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	<p>The vegetation northeast of the railway in Area A is mostly in good condition. However, vegetation immediately adjacent to the track and fence, where clearing would likely take place, is mapped as Degraded due to weed dominance. The vegetation does not meet the key diagnostic characteristics of the Eucalypt Woodland TEC.</p> <p>The vegetation southeast of the railway in Area A is in good condition and meets the key diagnostic characteristics of Eucalypt Woodland TEC.</p> <p>The vegetation in Area B is in a Completely Degraded condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix C. Representative photos are available in Appendix D.</p>
Climate and landform	<p>The climate of the application area is characterised by a mean temperature that ranges between 4.5°C (minima) in July and 33.0°C (maxima) in January and a mean annual rainfall of 447.9 mm. Most of the rain falls in the wet months between May and September.</p> <p>In Brookton locality, medium to strong wind blows east and southwardly in the morning, and westerly in the afternoon.</p>

Characteristic	Details
Soil description	The soil is mapped as Pingelly 3 undifferentiated Phase characterised by granitic and colluvial slopes with sandy and loamy duplexes and red or brown loam. Vegetation on this type of soil is typically that of York Gum and Wandoo woodland.
Land degradation risk	The application area and its local context are mapped as having low risks to water and wind erosion, salinity, waterlogging, nutrient export, and flood. It is however, mapped as having high susceptibility to subsurface acidification.
Waterbodies	The desktop assessment and aerial imagery indicated that the proposed clearing area will not intercept any watercourses or waterbodies. The nearest waterway is the Avon River tributary, located approximately 500 meters away from the application area.
Hydrogeography	The proposed clearing area is within the Avon River Catchment Area, proclaimed under the RIWI Act. Water degradation risk in the Basin is mostly associated with nutrient load due to agricultural practices (Department of Water, 2015).
Flora	At least 10 conservation significant flora are recorded within the local area. Four of these species are threatened. Many of the flora shared similar soil and vegetation complex characteristics with the application area. However, none of the flora are recorded within the application area. The nearest records to the application area are <i>Caladenia williamsiae</i> (T) and <i>Thomasia montana</i> (T), located 1.18 km and 1.15 km away from the application area, respectively.
Ecological communities	The proposed clearing area transects a mapped Eucalypt Woodlands of the Western Australia, identified as a Priority 3 PEC. This PEC is synonymous with the TEC listed under EPBC Act. In the local context, 626 patches of vegetation are mapped as the Eucalypt Woodlands TEC. These mapped Eucalypts Woodlands vary in size, ranging from below 1 hectare to 1900 hectares, averaging approximately 6.5 hectares.
Fauna	Twelve conservation significant fauna have been recorded in the local area. These fauna, however, do not occur within the application area. Many of the records were recorded in Weam and Pingeculling Nature Reserves.

A.2 Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA Bioregion: Avon Wheatbelt	630,577.61	108,887.52	17.27	10,191.45	1.64
Beard Vegetation complex: Pingelly	322,243.43	44,100.19	13.69	5,606.50	1.74
Vegetation Association: Pingelly - 352	82,862.74	9,414.26	11.36	181.05	0.22
Local area					
10km radius	31,468	4,368	13.88	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

A.3 Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), and biological survey information, impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Beaufortia burbridgeae</i>	P3	N	Y	Y	7.46	6	N/A
<i>Caladenia williamsiae</i>	T	N	N	Y	1.18	5	N/A
<i>Hakea aculeata</i>	T	N	Y	Y	6.47	7	N/A
<i>Hibbertia glomerata</i> subsp. <i>wandoo</i>	P3	N	Y	Y	8.47	1	N/A
<i>Gastrolobium stipulare</i>	P4	N	Y	Y	6.23	1	N/A
<i>Lasiopetalum rotundifolium</i>	T	Y	Y	N	3.19	22	N/A
<i>Lasiopetalum</i> sp. Weam Reserve (M. Hislop 2755)	P2	Y	Y	N	3.22	3	N/A
<i>Leucopogon audax</i>	P2	N	Y	Y	7.64	2	N/A
<i>Stylidium tenuicarpum</i>	P4	N	Y	Y	7.2	4	N/A
<i>Thomasia montana</i>	T	Y	Y	Y	1.15	9	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

A.4 Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records in the local context (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	N	N	7.26	2	N/A
<i>Calyptorhynchus</i> sp. 'white-tailed black cockatoo' (White-tailed black cockatoo)	EN	N	N	7.39	1	N/A
<i>Falco peregrinus</i> (Peregrine falcon)	OS	Y	Y	1.25	3	N/A
<i>Macrotis lagotis</i> (Bilby, dalgyte, ninu)	VU	N	N	1.82	2	N/A
<i>Myrmecobius fasciatus</i> (Numbat, walpurti)	EN	Y	Y	1.82	14	N/A
<i>Phascogale calura</i> (red-tailed phascogale, kenngoor)	CR	Y	Y	1.82	58	N/A
<i>Phascogale tapoatafa wambenger</i> (South-western brush-tailed phascogale, wambenger)	CR	N	N	9.72	2	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

A.5 Ecological community analysis table

Community name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Eucalypt woodlands of the Western Australian Wheatbelt	Priority 3 (DBCA) CR (EPBC Act)	Y	Y	Y	0	626	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

A.6 Land degradation risk table

Risk categories	Land Unit 1
Wind erosion	M2: 30-50% of the map unit has a high to extreme hazard
Water erosion	L2: 3-10% of the map unit has a very high to extreme hazard
Salinity	L1: <3% of the map unit has a moderate or high hazard or is presently saline
Subsurface Acidification	H2: >70% of the map unit has a high susceptibility
Flood risk	L1: <3% of the map unit has a moderate to high hazard
Water logging	L2: 3-10% of the map unit has a moderate to very high to risk
Phosphorus export risk	L2: 3-10% of the map unit has a high to extreme hazard

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The local area contains records of conservation significant flora and fauna, as well as mapped Eucalypt Woodland TEC/PEC. Given the extent of the proposed clearing and condition of the vegetation, it is unlikely conservation taxa will be present within the application areas. The proposed clearing is not likely to cause a detrimental impact to the Eucalypt Woodland TEC.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared may contain foraging habitat for Red-tailed Phascogale and Numbat; however, a review of the photographs, vegetation condition and historical nature of records of the fauna species in the area, it is unlikely to represent significant habitat for the species.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2. above</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>Application area contains similar soil and vegetation types as three threatened flora species listed under the BC Act. A review of the photographs and vegetation condition of the proposed clearing area, and that no threatened flora have been recorded within the application area, it is unlikely to contain threatened flora.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1 above</i>
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>Not state listed TEC’s by the Minister for Environment have been recorded within the local area..</p>	Not at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of the mapped vegetation type and native vegetation in the local area are below 30%, which are inconsistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered part of a significant ecological linkage in the local area. Given the extent of the proposed clearing, and that it would involve only incidental clearing, it is unlikely to be considered a significant remnant within an extensively cleared area.</p>	May be at variance	Yes <i>Refer to Section 3.2.3 above</i>
<p><u>Principle (h):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The application area is not mapped within any conservation area. The nearest conservation area is approximately 4 km away from the proposed clearing. Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>		
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."</i></p> <p><u>Assessment:</u></p> <p>No water courses or wetlands are recorded within of the application area. As such the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."</i></p> <p><u>Assessment:</u></p> <p>The mapped soils are not susceptible to water erosion, nutrient export, salinity, water logging, and flood. The soils, however, are mapped as highly susceptible to acidification. Noting the extent of the application area and the condition of the vegetation, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> <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."</i></p> <p><u>Assessment:</u></p> <p>There is no water course or wetland within the application area. The proposed clearing will not intercept any surface or groundwater resources. As such, the proposed clearing is unlikely to have impact on the quality of surface or groundwater.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."</i></p> <p><u>Assessment:</u></p> <p>The mapped soils and topographic contours in the surrounding area are identified as having a low risk of flooding, with only less than 3 percent of the area has a moderate to high risk of flooding. The proposed clearing is unlikely to contribute to increased incidence or intensity of flooding nor waterlogging.</p>	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia. The vegetation in the application area is in good to degraded conditions.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact, and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.



Figure 3 A and B. Native vegetation within Area A, along Lefroy Rd, Northeast of the railway. Photographs were taken from Way Point 3 (GHD, 2021b).
Vegetation is in Degraded condition along the edge and fence line of the mapped Eucalypt Woodlands TEC. This patch of vegetation does not meet the key characteristics of the Eucalypt Woodlands TEC.



Figure 4. Vegetation within Area A of the application area- southeast of the railway. Photographs were taken from Waypoint 6 (GHD, 2021b).
This patch of vegetation is in Good condition and meets the key characteristics of the Eucalypt Woodlands TEC.



Figure 5. Vegetation in Area B of the application area, on Sewel Street (GHD, 2021b).
The vegetation is in Degraded condition.

Appendix E. Sources of information

E.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

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