Wangara to Neerabup Terminal 132 kV Overhead Transmission Line

Environmental Review Document

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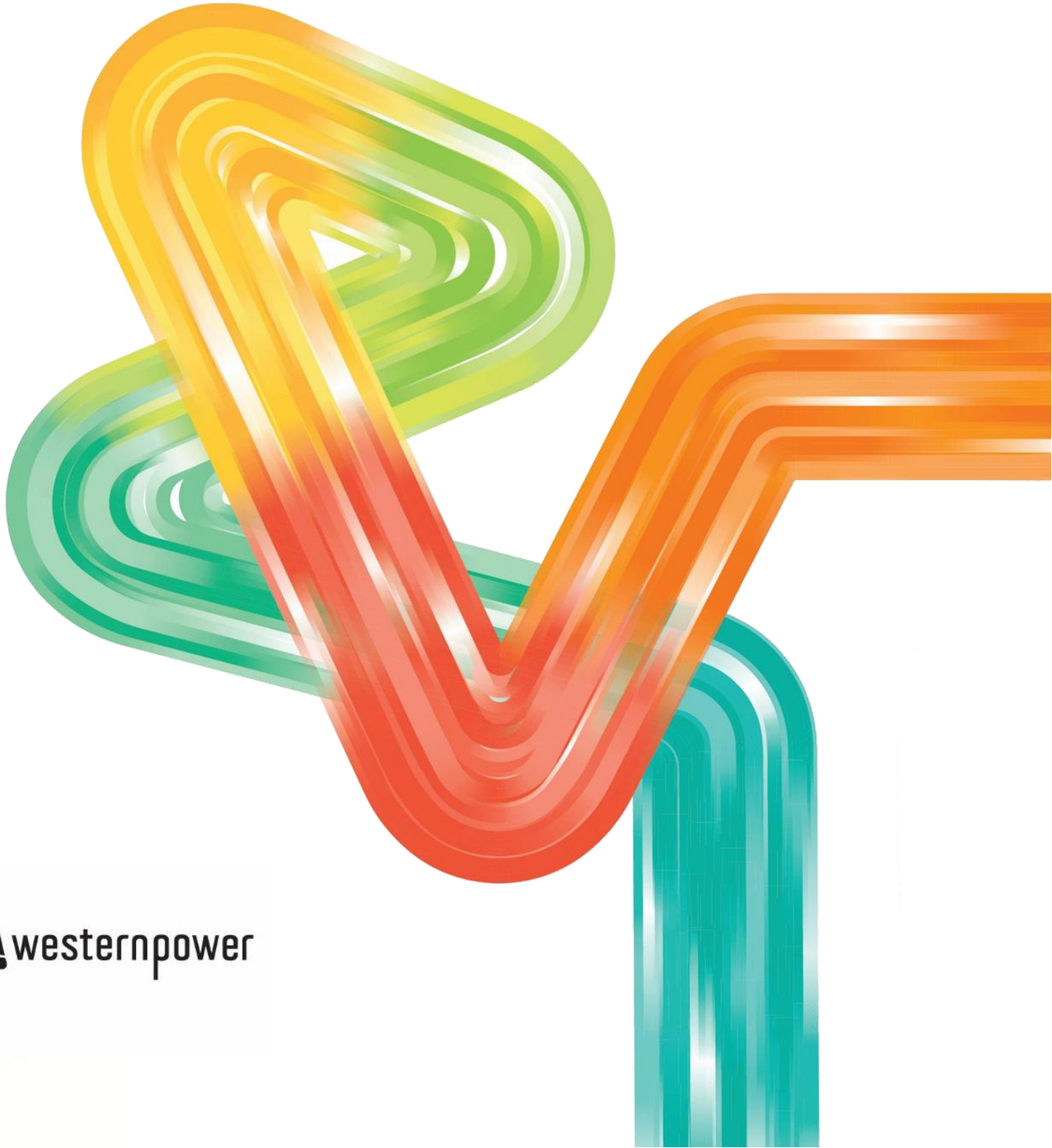

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Document Control

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1.0	04/05/2026	Finalised for submission to EPA

Abbreviations

Term	Definition
ACHC	Aboriginal Cultural Heritage Committee
ACHIS	Aboriginal Cultural Heritage Inquiry System
AECOM	AECOM Australia Pty Ltd
AH Act	*Aboriginal Heritage Act 1972* (WA)
ANZG	Australian and New Zealand Governments
ASS	Acid Sulfate Soil
ASSMP	Acid Sulfate Soil Management Plan
BAM Act	*Biosecurity and Agriculture Management Act 2007* (WA)
BC Act	*Biodiversity Conservation Act 2016* (WA)
BCE	Bamford Consulting Ecologists
CALM	Conservation and Land Management
CCW	Conservation Category Wetland
CBD	Central Business District
CEL	Clean Energy Link
CEMP	Construction Environmental Management Plan
CO_2	Carbon dioxide
COE	Clean on Entry
CPS	Clearing Permit System
CR	Critically Endangered
DAWE	Department of Agriculture, Water and the Environment
DBCA	Department of Biodiversity, Conservation and Attractions
DBH	Diameter at breast height
DCCEEW	Department of Climate Change, Energy, the Environment and Water
PDE	Proposal Development Envelope
DEE	Department of the Environment and Energy
DER	Department of Environment and Regulation
DEWHA	Department of the Environment, Water, Heritage and the Arts
DIW	Directory of Important Wetlands
DP	Declared Pests
DPIRD	Department of Primary Industries and Regional Development
DSEWPAC	Department of Sustainability, Environment, Water, Population and Communities

Term	Definition
DWER	Department of Water, Environment and Regulation
EIA	Environmental impact assessment
ELA	Eco Logical Australia
EMP	Environmental Management Plan
EN	Endangered
EP Act	*Environmental Protection Act 1986* (WA)
EPA	Environmental Protection Authority
EPBC Act	*Environment Protection and Biodiversity Act 1999* (Commonwealth)
ERD	Environmental Review Document
ESA	Environmentally Sensitive Area
FCT	Floristic community types
FFHEMP	Fauna and Fauna Habitat Environment Management Plan
FHOLD	Freehold
FVEMP	Flora and Vegetation Environmental Management Plan
GDE	Groundwater dependant ecosystems
GDV	Groundwater dependent vegetation
GHD	GHD Pty Ltd
GHG	Greenhouse Gas
GIS	Geographic Information System
GoWA	Government of Western Australia
ha	Hectare
IBRA	Interim Biogeographic Regionalisation for Australia
ILUA	Indigenous Land Use Agreement
IUCN	International Union for Conservation of Nature
km	Kilometre
kV	Kilovolt
m	Metre
LGA	Local Government Area
LOO	Likelihood of occurrence
LPS	Local Planning Scheme
Mbgl	Meters below ground level
MNES	Matters of National Environmental Significance
MRS	Metropolitan Region Scheme
MU	Multiple Use

Term	Definition
NBT	Neerabup Terminal
NVCP	Native vegetation clearing permit
OHTL	Overhead Transmission Line
OPGW	Optical Ground Wire
P	Priority
PASS	Potential Acid Sulfate Soil
PC	Principal Contractor
PDWSA	Public Drinking Water Supply Area
PEC	Priority Ecological Community
PMST	Protected Matters Search Tool
RE	Resource Enhancement
RESVE	Reserve
RIWI Act	*Rights in Water Irrigation Act 1914* (WA)
SCP	Swan Coastal Plain
SF6	Sulfur hexafluoride
SLR	SLR Consulting Australia
SPP	State Planning Policy
SW	South West
SWA	Swan Coastal Plain IBRA region
SWA02	Swan Coastal Plain Perth IBRA subregion
SWALSC	South West Aboriginal Land and Sea Council
SWIS	South West Interconnected System
T	Threatened
TEC	Threatened Ecological Community
TO	Traditional Owners
TPFL	Threatened and Priority Flora List
TSSC	Threatened Species Scientific Committee
UFI	Unique field identifier
VT	Vegetation type
VU	Vulnerable
WA	Western Australia
WAPC	Western Australian Planning Commission
WONS	Weeds of National Significance
WP	Western Power

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Summary

This Environmental Review Document (ERD) has been prepared for the Electricity Networks Corporation trading as Western Power (Western Power), to accompany a section 38 referral for the Wangara to Neerabup Terminal 132 kilovolt (kV) Overhead Transmission Line project (the Proposal) under Part IV of the *Environmental Protection Act 1986* (EP Act), to the Environmental Protection Authority (EPA). The Proposal is located 17.5 kilometres (km) north of Perth Central Business District (CBD) in the City of Wanneroo and is for the construction of a dual circuit 132 kV transmission line from Neerabup Terminal (Ziatis Road, Pinjar) to intersect an existing transmission line (MUL-WGA 81) at the intersection of Ocean Reef Road and Wanneroo Road, Woodvale, a length of approximately 23 km.

Enabling works will occur along the proposed line route, involving the relocation and/or undergrounding of existing customer power connections, distribution lines and utility assets to facilitate the construction and future operation of the new 132 kV transmission line.

The Western Australian Government's announcement to retire coal generation by 2030 requires the removal of network constraints on existing connected generation and additional capacity to allow for the connection of new generators to the South West Interconnected System (SWIS). The Proposal is part of the SWIS Transmission Plan, which sets out the State Government's vision for the transmission network and builds on extensive modelling and system planning carried out in the Whole of System Plan 2020, the SWIS Demand Assessment: 2023 and 2024, and the SWIS Planning Update. These Plans are publicly available on the WA Government website and Western Power website.

The Proposal forms a critical component of the Clean Energy Link (CEL) North program, designed to alleviate transmission constraints and facilitate integration of renewable energy sources into the SWIS. It will create new circuits between Neerabup Terminal and the connecting zone substations to improve utilisation of the 330 kV and 132 kV networks in transferring electricity generated from the Mid West to supply Perth's northern suburbs.

The Proposal consists of a 75.71 ha Proposal Development Envelope (PDE) and a 31.71 ha Impact Area comprised of:

- 13.34 ha of native vegetation
- 18.37 ha of non-native vegetation

The Proposal presents a relatively low-impact infrastructure development, and its environmental and social footprint is not considered so significant to warrant formal assessment under Part IV of the EP Act. Key impacts are only derived from the clearing of vegetation and a combination of existing statutory mechanisms, as outlined below, are able to appropriately assess and manage the Proposal and any potential risks and impacts to environmental, Aboriginal Heritage, and/or social values:

- Referral to Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for clearing of native and non native vegetation and associated potential impacts to Matters of National Environmental Significance (MNES).

- Department of Water and Environmental Regulation (DWER) Native Vegetation Clearing Permit (NVCP) under Part V of the EP Act:
  - EPA Environmental Factors including Flora and Vegetation, Terrestrial Fauna and Inland Waters can be addressed through a clearing permit assessment, which focuses on 10 clearing principles (Schedule 5 of the EP Act), including high biodiversity, fauna habitat significance, threatened species and communities, wetlands, land degradation, conservation estate and surface and groundwater.
  - detailed assessment of vegetation types, fauna habitat, wetland proximity, and mitigation measures in an assessment against the 10 Clearing Principles for an NVCP application.
  - The clearing permit framework incorporates the EPA's mitigation hierarchy and allows for conditions to be applied under Section 51I of the EP Act. This section specifically details the types of conditions, to avoid, minimise, or mitigate environmental harm, that can be attached to a clearing permit. This includes offsets where significant residual impacts are identified.
- Development Application under the *Planning and Development Act 2005*:
  - In terms of land use planning, the proposal intersects Bush Forever sites, State Forest and areas governed by the Metropolitan Region Scheme (MRS).
  - Western Power will seek the approval of the Western Australian Planning Commission (WAPC) for a Development Application under the *Planning and Development Act 2005*.
  - The Development Application will provide comprehensive planning oversight, including assessment of land zoning compatibility, and Bush Forever policy compliance. This ensures that social and environmental values are considered in a strategic planning context, without requiring duplication through Part IV assessment.
- An Archaeological and Ethnographic Site Identification Heritage Survey was undertaken over three days from 9 to 11 December 2025 by seven Whadjuk Aboriginal Consultants, three ALS heritage consultants and two Western Power representatives. The survey report is in the process of being finalised with the Whadjuk Aboriginal Corporation. If any Aboriginal Heritage sites are identified within the PDE, the appropriate approvals will be sought in consultation with the Whadjuk Aboriginal Corporation and in consideration of the *Aboriginal Heritage Act 1972* (AH Act).
- Permit issued by DWER under the *Rights in Water and Irrigation Act 1914* (RIWI Act):
  - Will be required for any activity or works associated with the Proposal that might interfere with, obstruct, or destroy the bed or banks of a watercourse, wetland or their surrounds.
  - DWER evaluates the impact on water resources, the environment, and other users and when considering potential impacts to environmental values associated with a watercourse may issue a Permit with conditions to manage ongoing activities.
- Department of Biodiversity Conservation and Attractions (DBCA) approval under the *Conservation and Land Management Act 1984* (CALM Act) and *Biodiversity Conservation Act 2016* (BC Act), administered through the Disturbance Approval System (DAS).
  - Disturbance approval application process requires applicants to demonstrate how proposed activities within State managed lands will not impact on conservation values and management objectives.
  - Limited to activities that occur within State managed lands, such as State Forest.

The above detailed regulatory mechanisms collectively can address and effectively manage the potential impacts of the Proposal on EPA Environmental Factors such that formal assessment of the Proposal under Part IV of the EP Act is not deemed to be required.

The Proposal description, content elements and summary of potential impacts, proposed mitigation and proposed environmental outcomes are outlined in the following tables.

Table S-1 Proposal content description

Proposal title	Wangara to Neerabup Terminal 132 kV Overhead Transmission Line
Proponent name	Electricity Networks Corporation (trading as Western Power)
Short description	The Wangara to Neerabup Terminal 132 kV Overhead Transmission Line proposal (the Proposal) is located 17.5 kilometres (km) north of Perth CBD in the City of Wanneroo. The Proposal is for the construction of a dual circuit 132 kilovolt (kV) transmission line from Neerabup Terminal (Ziatis Road, Pinjar) to intersect an existing transmission line (MUL-WGA 81) at the intersection of Ocean Reef Road and Wanneroo Road, Woodvale, a length of approximately 23 km. Enabling works will occur along the proposed line route, involving the relocation and/or undergrounding of existing customer power connections, distribution lines and utility assets to facilitate the construction and future operation of the new 132 kV transmission line. The Proposal is part of the South West Interconnected System Transmission Plan, which sets out the State Government's vision for Western Power's transmission network and builds on extensive modelling and system planning carried out in the Whole of System Plan 2020, the South West Interconnected System Demand Assessment: 2023 and 2024, and the South West Interconnected System Planning Update. The Proposal will create new circuits between Neerabup Terminal and the connecting zone substations to improve utilisation of the 330 kV and 132 kV networks in transferring electricity generated from the Mid-West to supply Perth's northern suburbs.

Table S-2 Summary of potential impacts, proposed mitigation and proposed environmental outcomes

Flora and Vegetation	
EPA objective	*To protect flora and vegetation so that biological diversity and ecological integrity are maintained* (EPA, 2023b)
Policy and guidance	• *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community* (DEE, 2016) • *Approved Conservation Advice (incorporating listing advice) for Tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain ecological community* (DEE, 2019) • *Conservation codes for Western Australia Flora and Fauna* (DBCA, 2023a) • *Environmental Factor Guideline: Flora and Vegetation* (EPA, 2016a) • *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016e). • *State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region*
Potential impacts	**Direct impacts** The Proposal has the potential to result in the following direct impacts to Flora and Vegetation: • Clearing of up to 31.71 ha of vegetation, comprised of:

	– 13.34 ha of native vegetation – 18.37 ha of non-native vegetation • Clearing of native vegetation may result in the following potential direct impacts to Threatened/Priority Ecological Communities (TEC/PEC): – Up to 0.24 ha of the Commonwealth listed Banksia Woodlands of the Swan Coastal Plain TEC (Endangered) (Banksia Woodlands TEC), which is inclusive of the following State listed PEC: – 0.21 ha of Banksia Woodlands of the Swan Coastal Plain PEC – 0.03 ha of Low-lying *Banksia attenuata* woodlands or shrublands PEC (FCT21c) – Up to 0.08 ha of the Commonwealth listed Tuart Woodlands and Forests of the Swan Coastal Plain TEC (Critically Endangered) (Tuart Woodlands TEC), which is analogous to the P3 State listed Tuart Woodlands and Forests of the Swan Coastal Plain PEC. • Clearing of vegetation may result in the following potential direct impacts to Bush Forever Sites: – Up to 0.65 ha within two Bush Forever Sites, Site No. 193 (0.63 ha) and 326 (0.02 ha). **Indirect impact** The Proposal has the potential to result in the following indirect impacts to Flora and Vegetation values: • Reduction in vegetation quality through introduction and/ or spread of weeds and disease (such as *Phytophthora* dieback) • Loss of vegetation due to accidental fires. • Fragmentation of native vegetation and flora habitat **Cumulative impacts** The Proposal is not expected to result in significant cumulative impacts as the application of the mitigation hierarchy has reduced the native vegetation clearing required for the Proposal to a maximum of 13.34 ha, 95% of which has been mapped in Degraded or worse condition. In addition, the cumulative impact assessment (Appendix D.12) has considered the impacts of the Proposal in the context of foreseeable future clearing within a 5 km radius. Proposal impacts will contribute <0.001% of foreseeable cumulative impacts to both Banksia Woodlands TEC/PEC and Tuart Woodlands TEC/PEC across the SCP. The avoidance and mitigation measures implemented by Wester Power has allowed for impacts to native and nonnative vegetation, including TEC/PEC and Bush Forever Sites, to be minimised such that construction of the Proposal will not significantly contribute to cumulative impacts in the broader SCP region.
Mitigation hierarchy	**Avoid** • Flora and vegetation surveys have been completed in 2023, 2024 and 2025, including during the early design phase of the Proposal to characterise the receiving environmental values and inform route selection for the transmission corridor and PDE. • Multiple alignments underwent a Multi-Criteria Analysis (MCA) which considered economic, environment, heritage, planning and social impacts. Alignments located further east were identified as having a higher environmental impact due to increased clearing of vegetation being required and were therefore not selected. • Span over areas have been identified within the PDE where no clearing is proposed for either construction or for the purposes of meeting safe electrical clearances as vegetation height at maturity is low enough that the required safe separation distance from the conductor is maintained. These span over areas align with Banksia Woodlands TEC/PEC and Bush Forever Sites and have has allowed for approximately 2 ha of clearing to be avoided within Banksia Woodland TEC/PEC and Bush Forever Sites. • New infrastructure has been located within existing cleared or sparsely vegetated road reserves and utilises existing tracks where possible to avoid additional clearing • Alignment has been located such that it does not introduce any additional fragmentation to existing remnant native vegetation patches and Bush Forever Sites.

	• The line route was moved to the southern side of Ocean Reef Road to avoid extensive impacts to the Tuart Woodlands TEC/PEC identified within the road reserve on the northern side between Prestige parade and Badgerup road. • Alternative methodologies for line stringing, such as back hand stringing and drone stringing will be implemented to reduce the clearing footprint required in environmentally sensitive areas such as TEC/PEC and Bush Forever Sites. **Minimise** • Vegetation clearing: – Proposed clearing has been minimised as far as practicable during the design phase to reduce the extent of disturbance required. – Clearing areas will be demarcated onsite and no disturbance will be permitted outside of these areas – The majority of the native vegetation to be cleared is in Degraded or worse condition (approximately 95%). No native vegetation in Excellent or Very Good condition will be impacted as part of the Proposal. – Laydown areas and construction facilities (e.g. mobile offices and ablutions, equipment laydown areas) will be restricted to pre-existing disturbed areas in the PDE and/ or offsite in Western Power depot locations. – Implement the Proposal Flora and Vegetation Environment Management Plan (FVEMP) which has been developed with objective and outcome-based targets aimed at minimising impacts to native flora and vegetation. • Introduction and/or spread of weeds and disease (*Phytophthora* dieback): – Implement a Proposal specific Construction Environmental Management Plan (CEMP) that will include controls to reduce the risk of spreading weeds and disease. – Implement the Proposal FVEMP which has been developed with objective and outcome-based targets aimed at minimising impacts to native flora and vegetation. – Implement the Proposal Hygiene Management Plan (HMP). • Accidental bushfires – A fire control and communications management plan, including emergency response and evacuation procedures, shall be prepared and implemented by the Principal Contractor (PC) in consultation with Western Power. – Hot Work shall be completed under a Hot Work Permit and in accordance with Western Power Hot Work Procedures. – All vehicles and machinery will be fitted with fire extinguishers and/ or in-plant fixed water suppression. – Fire Danger Ratings issued by the Bureau of Meteorology will be monitored and complied with, including any vehicle movement bans **Rehabilitate** • Areas of native vegetation cleared for the purposes of construction, that are not required for ongoing maintenance activities, will be rehabilitated. These areas will be identified during the post-construction phase of the Proposal in accordance with the outcome-based criteria specified in the Proposal's FVEMP. Significant residual impacts have been calculated by conservatively assuming all clearing approved within the PDE will be permanent.
Residual impacts, including assessment of significance	Residual impacts to Flora and Vegetation will include: • Clearing of up to 31.71 ha of native vegetation, comprising: – Up to 0.24 ha of Commonwealth listed Banksia Woodlands TEC, which includes the following State listed PEC: – 0.21 ha of Banksia Woodlands of the SCP PEC – 0.03 ha of Low-lying *Banksia attenuate* woodlands or shrublands PEC (FCT21c)

	– Up to 0.08 ha of Commonwealth and State listed Tuart Woodlands TEC/PEC • Clearing of up to 0.65 ha of vegetation within Bush Forever Sites Direct and indirect clearing impacts from the Proposal are not considered to be significant enough to require assessment under Part IV of the EP Act and can be managed via: • Referral and assessment of the Proposal under the EPBC Act, including impacts from clearing native and nonnative vegetation on MNES (including threatened black cockatoo habitats) and potential requirements for offsets • Part V EP Act NVCP process. This process will be able to assess and manage all direct and indirect vegetation and flora impacts, including any potential requirements for offsets. Assessment against Principles a, c, d and e requires the applicant to demonstrate that the proposed clearing will not significantly impact biodiversity, rare flora, threatened ecological communities and remnant patches of native vegetation. • DBCA's Disturbance Approval System, includes an assessment of environmental, social, and economic risks associated with proposed activities on lands managed by DBCA. This approval will be able to manage vegetation and flora impacts and weed and dieback spread within DBCA lands • Assessment of significance of impacts to vegetation and flora values of Bush Forever Sites will be managed via the *State Planning Policy 2.8 – Bushland Policy for the Perth Metropolitan Region* (SPP2.8) and the Development Application (DA) process under the Planning Act, including any offsets determined to be required
Proposed environmental outcomes	Implementation of the Proposal aims to achieve the following environmental outcomes, which will be reflected in the relevant EMPs for the Proposal: • Clearing of up to 31.71 ha of native vegetation, comprising: – Up to 0.24 ha of Commonwealth listed Banksia Woodlands TEC, which includes the following State listed PEC: – 0.21 ha of Banksia Woodlands of the SCP PEC – 0.03 ha of Low-lying *Banksia attenuate* woodlands or shrublands PEC (FCT21c) – Up to 0.08 ha of Commonwealth and State listed Tuart Woodlands TEC/PEC • Clearing of up to 0.65 ha of vegetation within Bush Forever Sites • No introduction of new Declared Pests or Weeds of National Significance within the PDE attributable to Proposal implementation • No spread of dieback into uninfested areas mapped within the PDE attributable to Proposal implementation.
Assessment of offsets (if relevant)	• Proposal impacts to Flora and Vegetation are considered to be not so significant as to warrant further assessment under Part IV of the EP Act. Separate mechanisms, such as referral under the EPBC Act and the NVCP application process under Part V of the EP Act have the appropriate authority to assess, manage and evaluate the requirement for offsets. • Offsets for Bush Forever Sites will be managed via the DA process and in accordance with the SPP2.8.
Terrestrial Fauna	
EPA objective	*To protect terrestrial fauna so that biological diversity and ecological integrity are maintained* (EPA, 2023b)
Policy and guidance	• *Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan* (DPaW, 2013) • *Forest Black Cockatoo (Baudin's Cockatoo Calyptorhynchus baudinii and Forest Red-tailed Black Cockatoo Calyptorhynchus banksia naso) Recovery Plan* (DEC, 2008) • *Environmental Factor Guideline: Terrestrial Fauna* (EPA, 2023b) • *Referral guideline for 3 WA threatened black cockatoo species Carnaby's Cockatoo (Zanda latirostris), Baudin's Cockatoo (Zanda baudinii) and the Forest Red-tailed Black-cockatoo (Calyptorhynchus banksii naso)* (DAWE, 2022)

	• *Scoring System for the Assessment of Foraging Value of Vegetation for Black Cockatoos (Bamford Consulting Ecologists* (BCE) 2020) • *Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020b). • *Technical Guidance – Sampling of short range endemic invertebrate fauna* (EPA, 2009).
Potential impacts	**Direct impacts** The Proposal has the potential to result in the following direct impacts to Terrestrial Fauna: • Clearing of up to 31.71 ha of fauna habitat • Clearing of Black Cockatoo foraging habitat, comprising: – Up to 31.71 ha of Negligible (1) to Moderate (6) quality foraging habitat for Carnaby's Cockatoo (*Zanda latirostris*) listed as Endangered (EN) under the EPBC Act and BC Act – Up to 31.71 ha of Negligible (1) to Moderate (5) quality foraging habitat for Baudin's Cockatoo (*Zanda banksii*) listed as EN under the EPBC Act and BC Act – Up to 23.78 ha of Negligible (1) to Moderate (5) quality foraging habitat for Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) listed as Vulnerable under the EPBC Act and BC Act • Clearing of up to 1 suitable breeding tree (one hollow, chew marks observed on the rim) and 52 potential nesting trees (no hollows) for Black Cockatoos • Clearing of up to 24.50 ha of potential Black Cockatoo roosting habitat • Clearing of up to 2.31 ha of potential habitat for Douglas' Broad-headed Bee (*Hesperocolletes douglasi*) listed as Critically Endangered (CR) under the EPBC Act and BC Act. • Fauna injury or mortality from vehicle strike and/ or entrapment. **Indirect impacts** The Proposal has the potential to result in the following indirect impacts to Terrestrial Fauna: • Habitat degradation from edge effects, and introduction/spread of weeds and disease (such as dieback) • Attraction of feral animals • Disturbance of fauna due to light, noise and vibration from construction activities • Loss of habitat due to accidental fires. **Cumulative impacts** The Proposal has sought to avoid and minimise potential impacts to threatened fauna and threatened fauna habitat at all stages of design and development. This has allowed the IA to be significantly reduce such that clearing for the Proposal is estimated to only contribute up to 0.6% to foreseeable cumulative impacts to all three Black Cockatoo species (Appendix D.12).
Mitigation hierarchy	**Avoid** • Basic Fauna surveys, a Short-Range Endemic (SRE) desktop assessment and field survey and Black Cockatoo habitat assessments have been completed between 2023-2026 to identify the fauna values within the PDE and inform route selection for the transmission corridor. • Multiple alignments underwent a Multi-Criteria Analysis (MCA) which considered economic, environment, heritage, planning and social impacts. Alignments located further east were identified as having a higher environmental impact due to increased clearing of vegetation being required (particularly pine plantation) and were therefore not selected. • Span over areas have been identified within the PDE where no clearing is proposed for either construction or for the purposes of meeting safe electrical clearances as vegetation height at maturity is low enough that the required safe separation distance from the conductor is maintained. These span over areas align with Banksia Woodlands TEC/PEC, which represents high value habitat for Black Cockatoos and conservation significant invertebrates. Span over areas have allowed for approximately 2 ha of clearing of Banksia Woodlands TEC/PEC to be avoided.

	• Alignment has been located such that it does not introduce any additional fragmentation to fauna habitat • Alternative methodologies for line stringing, such as back hand stringing and drone stringing will be implemented to reduce the clearing footprint required in high value fauna habitat areas such as TEC/PEC. **Minimise** • Proposed clearing has been minimised as far as practicable during the design phase to reduce the extent of disturbance required. • A fauna spotter will be present during clearing activities to manage any potential interactions with fauna and with the authority to stop clearing works where fauna is identified within the clearing footprint. • There is a requirement for a pre-clearance inspections of potential nesting trees for Black Cockatoo activity to be undertaken prior to clearing. A hold point has been put in place in the FFHEMP for 19 potential nesting trees and the one suitable breeding tree identified adjacent to Gnangara Lake. These 20 trees are located on the very edge of the electrical clearance buffer and will be risk assessed during construction as to whether they present a falls risk and can be retained without impacting on the safe operation of the transmission line. • Twice daily trench inspections will be completed for any trenches that remain open for longer than 24 hours. • Any trenches or open excavations will be fitted with adequate fauna egress. • Stormwater and sedimentation controls will be implemented to prevent impacts to SRE habitat • The Proposal's Fauna and Fauna Habitat Environment Management Plan (FFHEMP) and CEMP will provide objective and outcome based targets aimed at minimising impacts to conservation significant fauna during construction and operation of the Proposal. **Rehabilitate** • Areas of fauna habitat cleared for the purposes of construction, that are not required for ongoing maintenance activities, will be rehabilitated. These areas will be identified during the post-construction phase of the Proposal in accordance with the outcome-based criteria specified in the Proposal's FVEMP. Significant residual impacts have been calculated by conservatively assuming all clearing approved within the PDE will be permanent.
Residual impacts, including assessment of significance	Potential residual impacts to Terrestrial Fauna will include: • Clearing of up to 31.71 ha of fauna habitat • Clearing of Black Cockatoo foraging habitat, comprising: – Up to 31.71 ha of Negligible to High quality foraging habitat for Carnaby's Cockatoo – Up to 31.71 ha of Negligible to Moderate quality foraging habitat for Baudin's Cockatoo – Up to 23.78 ha of Negligible to Moderate quality foraging habitat for Forest Red-tailed Black Cockatoo • Clearing of up to 1 suitable breeding tree (one hollow) and 52 potential nesting trees (no hollows) for Black Cockatoos • Clearing of up to 24.50 ha of potential Black Cockatoo roosting habitat • Clearing of up to 2.31 ha of potential habitat for Douglas' Broad-headed Bee Direct and indirect clearing impacts from the Proposal are not considered to be significant enough to require assessment under Part IV of the EP Act and can be managed via: • Referral and assessment of the Proposal under the EPBC Act, including impacts from clearing native and nonnative vegetation on MNES (including threatened black cockatoo habitats) and potential requirements for offsets • Part V EP Act NVCP process. This process will be able to assess and manage all direct and indirect vegetation and flora impacts, including any potential requirements for offsets. Assessment against Principles a, b and g, requires the applicant to demonstrate that the proposed clearing will not significantly impact biodiversity and fauna habitat.

	• DBCA's Disturbance Approval System, includes an assessment of environmental, social, and economic risks associated with proposed activities on lands managed by DBCA. This approval will be able to manage fauna habitat impacts and weed and dieback spread within DBCA lands.
Proposed environmental outcomes	Implementation of the Proposal aims to achieve the following environmental outcomes, which will be reflected in the relevant EMPs: • Clearing of up to 31.71 ha of native and non-native fauna habitat • Clearing of Black Cockatoo foraging habitat, comprising: – Up to 31.71 ha of Negligible to Moderate quality foraging habitat for Carnaby's Cockatoo (*Zanda latirostris*) – Up to 31.71 ha of Negligible to Moderate quality foraging habitat for Baudin's Cockatoo (*Zanda banksii*) – Up to 23.78 ha of Negligible to Moderate quality foraging habitat for Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) listed as Vulnerable under the EPBC Act and BC Act • Clearing of up to 1 suitable breeding tree (one hollow) and 52 potential nesting trees (no hollows) for Black Cockatoos • Clearing of up to 24.50 ha of potential Black Cockatoo roosting habitat • Clearing of up to 2.31 ha of potential habitat for Douglas' Broad-headed Bee (*Hesperocolletes douglasi*) • No death or injury to threatened fauna as a result of Proposal activities • Minimise indirect impacts to threatened fauna habitat quality from incidence and spread of weeds and/or disease, fragmentation and fire.
Assessment of offsets (if relevant)	• An offset strategy has been developed for the Proposal's impacts to the three threatened species of Black Cockatoo to support the referral under the EPBC Act. The intent is for this offset strategy to also be used for assessment of the Proposal under Part V of the EP Act under the NVCP application process if the assessment determines offsets are required.
Inland Waters	
EPA objective	*To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected'* (EPA, 2023b)
Policy and guidance	• *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG, 2018) • *Environmental Factor Guideline – Inland Waters* (EPA, 2018a) • *Identification and Investigation of Acid Sulfate Soil and Acidic Landscapes* (DER, 2015a) • *Treatment and Management of Soil and Water in Acid Sulfate Soil Landscapes* (DER, 2015b) • *Water Quality Protection Note (WQPN) 13: Dewatering of soils at construction sites* (DoW, 2012) • *WQPN 44: Infrastructure – Road, transportation and utility corridors* (DWER, 2025)
Potential impacts	**Direct impacts** The Proposal has the potential to result in the following direct impacts to Inland Waters: • Clearing impacts of up to 0.04 ha of Geomorphic Wetlands, comprised of: – 0.03 ha of Conservation Category Wetlands – 0.01 ha of Resource Enhancement wetlands • Clearing of up to 0.17 ha of riparian/groundwater dependent vegetation (GDV) (noting the impact values for geomorphic wetlands and GDVs are not cumulative due to overlaps in mapping). • Potential impacts to groundwater and surface water quality within wetland areas • Potential decline in the availability and quality of waters within Public Drinking Water Source Areas **Indirect impacts** The Proposal has the potential to result in the following indirect impacts to Inland Waters:

	• Changes to hydrological regimes and water quality of adjacent wetlands from earthworks and dewatering activities (construction only) • Degradation in condition of Groundwater Dependent Vegetation (GDV) within and adjacent to the PDE through drawdown from dewatering (construction only). **Cumulative impacts** At the Regional scale (SCP), the extent of Geomorphic Wetlands in the PDE represents approximately 0.00004 % and 0.00005 % of foreseeable impacts across the SCP for Conservation and Resource Enhancement Geomorphic Wetlands, respectively. Construction of pole foundations is not anticipated to result in any impacts to the quantity of groundwater within PDWSAs as 'wet' techniques rely on the displacement of water only, with no sustained pumping of groundwater required. The avoidance and mitigation measures implemented by Western Power has allowed for impacts to Inland Waters to be minimised such that construction of the Proposal will not significantly contribute to cumulative impacts in the broader SCP region.
Mitigation hierarchy	**Avoid** • New infrastructure has been located within existing road reserves and utilises existing tracks where possible to avoid additional clearing within wetland areas and impeding surface water flow. • Where possible, pole locations have been located outside of wetland areas to avoid impacting water quality from excavation, and to reduce the likelihood of dewatering being required for pole installation. • Multiple alignments underwent a Multi-Criteria Analysis (MCA) which considered economic, environment, heritage, planning and social impacts. Alignments located further east were identified as having a higher environmental impact due to increased clearing of vegetation being required and were therefore not selected. **Minimise** • Pole locations have been chosen to minimise impacts to wetlands and reduce proximity to GDVs • Utilisation of wet construction techniques for pole foundations where water is displaced and saturated soil conditions are maintained. This removes the need for dewatering and reduces the risk of generating ASS by maintaining anerobic conditions. • Baseline monitoring for ASS at pole locations to determine where ASS management will be required. • Baseline sampling of groundwater quality from a representative location of PDWSA aquifers • Where Acid Sulfate Soils (ASS) are identified as a risk during geotechnical investigations, an ASS Management Plan will be developed and included as part of the CEMP for the Proposal. • Water management will be a required component of the CEMP where controls for the management of the water displaced as a result of the wet construction techniques will be specified. • FVEMP includes clearing controls for within wetland areas to mitigate the risk of sedimentation and impacts to surface water quality. **Rehabilitation** • Areas of riparian and groundwater dependent vegetation growing in association with wetlands cleared for the purposes of construction, that are not required for ongoing maintenance activities, will be rehabilitated, targeting stabilisation of soils to reduce risk of soil erosion impacting water quality post-construction. These areas will be identified during the post-construction phase of the Proposal in accordance with the outcome-based criteria specified in the Proposal's FVEMP. Significant residual impacts have been calculated by conservatively assuming all clearing approved within the PDE will be permanent.
Residual impacts, including assessment of significance	Residual impacts to Inland Waters will include: • Clearing impacts of up to 0.04 ha of Geomorphic Wetlands, comprised of: – 0.03 ha of Conservation Category Wetlands – 0.01 ha of Resource Enhancement wetlands

	• Clearing of up to 0.17 ha of riparian/groundwater dependent vegetation (noting the impact values for geomorphic wetlands and GDVs are not cumulative due to overlaps in mapping). Clearing impacts to Conservation Category Wetlands are not considered significant to warrant further assessment under Part IV of the EP Act and can be adequately managed via the Part V EP Act NVCP (Principle (i) and (j)) process including any potential requirements for offsets. Other residual impacts to Inland Waters are not considered significant and can be adequately managed via the Bed and Banks Permitting process under the RIWI Act Potential impacts to groundwater quantity are not considered to represent a significant impact due to the use of 'wet' construction techniques that involve displacement of water and no active pumping of groundwater. It is expected that the risk of potential indirect impacts to hydrological regimes and the quality of groundwater and surface water is low and that the avoidance and minimisation measures implemented are sufficient such that any potential impacts can be adequately managed via Development Application process under the Planning Act (through the provision of an ASSMP and water management measures as part of the CEMP).
Proposed environmental outcomes	Implementation of the Proposal aims to achieve the following environmental outcomes, which will be reflected in the relevant EMPs: • Clearing impacts of up to 0.04 ha of Geomorphic Wetlands, comprised of: – 0.03 ha of Conservation Category Wetlands – 0.01 ha of Resource Enhancement wetlands • Clearing of up to 0.17 ha of riparian/groundwater dependent vegetation (noting the impact values for geomorphic wetlands and GDVs are not cumulative due to overlaps in mapping). • No impacts to groundwater quality within wetland areas attributable to Proposal implementation • Minimise impacts to hydrological regimes within wetlands that may result from earthworks and/or dewatering for construction.
Assessment of offsets (if relevant)	• Impacts to Inland Waters are not considered to be significant enough to require offsets. • The NVCP process under Part V of the EP Act has the regulatory authority to assess, manage and impose the requirement for offsets
Social Surroundings	
EPA objective	*To protect social surroundings from significant harm* (EPA, 2023b)
Policy and guidance	• *Environmental Factor Guideline – Social Surroundings* (EPA, 2023a) • *Technical Guidance: EIA of Social Surroundings – Aboriginal Cultural Heritage* (EPA, 2023) • *International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields* (ICNIRP, 2010) • *Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) Guidelines and World Health Organisation (WHO) Environmental Health Criteria for electric and magnetic fields (EMF).*
Potential impacts	**Direct impacts** Construction of the Proposal has potential to result in the following direct impacts to Social Surroundings: • Disturbance of unidentified Aboriginal heritage items and/or places • Disturbance of intangible Aboriginal heritage values • Disturbance of one Municipal heritage sites listed on the Wanneroo Municipal Heritage Inventory **Indirect impacts** Construction of the Proposal has potential to result in the following indirect impacts to Social Surroundings: • Dust emissions causing nuisance to human receptors • New infrastructure impacting visual amenity

	• Construction noise causing nuisance to noise sensitive receivers • Increased local traffic causing nuisance to local communities • EMF impacts to sensitive receptors • Impacts to Traditional Owner access and use of land • Degradation of intangible Aboriginal Heritage values connected to the environment. **Cumulative Impacts** The Proposal is not expected to result in significant cumulative impacts, particularly given the majority of potential impacts to Social Surroundings are limited to the construction period and will be managed via a CEMP. The Proposal footprint has been restricted to road reserves and no transmission infrastructure will be situated on private property. The avoidance and mitigation measures implemented by Western Power are such that the Proposal is not considered to result in a significant cumulative impact.
Mitigation hierarchy	**Avoid** • The alignment has been located within road reserves and State owned land as far as practicable to avoid impacts to private property. Where the PDE intersects private property, it is solely to capture the clearing of vegetation that is required to meet electrical clearance requirements, distribution enabling works (undergrounding/pole removals) and customer reconnections. Limited and isolated activities associated with the construction of the transmission line pole foundations and line stringing will occur on private property. • The alignment was moved to the Southern side of Ocean Reef Road, the preferred route indicated by the Whadjuk Traditional Owners through consultation. This option has also avoided impacts to private landowners on the northern side of Ocean Reef Road. • An ethnographic and archaeological survey has been completed with the Whadjuk Traditional Owners in December 2025. If any new Sites are identified in the report, the AH Act is considered to be the appropriate statutory mechanism for managing any potential impacts. • An electric and magnetic Frequency (EMF) study (GHD, 2025) has been completed for the future double circuit 132 kV transmission line which indicates that EMFs are within ARPANSA and WHO reference levels. • Consultation with City of Wanneroo regarding the alignment resulted in relocation of the line route to minimise impacts to the East Wanneroo District Structure Plan. **Minimise** • A Proposal-specific CEMP, addressing dust, fire, noise and vibration impacts and mitigation controls, will be prepared by the Principal Contractor and supplied to Western Power prior to commencement of any construction works. • Ongoing engagement with City of Wanneroo and directly affected landowners will be undertaken throughout the construction period. • Results of the EMF study have been communicated to private landowners located adjacent to new alignment. • Ongoing engagement with the Whadjuk Aboriginal Corporation will be undertaken throughout the construction period. • A relevant management plan will be developed for any known/impacted Aboriginal Cultural Heritage in the event that any new Sites are identified within the PDE. **Rehabilitate** • Areas of native vegetation cleared for the purposes of construction, that are not required for ongoing maintenance activities, will be rehabilitated. These areas will be identified during the post-construction phase of the Proposal in accordance with the outcome-based criteria specified in the Proposal's FVEMP. Significant residual impacts have been calculated by conservatively assuming all clearing approved within the PDE will be permanent.
Residual impacts, including	Ongoing engagement with both Traditional Owners and the City of Wanneroo to manage impacts to sensitive values, and the ability for other regulatory mechanisms, such as the Development Application

assessment of significance	process and AH Act, to manage potential impacts to Social Surroundings, supports the expectation that the Proposal will not have a significant residual impact on this EPA Environmental Factor.
Proposed environmental outcomes	Implementation of the Proposal aims to achieve the following environmental outcomes: • Minimise indirect impacts from dust, noise and vibration and traffic during construction • Minimise impacts to ongoing access to land utilised for traditional use or custom by Whadjuk Traditional Owners • Avoid and minimise adverse impacts to Aboriginal cultural heritage resulting from the implementation of the Proposal within and surrounding the PDE
Assessment of offsets (if relevant)	No significant residual impacts have been identified for Social Surroundings. It is considered that offsets are not required for this factor.
Other Factors	
Landforms	
EPA objective	*To maintain the variety and integrity of distinctive physical landforms so that environmental values are protected* (EPA, 2023b)
Policy and guidance	Environmental Factor Guideline – Landforms (EPA, 2018b)
Potential impacts	Desktop assessment results indicate that no impacts to landforms are expected.
Mitigation	Not applicable
Residual impacts	Not applicable
Proposed environmental outcomes	The Proposal is expected to meet the EPA objective for Landforms.
Subterranean fauna	
EPA objective	*To protect subterranean fauna so that biological diversity and ecological integrity are maintained* (EPA, 2016c).
Policy and guidance	Environmental Factor Guideline – Subterranean fauna (EPA, 2016c)
Potential impacts	Desktop assessment results indicate that no impacts to subterranean fauna are expected.
Mitigation	Not applicable
Residual impacts	Not applicable
Proposed environmental outcomes	The Proposal is expected to meet the EPA objective for Subterranean Fauna.
Terrestrial Ecological Quality	
EPA objective	*To maintain the quality of land and soils so that environmental values are protected* (EPA, 2016d).
Policy and guidance	EPA Factor Guideline – Terrestrial Ecological Quality (EPA, 2016d)
Potential impacts	Potential acidification of groundwater and soils may occur if ASS are not appropriately managed during the dewatering and excavation required to construction. Potential spills and leaks of hydrocarbons or other substances during construction and operation may also impact this factor if not managed appropriately.

Mitigation	Potential risk associated with ASS and spills/leaks is not considered significant and can be appropriately managed via a CEMP. With the CEMP in place, the Proposal is not expected to cause significant impact to Terrestrial Environmental Quality.
Residual impacts	Not applicable
Proposed environmental outcomes	The Proposal is expected to meet the EPA objective for Terrestrial Environmental Quality.
Air Quality	
EPA objective	*To maintain air quality and minimise emissions so that environmental values are protected*
Policy and guidance	EPA Factor Guideline – Air quality (EPA, 2020b)
Potential impacts	Emissions as a result of clearing, earthworks and construction are expected to be temporary and limited to the construction phase of the Proposal.
Mitigation	Not applicable
Residual impacts	Not applicable
Proposed environmental outcomes	The Proposal is expected to meet the EPA objective for Air Quality.
Greenhouse Gases	
EPA objective	*To minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable* (EPA, 2024a)
Policy and guidance	EPA Factor Guideline – Greenhouse Gases (EPA, 2024a)
Potential impacts	Construction vehicles and heavy machinery can potentially reduce air quality in the area surrounding the Proposal however these emissions are expected to be temporary and limited to the construction phase of the Proposal.
Mitigation	Consideration will be given to the minimisation of greenhouse gas emissions and embedded carbon during construction.
Residual impacts	Not applicable
Proposed environmental outcomes	The Proposal is expected to meet the EPA objective for Greenhouse Gasses.
Human Health	
EPA objective	*To protect human health from significant harm* (EPA, 2016b)
Policy and guidance	EPA Factor Guideline – Human Health (EPA, 2016b)
Potential impacts	The PDE does not contain any significant sources of radiation that may impact upon human health. The Proposal is not considered to cause significant impacts to human health.
Mitigation	Not applicable
Residual impacts	Not applicable

Proposed environmental outcomes	The Proposal is expected to meet the EPA objective for Human Health.

1. Proposal

1.1 Proposal description

This Environmental Review Document (ERD) has been prepared for the Electricity Networks Corporation (Western Power), to accompany a section 38 referral of the Wangara to Neerabup Terminal 132 kilovolt (kV) Overhead Transmission Line project (the Proposal) under Part IV of the *Environmental Protection Act 1986* (EP Act) to the Environmental Protection Authority (EPA). The Proposal is located 17.5 km north of Perth CBD in the City of Wanneroo. The Proposal is for the construction of a dual circuit 132 kilovolt (kV) transmission line from Neerabup Terminal to intersect an existing transmission line (MUL-WGA 81) at the intersection of Ocean Reef Road and Wanneroo Road, Woodvale, a length of approximately 23 kilometres (km) (Figure 1).

Enabling works will occur along the proposed line route, involving the relocation and/or undergrounding of existing customer connections, distribution lines and utility assets to facilitate the construction and future operation of the new 132 kV transmission line.

The Western Australian Government's announcement to retire coal generation by 2030 requires the removal of constraints on existing connected generation and additional capacity to allow connection of new generators to the South West Interconnected System (SWIS). The Proposal is part of the SWIS Transmission Plan, which sets out the State Government's vision for Western Power's transmission network and builds on extensive modelling and system planning carried out in the Whole of System Plan 2020, the SWIS Demand Assessment: 2023 and 2024, and the SWIS Planning Update. These Plans are publicly available on the WA government website and Western Power website.

The Proposal forms a critical component of the Clean Energy Link (CEL) North program, designed to alleviate transmission constraints and facilitate integration of renewable energy sources into the SWIS and will create new circuits between Neerabup Terminal and the connecting zone substations to improve utilisation of the 330 kV and 132 kV networks in transferring electricity generated from the Mid West to supply Perth's northern suburbs.

The Proposal consists of a 75.71 ha Proposal Development Envelope (PDE) and 31.71 ha Impact Area (IA) within the PDE, comprised of:

- 13.34 ha of native vegetation
- 18.37 ha of non-native vegetation

Key elements of the Proposal are presented in Table 1.

Table 1 Proposal content elements

Proposed element	Location	Maximum extent, capacity, or range
Physical elements		
The transmission line comprises the following physical components:	Within the Proposal Development Envelope. Refer to Figure 1	A Proposal Development Envelope (PDE) of 75.71 hectares (ha).

• Transmission infrastructure (for the purposes of this referral 171 steel poles are assumed) • 132 kV conductors (dual circuit) • Optical Ground Wire (OPGW) • Permanent maintenance access track • Vegetation clearance zone		An Impact Area of 31.71 ha within the PDE, comprised of: • 13.34 ha of native vegetation • 18.37 ha of non-native vegetation
Construction elements		
Installation of pole foundations.	Within the Proposal Development Envelope. Refer to Figure 1	Installation of pole foundations. Construction will take approximately <1.5 years.
Operational elements		
Transmission infrastructure	Within the Proposal Development Envelope. Refer to Figure 1	Operation and maintenance of transmission infrastructure

Proposal elements with greenhouse gas emissions	
Construction elements	
Scope 1	3,500 t CO_2-e/yr Scope 1 emissions have been calculated using emission factors as per the National Greenhouse and Energy Reporting (Measurement) Determination based on available project projections and/or existing operational data for fuel use (transport and stationery) and land clearing. Supporting documentation can be provided on request due to commercially sensitive information used in emissions modelling.
Scope 2	Nil
Scope 3	N/A Scope 3 emissions are excluded in this estimate due to the lack of consistent available methods to provide a reliable estimate across the range of associated Scope 3 categories associated with the Proposal.
Operation elements	
Scope 1	25 t CO_2-e/yr Scope 1 emissions have been calculated using emission factors as per the National Greenhouse and Energy Reporting (Measurement) Determination based on available existing operational data for fuel use associated with operational and maintenance activities (transport) proportional to these activities across all network operations.
Scope 2	2,500 t CO_2-e/yr Based on electricity losses during transmission (line losses). Scope 2 emissions have been calculated as per the National Greenhouse and Energy Reporting (Measurement) Determination 2008, Method A1 for estimating emissions from electricity consumption. 2,500 t CO_2-e represents year one losses. Scope 2 emissions are projected to decrease year on year as this project, together with other network augmentation projects facilitates further connection of renewable energy generation to the South West Interconnected System.
Scope 3	N/A Scope 3 emissions are excluded in this estimate due to the lack of consistent available methods to provide a reliable estimate across the range of associated Scope 3 categories associated with the Proposal.

Rehabilitation		
Areas cleared for temporary construction activities will be identified and rehabilitated following the completion of construction.		
Commissioning		
Commissioning will include testing and assurance at the end of construction, these activities are included in the extent of construction elements.		
Decommissioning		
Decommissioning is not anticipated within the life of the asset (>50 years). Prior to the end of design life, the transmission line and associated infrastructure will be reviewed to determine the ongoing needs of the network and whether assets will be removed, upgraded or replaced.		
Proposal timeline		
Proposal time	Maximum project life	Permanent Infrastructure (>50 years)
	Construction phase	1-1.5 years
	Operations phase	>50 years (design life)
	Decommissioning phase	N/A

1.2 Proposal alternatives

Western Power is delivering the network infrastructure needed to achieve the State Government vision for WA as a world-leading renewable energy powerhouse. The network's transmission lines, and the wind and solar farms they will connect, will form one of the largest infrastructure, technology and construction transformations in Western Australia's history.

To support the flow of more clean energy, Western Power need to strengthen the network in Perth's northern suburbs. This will allow Western Power to continue to deliver clean power supply for daily use, and to support WA's growing housing supply and industry, as well as the employment and economic benefits they will bring now and in the future.

The State Government announced new contracts totalling $342 million as part of the largest investment in electricity transmission infrastructure in more than a decade - an important milestone in Western Australia's clean energy transition and phased coal exit by 2030. The investment enables major upgrades to the northern section of the South West Interconnected System (SWIS), the electricity distribution network servicing WA from Geraldton to Albany and east to Kalgoorlie.

Further funding of $503 million has been provided by the State Government to Western Power to assess and scope potential Clean Energy Link transmission projects in other parts of the SWIS in line with the SWIS Transmission Planning Update. This includes planning for new lines, reinforcements and upgrades around key industry areas, including Kwinana and Collie, as well as upgrades between Geraldton and Perth to support development at Oakajee.

The South West Interconnected System (SWIS) Transmission Plan details the vision for delivery of an energy transition that benefits all Western Australians, reimagining how the network can robustly

support our State now, and well into the future. Developed through extensive modelling and forecasting including industry collaboration, the plan is a blueprint for facilitating the phase-out of coal generation by 2030 and supports the widespread electrification of existing industries.

Modelling shows that a 10-fold increase in renewable generation will be required to meet future clean energy demand. The no development option for the Proposal is therefore not feasible.

Western Power engaged and worked with local and State Government agencies and City of Wanneroo to ensure alignment with their planned projects, including the East Wanneroo District Structure Plan (EWDSP), planned transport corridors and future housing growth.

The line route and design were selected to make use of existing infrastructure and road reserves to minimise broader community impacts, while balancing affordability and supporting ongoing important local and State Government projects that will benefit the local community.

After further review and feedback from stakeholders and landowners, Western Power refined the alignment of the Proposal using road reserves and Crown land wherever possible to further minimise impacts on private properties and the environment while still delivering the network infrastructure WA needs to meet future needs.

Where the PDE intersects private property, it is solely to capture the clearing of vegetation that is required to meet electrical clearance requirements, distribution enabling works (undergrounding/pole removals) and customer reconnections. Limited and isolated activities associated with the construction of the transmission line pole foundations and line stringing will occur on private property.

Various route options were evaluated using a range of considerations, including:

- Local job creation
- Meeting customer needs
- Local and Aboriginal heritage
- Stakeholder engagement
- Industry and community feedback
- Local environment
- Engineering feasibility
- Cost and value for money
- Network integration

Table 2 outlines the various alternatives for the Proposal and how they were considered and these alternatives are displayed in Figure 2.

Table 2 Alternatives considered for the Proposal

Alternative	Description	Considerations
Not implementing the Proposal	No transmission infrastructure is installed.	The purpose of the Proposal is to significantly increase transmission capacity within the SWIS to support WA's growing energy needs. This scale of increased transmission capacity can only be achieved by constructing new transmission lines, with the Proposal's dual-circuit 132 kV overhead transmission line achieving this aim. As such, not proceeding with the implementation of the Proposal is not considered a feasible option.
Alternative locations	Wanneroo Road	Most direct potential route, however, there are significant property impacts, high construction safety risks due to volume of traffic and increased impacts to businesses (closure) during extended construction periods. Alignment does not support infrastructure needed to meet future housing growth in the region. Presents the least environmental impact but a high economic impact and the highest social impact.
	Lenore Road	Significant impact to the EWDSP as route is through higher density Gnangara town centre and surrounding urban neighbourhood designations. DPLH and City of Wanneroo request to realign this original Sub-Regional Framework alignment east outside future town centre. Alignment presented a significant social impact and moderate economic and environmental impact.
	Badgerup Road	Significant impact to the EWDSP as the alignment would cross through future higher density Gnangara town centre and surrounding urban neighbourhood designations. DPLH and City of Wanneroo request to realign this original Sub-Regional Framework alignment east outside future town centre. Alignment presented a significant social impact and moderate economic and environmental impact.
	Sydney Road	Reduces impacts to the EWDSP developable area and thus presents a reduced social impact. Moderate economic impact as alignment increases length and associated increase in cost. Increased impacts to Banksia Woodlands, Conservation Category Wetlands and Black Cockatoo foraging habitat, however the ability to utilises existing road reserves has allowed for extent of environmental impacts to be minimised.
	Lindley Road	Greatest impacts to environmental values of all the line route options – includes increased impacts to Banksia Woodlands, Black Cockatoo foraging habitat and Conservation Category Wetlands. Increased cost due to significant diversion increasing the length of line route. Reduced social impact given outside of EDWSP developable area and limited residential areas along road alignment .

Alternative	Description	Considerations
	Whiteman-Yanchep Highway	This was the longest potential route considered, having the least social impact but highest economic and environmental impact. Planning Control Area in place which limits development within the envelope to protect area for future transport corridor. Significant risk of having to relocate assets in the future. High-level of planning uncertainty from limited design development and Main Roads WA not supportive of Western Power aligning within the Highway corridor
	Turkey Road	Suggested alternative alignment by East Wanneroo District Residents Association and members of the public. Western Power has investigated the suitability of the suggested alternative alignment along Turkey Road (Appendix D.11). It was determined that the alternative alignment would have a greater environmental impact due to the increased clearing requirements of pine trees, key foraging habitat for Carnaby's Cockatoo.
Options analysis	Undergrounding (either partial or majority of route)	Option significantly increases the economic impact of the Proposal. Additionally leads to the effectively sterilising of land for future development. Undergrounding also has an increased environmental impact, with additional clearing required for the excavation and trenching works. Further this method prevents the implementation of 'span over areas' which are a primary method for avoiding impacts to environmental values. Least long term social impact but significant social impact during construction.

1.3 Local and regional context

1.3.1 Regional biogeography

The Interim Biogeographic Regionalisation of Australia (IBRA) bioregions are defined as large land areas characterised by broad, landscape-scale natural features and environmental processes that influence the functions of entire ecosystems. Their purpose is to capture the large-scale geophysical patterns that occur across the Australian continent (Thackway & Cresswell, 1995). These patterns influence fauna assemblages at the broad scale. There are 89 recognised IBRA regions across Australia that have been defined based on climate, geology, landforms and characteristic vegetation and fauna (DCCEEW, 2023a).

The PDE is located within the Perth IBRA subregion (SWA02) (DCCEEW, 2023a). The Perth subregion is a low lying coastal plain, mainly covered with woodlands. It is dominated by Banksia or Tuart on sandy soils, *Casuarina obesa* on outwash plains, and paperbark in swampy areas. In the east, the plain rises to duricrusted Mesozoic sediments dominated by Jarrah (*Eucalyptus marginata*) woodland. The outwash plains, once dominated by *Casuarina obesa-Corymbia calophylla* (Marri) woodlands and Melaleuca shrublands, are extensive only in the south (Mitchell, Williams, & Desmond, 2002).

1.3.2 Land systems, soil and geology

Land systems are broad descriptions of landform, geology and soils. The PDE is situated across two land systems (GoWA, 2026), which are characterised as follows:

- **Bassendean System**: Sand dunes and sandplains with pale deep sand, semi-wet and wet soils with Banksia-Paperbark woodlands and mixed heathlands. This system occurs across the majority of the PDE.
- **Spearwood System**: Sand dunes and plains, with yellow deep sands, pale deep sands and yellow/brown shallow sands, supporting and variety of vegetation including Banksia and Eucalyptus species. This system occurs at the southern extent of the PDE along Ocean Reef Road.

A review of DWER Acid Sulfate Soil (ASS) risk mapping (DWER-055) indicates there is a Moderate to Low risk of ASS within 3 m of the natural surface throughout the majority of the PDE (55.53 ha), with areas of High to Moderate risk (1.33 ha) generally associated with Geomorphic Wetlands that intersect the PDE (GoWA, 2026). ASS can become acidified if disturbed or dewatered, potentially contaminating groundwater with acid and heavy metals.

PDE ASS risk areas are shown in Figure 3 and further details regarding ASS and associated management and mitigation are outlined in Section 6.

1.3.3 Regional vegetation

Broad-scale (1:250,000) pre-European vegetation mapping of the area was completed by Beard (1979) at an association level. The mapping indicates that three vegetation associations are intersected by the PDE:

- Vegetation association 6 – “Medium woodland; Tuart and Jarrah”
- Vegetation association 37 – “Shrublands, teatree thicket”
- Vegetation association 949 – “Low woodland; Banksia”.

The pre-European mapping has been adapted and digitised by Shepherd *et al.* (2002). The extent of each vegetation association has been determined by the state-wide vegetation remaining extent calculations, maintained by DWER (current as of June 2024) (GoWA, 2026).

EPA (2000) considers the “threshold level” below which species loss appears to accelerate exponentially at an ecosystem level is regarded as being 30 % of the pre-European extent of the vegetation type. A level of 10 % of the original extent is regarded as being a level representing “endangered”.

As shown in Table 3, the current extents remaining of Vegetation Association 6 are less than 30 % but greater than 10 % at the IBRA Bioregion and IBRA Subregion scale. The current extents remaining of vegetation association 949 and 37 are greater than 30% at all levels.

Table 3 Pre-European vegetation association extents at a bioregion and subregion scale (GoWA, 2025)

Pre-European vegetation association	Scale	Pre–European extent (ha)	Extent (ha)	Extent remaining (%)	Extent in DBCA managed land (proportion of current extent) (%)
6 – Medium woodland; Tuart and Jarrah	**IBRA Bioregion:** SCP	56,323.99	12,709.54	22.57	9.96
	IBRA Sub-region: Perth	56,323.99	12,709.54	22.57	9.96
949 – Low woodland; Banksia	**IBRA Bioregion:** SCP	209,894.08	120,132.92	57.24	33.01
	IBRA Sub-region: Perth	184,398.88	103,615.58	56.19	33.92
37 – Shrublands, teatree thicket	**IBRA Bioregion:** SCP	15,616.86	5,270.69	33.75	15.45
	IBRA Sub-region: Perth	14,012.17	4,748.57	33.89	16.78

Note: Red highlight indicates that less than 30% of the pre-European extent remains, vegetation statistics are provided as historic information, last updated June 2025.

1.3.4 Regional hydrogeology

The PDE intersects three Groundwater Areas which are proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act) (GoWA, 2026) including the following within the PDE (Figure 4):

- Wanneroo Groundwater Area
- Gnangara Groundwater Area
- Perth Groundwater Area

Groundwater

A desktop assessment of local groundwater conditions for the PDE has been completed using publicly assessable information on geology, hydrogeology, water quality, groundwater bores and groundwater use for the Perth, Wanneroo and the Gnangara Groundwater Areas.

The Perth, Wanneroo and Gnangara groundwater areas are interconnected parts of the Perth Basin's groundwater system which are made up of the unconfined Superficial aquifer, and the deeper Leederville and Yarragadee aquifers (DWER, 2021c). The central and most elevated part of the Superficial aquifer is known as the Gnangara Mound, north of the Swan River, and is the most significant hydrogeological feature supplying water to both the shallow, unconfined and deeper confined aquifers across the Perth coastal plain (DWER, 2022; DoE, 2003).

The superficial aquifer receives stormwater drainage and is highly susceptible to contamination from accidental spills and improper waste disposal. It supports perennial wetlands but has been partially drained in urban areas where the water table is shallow. The deeper, confined aquifers are primarily used for public water supply and are managed in conjunction with both unconfined groundwater and surface water sources. The Gnangara Mound is the main source within the superficial aquifer and a key

recharge area for the confined aquifers, the Gnangara Mound is largely covered by native vegetation and pine plantation (DoE, 2003).

The majority of the PDE is located on the boundary between the Wanneroo and Gnangara Groundwater Areas. Regional groundwater mapping indicates that groundwater generally flows from east to west (DWER, 2025c).

Minimum depth to groundwater has been estimated based on the *Gnangara Jandakot Depth to Groundwater (Contours) – 2019 Min (DWER-095)* dataset (GoWA, 2026). This indicates that groundwater depth in the PDE varies from 2 m to 41 m below ground level (BGL). Shallow groundwater (<5 m BGL) is located adjacent to Gnangara Lake, Hawkins Swamp, Jandabup Nature Reserve and wetland areas associated with Lake Joondalup as wetlands of the Swan Coastal Plain are generally surface expressions of the shallow unconfined groundwater (Froend et. al., 1993).

Public Drinking Water Source Areas

The PDE is located within multiple Public Drinking Water Source Areas (PDWSA) including the Priority 1 and 2 Gnangara Underground Water Pollution Control Area and the Priority 3 Perth Coastal and Gwelup Underground Water Pollution Control Area (GoWA, 2026) proclaimed under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909* (Figure 4):

- Priority 1 (P1) areas are generally located over land under government ownership, such as State forests. The objective in P1 areas is to avoid unnecessary water quality contamination risks.
- Priority 2 (P2) areas are located on land zoned rural, such as farmland and rural-residential lots. The objective in P2 areas is to minimise water quality contamination risks.
- Priority 3 (P3) areas are located on land zoned urban, commercial and light industrial. The objective in P3 areas is to manage water quality contamination risks.
- Works in PDWSA are required to be undertaken in a manner that maintains drinking water quality through conditions on local government Development Applications.

1.3.5 Regional hydrology

The PDE lies within the Swan Coastal Plain Surface Water Management Area and Sub-Area, which is proclaimed under the RIWI Act (GoWA, 2026).

Water courses

No surface watercourses are mapped within the PDE. The nearest surface watercourse is the Bennett Brook, located approximately 5 km southeast of the southern end of the PDE and Henley Brook, located approximately 11 km east of the southern end of the PDE (GoWA, 2026). These water courses will not be impacted by the construction or operation of the Proposal.

Wetlands

No internationally recognised (Ramsar) wetlands intersect the PDE. The closest Ramsar wetland is Ellen Brook (Draft Proposed Ramsar Addition) located approximately 15 km to the east of the PDE and Forrestdale and Thomsons Lakes located approximately 38 km to the south (GoWA, 2026).

There are no wetlands listed on the Directory of Important Wetlands in Australia intersected by the PDE. The closest is Joondalup Lake which is located approximately 1 km to the north west of the southern end of the PDE (GoWA, 2026).

A review of the Geomorphic Wetlands of the Swan Coastal Plain (DBCA-019) dataset published by the DBCA identified four Geomorphic Wetlands within the PDE (Figure 5). These comprise all three categories of Geomorphic Wetlands and are discussed further in Section 0.

1.3.6 Conservation areas

Bush Forever Sites

The *State Planning Policy 2.8 – Bushland Policy for the Perth Metropolitan Region* (SPP 2.8), prepared under the *Planning and Development Act 2005*, outlines the protection and management objectives for regionally significant bushland identified for protection as Bush Forever (WAPC, 2010). Section 5.1.1 (ii) of SPP2.8 identifies a requirement to ensure that all reasonable steps have been taken to avoid, minimise or offset any likely adverse impacts on regionally significant bushland consistent with the requirements of this policy.

The PDE intersects three Bush Forever Sites (GoWA, 2026) – Site No.193, 326 and 463 (Figure 6).

SPP2.8 aims to protect at least 10% of the original extent of the vegetation complexes protected within Bush Forever Sites, within the Perth Metropolitan (Perth Metro) Region. The extent of vegetation complexes described and mapped by Heddle *et al*. (1980) and updated by Webb *et al*. (2016) are based on major geomorphic units on the Swan Coastal Plain (SCP). This mapping indicates that five vegetation complexes are present within the Bush Forever Sites that intersect the PDE.

Table 4 lists the vegetation complexes present within the PDE within Bush Forever Sites and the proportion of the complex remaining within the Perth Metro Region (GoWA, 2025), noting none are below the 10% threshold.

Table 4 Pre-European extent and extent remaining of Vegetation Complexes within the PDE (GoWA, 2025)

Vegetation Complex	Scale	Pre-European Extent (ha)	Extent remaining (ha)	Extent remaining (%)	Extent remaining in DBCA reserves (%)	Extent within the PDE (ha)
Bassendean Complex-Central and South	**IBRA Bioregion:** SCP	87,476.26	20,819.97	23.80	7.53	1.06
	LGA: City of Wanneroo	925.08	190.41	20.58	37.01	
	IBRA Bioregion: SCP	79,057.35	56,470.36	71.43	39.86	2.87

Vegetation Complex	Scale	Pre-European Extent (ha)	Extent remaining (ha)	Extent remaining (%)	Extent remaining in DBCA reserves (%)	Extent within the PDE (ha)
Bassendean Complex-North	**LGA:** City of Wanneroo	8,723.14	4,502.67	51.62	66.56	
Bassendean Complex-North Transition	**IBRA Bioregion:** SCP	20,856.54	18,407.85	88.26	53.80	0.70
	LGA: City of Wanneroo	2,486.15	1,631.71	65.63	92.51	
Karrakatta Complex-Central and South	**IBRA Bioregion:** SCP	53,081.02	11,945.48	22.50	9.00	0.01
	LGA: City of Wanneroo	10,539.12	1,254.76	11.91	26.47	
Pinjar Complex	**IBRA Bioregion:** SCP	4,892.64	1,408.93	28.80	4.94	0.01
	LGA: City of Wanneroo	4,892.64	1,408.93	28.80	17.17	

Legislated Lands and Waters

The PDE intersects 38.37 ha of the Class A State Forest (F 65) Gnangara-Moore River State Forest which is vested with the Conservation Commission of WA and managed by DBCA (GoWA, 2026) (Figure 6), as summarised in Section **Error! Reference source not found.**. Impacts to DBCA managed reserves will be addressed via a Development Application and assessment of applications for a Disturbance Approval System (DAS) permit.

Environmentally Sensitive Areas

The PDE intersects five Environmentally Sensitive Areas (ESAs), as defined under the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 which are associated with Bush Forever Sites and Geomorphic Wetlands (GoWA, 2026), as summarised in Section 3 and Section 6, respectively.

Ecological linkages

Ecological linkages are functional linkages between natural areas which are important to promote pollination of flora species and facilitate the movement of fauna species through the landscape, adapting to changes to the environment such as fire, seasonal and climatic changes. Ecological linkages within the City of Wanneroo generally run from north to south and east to west, linking contiguous corridors and “stepping stones” of native vegetation from the coastline to areas of State Forest and National Park inland (City of Wanneroo, 2018).

1.3.7 Heritage

Aboriginal cultural heritage

The Proposal is within Noongar Country of the Whadjuk people of the South West Native Title Settlement, represented by Whadjuk Traditional Owner representatives, the Whadjuk Aboriginal Corporation (WAC) and the South West Aboriginal Land and Sea Council (SWALSC). The Proposal is located within the Whadjuk People Indigenous Land Use Agreement (ILUA) (WI2017/015), which forms part of the broader South West Native Title Settlement (WC1998/058).

Spatial analysis was undertaken to identify recorded Aboriginal heritage sites within the PDE. Spatial analysis used the Aboriginal Cultural Heritage - Register (DPLH-099), Aboriginal Cultural Heritage - Lodged (DPLH-100) and Aboriginal Cultural Heritage – Historic (DPLH-098) datasets (GoWA, 2026), results are displayed in Table 5.

No Aboriginal Heritage Places were identified within the PDE. Fourteen sites are located within 1 km of the PDE, seven are Registered, three are Lodged and four are Historic. The nearest of these sites is Place ID 3772 (Gnangara Lake), approximately 25 m east of the PDE. Gnangara Lake has ethnographic value as it is important in the Creation/Dreaming Narrative, as a historical and hunting place (Figure 26).

There are an additional 27 Aboriginal Heritage Places within 5 km of the PDE. Of these sites, 12 are Registered, nine are Lodged and six are Historic sites (Table 5).

Table 5 Aboriginal cultural heritage database search results

Registered Places		Lodged Places		Historic Places	
Name	**Number**	**Name**	**Number**	**Name**	**Number**
1 km buffer					
Gnangara Lake	3772	Marrynginup	22160	Little Badgerup Swamp	3163
Gnangara Lake SW	3319	Snake Swamp 2	22350	Gnangara Road Isolated Find	22013
Gnangara Lake SW 1	682	Gnangara Site 3 (GN#3)	16801	Gnangara Site 2 (GN#2)	16800
Gnangara Aboriginal Cemetery	1017	-	-	Wanneroo Shire	3226
Significant tree – Nyoongah Community	17593	-	-	-	-
Gnangara Site 6 (GN#6)	16804	-	-	-	-
Lake Joondalup	3740				
5 km buffer					
Gnangara Lake SE	3169	Gnangara Marked Tree 1	22407	Lake Adams	3396
Honey Possum site	3503	Gnangara Marked Tree 2	22408	Gnangara Site 5 (GN#5)	16802
Lake Marginiup	3741	Gnangara Marked Tree 3	22409	Wanneroo Primary School Scarred Tree #1	20054

Registered Places		Lodged Places		Historic Places	
Wanneroo Scarred tree	3657	Gnangara Marked Tree 4	22410	Wanneroo Primary School Scarred Tree #2	20055
Bonorin Hill	3533	Gnangara Marked Tree 5	22411	Shaw Road Wanneroo	16058
Edgewater burial Site	17590	Gnangara Site 4 (GN#4)	16803	Payne Road	3514
Joondalup Drive Trees	3505	Lake Mariginiup Scarred Tree	28616	-	-
Lake Joondalup South West	3640	Lake Neerabup	3693	-	-
Bennett Brook	3692	Beenyup Marked Tree BeA1	-	-	-
Lake Goollelal	3739	-	-	-	-
Landsdale	4044	-	-	-	-
Gnangara Scarred Tree	3371	-	-	-	-

On 5 June 2025, Western Power issued an activity notice to the South West Aboriginal Land and Sea Council (SWALSC) pertaining to a new double circuit 132 kV transmission line between Neerabup Terminal and Wangara Substation. SWALSC assessed the proposed activity to require surveying, as such a heritage survey was undertaken in consultation with Whadjuk Aboriginal Consultants nominated by Whadjuk Aboriginal Corporation and led by Aboriginal Land Services (ALS). The heritage survey was undertaken over three days from 9 to 11 December 2025 by seven Whadjuk Aboriginal Consultants, three ALS heritage consultants and two Western Power representatives. The heritage survey report produced by ALS for the Proposal has yet to be finalised and requires review and authorisation from Whadjuk Aboriginal Corporation.

Since completion of the Aboriginal Heritage survey, the PDE has been amended and now includes areas that are outside of the area surveyed by the Whadjuk Aboriginal Corporation and ALS. Western Power will be issuing a second Activity Notice to Whadjuk Aboriginal Corporation in mid-May 2026 detailing the changes to the PDE and requesting guidance as to whether a supplementary survey is required to address the currently unsurveyed areas within the PDE.

Proposal impacts to Aboriginal Heritage are discussed further in Section 7.

Historic heritage

There are no World Heritage Properties or National Heritage Places within the PDE or a 10 km buffer (DCCEEW, 2025b). A search of the WA Heritage State Register identified six State Registered Heritage Places within 5 km of the PDE (DPLH, 2025b), of which the closest Place is Cockman House (Place Number 2675) located approximately 100 m west of the PDE, adjacent to Ocean Reef Road.

The Local Heritage Survey (formerly Municipal Inventory) is a list of places identified that, in the opinion of the LGA, are or may become of historical heritage significance. One listed in the City of Wanneroo Local Heritage Survey intersects the PDE:

- Place Number 14289: Old Block Road, Mangano Place, Wanneroo.

2. Stakeholder engagement

A dedicated team within Western Power leads stakeholder engagement for the project, guided by a Stakeholder and Community Engagement Plan which outlines the approach to engaging and informing impacted landowners, stakeholders, and communities.

Early engagement has focused on briefing impacted private landowners, City of Wanneroo, DPLH and DBCA, state government landholders and the Whadjuk Aboriginal Corporation. Table 6 provides the stakeholder engagement schedule related to the Proposal.

Engagement is ongoing and will continue throughout the environmental assessment process to address potential concerns. This includes engagement with decision making authorities, other relevant government authorities, the local community, and environmental non-government organisations. All engagement to date is captured in the Stakeholder Engagement Register in Table 7.

Table 6 Stakeholder Engagement schedule for the Proposal

Stakeholder	Main interest	Task	Frequency
State Government of WA - Minister for Energy and Decarbonisation; Manufacturing; Skills and TAFE; Pilbara	Alignment with Net Zero 2030 target	Regular briefings	Ongoing
Environmental Protection Authority (EPA)	Significance of impacts of a Proposal to EPA Environmental Factors	Engage as part of the s38 referral process for a significant proposal under the EP Act.	Ongoing during pre-referral and referral stages
Department of Climate Change, Energy, the Environment and Water	Impacts from the implementation of an Action to Matters of National Environmental Significance	Engage as part of the referral of an Action under the EPBC Act.	Ongoing during pre-referral and referral stages
Dept. of Water and Environmental Regulation (DWER)	Impacts from the clearing of native vegetation.	Engage as part of the application for a Native Vegetation Clearing Permit under Part V of the EP Act	Ongoing during the application and assessment stage.
Department of Biodiversity, Conservation and Attractions (DBCA)	State listed environmental matters	Engage for advice and guidance on management of impacts to threatened and priority flora and fauna and offset opportunities.	Ongoing
Urban Bushland Council	Preserving the conservation of urban bushland and its biodiversity around/along the proposed alignment.	Engage and address any concerns raised by the council.	As required
Western Australian Planning Commission (WAPC)	Access to WAPC Freehold land parcels	Notice of Entry issued for WAPC Lands intersecting proposed alignment. Reference back to DPLH strategy and infrastructure representatives.	As required

Stakeholder	Main interest	Task	Frequency
Dept. of Planning, Lands and Heritage (DPLH)	State planning and approvals	Engagement on 132 kV north south line through East Wanneroo District Structure Plan (EWDSP) area commenced in 2013, communicated to the City of Wanneroo in 2014, outlined in the Sub-Regional Frameworks in 2018 and EWDSP servicing report 2019 (accompanying the endorsed EWDSP in 2021). Discussions in August 2023 regarding the East Wanneroo District Structure Plan and alignment options Follow-up discussions in March 2025, pre-lodgement submission in August 2025, with response confirming submission upon confirmation of alignment. Ongoing and regular DPLH engagement.	Fortnightly/as required
Main Roads Western Australia (MRWA)	Sharing of future Control of Access corridor for infrastructure purposes.	Consultative alignment planning with most recent discussions related to MRWA with co-sharing of the Ocean Reef Road corridor for infrastructure purposes. WP designers continue to work with MRWA to minimise potential impacts to potential future road widenings.	As required
Local Member for Landsdale and Wanneroo	Impacts on residents are appropriately managed.	Regular project updates provided to local member via the Minister's Office. Information for resident enquiries are provided when required.	As required
Local landholders /neighbours	Visual and social impact of new infrastructure.	Letters, fact sheets and information provided to keep landowners informed. Phone calls to all identified landowners to provide project overview and impacts. Site meetings with all landowners who requested.	As required
Whadjuk Aboriginal Corporation	Protection of heritage matters, environmental management and protection of other Native Title interests	Consult for the purposes of issuing activity notices and organising Aboriginal Heritage Surveys. Ongoing updates throughout project.	As required.
City of Wanneroo	Impacts on the City's land holdings, residents and general community and offsets	Project briefings with the City and ongoing engagement noting the City's preference for undergrounding or relocation outside of the East Wanneroo District Structure Plan area. Discussion around use of City of Wanneroo land holdings for restoration offsets.	As required
East Wanneroo Districts Residents Association	Impacts on residents/properties, black cockatoos and EMFs	Association only established in late 2025. Offers made to brief the association on the project and address any community concerns raised through the association.	As required
Urban Bushland Council	Preserving the conservation of urban bushland and its biodiversity around/along the proposed alignment.	Engage and address any concerns raised by the council.	As required

Stakeholder	Main interest	Task	Frequency
Conservation Council Western Australia	Protecting threatened species and bushlands along and around the proposed alignment	Engage and address any concerns raised by the council.	As required
Birdlife Western Australia	Dedicated to protecting Western Australia's birds around the proposed alignment.	Engage and address any concerns raised.	As required
Wildflower Society of Western Australia	Protecting the unique native plants of Western Australia around the proposed alignment.	Engage and address any concerns raised by the Society.	As required

Table 7 Stakeholder Engagement Register

Stakeholder	Date of Engagement	Content of Discussion	Outcomes
Government agencies			
Department of Water and Environmental Regulation (Green Energy Branch)	21 February 2025	Pre-referral meeting	Nil.
	20 April 2026	Pre-referral meeting	Feedback provided has been incorporated into the prepared referral documentation.
Department of Climate Change, Energy, the Environment and Water (DCCEEW)	24 February 2025	Pre-referral meeting	Nil.
	29 April 2026	Pre-referral meeting	Feedback provided has been incorporated into the prepared referral documentation.
State Government of WA - Minister for Energy and Decarbonisation; Manufacturing; Skills and TAFE; Pilbara	Ongoing	As owner of Western Power, the Minister and the Minister's Office is kept abreast of all Clean Energy Link – North activities.	Western Power ensures the Minister and the Minister's Office has visibility of Clean Energy Link – North activities, including emerging issues and opportunities.
Department of Biodiversity Conservation and Attractions	10 February 2026 – ongoing	Potential impacts of proposal to Conservation Category Wetlands and request for guidance from DBCA on significance of impacts and offset/rehabilitation opportunities.	DBCA suggested that potential offsets for the Proposal be discussed in an upcoming meeting between Western Power and DBCA. Communications have been ongoing with DBCA regarding suitable properties that Western Power can consider for the purposes of offsets.
	26 March 2026	Discuss the proposed location of poles along Mulga Road and any considerations required for the upcoming DAS Permit application.	DBCA raised no objection to poles being located within Mulga Road. Requested consideration of gates being installed to prevent future access. No comments provided regarding the DAS Permit application. DBCA noted that if Western Power was removing pines within State Forest, DBCA may have capacity to complete this work on Western Power's behalf. Requested to be engaged regarding the salvaging of any large pines removed.

Stakeholder	Date of Engagement	Content of Discussion	Outcomes
City of Wanneroo	2023 - ongoing Western Power has had several discussions with the City elected officials, executive team and officers, including a meeting between the City and Minister's Office, regarding this alignment.	Initial engagement commenced in 2023 to discuss line route options. The City raised concerns about the proposed alignment impacting future town centre for East Wanneroo District Structure Plan.	Western Power moved the alignment further east to Sydney Road from Badgerup Road which would impact the future town centre.
		2025 - Ongoing discussions topics have consisted of: • City tabled their preference for the alignment to be moved further east to avoid the future East Wanneroo town centre, with the preference being the proposed Whiteman-Yanchep Highway corridor. • City queried why the route couldn't be undergrounded. • City queried if Western Power had engaged with the East Wanneroo Districts Residents Association. • City formally objected to the line route via a letter to Western Power's CEO and the Minister for Energy and Decarbonisation; Manufacturing; Skills and TAFE; Pilbara.	Since recommencing engagement with the City in 2025, regular phone calls, emails and three meetings occurred between City officials and Western Power from mid-2025 to discuss the project. Western Power responded to the City's queries with the following material: • Map of the projects (Wangara Substation to Neerabup Terminal, Padbury Substation to Wangara Substation and Northern Terminal to Neerabup Terminal) and where they each intersect with the City of Wanneroo boundary. • List of engagement activities and landowner map for each project. • Letters sent to landowners and project collateral. • Responses to specific queries: • A Planning Control Area (PCA 173) was established over the Whiteman-Yanchep highway corridor by the Western Australian Planning Commission in 2023 to safeguard land for this future road corridor. • Confirmation the alignment had shifted further east based off the City's feedback and after further review and feedback from stakeholders and landowners, the alignment was refined, with the majority now being contained to the road reserve or Crown land with limited impact to private properties, other than those requiring safe clearance zones. • Acknowledged Western Power was seeking a meeting with the East Wanneroo Districts Residents Association.

Stakeholder	Date of Engagement	Content of Discussion	Outcomes
	17 December 2025	As per line item above.	The second meeting in December was with the City's CEO and Mayor, Western Power's Executive and Head of Function, and Powering WA, to address concerns around the alignment and the reasons it could not follow the future Whiteman–Yanchep Highway or be placed underground. WP advised the following: • Our priorities are to minimise broader community impacts, balancing environmental impacts, while delivering essential energy infrastructure. • Majority of alignment is being contained to the road reserve or Crown land with limited impact to private properties, other than those requiring safe clearance zones. • A Planning Control Area (PCA 173) was established over the Whiteman-Yanchep highway corridor by the Western Australian Planning Commission in 2023 to safeguard land for this future road corridor. • Undergrounding is cost prohibitive and would cause a significant social impact due to required construction methodology.
	2 February 2026	As per line item above.	The third meeting was held in early February between, the City, Western Power and the Minister, reconfirming that Clean Energy Link – North is a vital expansion of Western Australia's main power grid that will feed more renewable energy to households and businesses between Perth and the Mid West region. That this connection is a key element of the CEL-N upgrade that will enable Government to unlock greater capacity to add more renewable energy to the South West Interconnected System. The matters with the City are now considered closed and Western Power will work with the City to setup meetings to ensure information is shared at all levels within the City associated with the Clean Energy Link – North Program.
	30 March 2026 - current	NBT-WGA alignment queries regarding development application timing, engineering/technical aspects, offsets and engagement with EWDRA.	Western Power shared an update on requested items and advised that Western Power had reached out to the City for offset opportunities but advised by the City's environmental team there were no opportunities within City managed land currently available. Western Power has committed to keeping the City across the project as part of the City's and Western Power's regular strategic planning meetings.

Stakeholder	Date of Engagement	Content of Discussion	Outcomes
	21 April 2026	Meeting to facilitate the Principal Contractor to talk to City of Wanneroo representatives through the design model and take questions in respect to the Proposal.	Ongoing discussions with action to book a second meeting to review the design of the Proposal with the Principal Contractor and Western Power.
Main Roads Western Australia (MRWA)	November 2025	MRWA engaged to discuss alignment along Ocean Reef Road. Ocean Reef Road had only recently been transferred to MRWA care and control. Western Power outlined three options for the Proposal alignment along Ocean Reef Road, including north side, central/verge median and south side – with the south side being the preference.	MRWA raised concerns with all options, but preferred the south side alignment option and outside of road reserve where possible.
	December 2025	Meeting held to discuss CEL North and MRWA intersects, including Ocean Reef Road.	MRWA reiterated limitations and parameters along Ocean Reef Road for Western Power's consideration.
	March 2026	Western Power provided the PDE to MRWA, noting the change in design to the southern side of Ocean Reef Road to mitigate environmental impacts and infrastructure on north side of Ocean Reef Road.	MRWA responded requesting further detailed design, including how Western Power has addressed MRWA comments and parameters, consistent with advice in late 2025.

Stakeholder	Date of Engagement	Content of Discussion	Outcomes
Dept. of Planning, Lands and Heritage (DPLH)	21 July 2023 - Current	Project updates and discussions around • East Wanneroo District Structure Plan (EWDSP) and the proposed powerline alignment. • Access to Sydney Road and coordinating the proposed power line and proposed road development for the EWDSP. • Coordinating Community engagement between the DPLH & WP for the respective projects. • Updates to the Metropolitan Redevelopment Scheme (MRS) and relevance to the project. • Discussions on the required Development Application (DA) for the project. • Responding to the DA application and requests for feedback.	Ongoing discussions leading up to the development application lodgement in August 2026.
Western Australian Planning Commission (WAPC)	14 August 2025 - Current	Project updates and request for line route placement and access to WAPC owned property.	Nil.

Stakeholder	Date of Engagement	Content of Discussion	Outcomes
Water Corporation	08 April 2026	Meeting was held to facilitate the coordination between the Principal Contractor, Western Power and Water Corporation regarding pole locations, construction methodology, vibration management and access arrangements within sensitive Water Corporation infrastructure corridors. Key focus areas were: • Peak Particle Velocity control • Voltage mitigation • Construction access • Confirmation of design refinements required for DA and APRA approvals	Actions noted and present to Water Corporation and the Principal Contractor. Waiting on information required to progress the DA.
Local Member for Landsdale	Ongoing through the Minister's Office	Project updates via the Minister's Office. Local member has raised concerns raised by the local community, including route alignment, undergrounding and EMFs.	Information is regularly shared on project progression and impacts. In response to community concerns raised, Western Power has provided the following information: • Request to move the alignment further east: A Planning Control Area (PCA 173) was established over the Whiteman-Yanchep highway corridor by the Western Australian Planning Commission in 2023 to safeguard land for this future road corridor. Majority of alignment is being contained to the road reserve or Crown land with limited impact to private properties, other than those requiring safe clearance zones. • Underground: The is cost prohibitive and would cause a significant social impact due to required construction methodology. • EMF: Western Power has commissioned an EMF study which did not identify any impacts. • Information regarding a landowner's concern regarding the alignment near their proposed subdivision/development

Stakeholder	Date of Engagement	Content of Discussion	Outcomes
Local Member for Wanneroo	Ongoing through the Minister's Office	Project updates via the Minister's Office. Briefing note responding to a request for information regarding Western Power's engagement with EWDRA	Information is regularly shared on project progression and impacts. Briefing note sent with an update on Western Power's engagement with the association.
Traditional Owners			
Whadjuk Aboriginal Corporation	5 June 2025	Western Power issued an activity notice to the South West Aboriginal Land and Sea Council (SWALSC) pertaining to a new double circuit 132 kV transmission line between Neerabup Terminal and Wangara Substation.	SWALSC assessed the proposed activity to require surveying, as such a heritage survey was undertaken in consultation with Whadjuk Aboriginal Consultants nominated by Whadjuk Aboriginal Corporation and led by Aboriginal Land Services (ALS).
	9-11 December 2025	An Aboriginal Heritage survey was undertaken over three days from 9 to 11 December 2025 by seven Whadjuk Aboriginal Consultants, three ALS heritage consultants and two Western Power representatives	As a result of the survey, no known or previously unreported cultural heritage places or isolated artefacts were identified within the activity area. In preliminary findings, ALS deemed that no aspects of the proposed activity, as outlined in the activity notice, are likely to breach the Aboriginal Heritage Act 1972 (WA), subject to several recommendations developed by the Whadjuk Aboriginal Consultants on survey. The heritage report is still under final review with Whadjuk Aboriginal Corporation.
Community Groups			
East Wanneroo Districts Residents Association (EWDRA)	24 November 2025	EWDRA sent an objection to the line route and offered Western Power to attend community meeting.	Western Power has spoken to key delegates and offered to meet with the board on a number of occasions. The offer remains open. Western Power is aware there has since been a change in the board chair and intend to reoffer a meeting with the board.

Stakeholder	Date of Engagement	Content of Discussion	Outcomes
	10 March 26 - current	Meeting between Western Power and new EWDRA Board. The EWDRA Board provided in advance a detailed letter that raised concerns about EMF, health, property devaluation, environmental impacts, and lack of engagement. Western Power prepared a presentation that aimed to address these concerns, including engagement approach, safety, regulatory, environmental, and planning considerations that informed the route selection.	Meeting was held and a list of actions were developed addressing the Board's queries from the meeting and detailed letter around engagement, safety assessments, property and environmental impacts. Western Power aims to have all actions closed out by late May. Western Power continues to engage with the EWDRA Board to keep them abreast of the project. Note: EWDRA Board also met with the Minister's Office on Tuesday 17 March to raise their concerns.
Urban Bushland Council	1 May 2026	Update on projects across Clean Energy Link program impacting Bush Forever and Western Power's mitigation strategies, including offsets.	The primary concerns raised by the Council were: • Transparency and access to environmental survey information and how/when it becomes public through the approvals process • Confidence that route selection and options assessment adequately apply triple-bottom-line considerations (including publication of summaries) • Avoidance of unnecessary clearing and cumulative impacts on Bush Forever and other significant environmental values; and • Assurance that design and construction will continue to prioritise avoidance and minimisation, rehabilitation and vegetation management, and appropriate use of existing corridors while managing safety and future planning constraints
Conservation Council WA	28 April 2026	Overview of projects within the Clean Energy Link program, key environmental impacts and avoidance and mitigation strategies.	The Conservation Council of WA reiterated support for renewable energy but emphasised the need for careful siting and approvals, strong avoidance of environmental impacts – particularly cumulative impacts on Black Cockatoo habitat – and close scrutiny of how social and environmental risks are managed across CEL North metropolitan area packages.
Public			

Stakeholder	Date of Engagement	Content of Discussion	Outcomes
Local landholders / neighbours	July 2025 - current	Community consultation commenced in July 2025 and involved telephone calls, emails, and letters to impacted landowners. One to one meetings were offered and undertaken upon request. The following key landowner concerns were identified: • Visual amenity and electromagnetic field (EMF) concerns related to 132kV transmission lines. • Preference for alignment relocation east through Gnangara pine forest or undergrounding along proposed alignment. • Pole structures situated on private property under original alignment design. • Suggestion of alternative alignment utilising Turkey Road	• Original alignment was diverted to remove pole structures from being situated at the rear of private property. Structures were contained to road reserve and crown land. • An EMF modelling study was commissioned to ensure EMF levels remain well below public exposure reference levels. EMF report information will be publicly available upon request once published. • Eastern alignment options were considered but not deemed feasible due to environmental clearing, cost, and implications on the Planning Control Area for the future Yanchep-Whiteman Highway. • Undergrounding options were considered but not deemed feasible due to project cost and additional clearing requirements where overhead transmission lines are suitable. • Safe clearance assessments were offered to landowners who requested additional information pertinent to future development on their properties. • Western Power has investigated the suitability of the suggested alternative alignment along Turkey Road (Appendix D.11). It was determined that the alternative alignment would have a greater environmental impact due to the increased clearing requirement of pines, key foraging habitat for Carnaby's Cockatoo.
Austwide Mining Tenement	21 April 2026	Austwide requested a deviation of the alignment to mitigate encroachment into a portion of the pending mining lease M70/1306	• Response was provided from Western Power outlining that it is no feasible due to community and environmental constraints.

3. Identification of key environmental factors

Environmental factors are parts of the environment that may be impacted by the implementation of a proposal. The EPA has fourteen environmental factors organised into five themes: Sea, Land, Water, Air and People. The EPA assesses the significance of a proposal's potential impact on each environmental factor and undertakes a holistic assessment of the proposal's acceptability against EP Act principles.

Table 8 presents environmental factors relevant to the Proposal, including the EPA's objective for each factor. Environmental factors are classified as key environmental factors where they may be significantly impacted by the Proposal.

The construction of the proposal is expected to impact Flora and Vegetation, Terrestrial Fauna, Inland Waters and Social Surroundings however it is considered that these impacts can be managed under a combination of existing statutory mechanisms and does not necessitate assessment under Part IV of the EP Act. Appendix B.2 provides a detailed assessment of how other existing regulatory mechanisms can manage the potential impacts of Proposal implementation to the identified key environmental factors. Other environmental factors have been summarised in Appendix C.

Table 8 EPA environmental factors and their relevance to the Proposal

Theme	Factor	Objective	Relevance to Proposal	Key Environmental Factor?	Relevant section in this document
Sea	Benthic Communities and Habitats	To protect benthic communities and habitats so that biological diversity and ecological integrity are maintained.	Not applicable – no marine habitat identified within the PDE.	No	-
	Coastal Processes	To maintain the geophysical processes that shape coastal morphology so that the environmental values of the coast are protected.	Not applicable – no marine habitat identified within the PDE.	No	-
	Marine Environmental Quality	To maintain the quality of water, sediment and biota so that environmental values are protected.	Not applicable – no marine habitat identified within the PDE.	No	-
	Marine Fauna	To protect marine fauna so that biological diversity and ecological integrity are maintained.	Not applicable – no marine or migratory marine habitat identified within the PDE.	No	-

Theme	Factor	Objective	Relevance to Proposal	Key Environmental Factor?	Relevant section in this document
Land	Flora and Vegetation	To protect flora and vegetation so that biological diversity and ecological integrity are maintained.	The Proposal will require the clearing of native vegetation.	**Yes**	Section 4
	Landforms	To maintain the variety and integrity of significant physical landforms so that environmental values are protected.	No significant impact expected.	No	Summarised in **Error! Reference source not found.** - Other environmental factors or matters
	Subterranean Fauna	To protect subterranean fauna so that biological diversity and ecological integrity are maintained.	The Proposal is not expected to result in significant impacts to subterranean fauna.	No	Summarised in **Error! Reference source not found.** - Other environmental factors
	Terrestrial Environmental Quality	To maintain the quality of land and soils so that environmental values are protected.	The Proposal is not expected to result in significant impacts to terrestrial environmental quality.	No	Summarised in **Error! Reference source not found.** - Other environmental factors
	Terrestrial Fauna	To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.	The Proposal will require clearing of terrestrial fauna habitat.	**Yes**	Section 5
Water	Inland Waters	To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.	The Proposal may impact surface water and groundwater within the PDE.	**Yes**	Section 6
Air	Air Quality	To maintain air quality and minimise emissions so that environmental values are protected.	The Proposal is not expected to result in significant impacts to Air quality	No	Summarised in **Error! Reference source not found.** - Other environmental factors
	Greenhouse Gas (GHG) Emissions	To reduce net greenhouse gas emissions in order to	The construction of the Project will result in the generation of greenhouse gases. However, the	No	Summarised in **Error! Reference**

Theme	Factor	Objective	Relevance to Proposal	Key Environmental Factor?	Relevant section in this document
		minimise the risk of environmental harm associated with climate change	Proposal is not likely to have a significant impact on Greenhouse Gas Emissions, noting the EPA will typically consider this factor when a projects emissions exceed 100,000 tonnes of CO_2-e Scope 1 emissions each year. The operation of the transmission line will not generate greenhouse gas emissions and will enable renewable energy projects.		**source not found.** - Other environmental factors
People	Social Surroundings	To protect social surroundings from significant harm.	Wester Power has issued an Activity Notice to the South West Aboriginal Land Sea Council (SWALSC) and has undertake Aboriginal heritage surveys. Traditional Owners (TO) will be invited to be present to monitor during construction works. It is considered that that Aboriginal heritage aspects can be addressed under the *Aboriginal Heritage Act 1972*. Consultation has been undertaken with surrounding landowners and local communities. Proposal is not expected to result in significant impacts to noise, dust, or visual amenity. These will be temporary impacts during construction, and the permanent changes to visual amenity of the proposed transmission line is considered to be in keeping with the local area.	**Yes**	Section 7
	Human Health	To protect human health from significant harm.	Proposal is not expected to result in significant impacts to Human health	No	Summarised in **Error! Reference source not found.** - Other environmental factors

4. Flora and Vegetation

4.1 EPA objective

The objective of the factor Flora and Vegetation is *'To protect flora and vegetation so that biological diversity and ecological integrity are maintained.'*

4.2 Relevant policy and guidance

The following policy and guidance documents have been considered throughout this section:

- Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community (DEE, 2016)
- Approved Conservation Advice (incorporating listing advice) for Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain ecological community (DEE, 2019)
- Conservation codes for Western Australia Flora and Fauna (DBCA, 2023a)
- Environmental Factor Guideline: Flora and Vegetation (EPA, 2016a)
- Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016e).
- State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region

4.3 Receiving environment

4.3.1 Surveys and studies

Multiple biological surveys have been completed for the various design iterations and alignments during the planning phase of the Proposal. These surveys have been classified as either primary or secondary surveys:

- Primary surveys being those conducted to the Detailed level, within the appropriate season and in accordance with EPA technical guidance
- Secondary surveys being supplemental, out of season and/or Reconnaissance level surveys that only include portions of the PDE

A summary of these surveys is provided in Table 9 and full survey reports can be found in Appendix D. Figure 8 maps the survey boundaries in relation to the PDE.

The survey that has been used to inform the environmental impact assessment for the Proposal is the 2025 Eco Logical (ELA) biological survey which included a Detailed flora and vegetation survey, basic fauna survey, targeted flora survey and targeted black cockatoo habitat assessment. This survey presents the most recent and comprehensive assessment of the PDE, was completed within the appropriate season, in accordance with EPA Technical guidance and included a review of the previous

reports completed for the Proposal as part of the desktop assessment. Supplementary data from AECOM (2024) has been used where relevant, such as for Threatened and Priority flora records, introduced species records and LOO assessments.

A portion of the PDE associated with the Neerabup Terminal (1.55 ha) was not included within the ELA survey area. The AECOM 2024 (1.5 ha) and AECOM 2023 (0.05 ha) survey data (Table 9) has been used to inform the environmental values for this area. The AECOM 2023 survey data is only considered in the following sections in the context of the 0.05 ha that intersects the PDE as the only overlapping scope of this survey with the Proposal is Neerabup Terminal.

Data from secondary surveys has been included where it adds to the results of the ELA survey. Where data in secondary surveys contradict results of the ELA survey, in the context of significant environmental values such as classification of Threatened Ecological Communities, species identification and Black Cockatoo habitat assessments, the data in the ELA survey has been taken as the more accurate. This is due to secondary surveys being only Reconnaissance level and/or undertaken for the purposes of informing future survey requirements.

There is a 1.47 ha gap within the PDE that has not been surveyed. Data for these areas has been inferred using a combination of the existing data from AECOM (2024) and ELA (2026) and review of aerial imagery. Where vegetation communities and condition have been inferred, this has been highlighted in the relevant sections.

Figure 9 indicates the location of the survey gap areas within the PDE.

Table 9 Flora and Vegetation Surveys completed for the Proposal

Survey	Scope	Total area surveyed	Total area intersecting the PDE
Primary Surveys			
Ecological Assessment of the Wangara to Neerabup 132 kV Transmission Line Project, Eco Logical Australia 2026 (Appendix D.1)	A single season Detailed flora and vegetation survey for the defined linear corridor for the Proposal was undertaken in accordance with the EPA (2016e) *Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment* including: • A desktop assessment of available databases and literature review of previous reports for the Proposal. Data was used to inform the pre-survey likelihood of occurrence assessment for conservation significant flora species and ecological communities. • Field survey in Spring, across five days in November 2025. • Floristic data was collected from 48 quadrats, 21 releves, opportunistic observations and mapping notes • The assessment included statistical analysis to compare quadrat data against the Keighery et al. (2012) SCP dataset to support delineation of plant communities and define the Floristic Community Types (FCTs) present. • Each of the vegetation types were also compared against the key diagnostic criteria for TEC/ PECs likely to occur. • Flora species accumulation curve was undertaken to indicate the adequacy of survey effort • Targeted flora searches were undertaken for conservation significant flora species that were known or likely to occur based on the pre-survey likelihood of occurrence assessment. • Post-survey likelihood of occurrence assessment completed for conservation significant flora species and ecological communities.	273.3 ha	72.73 ha
Clean Energy Link Swan Coastal Plain Flora, Vegetation and Fauna Assessment, AECOM 2024 (Appendix D.2)	A single phase (spring) Detailed Flora and Vegetation Survey for defined linear corridors within the Perth Metropolitan Region on the Swan Coastal Plain (SCP) as part of CEL project: • Five survey sites: Padbury – Wangara, Pinjar Terminal, Neerabup Terminal and East Wanneroo, NT-NOR to HBK 132kV Line and Northern Terminal. • The Neerabup Terminal and East Wanneroo survey area (204.98 ha) includes the PDE for this Proposal.	204.98 ha	43.94 ha (only 1.50 ha of vegetation and fauna habitat mapping used)

Survey	Scope	Total area surveyed	Total area intersecting the PDE
	• A Detailed Flora and Vegetation Survey was undertaken utilising methods outlined in the EPA (2016e) *Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment* including: – A desktop review of available databases and literature review of previous reports for survey area. – Survey across multiple days in October and November in 2023. – Floristic data was collected from 16 quadrats, 21 relevés, multiple observation points and mapping notes. – The assessment included statistical analysis to compare quadrat data against the Keighery et al. (2012) SCP dataset to support delineation of plant communities and define the Floristic Community Types (FCTs) present. – Each of the vegetation types were also compared against the key diagnostic criteria for TEC/ PECs likely to occur. • Targeted searches were undertaken for conservation significant flora species that were known or likely to occur based on desktop assessment.		
NREP 1-NT-NBT 330 kV Line Flora, Vegetation and Fauna Assessment, AECOM 2023 (Appendix D.5)	A single phase (spring) Detailed Flora and Vegetation Survey for the linear corridor of the NT-NBT 330 kV line project. This project has an overlapping area with the Proposal associated with Neerabup Terminal. Survey data from this survey has been used to address a gap area in the ELA (2026) survey of 0.05 ha. The AECOM (2023) survey as conducted in accordance with the EPA (2016e) *Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment* including: • A desktop review of available databases and literature review of previous reports for survey area. • Survey across multiple days in September, October and November in 2022. • Floristic data was collected from 23 quadrats, 12 relevés, multiple observation points and mapping notes. • The assessment included statistical analysis to compare quadrat data against the Keighery et al. (2012) SCP dataset to support delineation of plant communities and define the Floristic Community Types (FCTs) present. • Each of the vegetation types were also compared against the key diagnostic criteria for TEC/ PECs likely to occur.	576 ha	0.05 ha

Survey	Scope	Total area surveyed	Total area intersecting the PDE
	• Targeted searches were undertaken for conservation significant flora species that were known or likely to occur based on desktop assessment.		
Phytophthora Dieback Occurrence Report for the Clean Energy Link Neerabup-Wangara Survey, Glevan Consulting 2025 (Appendix D.6)	A *Phytophthora* Dieback assessment was undertaken in November 2025 to determine the disease status of native vegetation within the survey area. The assessment was undertaken by two Dieback Interpreters and was carried out in accordance with the *Phytophthora* Dieback Interpreter's Manual for lands managed by the DBCA (DPAW, 2015). Two soil and tissue samples were collected over the course of the assessment and analysed in the Vegetation Health Services (DBCA) laboratory using best-practice techniques. The *Phytophthora* Dieback occurrence categories were demarcated in the field and the validity of the hygiene boundaries mapped for this project is twelve months from the completion of the assessment. The Phytophthora Dieback occurrence categories will expire November 2026.	218.78 ha	71.63 ha
Secondary Surveys			
Neerabup Terminal Transmission Corridor Preliminary Flora and Vegetation, Fauna and Black Cockatoo Surveys, SLR 2026 (Appendix D.3)	A single phase (summer) preliminary reconnaissance flora and vegetation survey within areas outside the AECOM 2023 survey area: • These surveys were intended to provide information to assist Western Power in determining areas of environmental importance that may require further detailed survey work in Spring 2025 and expand on previous surveys by AECOM in 2023. • These surveys were not intended to meet the requirements under any guidelines or regulation for biological assessments. • One relevé was established in an area of intact Banksia woodland and mapping notes were used to delineate and describe vegetation communities within the survey area. • Some areas of native vegetation were inaccessible and were mapped using aerial imagery and relevant mapping notes with the understanding that a secondary Spring 2025 survey may be required. • Survey effort comprised four person days in December 2024. • Report was revised in 2026 to align the habitat scoring tool with the AECOM (2024) survey	121.27 ha	24.38 ha

Survey	Scope	Total area surveyed	Total area intersecting the PDE
Joyce Road and Mulga Road, 218 Clean Energy Link North Flora and Vegetation Assessment, PGV 2025 (Appendix D.4)	A single phase (summer) Reconnaissance level Flora and Vegetation assessment was undertaken to address survey gaps within the PDE along Joyce Road and Mulga Road: • Ten relevés were sampled within the survey area, including five located along Joyce Road and five along Mulga Road. • The survey involved determining species presence and mapping vegetation types and condition. • Survey effort comprised approximately 7 hours by one botanist in December 2025.	6.46 ha	1.94 ha

Adequacy of Surveys

The primary surveys were undertaken in accordance with EPA (2016e) *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* for the Flora and Vegetation surveys, including appropriate survey timings and by suitably qualified consultants.

Both primary surveys noted 'access problems' as a potential limitation, as small sections of the surveyed areas for both the AECOM (2024) and ELA (2026) surveys were inaccessible due to these areas overlapping with private property boundaries. However, this was not considered a significant limitation as the Proposal construction works have prioritised the avoidance of private property, with any works that are to occur on private property limited to the distribution enabling works and customer reconnections.

Secondary surveys were limited due to access restrictions, seasonal timing and survey effort. For this reason, these surveys have been used as supplementary information for the Proposal only.

The *Phytophthora* Dieback Occurrence Survey (Glevan Consulting, 2026) was carried out in accordance with the *Phytophthora* Dieback Interpreter's Manual for lands managed by the DBCA (DPAW, 2015).

The flora and vegetation surveys provide suitable information for the basis of the environmental impact assessment for Flora and Vegetation for the Proposal.

4.3.2 Vegetation communities

A total of twelve native vegetation communities and six non-native vegetation communities, totalling 183 ha, were delineated and mapped by ELA (2026) within the survey area.

Of the twelve native vegetation communities, eight represent remnant Banksia and Melaleuca woodlands, covering a total of 41.8 ha of the survey area. Four were comprised of native regrowth amongst ex-pine plantations (distinguished by the prefix 'EPP') accounting for 78.69 ha of the survey area.

The six non-native vegetation communities recorded covered 62.82 ha of the survey area and were comprised of pine plantations, managed gardens, rehabilitation and planted natives.

The remaining 89.9 ha of the survey area was mapped as cleared.

Only 10 of the 12 native vegetation communities occur within the PDE, comprising 14.18 ha. All six non-native vegetation communities were mapped within the PDE accounting for a total area of 18.77 ha. A total of 39.75 ha was mapped as cleared within the PDE by ELA (2026).

Full details of the vegetation communities mapped by ELA (2026) and their extents within the survey area and PDE are provided in Table 10. Where vegetation communities have been inferred for the survey gap areas, the inferred area is presented in in brackets following the area value of the surveyed extent of vegetation community type.

The 1.55 ha portion of the PDE associated with Neerabup Terminal that was not included within the ELA (2026) survey area is covered by the AECOM (2024) and AECOM (2023) survey areas. All 1.55 ha were mapped as Pine Plantation by AECOM (2023 and 2024). Details are also included in Table 10.

For the unsurveyed gap areas within the PDE, 0.29 ha was inferred as native vegetation and 0.74 ha as non-native vegetation. A total of 0.43 ha was inferred as Cleared.

The consolidated data gives a breakdown of the PDE as follows:

- 16.02 ha of native vegetation
- 19.51 ha of non-native vegetation
- 40.18 ha of cleared areas

Figure 10 displays the vegetation communities mapped by AECOM (2023 and 2024) and ELA (2026) for the PDE, as well as those inferred for the survey gap areas.

Table 10 Vegetation communities mapped within the Survey Area and PDE (ELA, 2026)

Representative Photograph	Code	Vegetation community and vegetation type description	Extent within the Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
Native					
	BaBmBi	**Description:** *Banksia attenuata, Banksia menziesii, Banksia ilicifolia* low open woodland over *Xanthorrhoea preissi* tall sparse shrubland and *Eremaea asterocarpa, Melaleuca seriata* mid sparse shrubland over *Dasypogon bromeliifolius, Patersonia occidentalis, Alexgeorgea nitens* low open forbland. **Associated species:** *Acacia pulchella, *Avena barbata, Bossiaea eriocarpa, *Briza maxima, Chaetospora curvifolia, *Ehrharta calycina, *Gladiolus caryophyllaceus, Gompholobium tomentosum, Hemiandra pungens, Hypocalymma robustum, Hypolaena exsulca, Jacksonia furcellata, Macrozamia fraseri, Nuytsia floribunda, Petrophile linearis, Styphelia propinqua, *Ursinia anthemoides.*	1.4	0.04	0.05
	MpAgLs	**Description:** *Melaleuca preissiana*, *Agonis flexuosa* low open forest over *Jacksonia furcellata*, **Acacia iteaphylla*, *Spyridium globulosum* tall sparse shrubland over *Leptocarpus scariosus* low sedgeland and *Tricoryne elatior*, *Dianella revoluta* low sparse forbland. **Associated species:** **Acacia longifolia*, **Allocasuarina verticillata*, **Asparagus asparagoides*, *Astartea scoparia*, *Daucus glochidiatus*, **Eucalyptus camaldulensis*, **Gladiolus caryophyllaceus*, *Gompholobium tomentosum*, *Hovea trisperma*, *Jacksonia sternbergiana*, *Microlaena stipoides*, *Microtis media*, **Sonchus oleraceus*, *Thysanotus manglesianus*, *Trachymene pilosa*, **Urospermum picroides*.	1.4	0.00	0.00

Representative Photograph	Code	Vegetation community and vegetation type description	Extent within the Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
	MpAsHa	**Description:** *Melaleuca preissiana* low open woodland over *Astartea scoparia*, *Hypocalymma angustifolium*, **Acacia longifolia* tall shrubland over *Dampiera linearis* low sparse shrubland and *Patersonia occidentalis*, *Dianella revoluta* low sparse forbland. **Associated species:** **Briza maxima*, *Cassytha flava*, **Ehrharta calycina*, **Ehrharta longiflora*, **Gladiolus caryophyllaceus*, **Hypochaeris glabra*, *Hypolaena exsulca*, *Leptocarpus scariosus*, **Sonchus oleraceus*, *Trachymene pilosa*, **Urospermum picroides*, **Ursinia anthemoides*.	1.3	0.00	0.00
	XpAcMf	**Description:** *Xanthorrhoea preissii*, *Adenanthos cygnorum*, *Macrozamia fraseri* mid open shrubland over **Ehrharta calycina* low sparse grassland and *Corynotheca micrantha*, *Alexgeorgea nitens* low sparse forbland. **Associated species:** **Avena barbata*, **Briza maxima*, **Carpobrotus edulis*, *Cartonema philydroides*, *Dasypogon bromeliifolius*, **Gladiolus caryophyllaceus*, *Haemodorum spicatum*, *Hardenbergia comptoniana*, *Lechenaultia biloba*, **Pentameris airoides*, **Petrorhagia dubia*, *Podotheca gnaphalioides*, **Sonchus oleraceus*, **Ursinia anthemoides*, **Urospermum picroides*.	0.9	0.26	0.34

Representative Photograph	Code	Vegetation community and vegetation type description	Extent within the Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
	CcBaBi	**Description:** *Corymbia calophylla* mid open woodland and *Banksia attenuata*, *Banksia ilicifolia* low woodland over *Xanthorrhoea preissii* tall sparse shrubland and *Calytrix fraseri*, *Acacia pulchella* mid sparse shrubland over *Phlebocarya ciliata*, *Dasypogon bromeliifolius*, *Opercularia vaginata* low sparse forbland. **Associated species:** **Briza maxima*, *Calytrix fraseri*, **Ehrharta calycina*, *Dianella revoluta*, **Freesia leichtlinii*, **Gladiolus caryophyllaceus*, *Gompholobium tomentosum*, *Jacksonia sternbergiana*, *Leptocarpus scariosus*, *Lomandra caespitosa*, *Patersonia occidentalis*, **Pelargonium capitatum*.	0.8	0.13	0.17
	EmBaBm	**Description:** *Eucalyptus marginata* mid open woodland and *Banksia attenuata*, *Banksia menziesii* low open woodland over *Xanthorrhoea preissii* tall sparse shrubland and *Daviesia divaricata*, *Hypocalymma robustum* mid open shrubland over *Hibbertia hypericoides* low open shrubland, *Mesomelaena pseudostygia* low sparse sedgeland and *Corynotheca micrantha* low sparse forbland. **Associated species:** *Adenanthos cygnorum*, *Alexgeorgea nitens*, *Amphipogon turbinatus*, *Bossiaea eriocarpa*, *Calectasia narragara*, *Calytrix flavescens*, *Conospermum stoechadis*, *Conostylis aculeata*, *Desmocladus flexuosus*, *Eremaea pauciflora*, *Gompholobium tomentosum*, *Jacksonia floribunda*, *Lyginia imberbis*, *Patersonia occidentalis*, *Petrophile linearis*, *Scaevola repens*.	24.9	0.52	0.69

Representative Photograph	Code	Vegetation community and vegetation type description	Extent within the Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
	MpNfAc	**Description:** *Melaleuca preissiana*, *Nuytsia floribunda* low open woodland over *Adenanthos cygnorum*, *Kunzea glabrescens* tall sparse shrubland and *Regelia ciliata* mid sparse shrubland over *Hibbertia subvaginata* low sparse shrubland and *Dasypogon bromeliifolius*, *Lomandra caespitosa* low sparse forbland. **Associated species:** *Acacia pulchella*, *Burchardia congesta*, **Ehrharta calycina*, *Euchilopsis linearis*, **Gladiolus caryophyllaceus*, *Gonocarpus pithyoides*, *Hypocalymma angustifolium*, **Hypochaeris glabra*, *Levenhookia stipitata*, *Patersonia occidentalis*, *Siloxerus humifusus*, *Stylidium brunonianum*, *Stylidium repens*, *Styphelia xerophylla*, *Trachymene pilosa*, **Ursinia anthemoides*.	0.9	0.11	0.15
	BsppEtAf	**Description:** *Banksia* spp., *Eucalyptus todtiana*, *Allocasuarina fraseriana*, *Nuytsia floribunda* low open woodland over *Xanthorrhoea preissii* tall sparse shrubland and *Eremaea pauciflora*, *Hypocalymma robustum* mid sparse shrubland over *Hibbertia hypericoides* low open shrubland and *Lyginia imberbis* low open sedgeland and *Alexgeorgea nitens* low open forbland. **Associated species:** *Acacia pulchella*, *Allocasuarina humilis*, *Banksia attenuata*, *Banksia menziesii*, *Beaufortia elegans*, *Bossiaea eriocarpa*, **Briza maxima*, *Calytrix flavescens*, *Daviesia triflora*, *Desmocladus flexuosus*, **Ehrharta calycina*, *Gompholobium tomentosum*, *Haemodorum spicatum*, *Hibbertia subvaginata*, *Jacksonia floribunda*, *Macrozamia fraseri*, *Melaleuca seriata*, *Patersonia occidentalis*, *Petrophile linearis*.	10.2	1.33	1.76

Representative Photograph	Code	Vegetation community and vegetation type description	Extent within the Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
	EPP_ErMpNf	**Description:** Ex Pine Plantation - *Eucalyptus rudis* mid open woodland and *Melaleuca preissiana*, *Nuytsia floribunda* low woodland over *Kunzea glabrescens* tall open shrubland and *Hypocalymma angustifolium*, *Astartea scoparia* mid sparse shrubland over **Ehrharta calycina*, **Briza maxima*, **Bromus diandrus* low open grassland. **Associated species:** *Acacia pulchella*, **Aira cupaniana*, **Avena barbata*, **Brachypodium distachyon*, **Carpobrotus edulis*, *Dianella revoluta*, *Hypocalymma robustum*, *Hypolaena exsulca*, *Jacksonia furcellata*, **Lysimachia arvensis*, **Sonchus oleraceus*, **Ursinia anthemoides*.	2.7	0.24	0.32
	EPP_PpEmNf	**Description:** Ex Pine Plantation - **Pinus pinaster* mid sparse woodland and *Eucalyptus marginata*, *Nuytsia floribunda* low sparse woodland over *Adenanthos cygnorum* tall sparse shrubland and *Xanthorrhoea preissii*, *Macrozamia fraseri* mid sparse shrubland over **Ehrharta calycina*, **Bromus diandrus* low open grassland and **Carpobrotus edulis* low sparse forbland. **Associated species:** **Aira cupaniana*, **Avena barbata*, **Briza maxima*, *Dasypogon bromeliifolius*, *Eucalyptus todtiana*, *Gompholobium tomentosum*, *Hardenbergia comptoniana*, *Hibbertia subvaginata*, *Hypocalymma robustum*, **Ornithopus compressus*, **Pelargonium capitatum*, *Scholtzia involucrata*, **Trifolium arvense*, **Trifolium campestre*, **Vulpia myuros*	75.3	11.49 (0.29)	15.55

Representative Photograph	Code	Vegetation community and vegetation type description	Extent within the Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
	EPP_ErEtB spp	**Description**: *Eucalyptus rudis*, *Eucalyptus todtiana*, *Banksia* spp. low sparse woodland over *Kunzea glabrescens* tall open shrubland and *Regelia ciliata*, *Calothamnus quadrifidus* mid sparse shrubland over **Eragrostis curvula*, **Ehrharta calycina* low open grassland and **Carpobrotus edulis* low sparse forbland. **Associated species:** *Acacia pulchella*, *Banksia attenuata*, *Banksia grandis*, *Banksia menziesii*, *Bossiaea eriocarpa*, *Eremaea pauciflora*, *Gastrolobium capitatum*, *Jacksonia furcellata*, *Kennedia prostrata*, **Pelargonium capitatum*, **Tolpis barbata*.	0.4	0.06	0.08
	EPP_Ec	**Description:** *Eucalyptus camaldulensis* low open woodland over *Acacia saligna*, *Adenanthos cygnorum*, *Jacksonia furcellata* and **Bambusa vulgaris* tall sparse shrubland over **Ehrharta calycina* and **Eragrostis curvula* open grassland.	0.4	0.00	0.00

Representative Photograph	Code	Vegetation community and vegetation type description	Extent within the Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
	PpAcCe	Vegetation community mapped by AECOM (2023 and 2024) for the portion of the Neerabup Terminal that is not covered by the ELA (2026) survey. Pine regrowth **Description:** **Pinus pinaster* tall, isolated trees over *Adenanthos cygnorum* var. *cygnorum, Xanthorrhoea preissii* and *Macrozamia fraseri* tall to mid sparse shrubland over **Carpobrotus edulis, *Pelargonium capitatum* and **Ornithopus pinnatus* low sparse forbland. Located on grey-white sandy soil with terrain varying throughout the survey area. **Associated species:** *E. todtiana, E. marginata, Acacia pulchella, Hemiandra pungens, Lechenaultia floribunda, Jacksiona furcellata.*	N/A	1.55	2.05
Non-native					
	EPP_CLPp	Scattered **Pinus pinaster* in cleared areas. **Description:** Isolated to scattered **Pinus pinaster* trees in cleared areas. Understorey consists of weedy herbaceous or grassy species with native species limited to isolated shrubs in some areas.	8.7	2.49	3.29

Representative Photograph	Code	Vegetation community and vegetation type description	Extent within the Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
	PP	Pine plantations **Description:** **Pinus pinaster* mid open forest.	19.6	2.92 (0.14)	4.04
	Rehabilitation / regrowth	Rehabilitated areas **Description:** Urban areas rehabilitated by Main Roads WA with a variety of species.	5.4	4.38	5.79

Representative Photograph	Code	Vegetation community and vegetation type description	Extent within the Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
	MXP	Mixed native tree plantations **Description:** Planted lines of various native tree species forming tall sparse shrublands to low open woodlands over weedy ground storey species. Tree species recorded include *Corymbia calophylla*, *Eucalyptus camaldulensis*, *E. gomphocephala*, *E. marginata* and/or *E. rudis*.	10.0	1.35	1.78
	MG	Managed gardens and roadside treelines **Description:** A variety of planted species as decorative roadside trees, park areas, garden areas and private property with planted species.	15.3	6.79 (0.6)	9.76

Representative Photograph	Code	Vegetation community and vegetation type description	Extent within the Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
	CLXp	Scattered *Xanthorrhoea preissii* in cleared areas. **Description:** Scattered to isolated remnant *Xanthorrhoea preissii* shrubs in cleared areas, typically agricultural paddocks or road corridors where the soil surface is bare or covered by weed species.	4.0	0.84	1.12
Total cleared			89.93	40.18	53.10
Total native vegetation			121.34	16.02	21.2
Total non-native vegetation			62.82	19.51	25.77

4.3.3 Vegetation condition

ELA (2026) identified the condition of vegetation within the survey area to range from Excellent to Completely Degraded based on Keighery (1994) vegetation scale provided on the *Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment* for the South West Botanical Province (EPA, 2016). The majority of vegetation within the survey area and PDE is in Degraded or worse condition (95%). Non-native vegetation has been excluded from the below condition analysis. Disturbances in the area included residential properties and urban infrastructure, roads, tracks, weeds, clearing, exotic species plantations, grazing and rubbish (ELA, 2026).

Table 11 provides detail on the extents of native vegetation condition within the survey area and PDE. AECOM's (2023 and 2024) condition rating for the 1.55 ha area associated with sections of the PDE in proximity to Neerabup Terminal not surveyed by ELA have been consolidated into Table 11. Of the 1.55 ha of the vegetation community (PpAcCe), 1.50 ha was classified as Degraded (AECOM, 2024) and 0.05 ha was classified as Completely Degraded (AECOM, 2023). Native vegetation condition mapping for the PDE is shown in Figure 11.

Where native vegetation condition has been inferred for the survey gap areas, the inferred area is presented in in brackets following the area value of the surveyed extent of each condition rating.

Cleared areas are not assigned a condition rating and are excluded from Table 11.

Table 11 Native vegetation condition within the Survey Area and PDE

Condition Rating	Native Vegetation Community types	Extent within the survey area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
Excellent				0.05
Very Good	BaBmBi, BsppEtAf, EmBaBm, EPP_ErMpNf, MpAgLs	10.9	0.12	0.16
Good	BsppEtAf, CcBaBi, EmBaBm, EPP_ErEtBspp, EPP_ErMpNf, EPP_PpEmNf, MpAgLs, MpAsHa, MpNfAc	13.4	1.91	2.52
Degraded	PpAcCe, BaBmBi, BsppEtAf, EmBaBm, EPP_Ec, EPP_ErEtBspp, EPP-ErMpNf, EPP_PpEmNf, MpNfAc	52.91	10.86 (0.26)	14.67
Completely Degraded	PpAcCe, EPP_ErMpNf, EPP_PpEmNf	26.55	2.79 (0.03)	3.72
Total native vegetation		121.34	16.02	21.16

4.3.4 Threatened and Priority ecological communities

ELA undertook an analysis of vegetation floristics, structure and composition to identify conservation significant ecological communities within the survey area. This involved Floristic Community Type (FCT) analysis and an assessment against DBCA methods for determining the presence of TECs, approved conservation advice and fact sheet documentation or ecological communities identified previously as occurring in the survey area, or as having the Potential to occur in the survey area (ELA, 2026).

Floristic Community Type (FCT) analysis

To identify potential TECs and PECs in the survey area, ELA quadrats and vegetation communities were compared to FCTs defined by Gibson et al. (1994) using appropriate multivariate analyses (ELA, 2026).

Analysis identified that some of vegetation communities mapped within the survey area had the potential to be affiliated with seven FCTs.

Two conservation significant communities defined by FCTs were mapped within the survey area:

- 6 ha of FCT21c – Low lying *Banksia attenuata* woodlands or shrubland (DBCA listed P3 PEC, and a component of EBPC Act listed Endangered Banksia Woodlands of the Swan Coastal Plain TEC' [Banksia Woodlands TEC])
- 0.6 ha of FCT22 – *Banksia ilicifolia* woodlands (DBCA listed P3 PEC, and a component of EBPC Act listed Endangered'Banksia Woodlands of the Swan Coastal Plain TEC')

Of the 6 ha of FCT21c mapped, only 0.13 ha occurs within the PDE and of the 0.6 ha of FCT22 mapped in the survey area, only 0.14 ha occurs within the PDE.

Details of the results of the FCT analysis are provided in Table 12.

Table 12 Results of FCT analysis of ELA (2026) vegetation communities

ELA vegetation community	ELA quadrat number	Inferred FCT(s)	Description
BaBmBi	ELA_Q03, ELA_Q25, ELA_Q26	FCT21c	'Low lying *Banksia attenuata* woodlands or shrublands' – DBCA listed P3 PEC and a component of the EPBC Act listed EN Banksia Woodlands TEC
MpAgLs	ELA_Q04, ELA_Q05, ELA_Q06	FCT11	'Wet forests and woodlands'
MpAsHa	ELA_Q07, ELA_Q08, ELA_Q09	FCT11	'Wet forests and woodlands'
XpAcMf	ELA_Q10, ELA_Q11, ELA_Q12	FCT6	'Weed dominated wetlands on heavy soils'
CcBaBi	ELA_Q13	FCT21c	'Low lying *Banksia attenuata* woodlands or shrublands' – DBCA listed P3 PEC and a component of the EPBC Act listed EN Banksia Woodlands TEC
EmBaBm	ELA_Q14, ELA_Q15, ELA_Q16, ELA_Q17, ELA_Q18, ELA_Q19, ELA_Q21	FCT28, FCT21a	'Spearwood *Banksia attenuata* or *Banksia attenuata – Eucalyptus* woodlands' and 'Central *Banksia attenuata – Eucalyptus marginata* woodlands'
MpNfAc	ELA_Q20, ELA_Q23	FCT4, FCT5	*'Melaleuca preissiana* damplands' and 'Mixed Shrub damplands'

ELA vegetation community	ELA quadrat number	Inferred FCT(s)	Description
BsppEtAf	ELA_Q27, ELA_Q28, ELA_Q29, ELA_Q30, ELA_Q31, ELA_Q32, ELA_Q35	FCT21c, FCT22, FCT28	'Low lying *Banksia attenuata* woodlands or shrublands' – DBCA listed P3 PEC and a component of the EPBC Act listed EN Banksia Woodlands TEC '*Banksia ilicifolia* woodlands, southern Swan Coastal Plain' - DBCA listed P3 PEC and a component of the EPBC Act listed EN Banksia Woodlands TEC 'Spearwood *Banksia attenuata* or *Banksia attenuata – Eucalyptus* woodlands'

Banksia Woodlands of the Swan Coastal Plain TEC

Vegetation within the ELA (2026) survey was assessed against key diagnostic characteristics outlined in the Banksia Woodlands of the Swan Coastal Plain TEC approved conservation advice (TSSC, 2016), to determine the presence of this TEC within the survey area. Several of the diagnostic characteristics were met by vegetation communities BaBmBi, CcBaBi, EmBaBm and BsppEtAf, including:

- Location/landform: the survey area is located on the Swan Coastal Plain and occurs on the Bassendean, Karrakatta and Spearwood land systems
- Structure and composition: vegetation communities BaBmBi, CcBaBi, EmBaBm and BsppEtAf were dominated or co-dominated by the indicative taxa *Banksia attenuata, B. ilicifolia* and/or *B. menziesii* with emergent or co-dominant canopies of *Corymbia calophylla, Eucalyptus marginata* and/or *E. todtiana*.
- Condition thresholds: BaBmBi and BsppEtAf vegetation was primarily mapped as being in Very Good condition with some areas of Good or Degraded condition. EmBaBm was primarily mapped as being in Excellent condition, with some Very Good, Good and limited Degraded condition. Areas of Degraded vegetation mapped as the Banksia Woodlands TEC are considered extensions of the same patch of vegetation mapped as being in Good or better condition.

In total, seven patches of discrete Banksia woodland vegetation were recorded in the survey area by ELA (2026) (Figure 12), with five of these meeting the criterion for the Banksia Woodland TEC. Two of the seven patches were not considered to meet the patch/size condition thresholds for the Banksia Woodlands TEC given they were in Good or Degraded condition and the patch was less than 1 ha in size (ELA, 2026).

A total of 36.9 ha of Banksia Woodlands TEC/PEC was recorded in the survey area and 1.98 ha occurs within the PDE (inclusive of FCTs that are State listed PECs).

The full assessment against the key diagnostic characteristics of the Banksia Woodlands TEC is presented in Table 13. The location of the Banksia Woodlands TEC patches assessed within the survey area are provided in Figure 12.

Table 13 Banksia Woodlands TEC assessment (ELA, 2026)

Step	Key diagnostic characteristics	Outcome
1	**Location and physical environment** The Banksia Woodlands ecological community primarily occurs in the Swan Coastal Plain IBRA bioregion	The survey area is located on the Swan Coastal Plain.
	Soil and landform The Banksia Woodlands typically occurs on well drained, low nutrient soils on sandplain landforms particularly deep Bassendean and Spearwood sands and occasionally on Quindalup sands	The survey area is located on the Bassendean, Karrakatta and Spearwood land systems.
	Structure The structure of the Banksia Woodlands is a low woodland to forest with these features: • A distinctive upper sclerophyllous layer of low trees (occasionally large shrubs more than 2m tall), typically dominated or co-dominated by one or more of the Banksia species identified under composition • Emergent trees of medium or tall (>10m) height Eucalyptus or Allocasuarina species may sometimes be present above the Banksia canopy • An often highly species-rich understorey that consists of: – A layer of sclerophyllous shrubs of various heights; and – A herbaceous ground layer of cord rushes, sedges, and perennial and ephemeral forbs that sometimes includes grasses. The development of a ground layer may vary depending on the density of the shrub layer and disturbance history.	Of the eight intact native vegetation communities mapped in the survey area, four conform to this structure, including CcBaBi, BaBmBi, BsppEtAf and EmBaBm. The CcBaBi vegetation community is comprised of *Corymbia calophylla* mid open woodland and *Banksia attenuata, Banksia ilicifolia* low woodland over *Xanthorrhoea preissii* tall sparse shrubland and *Calytrix fraseri, Acacia pulchella* mid sparse shrubland over *Phlebocarya ciliata, Dasypogon bromeliifolius, Opercularia vaginata* low sparse forbland. The BaBmBi vegetation community is comprised of *Banksia attenuata, Banksia menziesii, Banksia ilicifolia* low open woodland over *Xanthorrhoea preissi* tall sparse shrubland and *Eremaea asterocarpa, Melaleuca seriata* mid sparse shrubland over *Dasypogon bromeliifolius, Patersonia occidentalis, Alexgeorgea nitens* low open forbland. The BsppEtAf vegetation community is comprised of Banksia spp., *Eucalyptus todtiana, Allocasuarina fraseriana, Nuytsia floribunda* low open woodland over *Xanthorrhoea preissii* tall sparse shrubland and *Eremaea pauciflora, Hypocalymma robustum* mid sparse shrubland over *Hibbertia hypericoides* low open shrubland and *Lyginia imberbis* low open sedgeland and *Alexgeorgea nitens* low open forbland. The EmBaBm vegetation community is comprised of *Eucalyptus marginata* mid open woodland and *Banksia attenuata, Banksia menziesii* low open woodland over *Xanthorrhoea preissii* tall sparse shrubland and *Daviesia divaricata, Hypocalymma robustum mid* open shrubland over *Hibbertia hypericoides* low

Step	Key diagnostic characteristics	Outcome
		open shrubland, *Mesomelaena pseudostygia* low sparse sedgeland and *Corynotheca micrantha* low sparse forbland.
	Composition • The canopy is most commonly dominated or codominated by *Banksia attenuata* (candlestick banksia, slender banksia) and/or *B. menziesii* (firewood banksia). Other Banksia species that dominate in some examples of the ecological community are *B. prionotes* (acorn banksia) or *B. ilicifolia* (holly-leaved banksia); and • The patch must include at least one of the following species: – *Banksia attenuata* (candlestick banksia) – *Banksia menziesii* (firewood banksia) – *Banksia prionotes* (acorn banksia) – *Banksia ilicifolia* (holly-leaved banksia) • If present, the emergent tree layer often includes *Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah), or less commonly E. gomphocephala (tuart); and • Other trees of a medium height that may be present, and may be co-dominant with the Banksia species across a patch, include *Eucalyptus todtiana* (blackbutt, pricklybark), *Nuytsia floribunda* (WA Christmas Tree), *Allocasuarina fraseriana* (western sheoak), *Callitris arenaria* (sandplain cypress), *Callitris pyramidalis* (swamp cypress), and *Xylomelum occidentale* (woody pear); and • The understorey typically contains a high to very high diversity of shrub and herb species that often vary from patch to patch*** • Contra-indicators: – Patches clearly dominated by *Banksia littoralis* are not part of the Banksia Woodlands ecological community but indicates a different, dampland community is present. – Patches clearly dominated by *Banksia burdettii* are not part of the Banksia Woodlands ecological community but indicates a tall shrubland and not the Banksia Woodlands ecological community.	The canopy of the CcBaBi vegetation community is dominated by *Banksia attenuata/B. ilicifolia* with emergent *Corymbia calophylla*. The floristic composition of quadrats within the CcBaBi vegetation community had floristic affiliations with FCT21c, which is a known subcomponent of the Banksia Woodlands TEC. The canopy of the BaBmBi vegetation community is dominated by *Banksia attenuata, B. menziesiii* and *B. ilicifolia*. The floristic composition of quadrats within the CcBaBi vegetation community had floristic affiliations with FCT21c, which is a known subcomponent of the Banksia Woodlands TEC. The canopy of the BsppEtAf vegetation community is dominated by *Banksia attenuata* and *B. menziesii* with emergent *Eucalyptus todtiana* and *Allocasuarina fraseriana.* The canopy of the EmBaBm vegetation community is dominated by B*anksia attenuata* and *B. menziesii* with emergent *Eucalyptus marginata*. The floristic composition of quadrats within the EmBaBm vegetation community had floristic affiliations with FCTs 21c, 22 and 28, which are known subcomponents of the Banksia Woodlands TEC. All three vegetation communities contain highly diverse shrub layers. The contra-indicator species *Banksia littoralis* and *B. burdettii* were not recorded. The communities do not represent FCT20c.

Step	Key diagnostic characteristics	Outcome
	– FCT 20c – Eastern shrublands and woodlands, corresponds with separate EPBC ecological community listing, Shrublands and Woodlands of the eastern Swan Coastal Plain. Occurrences of this FCT should be considered under that separate listing.	
2	**Condition thresholds** • Assessments of a patch should initially be centred on the area of highest native floristic diversity and/or cover, i.e., the best condition area of the patch. • Consideration must be given to the timing of surveys and recent disturbance. Ideally surveys should be undertaken in spring with two sampling periods to capture early and late flowering species. • The surrounding context of a patch must also be taken into account when considering factors that add to the importance of a patch that meets the condition thresholds. • Certain vegetation components of the Banksia Woodlands ecological community merit consideration as critical elements to protect. Three components are recognised as threatened in their own right in WA and, as such, are priorities for protection; refer to Table 1 in the Approved Conservation Advice. • A relevant expert (e.g., ecological consultant, local NRM or environment agency) may be useful to help identify the ecological community and its condition.	BaBmBi and BsppEtAf vegetation was primarily mapped as being in Very Good condition with some areas of Good or Degraded condition vegetation. EmBaBm was primarily mapped as being in Excellent condition, with some Very Good, Good, and limited Degraded condition vegetation. Areas of Degraded vegetation mapped as the Banksia Woodlands TEC are considered extensions of the same patch of vegetation mapped as being in Good or better condition. The survey was undertaken in Spring and the vegetation was sampled in the highest condition representation available.
3	**Minimum patch size** Minimum patch sizes apply for consideration of a patch as part of the listed ecological community for EPBC Act referral, assessment and compliance purposes. Where patches meet different levels of condition, different minimum patch sizes apply: • 'Pristine' – no minimum patch size applies • 'Excellent' – 0.5 ha or 5,000 m2 (e.g. 50 m x 100 m) • 'Very Good' – 1 ha or 10,000 m2 (e.g. 100 m x 100 m) • 'Good' – 2 ha or 20,000 m2 (e.g. 200 m x 100 m).	Most areas mapped as Banksia Woodlands TEC within the survey area are large patches or complexes of patches within the greater region in Very Good to Excellent condition that meet the patch size criterion for the Banksia Woodlands TEC. In total, five patches of vegetation (Patches A – E) that meet the patch size and condition criterion for Banksia Woodlands TEC were delineated within the survey area. This included: • Patch A - patch of EmBaBm vegetation in the north of the survey area (adjacent to Neaves Road) in 'Good' condition and inferred via aerial imagery to be at least 3.8 ha in size;

Step	Key diagnostic characteristics	Outcome
	Note: To be considered as part of the EPBC Act ecological community, a patch should meet at least the Good Condition category.	• Patch B – patch of BsppEtAf vegetation in the north of the survey area (along Boundary Rd) in 'Very Good' to 'Good' condition and inferred via aerial imagery to be at least 12 ha in size; • Patch C – large complex of EmBaBm, BsppEtAf and BaBmBi vegetation in the centre of the survey area in 'Excellent' to 'Degraded' condition and inferred via aerial imagery to be at least 150 ha in size; • Patch D – patch of CcBaBi vegetation in the south of the survey area adjacent to Lake Gnangara in 'Good' condition and inferred via aerial imagery to be at least 12 ha in size; and • Patch E – patch of BsppEtAf vegetation in the south of the survey area in 'Good' condition and inferred via aerial imagery to be at least 14 ha in size. Some isolated patches of Degraded condition vegetation, or Good condition vegetation under 2 ha were recorded, and these areas were not considered to be representative of the TEC. This included the following two patches of vegetation: • Patch F – patch of BaBmBi vegetation in the south of the survey area on the corner of Sydney Rd and Fortitude Bvd in 'Degraded' condition and inferred via aerial imagery to be 0.2 ha in size • Patch G – patch of EPP_ErEtBspp vegetation in the north of the survey area adjacent to the Neerabup Terminal substation in 'Good' condition and inferred via aerial imagery to be 0.8 ha in size.
4	Further information to assist in determining the presence of the ecological community and significant impacts • The landscape position of the patch, including its position relative to surrounding vegetation also influences how important it is in the broader landscape. For example, if it enables movement of native fauna or plant material or supports other ecological processes • A patch is a discrete and mostly continuous area of the ecological community. A patch may include small-scale (<30 m) variations, gaps and disturbances, such as tracks, paths or breaks. Where there is a break in native vegetation cover, from the edge of the tree canopy of 30 m or more (e.g. due to permanent artificial structures, wide roads or other barriers; or	A total of 36.9 ha of Banksia Woodlands TEC vegetation was recorded in the survey area and 1.98 ha of this occurs within the PDE.

Step	Key diagnostic characteristics	Outcome
	due to water bodies typically more than 30m wide) then the gap typically indicates that separate patches are present. • Variation in canopy cover, quality or condition of vegetation across a patch should not initially be considered to be evidence of multiple patches. Patches can be spatially variable and are often characterised by one or more areas within a patch that meet the key diagnostic characteristics and condition threshold criteria amongst areas of lower condition. Average canopy cover and quality across the broadest area that meets the general description of the ecological community should be used initially in determining overall canopy cover and vegetation condition. Also note any areas that are either significantly higher or lower in quality, gaps in canopy cover and the condition categories that would apply across different parts of the site respectively. Where the average canopy cover or quality falls below the minimum thresholds, the next largest area or areas that meet key diagnostics (including minimum canopy cover requirements) and minimum condition thresholds should be specified and protected. This may result in multiple patches being identified within the overall area first considered. • A buffer zone is a contiguous area immediately adjacent to a patch of the ecological community that is important for protecting its integrity. The purpose of the buffer zone is to help protect and manage the national threatened ecological community. The edges of a patch are considered particularly susceptible to disturbance and the presence of a buffer zone is intended to act as a barrier to further direct disturbance. • The recommended minimum buffer zone for the ecological community is 20–50 m from the outer edge of a patch, and the appropriate size depends on the nature of the buffer and local context (e.g. slope). A larger buffer zone should be applied, where practical, to protect patches that are of particularly high conservation value, or if patches are down slope of drainage lines or a source of nutrient enrichment, or groundwater drawdown.	

Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the SCP

Given the presence of Tuart trees in the survey area, vegetation was assessed against the key diagnostic characteristics outlined in the Tuart Woodlands TEC approved conservation advice (DoEE, 2019) to determine the presence of the TEC in the survey area. The primary defining feature is the presence of at least two living established Tuart (*Eucalyptus gomphocephala*) trees in the uppermost canopy layer.

The conservation advice for the Tuart Woodlands TEC states three primary patch size condition thresholds that define the presence of the TEC, including:

- Patches of less than 0.5 ha are not considered to be part of the Tuart Woodlands TEC
- Patches between 0.5 ha and 5 ha in size may be considered to be part of the Tuart Woodlands TEC if they meet the key diagnostic characteristics and are in 'High' condition (for patches greater than 0.5 ha) or 'Moderate' condition (for patches greater than 2 ha)
- Patches greater than 5 ha that meet the key diagnostic characteristics are considered to be part of the Tuart Woodlands TEC

Five individual parches of Tuart Woodland vegetation were delineated within the survey area (Figure 13). This included:

- A patch of rehabilitated/planted vegetation on the corner of Townsend Road and Boundary Road (Patch 1)
- One patch along Hawkins Road (Patch 2)
- One patch associated with Tuscan Park on the corner of Tuscan Way and Sydney Road (Patch 3)
- Two patches along Ocean Reef Road (Patches 4 and 5).

Patches 1,2 and 5 were not considered to be representative of the Tuart Woodlands TEC based on biotic condition thresholds, with all three patches considered to be in 'Poor' biotic condition (ELA, 2026).

In total, 1.3 ha of vegetation representing the Tuart Woodlands TEC was recorded within the survey area and of this, 0.12 ha intersects the PDE (portions of Patch 3 and 4).

The full assessment against key diagnostic characteristics is presented in Table 14. The location of the Tuart Woodlands TEC patches assessed within the survey area and PDE are provided in Figure 13.

Table 14 Tuart Woodlands TEC assessment (ELA, 2026)

Step	Key diagnostic characteristics	Outcome
1	Occurs in the Swan Coastal Plain Bioregion within the state of Western Australia.	The survey area is located on the Swan Coastal Plain in Western Australia.
	Primarily occurs on the Spearwood and Quindalup dune systems but can also occur on the Bassendean dunes and Pinjarra Plain. It can occur on the banks of rivers and wetlands.	The survey area is situated across primarily Bassendean and some Spearwood soil landscapes.
	The primary defining feature is the presence of at least two living established *Eucalyptus gomphocephala* (Tuart) trees in the uppermost canopy layer, although they may co-occur with trees of other species. There is a gap of no more than 60 m between the outer edges of the canopies of adjacent Tuart trees. These trees may occur either as single stemmed trees or as a mallee growth form.	Five individual patches of Tuart woodland (that comprised of two living established *Eucalyptus gomphocephala* trees in the uppermost canopy layer were recorded in the survey area. This included a patch of rehabilitated/planted vegetation on the corner of Townsend Road and Boundary Road (Patch 1), one patch along Hawkins Road (Patch 2), one patch associated with Tuscan Park on the corner of Tuscan Way and Sydney Road (Patch 3), and two patches along Ocean Reef Road (Patches 4 and 5).
	Most often occurs as a woodland but can occur in other structural forms, For example, forest, open forest, woodland, open woodland, and various mallee forms.	-
	Other tree species may be present in the canopy or sub-canopy. They commonly include: *Agonis flexuosa* (Peppermint) and *Banksia grandis* (Bull Banksia) (both in the southern part of the range), *Banksia attenuata* (Candlestick Banksia), *Eucalyptus marginata* (Jarrah); and less commonly, *Corymbia calophylla* (Marri), *Banksia menziesii* (Firewood Banksia) and *Banksia prionotes* (Acorn Banksia).	-
	An understorey of native plants is typically present, which may include grasses, herbs and shrubs, although this is often modified by disturbance.	-
2	Further information to assist in defining a patch of the ecological community Patches of Tuart woodlands and forests may contain areas that vary in structural or biological complexity. One part of a patch may have a larger number of mature trees and more ecological diversity, whereas another part of the same patch may demonstrate fewer mature trees and less groundcover. Areas with soil exposed and/or plant litter can also be expected within this ecological community. Variation in quality or condition of vegetation across a patch should not necessarily be considered to be evidence of multiple patches. Patches of the ecological community	Patch 1 consists of rehabilitated/planted vegetation on the corner of Townsend Road and Boundary Road, with site ELA_R13 associated and dominated by an understorey of weeds. Patch 2 consists of a line of planted trees along a fence in private property on the western side of Hawkins Rd. No associated sites. Photo indicates surrounding area consists of introduced garden plants or bare areas. Patch 3 had no associated site, however was comprised of native vegetation in association with Tuscan Park.

Step	Key diagnostic characteristics	Outcome
	can be spatially variable and are often characterised by one or more areas within a patch that meet higher condition thresholds amongst areas of lower condition. If an area meets the key diagnostic characteristics but the average condition across that area falls below the minimum condition thresholds, the largest area or areas of at least 0.5 ha that meet minimum condition thresholds on average, should be specified as the patch or patches of the nationally listed ecological community. This may result in multiple patches of the ecological community being identified within the overall area first identified as meeting the key diagnostics.	Patch 4 consists of a line of planted roadside trees along the northern side of Ocean Reef road with an addition tree in the median strip. Nearby ELA_Q02 and ELA_R11, located within the same patch of roadside rehabilitation, record a diverse mix of native species with over 30 endemic species with between 15% and 20% foliar cover. ~10% to 17% weedy cover. Patch 5 consists of a line of planted roadside trees along the southern side of Ocean Reef road. Low trees with planted shrubs associated. Represented by ELA_R07. Associated native species consist of *E. camaldulensis* and *Grevillea preissii*, both planted. 2-3% weedy cover.
3	Relationship with other ecological communities The range of the ecological community overlaps and interacts with other ecological communities of the Swan Coastal Plain, including some listed under the EPBC Act. At some locations more than one ecological community may be present. The following considerations apply to the identification of the ecological community where it is likely to overlap with some other listed ecological communities: • Banksia woodlands of the Swan Coastal Plain: where Tuart occurs as an occasional emergent above a stratum dominated or co-dominated by Banksia species including Banksia attenuata, B. menziesii, B. prionotes or B. ilicifolia the patch is likely to meet the diagnostic characteristics for the Banksia woodlands of the Swan Coastal Plain. This is not common and most likely on Spearwood formation dunes. • Sedgelands in Holocene Dune Swales: occurs in linear damplands, typically waterlogged in winter. Characteristic species include shrubs such as Acacia rostellifera, Acacia saligna, Xanthorrhoea preissii as well as sedges and grasses. Typically the ecological community has a more open structure than Tuart woodlands and forests, but at mature sites a closer tree canopy may develop, including Tuart or Banksia littoralis trees, which may meet the diagnostic characteristics for the Tuart woodlands and forests ecological community. This is not common and most likely in the areas between dunes on the Quindalup formation. • Aquatic root mat community of caves of the Swan Coastal Plain: at sites including Yanchep National Park, some groundwater fed streams and pools occurring in caves support dense root mats of Tuart trees. These root mats support a highly diverse and distinctive assemblage of cave fauna. It is likely that this ecological community occurs directly below some occurrences of the Tuart woodlands and forests	The Tuart Woodland vegetation in the survey area does not appear to co-occur with any listed ecological communities.

Step	Key diagnostic characteristics	Outcome
	ecological community. There are strong interactions between the two ecological communities and it is likely also that disturbance to either surface vegetation or groundwater may affect both ecological communities.	
4	Condition thresholds and categories For confirmed patches of the ecological community, following the key diagnostic characteristics and patch definition above (Step 1), determine the following requirements for information on condition to indicate if they are part of the nationally protected ecological community: If the patch is smaller than 0.5 ha it is not part of the nationally protected ecological community; If the patch is at least 0.5 ha and up to 5 ha in size, conduct on ground surveys to see which condition category applies. Condition categories are outlined in the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain ecological community approved conservation advice (DotEE 2019). All patches of 5 ha or greater that meet the key diagnostic characteristics are part of the nationally protected ecological community.	Patch 1 was associated with site ELA_R13 and based on the condition thresholds in the conservation advice would be considered to be in 'Poor' condition given that less than 50% of the understorey vegetation cover is native and therefore not representative of the TEC. Patch 2 had no associated site and was 0.8 ha in size. This patch consisted of planted Tuart trees over a bare understorey and as such would be considered to be in 'Poor' condition and therefore not representative of the TEC. Patch 3 had no associated site and was 1.0 ha in size (with 0.1 ha in the survey area), including trees associated with Tuscan Park. It is inferred from aerial imagery that this patch extends further outside of what has been assessed as part of this project and is likely to be at least 2.0 ha in size. Field observations found that this patch is likely to be in 'Moderate' condition. Given patch size and condition this patch of vegetation would be considered representative of the Tuart Woodlands TEC. Patch 4 was associated with site ELA_Q02 and was 1.3 ha in size (with 1.2 ha in the survey area). A diverse mix of understorey species was recorded within this patch and would be considered to be in 'High' or 'Very High' condition. Given patch size and condition this patch of vegetation would be considered representative of the Tuart Woodlands TEC. Patch 5 was associated with site ELA_R07 and was 1.2 ha in size. This patch of vegetation was considered to be in 'Poor' condition and not representative of the TEC. In total, 1.3 ha of vegetation representing the Tuart Woodlands TEC was recorded within the survey area.

4.3.5 Threatened and Priority Flora species – Desktop

Prior to undertaking the field survey, ELA completed a desktop database search of DBCA databases and the DCCEEW Protected Matters Search Tool (PMST) to identify records of Threatened or Priority flora species within a 10 km search radius of the survey area. A pre-survey likelihood of occurrence (LOO) assessment was undertaken to determine the potential for Threatened or Priority flora species to occur within the survey area, based on factors such as location of previous records in relation to the survey area, suitable landforms, soil and habitat that appear to be present based on desktop review and aerial imagery (ELA, 2026). Table 15 provides the criteria used for the LOO assessment.

Table 15 Likelihood of occurrence criteria

Likelihood rating	Criteria
Recorded	The species has been previously recorded within the survey area from DBCA database search results and/or from previous surveys of the survey area, and/or the species has been confirmed through a current vouchered specimen at the WA Herbarium.
Likely	The species has not previously been recorded from within the survey area. However, to qualify requires one or more of the following criteria to be met: • The species has been recorded in close proximity to the survey area, and occurs in similar habitat to that which occurs within the survey area • Core habitat and suitable landforms for the species occurs within the survey area either year-round or seasonally. In relation to fauna species, this could be that a host plant is seasonally present on site, or habitat features such as caves are present that may be used during particular times during its life cycle e.g. for breeding. In relation to both flora and fauna species, it may be there are seasonal wetlands present • There is a medium to high probability that a species uses the survey area
Potential	The species has not previously been recorded from within the survey area. However, to qualify requires one or more of the following criteria to be met: • Targeted surveys may locate the species based on records occurring in proximity to the survey area and suitable habitat occurring in the survey area • The survey area has been assessed as having potentially suitable habitat through habitat modelling • The species is known to be cryptic and may not have been detected despite extensive surveys • The species is highly mobile and has an extensive foraging range so may not have been detected during previous surveys • The species has been recorded in the survey area by a previous survey or there is historic evidence of species occurrence within the survey area. However, one or more of the following criteria is met: • Doubt remains over taxonomic identification or the majority of habitat does not appear suitable (although presence cannot be ruled out due to factors such as species ecology or distribution) • Location co-ordinates for the record are doubtful

Likelihood rating	Criteria
Unlikely	The species has been recorded locally through DBCA database searches. However it has not been recorded within the survey area and: • It is unlikely to occur due to the site lacking critical habitat, having at best marginally suitable habitat, and/or being severely degraded • It is unlikely to occur due to few historic record/s and no other current collections in the local area The species has been recorded within the bioregion based on literature review but has not been recorded locally or within the survey area through DBCA database searches. The species has not been recorded in the survey area despite adequate survey efforts, such as a standardised methodology of targeted searching within potentially suitable habitat.
Does not occur (one or more criteria requires to be met)	The species is not known to occur within the IBRA bioregion based on current literature and distribution. The conspicuous species has not been recorded in the survey area despite adequate survey efforts at an appropriate time of year to detect the species within potentially suitable habitat. The survey area lacks important habitat for a species that has highly selective habitat requirements. The species has been historically recorded within the survey area or locally, however it is considered locally extinct due to significant habitat changes such as land clearing and/or introduced predators.

A total of 81 conservation significant flora species were identified from the desktop assessment. Of the 81 flora species, one was considered likely to occur within the survey area and 27 were considered as having the potential to occur within the survey area, as part of the pre-survey LOO (Table 16)(ELA, 2026). No previous records of conservation significant flora were identified within the survey area (ELA, 2026). The remaining 53 conservation significant flora species were considered unlikely to occur or 'does not occur' within the survey area.

4.3.6 Flora – field survey

Flora diversity

A total of 289 flora species (210 native and 79 introduced) were recorded within the survey area during the ELA (2026) field survey. Families with the greatest number of species were Fabaceae (36 species), Myrtaceae (33 species), Poaceae (27 species) and Proteaceae (21 species). The species accumulative curve derived to evaluate the adequacy of sampling indicates the survey effort was sufficient and that the majority of flora species potentially present within the survey area were recorded (ELA, 2026).

Threatened and Priority Flora

Of the 289 flora species recorded by ELA (2026), three were conservation significant flora species:

- *Schoenus griffinianus* (listed as Priority (P) 4 by DBCA)
- *Jacksonia sericea* (DBCA listed P4)
- *Grevillea olivacea* (DBCA listed P4)

Grevillea olivacea was recorded and observed within Rehabilitation/Regrowth and MG vegetation types, with all individuals considered planted cultivars, not native to the area and not representative of a natural population (ELA, 2026). As such, assessment of the Proposal's impacts to *Grevillea olivacea* has not been considered in this document.

No Threatened flora species were identified during the field survey.

The *Jacksonia sericea* population (168 individuals) recorded by ELA occurs in a patch of remnant vegetation located over 200 m to the west of the PDE. It is not anticipated that there will be any direct impacts to the population as a result of Proposal implementation. The two individuals of *Schoenus griffinianus* recorded (ELA, 2026) are located 8 m west of the PDE boundary (Figure 10). These individuals will not be directly impacted by the implementation of the Proposal.

Seven of the conservation significant flora species assessed as having a Potential pre-survey LOO were considered to still have a Potential LOO post-survey (ELA, 2026):

- *Caladenia huegelii* (listed as EN under the EPBC Act and CR under the BC Act
- *Drosera patens* (DBCA listed P1)
- *Poranthera moorokatta* (DBCA listed P2)
- *Stenanthemum sublineare* (DBCA listed P2)
- *Styphelia filifolia* (DBCA listed P3)
- *Anigozanthos humilis* subsp. *Chrysanthus* (DBCA listed P4)
- *Hypolaena robusta* (DBCA listed P4)

This was due to several factors including:

- Presence of suitable habitat for the species
- Presence of nearby records
- Annual or cryptic nature of species
- Survey being conducted outside of species known flowering time

Threatened flora species, *Caladenia huegelii* (EPBC Act EN, BC Act CR), was assessed as having the potential to occur within the survey area post-survey due to the presence of marginal habitat and the Detailed Flora and Vegetation survey being conducted outside of the known flowering period for the species (September to October) (ELA, 2026). However, typical areas of dense undergrowth in which the species tends to occur are largely absent.

ELA (2026) concluded that the species has the potential to occur in the following mapped vegetation communities, only where the vegetation condition is Very Good or better, with a deep leaf litter layer and dense undergrowth:

- BaBmBi
- EmBaBm
- BsppEtAf

Figure 14 indicates the patches of these vegetation communities where condition was assessed to be Very Good or better, equating to an area of 26.1 ha of suitable habitat for *C. huegelii* within the ELA

survey area. Of this, 0.15 ha occurs within the PDE, however, the habitat areas align with span over areas where no clearing or construction activities will occur. Therefore, *C. huegelii* and its suitable habitat will not be impacted by implementation of the Proposal.

In addition, targeted surveys completed by AECOM (2024) during the appropriate flowering timeframe and within identified potential habitat did not identify any records of the species. The post-survey LOO concluded the species to have a Low LOO due to no suitable habitat being identified within the survey area (AECOM, 2024).

Further rationale for the post-survey LOO assessment ratings for all 27 conservation significant species initially considered as having the Potential to occur within the survey area are provided in Table 16.

Table 16 Likelihood of Occurrence of Threatened and Priority Flora (ELA, 2026)

Taxon	Common Name	EPBC Act	BC Act / DBCA	Habitat	Pre-survey	Post-survey	Justification
Calectasia elegans	Elegant Tinsel Lily	CR	CR	Occurs within the low shrub stratum of Banksia Woodland of the northern Swan Coastal Plain and central Dandaragan Plateau, on well-drained grey sand, within wide flat areas between contours of low relief.	Potential	Unlikely	No suitable habitat present.
Caladenia huegelii	King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid	EN	CR	Occurs in areas of mixed woodland of jarrah (*Eucalyptus marginata*), candlestick banksia (*Banksia attenuata*), holly banksia (*B. ilicifolia*) and firewood banksia (*B. menziesii*) with scattered sheoak (*Allocasuarina fraseriana*) and marri (*Corymbia calophylla*) over dense shrubs. Throughout its range the species tends to favour areas of dense undergrowth. Soil is usually deep grey-white sand usually associated with the Bassendean sand-dune system. However, rare plants have been known to extend into the Spearwood system (in which calcareous yellow sands dominate) in some areas.	Potential	Unlikely	Marginal habitat occurs, however typical areas of dense undergrowth in which the species tends to occur are largely absent. It is noted that this is a cryptic species and the survey was undertaken outside of the known flowering time. Within the survey area, the species has the potential to occur within BaBmBi, EmBaBm and BsppEtAf communities where condition is Very Good or better with a deep leaf litter layer and dense undergrowth.
Drakaea elastica	Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid	EN	CR	White sand over a dark sandy loam on low-lying damp areas near ephemeral lakes, or on the slopes adjacent to winter wet depressions, swamps	Potential	Unlikely	No suitable habitat present.
Macarthuria keigheryi	Keighery's Macarthuria	EN	EN	Low-lying winter-wet damp, grey/white sands and grows in open patches with low tree canopy cover among heathland.	Potential	Unlikely	Marginal habitat present, species occurs as disjunct populations across its range. Targeted searches undertaken within known flowering time Sep-Dec.

Taxon	Common Name	EPBC Act	BC Act / DBCA	Habitat	Pre-survey	Post-survey	Justification
Drakaea micrantha	Dwarf Hammer-orchid	VU	EN	The species is usually found in cleared fire breaks or open sandy patches that have been disturbed, and where competition from other plants has been removed. The Dwarf Hammer-orchid occurs in infertile grey sands, in Banksia, Jarrah (*Eucalyptus marginata*) and Common Sheoak (*Allocasuarina fraseriana*) woodland or forest. It is often found under thickets of Spearwood (*Kunzea ericifolia*) with Flying Duck orchid *(Paracaleana nigrita*) and other Drakaea species.	Potential	Unlikely	No suitable habitat present.
Baeckea sp. Limestone (N. Gibson & M.N. Lyons 1425)			1	Yellow/grey sand over limestone	Potential	Unlikely	No suitable habitat present.
Drosera patens			1	Sandy soils. Margins of winter-wet depressions, swamps and lakes	Potential	Potential	Suitable habitat present, small cryptic herb with targeted searches undertaken outside of Dec or Feb flowering time. Within the survey area this species has the potential to occur in vegetation associated with Lake Gnangara, including MpAgLs and MpAsHa communities.
Drosera x sidjamesii			1	Peaty sand. Along lake margins, close to winter high-water line.	Potential	Unlikely	No suitable habitat present.
Stachystemon exilis			1	Banksia woodlands with *Eucalyptus marginata, Agonis flexuosa* or *Melaleuca preissii* on grey sandy soils.	Potential	Unlikely	Suitable habitat occurs; targeted searches would have identified the species if present.
Millotia tenuifolia var. laevis			2	Granite or laterite soils. Wandoo Woodland, Banksia Woodland, Jarrah/Marri Woodlands, *Eucalyptus todtiana*.	Potential	Unlikely	No suitable habitat present.
Netrostylis sp. Chandala (G.J. Keighery 17055)			2	Peaty soils in wet areas, creeks, swamps. Typically, *Melaleuca preissii* or *M. rhaphiophylla* dominant or codominant over myrtaceous heath or sedgelands.	Potential	Unlikely	Suitable habitat occurs; targeted searches would have identified the species if present.

Taxon	Common Name	EPBC Act	BC Act / DBCA	Habitat	Pre-survey	Post-survey	Justification
Poranthera moorokatta			2	In open *Banksia menziesii, B. attenuata* woodland	Potential	Potential	Suitable habitat occurs; cryptic annual species may not have been visible at the time of survey. Within the survey area, the species has the potential to occur within Banksia Woodland, including BaBmBi, EmBaBm and BsppEtAf communities where condition is Very Good or better.
Stenanthemum sublineare			2	Coastal or generally flat plains with well drained white to grey sand or sandy loam, sometimes with lateritic gravel. Variety of associated vegetation including shrubland, mallee woodlands, Banksia, Jarrah, Marri, Melaleuca woodlands.	Potential	Potential	Suitable habitat occurs; small cryptic shrub may not have been visible at the time of survey.
Cyathochaeta teretifolia			3	Grey sand, sandy clay. Swamps, creek edges.	Potential	Unlikely	Suitable habitat occurs; targeted searches would have identified the species if present.
Dampiera triloba			3	Dark brown/black peaty soils on low shrubland.	Potential	Unlikely	No suitable habitat present.
Phlebocarya pilosissima subsp. pilosissima			3	White or grey sand, lateritic gravel. Low Banksia woodland or *E. todtiana* - Banksia woodlands.	Potential	Unlikely	No suitable habitat present (no lateritic gravels).
Sarcozona bicarinata			3	Limestone out - crop. Shallow grey/white sand. Open *Banksia sessilis* heathland	Potential	Unlikely	No suitable habitat present.
Stylidium maritimum	Coastal Triggerplant		3	Sand over limestone. Dune slopes and flats. Coastal heath and shrubland, open Banksia woodland.	Potential	Unlikely	No suitable habitat present.
Stylidium paludicola	Swamp Reed Triggerplant		3	Peaty sand over clay. Winter wet habitats. Marri and Melaleuca woodland, Melaleuca shrubland.	Potential	Unlikely	No suitable habitat present.

Taxon	Common Name	EPBC Act	BC Act / DBCA	Habitat	Pre-survey	Post-survey	Justification
Styphelia filifolia			3	It grows on sandy soils of the coastal plain (with one known occurrence from the northern Darling Scarp), usually in Banksia or Jarrah woodland and in low-lying situations.	Potential	Potential	Suitable habitat present, targeted searches undertaken outside of March-May flowering time. Within the survey area, the species has the potential to occur within Banksia Woodland including BaBmBi, EmBaBm and BsppEtAf communities where condition is Very Good or better.
Anigozanthos humilis subsp. chrysanthus	Golden Catspaw		4	Grey or yellow sand	Potential	Potential	Suitable habitat present, targeted searches undertaken outside of Jul-Oct flowering time.
Eucalyptus foecunda subsp. foecunda			4	Coastal limestone or coastal plain limestone formations, associated with various vegetation.	Potential	Unlikely	Suitable habitat occurs; targeted searches would have identified the species if present.
Hypolaena robusta			4	White sand. Sandplains.	Potential	Potential	Suitable habitat present, targeted searches undertaken outside of Sep-Oct flowering time. Within the survey area, the species has the potential to occur within Banksia Woodland including BaBmBi, EmBaBm and BsppEtAf communities where condition is Very Good or better.
Jacksonia sericea	Waldjumi		4	Calcareous and sandy soils in Banksia/Eucalypt woodland	Likely	Recorded	Recorded during survey.
Schoenus griffinianus			4	Sandy soils with Kwongan heath or Banksia shrublands	Potential	Recorded	Recorded during survey.

Taxon	Common Name	EPBC Act	BC Act / DBCA	Habitat	Pre-survey	Post-survey	Justification
Stylidium longitubum	Jumping Jacks		4	Sandy clay, clay. Seasonal wetlands.	Potential	Unlikely	No suitable habitat present.
Stylidium striatum			4	Brown clay loam over laterite. Hillslopes. Jarrah/Marri Forest, Wandoo woodland.	Potential	Unlikely	No suitable habitat present.
Verticordia lindleyi subsp. lindleyi			4	Sand, sandy clay. Winter-wet depressions.	Potential	Unlikely	Suitable habitat occurs; targeted searches would have identified the species if present.

Introduced species

A total of 79 introduced (weed) species were recorded within the survey area by ELA (2026), representing 27.3% if the total flora species recorded. One species, **Asparagus asparagoides* is listed as a Declared Pest under the State *Biosecurity and Agriculture Management Act 2007* (BAM Act) and a Weed of National Significance (WONS). This species was recorded at several locations within the survey area and PDE (Figure 10). Additionally, the AECOM (2024) survey recorded **Opuntia tomentosa*, also a Declared Pest and WONS.

The remaining 78 weed species recorded are listed on the Western Australian Organism List under the BAM Act as Permitted (s11) species, indicating that no specific management of this species is required.

AECOM (2024) also included a comprehensive list of weed species, this data, in conjunction with the ELA (2026) results will form the baseline weed survey data for the Proposal.

4.3.7 Riparian / Groundwater dependent vegetation

ELA (2026) identified five vegetation communities within the survey area associated with lowland areas surrounding wetlands. Four communities surrounding Gnangara Lake and one associated with Hawkins Road Swamp Conservation Category wetland (ELA, 2026) These vegetation communities are MpAgLs, MpAsHa, XpAcMf, CcBaBi and MpNfAc and comprise 5.3 ha of the survey area, and 0.5 ha of the PDE. The identified vegetation communities align with areas mapped as Ground Water Dependent Ecosystems by the Bureau of Meteorology Groundwater Dependent Ecosystems Atlas (ELA, 2026) and are considered to be representative of riparian and/or groundwater dependent vegetation.

None of the inferred vegetation communities for the survey gap areas were representative of riparian or groundwater dependent vegetation.

Further detail on riparian and groundwater dependent vegetation and potential impacts are discussed in Section 6 Inland Waters.

4.3.8 Bush Forever Sites

The PDE intersects three Bush Forever Sites (GoWA, 2026), as summarised in Table 17 and shown on Figure 15.

Table 17 Bush Forever Sites within the PDE

Site Number	Bush Forever Site name	Vegetation Complexes present within the entire Bush Forever Site	Site Area (ha) 2020 (DPLH, 2021)	Extent of Bush Forever Site within PDE (ha)
193	Gnangara Lake and Adjacent Bushland, Gnangara/ Lexia	• Bassendean Complex-Central and South	301.67	0.99
326	Hawkins Road Bushland, Jandabup/ Gnangara	• Bassendean Complex-North • Bassendean Complex-North-Transition • Pinjar Complex	338.58	3.58
463	Starlight Grove Bushland, Gnangara / Wangara (Sydney Road)	• Bassendean Complex-Central and South • Karrakatta Complex-Central and South	19.54	0.08
Total			**659.79**	**4.37**

SPP 2.8 aims to protect at least 10% of the original extent of the vegetation complexes protected within Bush Forever sites, on the Perth Metropolitan Region. Table 18 provides the vegetation complexes present within each Bush Forever Site within the PDE and the proportion of the complex remaining, as of 2024, for these complexes on the Swan Coastal Plain (SCP) (GoWA, 2025).

Table 18 Extent of vegetation complexes within Bush Forever Sites

Vegetation Complexes within Bush Forever Sites	Pre-European Extent (ha)	2024 extent of complex on SCP (ha)	Proportion of pre-European extent remaining (%)	Extent of complex within the Bush Forever sites in PDE (ha)
Bassendean Complex-North	79,057.34	56,470.36	71.43	2.87
Bassendean Complex-North-Transition	20,856.54	18,407.85	88.26	0.70
Bassendean Complex-Central and South	87,476.26	20,819.97	23.80	0.99
Pinjar Complex	4,892.64	1,408.93	28.80	0.01
Karrakatta Complex-Central and South	53,081.02	11,945.48	22.50	0.01
Total				**4.64**

The vegetation condition of the Bush Forever Sites that intersect the PDE is provided in Table 19.

Table 19 Vegetation Condition of Bush Forever Sites within the PDE

Bush Forever Site	Vegetation Condition					
	Cleared (ha)	Completely Degraded (ha)	Degraded (ha)	Good (ha)	Very Good (ha)	Excellent (ha)
193	0.12	0.53	0.23	0.12	0.00	0.00
326	2.82	0.00	0.10	1.11	0.00	0.04
463	0.07	0.01	0.00	0.00	0.00	0.00

4.3.9 Conservation Reserves

The PDE intersect 38.37 ha of the DBCA managed Class A State Forest (F 65) Gnangara-Moore River State Forest, which is vested with the Conservation Commission of WA (Figure 7).

4.3.10 Ecological linkages

The PDE intersects four regional ecological linkages which converge at Jandabup Nature Reserve (Bush Forever Area 324) (GoWA, 2026) as shown in **Error! Reference source not found.**. These ecological linkages provide connections between Jandabup Lake to Lake Gnangara (Bush Forever 193), Lake Badgerup (Bush Forever Area 327), Gnangara-Moore River State Forest to the north and east.

4.3.11 *Phytophthora* Dieback occurrence

The PDE is located within a *Phytophthora* dieback risk area as it receives more than 400 mm of average annual rainfall and is south of the 26th parallel (DBCA, 2023c). Weather data from nearby weather stations (BoM, 2026) is summarised in Table 20. *Phytophthora* dieback can lead to the death of plants and reduce the health of susceptible vegetation communities.

Table 20 Total annual rainfall of nearest Bureau of Meteorology weather stations (BoM, 2026)

Year	Wanneroo Station (9105)	Tamala Park (Mindarie) (9264)	Whiteman Park (9263)
2025	789.9 mm	825.4 mm	Not available
2024	649.7 mm	660.7 mm	Not available
2023	549.6 mm	511.6 mm	Not available
2022	749.1 mm	655.0 mm	584.6 mm
2021	879.7 mm	830.2 mm	Not available

A *Phytophthora* dieback occurrence survey was undertaken by Glevan Consulting (2026) for the Proposal to assess presence of dieback (Appendix D.6). A total of 218.78 ha was surveyed and two infested areas (3.58 ha) were identified within the survey boundary, one at the western end of Joyce Road at the corner of Sydney Road and one at the eastern end of Joyce Road and onto Steel Road (Figure 16).

Glevan Consulting (2026) reported that vegetation classified as Uninfested (8.26 ha) appeared to be in good condition, with scattered indicator deaths seen throughout. These deaths can likely be attributed to drought at some sites due to their topographical positions and lack of observable factors attributed to *Phytophthora* Dieback.

A 3.66 ha area of the survey area was mapped as Permanently Uninterpretable due to the insufficient coverage of the reliable indicator species. This area was located on Sydney Road adjacent to Gnangara Lake (Figure 16).

The majority of the survey area (203.28 ha) was mapped as Excluded in areas where native vegetation is completely cleared or severely degraded, including private properties, private businesses, roads, infrastructure, farmland and areas dominated by invasive weeds (Glevan Consulting, 2026).

Phytophthora dieback occurrence extent mapped within the Glevan Consulting (2026) survey area and PDE are summarised in Table 21.

A total of 4.08 ha of the PDE was not included in the dieback occurrence survey.

Table 21 Phytophthora dieback occurrence mapped within the Survey Area and PDE

Dieback Occurrence	Extent within the Glevan Consulting (2026) survey area (ha)	Extent within the PDE (ha)
Infested	3.58	1.49
Uninfested	8.26	1.76
Uninterpretable	3.66	0.02
Excluded	203.28	68.63
Total	**218.78**	**71.63**

4.4 Proposed mitigation

The mitigation hierarchy has been applied in accordance with the Statement of environmental principles, factors, objectives and aims of EIA (EPA, 2023b). *State Planning Policy 2.8 – Bushland Policy for the Perth Metropolitan Region* (SPP 2.8) was also used to inform avoidance and mitigation measures for the Proposal, in the context of the potential impacts to Bush Forever Sites identified within the Impact Area.

These principles, and the order in which they have been applied, are:

- Avoid: reducing the Impact Area and locating activities to avoid direct and indirect impacts on significant flora and vegetation.
- Minimise: minimising direct and indirect impacts where they cannot be completely avoided.
- Rehabilitate: actively repairing, rehabilitating or restoring impacted areas as soon as possible to promote long-term recovery.

- Offset (where necessary): providing suitable offsets for activities that result in significant adverse environmental impacts.

Numerous Proposal design iterations have been undertaken with consideration of ecological values identified and mapped through surveys. Avoidance mechanisms have particularly been applied for areas of Banksia Woodlands TEC and Bush Forever Sites through the adjustment of pole and powerline locations and identification of 'span over areas' (areas where vegetation height at maturity is low enough that the required safe separation distance of vegetation from the conductor can be maintained without clearing of vegetation being required).

Table 22 outlines the mitigation measures that have and/or will be implemented to reduce potential impacts to Flora and Vegetation.

Table 22 Mitigation and avoidance actions proposed for Flora and Vegetation

Potential impact	Mitigation hierarchy
Avoid	
Proposal siting	• Flora and vegetation surveys have been completed in 2023, 2024 and 2025, including during the early design phase of the Proposal to characterise the receiving environmental values and inform route selection for the transmission corridor and PDE. • Multiple alignments underwent a Multi-Criteria Analysis (MCA) which considered economic, environment, heritage, planning and social impacts. Alignments located further east were identified as having a higher environmental impact due to increased clearing of vegetation being required and were therefore not selected. • Span over areas have been identified within the PDE where no clearing is proposed for either construction or for the purposes of meeting safe electrical clearances as vegetation height at maturity is low enough that the required safe separation distance from the conductor is maintained. These span over areas align with Banksia Woodlands TEC and Bush Forever Sites and have has allowed for approximately 2 ha of clearing to be avoided within Banksia Woodland TEC and Bush Forever Sites. • New infrastructure has been located within existing cleared or sparsely vegetated road reserves and utilises existing tracks where possible to avoid additional clearing • Alignment has been located such that it does not introduce any additional fragmentation to existing remnant native vegetation patches and Bush Forever Sites. • The line route was moved to the southern side of Ocean Reef Road to avoid extensive impacts to the Tuart Woodlands TEC identified within the road reserve on the northern side between Prestige parade and Badgerup road. • Alternative methodologies for line stringing, such as back hand stringing and drone stringing will be implemented to reduce the clearing footprint required in environmentally sensitive areas such as TEC/PEC and Bush Forever Sites.
Minimise	
Vegetation clearing	• Proposed clearing has been minimised as far as practicable during the design phase to reduce the extent of disturbance required. • Clearing areas will be demarcated onsite and no disturbance will be permitted outside of these areas

Potential impact	Mitigation hierarchy
	• The majority of the native vegetation to be cleared is in Degraded or worse condition (approximately 95%). No native vegetation in Excellent or Very Good condition will be impacted as part of the Proposal. • Laydown areas and construction facilities (e.g. mobile offices and ablutions, equipment laydown areas) will be preferentially located within pre-existing disturbed areas in the PDE and/ or offsite in Western Power depot locations. • Implement the Proposal Flora and Vegetation Environment Management Plan (FVEMP) which has been developed with objective and outcome-based targets aimed at minimising impacts to native flora and vegetation.
Introduction and/or spread of weeds and disease (*Phytophthora* dieback)	• Implement a Proposal specific Construction Environmental Management Plan (CEMP) that will include controls to reduce the risk of spreading weeds and disease. • Implement the Proposal FVEMP which has been developed with objective and outcome-based targets aimed at minimising impacts to native flora and vegetation. • Implement the Proposal HMP that will include controls to reduce the risk of spreading weeds and disease.
Accidental bushfires	• A fire control and communications management plan, including emergency response and evacuation procedures, shall be prepared and implemented by the PC in consultation with Western Power. • Hot Work shall be completed under a Hot Work Permit and in accordance with Western Power Hot Work Procedures. • All vehicles and machinery will be fitted with fire extinguishers and/ or in-plant fixed water suppression. • Fire Danger Ratings issued by the Bureau of Meteorology will be monitored and complied with, including any vehicle movement bans
Rehabilitate	
Vegetation rehabilitation	• Areas of native vegetation cleared for the purposes of construction, that are not required for ongoing maintenance activities, will be rehabilitated. These areas will be identified during the post-construction phase of the Proposal in accordance with the outcome-based criteria specified in the Proposal's FVEMP. Significant residual impacts have been calculated by conservatively assuming all clearing approved within the PDE will be permanent
Offset	
Offset strategy	• Proposal impacts to Flora and Vegetation considered to be not so significant to warrant further assessment under Part IV of the EP Act. Separate mechanisms, such as referral under the EPBC Act and the NVCP application process under Part V of the EP Act have the appropriate authority to assess, manage and evaluate the requirement for offsets. • Offsets for Bush Forever Sites will be managed via the Development Application process and in accordance with the *State Planning Policy 2.8 – Bushland Policy for the Perth Metropolitan Region* (SPP2.8).

4.5 Potential environmental impacts

4.5.1 Identified environmental impacts

Potential Direct Impacts

The Proposal has the potential to result in the following direct impacts to Flora and Vegetation.

Table 23 Potential direct impacts to Flora and Vegetation

Proposal activity	Potential Direct impact	Relevance to Proposal
Clearing for construction	Loss of native vegetation	Yes. Proposal requires clearing of 13.34 ha of native vegetation. Detailed discussion is provided in Section 4.5.2.
	Loss of threatened ecological communities	Yes. Proposal requires clearing of 0.24 ha of the Banksia Woodlands TEC (area is inclusive of State listed PECs) and 0.08 ha of Tuart Woodlands TEC. Detailed discussion is provided in Section 4.5.2.
	Loss of threatened and/or priority flora	No. Biological surveys completed over the PDE have not identified any Threatened or Priority flora within the PDE or IA. Seven conservation significant flora species were considered to have the potential to occur, post-survey. Detailed discussion is provided in Section 4.5.2.
	Loss of riparian or groundwater dependent vegetation	Yes. Proposal requires clearing of 0.17 ha of riparian vegetation. Detailed discussion is provided in the Section 6 Inland Waters.

Potential Indirect Impacts

The Proposal has the potential to result in the following indirect impacts to Flora and Vegetation.

Table 24 Potential indirect impacts to Flora and Vegetation

Proposal activity	Potential Indirect impact	Relevance to Proposal
Construction activities (including access, import of fill, material movements)	Introduction and/or spread of weeds and disease (such as dieback) within TEC/PECs and/or Threatened and Priority flora habitat.	Yes. Weeds of National Significance and dieback risk areas have been identified within the PDE. Detailed discussion is provided in Section 4.5.2.
	Reduction in vegetation condition of TEC/PECs and/or habitat quality of	No. Given clearing will occur across a linear corridor it will be of limited

Proposal activity	Potential Indirect impact	Relevance to Proposal
	Threatened and Priority flora due to excessive dust deposition.	duration and intensity in any one location. It is not anticipated that potential impacts to vegetation from dust deposition will be significant, and that they can be adequately managed via control measures stipulated in the Proposal CEMP.
Clearing for construction	Fragmentation of native vegetation, including TEC/PECs and/or Threatened and Priority flora habitat, exacerbating edge effects.	No. The transmission line corridor has been located such that it does not introduce any additional fragmentation to existing remnant native vegetation patches.
Hot works and construction and operational activities	Accidental fires leading to loss of native vegetation, including TEC/PECs and/or Threatened and Priority flora habitat.	Yes. Construction and operation of the new transmission line infrastructure has the potential to cause accidental fires. These risks will be managed via a Bushfire and Emergency Response Management Plan

4.5.2 Predicted direct environmental impacts

Vegetation

Native vegetation clearing has been avoided and minimised wherever possible within the PDE. Total clearing will be limited up to a maximum of 31.71 ha comprising the following:

- 13.34 ha of native vegetation
- 18.37 ha of non-native vegetation.

Vegetation type extents within the PDE and Impact Area are outlined in Table 25. Areas that have been mapped as 'Cleared' are excluded from the vegetation clearing impact assessment.

The transmission line corridor has been located to avoid areas of Very Good or better condition native vegetation, with the majority of native vegetation to be cleared being in Degraded or worse condition (95%). Within the IA, 0.65 ha of the native vegetation proposed to be cleared is in Good and no native vegetation in Excellent or Very Good condition will be impacted by the Proposal (Table 26).

Inferred vegetation types from the survey gap areas and the vegetation mapping of Neerabup Terminal (PpAcCe) completed by AECOM (2023 and 2024) have been consolidated in values presented in Table 25.

Additionally, the transmission line corridor does not create any additional fragmentation to remnant native vegetation patches, with clearing restricted to the edges of vegetation patches.

Table 25 Direct impacts to Vegetation Types

Vegetation types	Extent within the PDE (ha)	Extent within the Impact Area (ha)
Native		
BaBmBi	0.04	0.04
MpAgLs	0.00	0.00
MpAsHa	0.00	0.00
XpAcMf	0.26	0.03
CcBaBi	0.13	0.03
EmBaBm	0.52	0.21
MpNfAc	0.11	0.11
BsppEtAf	1.33	0.00
EPP_ErMpNf	0.24	0.17
EPP_PpEmNf	11.78	11.13
EPP_ErEtBspp	0.06	0.06
EPP_Ec	0.00	0.00
PpAcCe	1.55	1.55
Total Native Vegetation	**16.02**	**13.34**
Non-native		
EPP_CLPp	2.49	2.49
PP	3.06	2.98
Rehabilitation / regrowth	4.38	3.81
MXP	1.35	1.12
MG	7.39	7.13
CLXp	0.84	0.84
Total Non-Native Vegetation	**19.51**	**18.37**

Table 26 Vegetation condition of native vegetation within the Impact Area

Vegetation Condition	Extent within the PDE (ha)	Extent within the Impact Area (ha)
Excellent	0.04	0.00
Very Good	0.12	0.00
Good	1.91	0.65
Degraded	11.12	10.16
Completely Degraded	2.82	2.53

The impacts to native vegetation from the Proposal are not considered significant to warrant further assessment under Part IV of the EP Act. Avoidance measures have allowed for the amount of native vegetation impacted within the PDE to be minimised such that it comprises only 17.6% of the PDE and is primarily of native vegetation in Degraded or worse condition (95%).

As these impacts to native vegetation are associated with clearing activities and not of a significant magnitude, the NVCP process under Part V of the EP Act is considered to have the appropriate regulatory authority to assess the significance and impose conditions for management of impacts associated with the implementation of the Proposal via assessment against Principle (a) (refer to Table B2-2, Appendix B.2 for further detail).

Additionally, a FVEMP has been developed for the Proposal which includes objective and outcome based provisions aimed at minimising impacts to Flora and Vegetation and will ensure that the risk of impacts of the Proposal to Flora and Vegetation remains low (Appendix E.1).

Banksia Woodlands Threatened/Priority Ecological Communities

Clearing activities for the construction of the Proposal will result in an impact of 0.24 ha of the Commonwealth listed Banksia Woodland TEC (Endangered), inclusive of the following State listed PEC:

- 0.21 ha of Banksia Woodlands of the Swan Coastal Plain PEC (Banksia Woodland PEC)
- 0.03 ha of FCT21c – Low lying *Banksia attenuata* woodlands or shrubland (DBCA listed P3)

Table 27**Error! Reference source not found.** presents a patch analysis for native vegetation mapped by ELA (2026) as representative of Banksia Woodlands TEC/PEC that intersects the IA.

Table 27 Banksia Woodlands TEC Patch Analysis

Patch ID	Est. patch extent (ha)	Patch extent within PDE (ha)	Patch extent within IA (ha)	Remaining patch size after clearing (ha)	Description
A	3.8	0.12	0.12	3.68	A patch of EmBaBm vegetation in Good condition.
B	12	0.14	0.00	12	A patch of BsppEtAf vegetation in Very Good to Good condition. FCT analysis for this patch determined it to be representative of the FCT22 PEC.
C	150	1.59	0.08	149.02	A large complex of EmBaBm, BsppEtAf and BaBmBi vegetation in Excellent to Degraded condition (clearing is within the Degraded portion of the patch)

Patch ID	Est. patch extent (ha)	Patch extent within PDE (ha)	Patch extent within IA (ha)	Remaining patch size after clearing (ha)	Description
D	12	0.13	0.03	11.97	A patch of CcBaBi vegetation in Good condition. FCT analysis for this patch determined it to be representative of the FCT21c PEC.
E	14	0.00	0.00	14	A patch of BsppEtAf vegetation in Good condition

The Proposal has been developed so that impacts are restricted to the edge of TEC patches or within existing cleared areas within Patches. Clearing will not result in further fragmentation or result in the identified patches of TEC as no longer meeting the DEE (2016b) thresholds for classification as TEC based on remaining patch condition and size.

Span over areas have been targeted for areas mapped as Banksia TEC/PEC within the PDE where no clearing is proposed for either construction or the purposes of meeting safe electrical clearances as vegetation height at maturity is low enough that the required safe separation distance from the conductor is maintained. This has allowed for approximately 2 ha of clearing of Banksia TEC/PEC to be avoided within the PDE. Additionally, alternative stringing methodology such as manual stringing and drone stringing has been employed through areas of TEC to avoid clearing for construction within these areas. The alternative methodology allows for the standard sized 50 m x 50 m brake and winch pads to be significantly reduced or for a pad to not be required altogether.

Banksia TEC conservation advice (DEE, 2016a) estimates that the pre-European extent, based on corresponding vegetation system/ associations, was approximately 708,179.5 ha across the Swan Coastal Plain SCP). Of this it was estimated that in 2015, there was approximately 336,930.1 ha of Banksia TEC remaining within the SCP and an estimated 23,462.1 ha within the City of Wanneroo (DEE, 2016a). Approximately 81,800 ha (24.33%) of the TEC is estimated to occur within reserves, most of which are in the Perth subregion of the SCP Bioregion (DEE, 2016a).

Based on the loss of Banksia Woodland TEC reported from 2009 to 2015, the estimated rate of change per decade is 3.37% and 11.87% for the SCP and Perth Metropolitan area, respectively (DEE, 2016a). The estimated remaining extent by 2025 and the percentage reduction, as a result of clearing up to 0.24 ha of Banksia Woodland TEC, has been presented in Table 28.

Table 28 Predicted loss of Banksia Woodland TEC (DEE, 2016a)

Scale	Pre-European extent (ha)	Extent – 2015 (ha)	Predicted rate of loss per decade (%)	Predicted loss (ha) – 2016-2025	Predicted extent remaining 2025 (ha)	Proposed clearing 0.24 ha – estimated % reduction of predicted remaining extent in 2025
Swan Coastal Plain	708,179.5	336,930.1	3.37	11,354.5	325,575.6	<0.001
Perth Metropolitan	172,410.5	48,828.8	11.87	5,796.0	43,032.8	<0.001
City of Wanneroo	56,095.1	23,462.1	11.87	2,745.1	20,717.0	<0.001

Note: 11.87% rate of loss assumed for the City of Wanneroo based on rate of loss within the Perth Metropolitan area.

The local extent of Banksia Woodlands TEC (within a 5km radius of the PDE) is estimated to be 5,344.26 ha, of which 2,227.82ha occurs in conservation reserves. The proposed clearing of 0.24 ha of Banksia Woodlands TEC for the purposes of the Proposal will amount to a 0.004% reduction in the local extent of the TEC. At the regional scale (SCP SWA region), the proposed clearing will amount to a <0.0005% reduction in the extent of the TEC.

Table 29 Residual impacts to Banksia Woodlands TEC/ PEC on a local and regional context

TEC/ PEC	Impact Area extent (ha)	Local extent – Potential Banksia Woodlands within 5 km of the PDE (ha)	Proportion of local extent impacts (%)	Regional extent – within the SCP SWA region (ha)	Proportion of regional extent impacts (%)
Banksia Woodlands of the Swan Coastal Plain TEC inclusive of 0.03 ha of Low lying *Banksia attenuata* woodlands or shrublands (FCT 21c) PEC	0.24	5,344.26	0.004	251,835.73	<0.0005

Given the conservation status of the Banksia Woodlands TEC/PEC and the cumulative impacts to the community from developments within the SCP, there is the potential for clearing of the TEC/PEC for Proposal to be considered a significant residual impact.

However, Proposal impacts to the TEC/PEC are limited to those resulting from clearing activities only and avoidance and minimisation measures implemented by Western Power has reduced the scale of clearing such that it is minimal when considered at both the local and regional scale (0.004% and <0.0005% reduction in extent, respectively). As such, the Proposal impacts to Banksia Woodland TEC/PEC are not considered to be significant enough to warrant further assessment under Part IV of the EP Act and can be adequately addressed via the NVCP process under Part V of the EP Act (refer to Table B2-2, Appendix B.2 for further detail).

Western Power has also referred the Proposal under the EPBC Act where the impacts to the Banksia Woodlands TEC, a listed MNES, will be assessed. The DCCEEW has the regulatory authority

and powers to adequately assess and condition management of the Proposal and its significant residual impact to Banksia Woodlands TEC (refer to Table B2-2, Appendix B.2 for further detail).

In addition, a FVEMP has been developed for the Proposal (Appendix E.1) with specific objective and outcome based targets aimed at avoiding and minimising impacts to Banksia Woodland TEC/PEC.

Tuart Woodlands TEC

Clearing for the construction of the Proposal will result in an 0.08 ha impact to Tuart Woodlands TEC/PEC. Table 30 presents a patch analysis for vegetation mapped by ELA (2026) as representative of Tuart Woodlands TEC/PEC that intersects the IA.

Table 30 Tuart Woodlands TEC Patch Analysis

Patch ID	Est. patch extent (ha)	Patch extent within PDE (ha)	Patch extent within IA (ha)	Remaining patch size after clearing (ha)	Description
3	2.00	0.01	0.00	1.00	Comprised of native vegetation in association with Tuscan Park and considered to be in Moderate condition
4	1.30	0.08	0.08	1.22	Consists of a line of planted roadside trees along the northern side of Ocean Reef road with an additional tree in the median strip. Considered to be in High to Very High condition

Clearing for the Proposal will not result in any identified patches of Tuart Woodlands TEC/PEC as no longer meeting the required size and condition thresholds to be classified as TEC in accordance with Approved Conservation Advice (DEE, 2019).

The alignment for the Proposal was relocated from the northern side of Ocean Reef road between Prestige parade and Badgerup road to the southern side to avoid clearing 1.22 ha of Patch 4 of Tuart Woodlands TEC/PEC. The shifted alignment has meant that only 0.08 ha of TEC will be impacted, associated with the tree and buffer area within the median strip of Ocean Reef road. This clearing will also not introduce any fragmentation to Patch 4.

The Tuart TEC occurs from Jurien, approximately 200 km north of Perth, to the Sabina River, near Busselton, 225 km south of Perth, along the Spearwood or Quindalup dunes (DEE, 2019). The community is most commonly found on the Spearwood dune systems, also occurring on the Quindalup dune systems and in some places also on the Bassendean dune systems.

The current extent of the Tuart TEC as of 2015 is estimated to be >17,000 ha across its range (DEE, 2019). Regionally it is estimated there is 20,545 ha of Tuart Woodlands across the SWA02 SCP.

Locally it is estimated there is 203.38 ha of Tuart TEC within 5 km of the PDE. Of this, approximately 22.26 ha occurs in conservation reserves. Clearing for the Proposal will therefore result in a 0.0003% reduction in the extent of the TEC at a regional scale and a 0.039% reduction at the local scale.

Given the conservation status of the Tuart Woodlands TEC/PEC and the cumulative impacts to the community from developments within the SCP, there is the potential for clearing of the TEC/PEC for Proposal to be considered a significant residual impact.

However, Proposal impacts to the TEC/PEC are limited to those resulting from clearing activities only and avoidance and minimisation measures implemented by Western Power has reduced the scale of clearing such that it is minimal when considered at both the local and regional scale (0.039% and <0.0003% reduction in extent, respectively). As such, the Proposal impacts to Tuart Woodland TEC/PEC are not considered to be significant enough to warrant further assessment under Part IV of the EP Act and can be adequately addressed through the NVCP process under Part V of the EP Act via assessment against Principle (a) for PEC impacts and Principal (d) for TEC impacts (refer to Table B2-2, Appendix B.2 for further detail).

Western Power has also referred the Proposal under the EPBC Act where the impacts to the Tuart Woodlands TEC, a listed MNES, will be assessed. The DCCEEW has the regulatory authority and powers to adequately assess and condition management of the Proposal and its significant residual impact to Tuart Woodland TEC (refer to Table B2-2, Appendix B.2 for further detail).

In addition, a FVEMP has been developed for the Proposal (Appendix E.1) with specific objective and outcome based targets aimed at avoiding and minimising impacts to Tuart Woodland TEC/PEC.

Threatened Flora

The Proposal will not result in any direct impacts to Threatened flora. The ELA (2026) survey did not identify any *Caladenia huegelii* individuals, however, it was noted that the surveys were completed outside of the known flowering period and suitable habitat was mapped within the surveyed area.

ELA (2026) concluded that the species has the potential to occur in three vegetation communities, only where the vegetation condition is Very Good or better, with a deep leaf litter layer and dense undergrowth. Only two of these occur within the PDE within identified avoidance sites (span over areas) where no clearing is proposed. The extent of suitable habitat for *C. huegelii* within the PDE and IA is presented in Table 31.

Table 31 Extent of suitable habitat for Caladenia huegelii within the PDE and IA

Vegetation Community	Vegetation Condition	Extent within the PDE (ha)	Extent within the IA (ha)
EmBaBm	Excellent	0.04	0.00

Vegetation Community	Vegetation Condition	Extent within the PDE (ha)	Extent within the IA (ha)
BsppEtAf	Very Good	0.11	0.00

Given the Proposal avoids impacts to suitable habitat for the species, it is considered that the implementation of the Proposal will have no impact to the Threatened flora species.

State Forest

The PDE intersects 38.37 ha of the Gnangara-Moore River State Forest.

Direct impacts to State Forest will be managed via the NVCP process via assessment against Principle (h) and the DBCA DAS permitting application process, whereby the applicant must demonstrate consideration of all environmental values present within State managed lands, potential impacts and the management measures to be implemented to mitigate the identified impacts (refer to Table B2-2, Appendix B.2 for further detail).

Wetlands

Potential impacts to wetlands and native vegetation growing in or in association with a watercourse or wetlands are discussed in detail in Section 6.

Bush Forever sites

Three Bush Forever Sites are intersected by the PDE, Site No. 193, 326 and 463. Vegetation community mapping completed by ELA (2026) was used to calculate the extent of actual disturbance to vegetation within the Bush Forever Sites. This is to account for the already cleared areas and access tracks within the mapped Bush Forever Site boundaries.

A total of 0.65 ha of vegetation will be impacted by the Proposal within Bush Forever Sites 193 and 326. No vegetation clearing is proposed within Bush Forever Site No. 463. Where Proposal activities occur within Site No 463, it is within existing cleared areas within the mapped site boundary. Table 32 outlines the proportion of the total extent of the Bush Forever Sites proposed to be cleared for construction of the Proposal.

The two Bush Forever Sites within the IA have a combined area of approximately 640.25 ha. The proposed clearing represents a loss of approximately 0.1% of this total area.

The Proposal design has evolved to avoid and minimise impacts to Bush Forever Sites as far as practicable, in accordance with the SPP2.8 outcomes. Design of the line route actively avoided Bush Forever Sites, with all impacts being restricted to the edges of the mapped boundary of Sites such that no fragmentation is introduced or high condition vegetation is impacted. The utilisation of the existing corridor also ensures there is a reduced risk of introducing and spreading weeds and disease by reducing new access points to the Bush Forever Sites.

Span over areas have been targeted for Bush Forever Sites within the PDE where no clearing is proposed for either construction or the purposes of meeting safe electrical clearances as vegetation height at maturity is low enough that the required safe separation distance from the conductor is maintained. This has allowed for approximately 2 ha of clearing of within Bush Forever Site No. 326 to be avoided along Joyce Road and Sydney Road. Additionally, alternative stringing methodology such as manual stringing and drone stringing has been employed through areas of Bush Forever Sites to avoid clearing for construction within these areas. The alternative methodology allows for the standard sized 50 m x 50 m brake and winch pads to be significantly reduced or for a pad to not be required altogether.

Table 32 Bush Forever Sites impacted by the Proposal

Site Number	Site Name and Location	Site Area (ha) 2020 (DPLH, 2021)	PDE Extent (ha)	Impact Area Extent (ha)	Proportion of total extent impacted by the Proposal (%)
193	Gnangara Lake and Adjacent Bushland, Gnangara/ Lexia	301.67	0.99	0.63	0.21
326	Hawkins Road Bushland, Jandabup/ Gnangara	338.58	3.58	0.02	0.005
Total		**640.25**	**4.57**	**0.65**	**0.10**

The Proposal has prioritised avoidance of Bush Forever Sites as far as practicable. Of the 0.65 ha of Bush Forever Sites that will be impacted by clearing activities for the Proposal, 0.5 ha is in Completely Degraded condition.

The Bush Forever Sites within the Proposal IA protect two vegetation complexes that the SPP2.8 aims to protect by maintaining greater than 10% of their original pre-European extent within the Perth Metropolitan Region. Table 33 outlines the amount of each vegetation complex that is proposed to be cleared and the extent of each complex remaining post-clearing in the context of the Swan Coastal Plain (GoWA, 2025).

Results in Table 33 show that the proposed clearing within Bush Forever Sites will not reduce the remaining extent of any of the vegetation complexes below 10 % within the Swan Coastal Plain.

Table 33 Impacts to vegetation complexes as a result of clearing within Bush Forever Sites

Vegetation Complexes within Bush Forever Sites	Pre-European Extent within the Swan Coastal Plain (ha)	Current extent of complex within the Swan Coastal Plain (ha)	Proportion of original extent remaining (%)	Bush Forever Site the Vegetation Complex is within	Extent of complex within the Bush Forever Site within PDE	Extent of complex within Bush Forever Site within IA	Remaining extent of complex post clearing of IA	Proportion of original extent remaining post clearing of IA (%)
Bassendean Complex-North-Transition	20,856.54	18,407.85	88.26	326	0.70	0.02	18,407.83	88.26
Bassendean Complex-Central and South	87,476.26	20,819.97	23.80	193	0.99	0.63	20,819.34	23.80

Management and mitigation measures for Bush Forever Sites have been included in the Proposal FVEMP aimed at avoiding and minimising direct and indirect impacts to Bush Forever Sites.

The significance of impacts to Bush Forever Sites and any requirements for offsets will be managed via the DA process under the Planning Act and assessment against Principle (h) via the NVCP process under Part V of the EP Act (refer to Table B2-2, Appendix B.2 for further detail).

4.5.3 Predicted indirect environmental impacts

Native Vegetation, Threatened and Priority Ecological Communities and Threatened and Priority flora habitat

Indirect impacts to native vegetation, including TEC/PECs and Priority flora have the potential to occur as a result of construction and operational activities of the Proposal. This may include changes in vegetation structure, species composition and ecological function due to indirect impacts from construction activities as a result of vehicle and heavy equipment movement causing dust deposition on vegetation, introduction and/or spread of weeds species and disease such as *Phytophthora* dieback. A FVEMP and HMP (Appendix **Error! Reference source not found.** and Appendix **Error! Reference source not found.**, respectively) have been developed for the Proposal to manage risks associated with weeds and disease and their potential impacts to Flora and Vegetation.

The two individuals of *Schoenus griffinianus* recorded (ELA, 2026) are located 8 m west of the PDE boundary. These individuals may be indirectly impacted by the implementation of the Proposal. However, as noted above risk of indirect impacts is considered to be low, given the construction of the Proposal will be transient along the extent of linear corridor and therefore limited in intensity and duration in any one location. Additionally, the mitigation measures detailed in the FVEMP, CEMP and HMP are considered sufficient to ensure that the risk of indirect impacts continues to remain low throughout the construction of the Proposal.

As the majority of the of native vegetation proposed to be cleared is in Degraded tor worse condition (95%), any edge effects that do occur are unlikely to result in significant impact to the integrity of these patches. Additionally, the Proposal is located such that no additional fragmentation is introduced to the current extents of the native vegetation within the PDE.

The Proposal's construction and operational activities, such as hot works and use of diesel-powered equipment present a potential fire risk. Western Power has a Bushfire Management Strategy which will be implemented for both the construction and operation stages of the Proposal. Additional management measures to minimise risk of impacts to vegetation from fires are also detailed in FVEMP (Appendix **Error! Reference source not found.**) for the Proposal.

Potential indirect impacts to vegetation from dust emissions is considered to be insignificant due to limited intensity and duration of activities in any one location as works are transient along the linear corridor. Standard industry controls are considered adequate to manage the potential risk and these will be addressed in the CEMP prepared by the PC and supplied to Western Power prior to construction of

the Proposal. Such controls include the use of water carts for dust suppression and limiting clearing and material movement activities during high wind conditions.

As these indirect impacts are primarily associated with clearing activities, the NVCP process under Part V of the EPA act is considered to have the appropriate regulatory authority to assess the significance and impose conditions for management of impacts associated with the implementation of the Proposal. Within State managed land, the DAS permitting process will also serve as an alternative regulatory mechanisms to manage indirect impacts, specifically relating to impacts that may result from introduction and spread of weeds and disease (dieback) The DAS application requires the applicant to demonstrate implementation of the mitigation hierarchy such that risks to the environmental, economic and social values of the State managed land are minimised to as low as reasonably practicable (ALARP principle) (refer to Table B2-2, Appendix B.2 for further detail).

In addition, Western Power has referred the Proposal under the EPBC Act due to the direct and indirect impacts of the Proposal to MNES, specifically the Banksia Woodlands and Tuart Woodlands TECs. The DCCEEW has statutory authority under the EPBC Act to assess the significance of, and impose conditions for management of, impacts associated with the implementation of the Proposal (refer to Table B2-2, Appendix B.2 for further detail).

4.5.4 Cumulative impacts to Flora and Vegetation

Cumulative effects are the successive, incremental and interactive environmental impacts of a proposal when assessed in conjunction with one or more past, present and reasonably foreseeable future activities. Cumulative impacts to Flora and Vegetation have been assessed in the desktop cumulative impact assessment for the PDE which are included Appendix D.12.

The SCP has been subject to environmental impacts such as clearing of native vegetation, spread of *Phytophthora* dieback, weed invasion, altered fire regimes and hydrological changes, from a range of past and present activities such as plantations in State Forest, agriculture, infrastructure and urban sprawl. A drying climate has also lead to reduced rainfall and groundwater recharge impacting terrestrial and groundwater dependent ecosystems.

Clearing within the IA represents a reduction of 0.24% of the remaining native vegetation within a 5 km buffer of the PDE (5,531.57 ha) and contributes 0.002% of impacts to the foreseeable cumulative impacts across the SCP.

The local extent of Banksia TEC/ PEC (within a 5 km radius of the PDE) is estimated to be 5,344.26 ha, of which 2,227.82 ha occurs in conservation reserves. The proposed clearing of 0.24 ha of the TEC/PEC for the purposes of the Proposal will amount to a 0.004% reduction in the local extent of the TEC. The cumulative impact assessment indicates the Proposal will contribute <0.0001% to the foreseeable cumulative impacts to Banksia TEC/PEC across the SCP.

The cumulative impact assessment has identified the potential for up to 115.08 ha of foreseeable clearing impacts to Tuart Woodlands TEC/PEC across the SCP. (inclusive of this Proposal) The proposed

clearing will therefore only contribute 0.0004% to foreseeable cumulative impacts to Tuart Woodlands TEC/PEC across the SCP.

Clearing of native vegetation in Bush Forever Sites within the PDE represents a 0.001% cumulative impact, when combined with foreseeable cumulative impacts, across the SCP.

The avoidance and mitigation measures implemented by Western Power has allowed for impacts to native vegetation, including TEC/PEC and Bush Forever Sites, to be minimised such that construction of the Proposal will not significantly contribute to cumulative impacts in the broader SCP region.

4.6 Assessment and consideration of significance of residual impacts

Residual impacts remaining after application of the mitigation hierarchy have been considered regarding the 'significance' of impacts on EPA Factor Flora and Vegetation and summarised in Table 34. This assessment is based on EPA (2023b) *Statement of Environmental Principles, Factors, Objectives and Aims of EIA*.

Table 34 Assessment of significance of residual impact on Flora and Vegetation

Significant matters	Significance of residual impacts in regional context
Object and principles of the Act	Specialist surveys, undertaken by suitably qualified consultants, have been undertaken to assess Flora and Vegetation. Surveys were completed in accordance with EPA guidelines. The Proposal design focused strongly on impact avoidance, informed by completed surveys, and involved multiple design iterations. This approach maximised avoidance of impacts and is a precautionary approach, limiting reliance on minimisation, rehabilitation and offsets. The precautionary principle has been applied through: • Evolving Proposal design informed by environmental studies to minimise impacts • Design to place powerlines within existing easements to avoid additional clearing of Banksia Woodland TEC, Bush Forever Sites and native vegetation, where viable. • Pole locations have been adjusted to avoid patches of Banksia Woodlands TEC and Bush Forever Sites and span over vegetation as much as possible. • Restricting clearing to a maximum of 31.71 ha. The Proposal's design evolution has prioritised use of areas of native vegetation mapped as being in degraded condition.
Values, sensitivity and quality of the environment that is likely to be impacted	Clearing of native vegetation will be limited to a maximum of 13.34 ha. The majority of the of native vegetation to be cleared is in Degraded or worse condition (approximately 95%). No native vegetation in Excellent or Very Good condition will be impacted as part of the Proposal. Clearing of the Banksia Woodlands TEC will be limited to a maximum of 0.24 ha, which is inclusive of the following State listed PECs: • 0.21 ha of Banksia Woodlands PEC • 0.03 ha of Low lying *Banksia attenuata* woodlands or shrublands (FCT 21c, PEC) Clearing of Banksia Woodlands TEC/PEC will impact three identified patches within the PDE. The vegetation condition of the impacted areas of Banksia Woodlands TEC/PEC ranges from Good to Degraded. Clearing of the Tuart Woodlands TEC will be limited to a maximum of 0.08 ha. The clearing is within one patch identified within the PDE and is of planted rehab within the median strip of Ocean Reef Road.

Significant matters	Significance of residual impacts in regional context
	No flora species listed as Threatened under the BC Act or EPBC Act or DBCA listed Priority Flora species recorded during the field surveys are located within the PDE. A total of 0.65 ha of Bush Forever Sites and 37.07 ha within the Gnangara-Moore River State Forest is intersected by the IA.
All stages and components of the Proposal	The impact assessment considers components of the Proposal that might impact flora and vegetation.
Extent (intensity, duration, magnitude and footprint) of likely impacts	Indirect impacts from weed, disease and fire are limited to the construction period and ongoing maintenance of access tracks (where required). For the purposes of the EIA, all clearing proposed has been considered permanent. However, the FVEMP requires a review of the final cleared footprint one month following completion of construction to identify any areas within the PDE that can be rehabilitated. The condition stipulates rehabilitation will be managed via a Revegetation Management Plan (RMP). Construction and clearing actions will take place progressively over a one to one and half-year period, with an operational life of >50 years (permanent infrastructure).
Resilience of the environment to cope with the impacts, including pressures such as climate change	A significant proportion of the Proposal's IA is already Degraded or disturbed. Climate change is predicted to lead to increased drought and extreme weather events in the region, which would increase pressure on native vegetation. As the Proposal is seeking to upgrade the SWIS to enhance renewable energy generation in the area, it will therefore seek to mitigate climate change pressures.
Consequence of application of the mitigation hierarchy	Application of the mitigation hierarchy will result in no significant indirect impacts to Flora and Vegetation. Application of the mitigation hierarchy has identified the potential for significant residual direct impacts resulting from clearing activities remain. However, assessment of significance and the requirement for offsets can be adequately managed via: • Part V of the EP Act • Referral under the EPBC Act • DAS permitting system under the CALM Act and BC Act for State managed lands • DA process under the Planning Act.
Consequence of the likely impacts	Likely impacts will reduce the extent of TEC/ PECs within the local area and patch extents. Native vegetation within the IA including TECs/ PEC buffers is considered to be primarily in Degraded condition, and Proposal activities have the potential to contribute to further degradation. Likely impacts will reduce the extent of Bush Forever Sites in the local area.
Likely environmental outcomes, and whether they are consistent with the EPA environmental factor objectives	Likely environmental outcomes are presented in Table 35
Cumulative effects	The Proposal is not expected to result in significant cumulative impacts as the application of the mitigation hierarchy has reduced the clearing required for the Proposal to a maximum of 13.34 ha, 95% of which has been mapped in Degraded or worse condition. C In addition, the cumulative impact assessment has considered the impacts of the Proposal in the context of foreseeable future clearing within a 5 km radius. Proposal impacts will only contribute 0.002% to cumulative impacts to native vegetation and <0.001% of foreseeable cumulative impacts to Banksia Woodlands TEC/PEC and Tuart Woodlands TEC/PEC. This is not considered to be a significant contribution to cumulative impacts.

Significant matters	Significance of residual impacts in regional context
Holistic impacts	The Proposal involves clearing up to 31.71 ha of vegetation, resulting in the loss of native flora, TEC/ PECs, ESAs (including Bush Forever sites and DBCA-managed land), and fauna habitat. This may lead to direct fauna mortalities, visual amenity loss, weed invasion, and degradation of nearby ecosystems. Clearing of vegetation growing in association with a wetland could alter hydrological regimes and affect surrounding vegetation health.
Level of confidence in the predicted residual impacts and success of the proposed mitigation	The EIA for the Proposal has been informed by biological surveys undertaken for the Proposal, in accordance with relevant EPA Technical Guidance and with no significant limitations noted. Western Power, as an organisation, has an established Environmental Management System in place, with policies and procedures that regulate construction and operation activities such that potential impacts to the environment are avoided and minimised.
Public interest about the likely effect of the proposal on the environment and relevant public information	Western Power has engaged with relevant stakeholders, as identified in Table 6. Primary concerns have been the removal of mature vegetation, impacts to Black Cockatoos and impacts to visual amenity.
Other Approvals	Table B2-2, Appendix B.2 details the other approvals processes that can assess the significance of, and impose conditions for the management of, residual impacts identified for the Proposal. The primary impacts of Proposal implementation to native vegetation result from clearing activities and are of low enough magnitude that they can be suitably managed under the NVCP process under Part V of the EP Act. Impacts to native vegetation as well as non-native vegetation and its environmental value (particularly in the context of Black Cockatoos) will also be managed via the assessment of the Proposal as a 'Controlled Action' under the EPBC Act. As the Banksia Woodlands TEC/PEC and Tuart Woodlands TEC/PEC is a listed MNES under the EPBC Act, potential impacts of the proposal to these threatened ecological communities can be managed by DCCEEW and their assessment of the Proposal as a 'Controlled Action'. Additional approvals such as the DBCA DAS permit and DA process under the Planning Act provide further mechanisms for assessing and managing potential impacts to flora and vegetation, specifically conservation areas, such as Bush Forever Sites and State Forest.

4.7 Environmental outcomes

The Proposal will be implemented in accordance with the environmental outcomes for Flora and Vegetation detailed in Table 35 below.

Table 35 Environmental Outcomes for Flora and Vegetation

Environmental Outcome	How outcomes will be measured and assured
• Clearing of up to 13.34 ha of native vegetation	Part V of the EP Act - NVCP conditions and compliance reporting
• Clearing of up to 0.24 ha of Commonwealth listed Banksia Woodlands TEC, which includes the following State listed PECs: – 0.21 ha of Banksia Woodlands of the Swan Coastal Plain (SCP) PEC – 0.03 ha of Low-lying *Banksia attenuata* woodlands or shrublands PEC (FCT21c)	Part V of the EP Act - NVCP conditions and compliance reporting EPBC Act – assessment of significance of impacts to MNES (Threatened ecological communities) and Proposal FVEMP

Environmental Outcome	How outcomes will be measured and assured
• Clearing of up to 0.08 ha of Commonwealth listed Tuart Woodlands TEC/PEC	EPBC Act – assessment of significance of impacts to MNES (Threatened ecological communities) and Proposal FVEMP
• Clearing of up to 0.65 ha of vegetation within Bush Forever Sites	Planning Act DA process
• No introduction of new Declared Pests or Weeds of National Significance within the PDE attributable to Proposal implementation	Part V of the EP Act - NVCP conditions and compliance reporting EPBC Act – assessment of significance of impacts to MNES (Threatened ecological communities) CALM Act – DBCA DAS permit
• No spread of dieback into uninfested areas mapped within the PDE attributable to Proposal implementation.	Part V of the EP Act - NVCP conditions and compliance reporting EPBC Act – assessment of significance of impacts to MNES (Threatened ecological communities) CALM Act – DBCA DAS permit Planning Act DA process

5. Terrestrial fauna

5.1 EPA objective

The objective of the factor Terrestrial Fauna is '*To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*'

5.2 Relevant policy and guidance

- The following policy and guidance documents have been considered throughout this section:
- *Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan* (DPaW, 2013)
- *Forest Black Cockatoo (Baudin's Cockatoo Calyptorhynchus baudinii and Forest Red-tailed Black Cockatoo Calyptorhynchus banksia naso) Recovery Plan* (DEC, 2008)
- *Environmental Factor Guideline: Terrestrial Fauna* (EPA, 2023b)
- *Referral guideline for 3 WA threatened black cockatoo species Carnaby's Cockatoo (Zanda latirostris), Baudin's Cockatoo (Zanda baudinii) and the Forest Red-tailed Black-cockatoo (Calyptorhynchus banksii naso)* (DAWE, 2022)
- *Scoring System for the Assessment of Foraging Value of Vegetation for Black Cockatoos (Bamford Consulting Ecologists* (BCE) 2020)
- *Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* (EPA, 2020b).
- *Technical Guidance – Sampling of short range endemic invertebrate fauna* (EPA, 2009).

5.3 Receiving environment

5.3.1 Surveys and studies

Multiple biological surveys have been completed for the various design iterations and alignments during the planning phase of the Proposal. These surveys have been classified as either primary or secondary surveys:

- Primary surveys being those conducted to the Detailed level, within the appropriate season and in accordance with EPA technical guidance
- Secondary surveys being supplemental, out of season and/or Reconnaissance level surveys that only include portions of the PDE

A summary of these surveys is provided in Table 36 and full survey reports can be found in Appendix D. Figure 8 maps the survey boundaries in relation to the PDE.

The survey that has been used to inform the environmental impact assessment for the Proposal is the 2026 Eco Logical (ELA) biological survey which included a Detailed flora and vegetation survey, basic fauna survey, targeted flora survey and targeted black cockatoo survey. This survey presents the most

recent and comprehensive assessment of the PDE, was completed within the appropriate season, in accordance with EPA Technical guidance and included a review of the previous reports completed for the Proposal as part of the desktop assessment. Supplementary data from AECOM (2024) has been used where relevant, such as for Threatened and Priority fauna records, LOO assessments and Black Cockatoo habitat assessments.

A portion of the PDE associated with the Neerabup Terminal (1.55 ha) was not included within the ELA survey area. The AECOM 2024 (1.5 ha) and AECOM 2023 (0.05 ha) survey data (Table 36) has been used to inform the environmental values for this area. The AECOM 2023 survey data is only considered in the following sections in the context of the 0.05 ha that intersects the PDE as the only overlapping scope of this survey with the Proposal is Neerabup Terminal.

Data from secondary surveys has been included where it adds to the results of the ELA survey. In particular, for the Black Cockatoo habitat assessment, data for potential nesting trees recorded across both primary and secondary surveys has been consolidated into a single data set for the EIA. This is to address the inconsistencies in the potential nesting trees that were identified across the biological surveys for the Proposal due to differing methodologies employed by each consultant.

There is a 1.47 ha gap within the PDE that has not been surveyed. Data for these areas has been inferred using a combination of the existing data from AECOM (2024) and ELA (2026) and review of aerial imagery. Where fauna habitat types have been inferred, this has been highlighted in the relevant sections.

Figure 9 indicates the location of the survey gap areas within the PDE.

Table 36 Fauna surveys completed for the Proposal

Survey	Scope	Total area surveyed	Total area intersecting the PDE
Primary Surveys			
Ecological Assessment of the Wangara to Neerabup 132 kV Transmission Line Project, Eco Logical Australia 2026 (Appendix D.1)	A single season Basic fauna survey for the defined linear corridor for the Proposal was undertaken in accordance the EPA (2020b) *Technical Guidance - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*, including: • A desktop assessment of available databases and literature review of previous reports for the Proposal. Data was used to inform the pre-survey likelihood of occurrence assessment for conservation significant fauna species • A field survey with personnel walking transects through the survey area, delineating and mapping fauna habitats and recording opportunistic sightings of fauna. A Targeted black cockatoo habitat assessment was conducted in accordance with the *Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo, and the Forest Red-tailed Black cockatoo* (DAWE 2022). Consideration was also given to the *Survey guidelines for Australia's threatened birds* (DEWHA 2010). Foraging potential breeding and potential roosting habitat was assessed within the survey area.	273.3 ha	72.73 ha
Clean Energy Link Swan Coastal Plain Flora, Vegetation and Fauna Assessment, AECOM 2024 (Appendix D.2)	A single season (spring) Basic Fauna Survey was conducted in accordance with the EPA (2020b) *Technical Guidance - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*, including: • Fauna habitats were assessed for specific habitat components, including consideration of structural diversity and refuge opportunities for fauna, to determine the potential for these habitats to support conservation significant species. • Eighteen detailed habitat assessments were completed throughout the survey area. • A single season (spring) Targeted Black Cockatoo Survey was undertaken for all three Threatened WA Black Cockatoo species (Carnaby's Cockatoo, Baudin's Cockatoo, and the Forest-Red-tailed Black Cockatoo). • Breeding, foraging and roosting assessments were completed based on DAWE (2022) and BCE (2020) assessments.	204.98 ha	43.94 ha (only 1.50 ha of vegetation and fauna habitat mapping used)

Survey	Scope	Total area surveyed	Total area intersecting the PDE
NBT-WGA 132 kV Line Project – Short Range Endemic Invertebrate Fauna Impact Assessment Technical Memorandum, Invertebrate Solutions 2026b (Appendix D.8)	A technical memorandum assessing the Proposal's impacts to five key conservation significant and SRE species identified during the desktop assessment. The memorandum was informed by a targeted field survey completed in April 2026 (report still pending finalisation). Detailed information was provided to Invertebrate Solutions to inform the impact assessment, including a PDE and fauna habitat mapping. The fauna habitat mapping provided to Invertebrate Solutions was a consolidated dataset of SLR (2025) and AECOM (2024) habitat mapping, as the ELA (2026) survey results were not available at the of commissioning the works. The suitable habitat mapped by Invertebrate Solutions has been cross-referenced against ELA (2026) habitat mapping to allow for consistency in discussing impacts in this ERD. The scope of the technical memorandum included: • Assessment of suitability of potential habitat identified within the PDE for conservation significant and SRE invertebrate fauna • Assessment of significance of identified potential indirect and direct impacts to conservation significant and SRE invertebrate fauna from implementation of the Proposal • Recommendations for appropriate avoidance and mitigation measures for conservation significant and SER invertebrate fauna	68.16 ha	63.24 ha
NREP 1-NT-NBT 330 kV Line Flora, Vegetation and Fauna Assessment, AECOM 2023 (Appendix D.5)	A single season (spring) Basic Fauna Survey was conducted for the linear corridor of the NT-NBT 330 kV line project. This project has an overlapping area with the Proposal associated with Neerabup Terminal. Survey data from this survey has been used to address a gap area in the ELA (2026) survey of 0.05 ha. The AECOM (2023) survey was conducted in accordance with the EPA (2020b) *Technical Guidance - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*, including: • Fauna habitats were assessed for specific habitat components, including consideration of structural diversity and refuge opportunities for fauna, to determine the potential for these habitats to support conservation significant species. • A single season (spring) Targeted Black Cockatoo Survey was undertaken for all three Threatened WA Black Cockatoo species (Carnaby's Cockatoo, Baudin's Cockatoo, and the Forest-Red-tailed Black Cockatoo). • Breeding, foraging and roosting assessments were completed based on DAWE (2022) and BCE (2020) assessments.	576 ha	0.05 ha

Survey	Scope	Total area surveyed	Total area intersecting the PDE
Secondary Surveys			
Short Range Endemic Invertebrate Assessment of NBT-WGA 132 kV Line, Invertebrate Solutions 2026a (Appendix D.7)	A desktop assessment for short range endemic (SRE) and conservation significant invertebrate fauna was undertaken within the PDE to provide supporting information. The desktop assessment included the following: • A search of the WA Museum databases for potential SRE taxa within the study area. • Summary of previous SRE fauna surveys and studies from the region as part of the desktop assessment. • Assessment of likelihood of occurrence for SRE and conservation significant invertebrate fauna based on the consolidated vegetation types, condition and habitat mapping. The desktop assessment was undertaken with regard to the *Technical Guidance – Sampling of Short Range Endemic Invertebrate Fauna* (EPA, 2016).	NA	NA
Neerabup Terminal Transmission Corridor Preliminary Flora and Vegetation, Fauna and Black Cockatoo Surveys, SLR 2025 (Appendix D.3)	A supplementary single phase (summer) Basic fauna survey, and Black Cockatoo habitat assessment was undertaken in areas outside the AECOM 2024 survey area: • Eight habitat assessments were undertaken in representative areas of fauna habitat within the survey area to record habitat values. Where possible, at least one habitat assessment was recorded within each habitat type. • Where access was restricted due to private land, habitat assessments were taken at a distance and may require further surveys in spring 2025. • Breeding, foraging and roosting assessments were completed based on DAWE (2022) and DCCEEW (2023b) habitat scoring tool for Black Cockatoos. • Survey effort comprised four person days in December 2024. • Report was revised in 2026 to align the habitat scoring tool with the AECOM (2024) survey	121.27 ha	24.38 ha

Adequacy of surveys

The primary surveys were undertaken in accordance with the EPA (2020) *Technical Guidance – Vertebrate Fauna Surveys for Environmental Impact Assessment* for Fauna surveys and *Technical Guidance – Sampling of Short Range Endemic Invertebrate Fauna* (EPA, 2016), including appropriate survey timings and by suitably qualified consultants.

The AECOM (2024) and ELA (2026) primary surveys noted 'access problems' as a potential limitation, as small sections of the surveyed areas for both the AECOM (2024) and ELA (2026) surveys were inaccessible due to these areas overlapping with private property boundaries. This may present a moderate limitation for the assessment of Black Cockatoo breeding trees, as large trees within private properties were unable to be accessed to conduct a hollow assessment. Additional controls will be implemented in the Fauna and Fauna Habitat Environmental Management Plan (FFHEMP) to address this limitation.

5.3.2 Threatened and Priority Fauna – Desktop

Prior to undertaking the field survey, ELA completed a desktop database search of DBCA databases and the DCCEEW Protected Matters Search Tool (PMST) to identify records of Threatened or Priority fauna species within a 10 km search radius of the survey area. A pre-survey LOO assessment was undertaken to determine the potential for Threatened or Priority fauna species to occur within the survey area, based on factors such as likely presence of suitable habitat within the survey area and the proximity of previous records.

A total of 90 conservation significant fauna species were identified from the desktop assessment. Previous records of four conservation significant fauna species were identified within the survey area:

- Carnaby's Cockatoo (*Zanda latirostris*, listed as EN under the EPBC Act and BC Act)
- Red-necked stint (*Calidris ruficollis*, listed as MI under the EPBC Act and BC Act)
- Black-striped snake (*Neelaps calonotos,* listed as P3 by DBCA)
- Quenda (*Isodon fusciventer*, listed as P4 by DBCA).

The pre-survey LOO was downgraded for both the Red-necked stint and Black-striped snake. The Red-necked stint was considered Unlikely to occur based on assessment of aerial imagery indicating suitable habitat to be unavailable. The Black-striped snake was downgraded to Potential to occur due to the records of the species being from 1976 (ELA, 2026).

The pre-survey LOO concluded that three conservation significant species were Likely to occur within the survey area and four had the Potential to occur:

- Carnaby's Cockatoo (*Zanda latirostris*, listed as EN under the EPBC Act and BC Act) - Likely
- Quenda (*Isodon fusciventer*, listed as P4 by DBCA) – Likely
- Forest Red-tailed Black Cockatoo (FRTB) (*Calyptorhynchus banksia naso*, listed as VU under the EPBC Act and BC Act) - Likely

- Rainbow Bee-eater (*Merops orantus,* listed as M under the EPBC Act) - Potential
- Peregrine falcon (*Falco peregrinus*, listed as OS under the BC Act) - Potential
- Black-striped snake (*Neelaps calonotos,* listed as P3 by DBCA) - Potential
- Western brush wallaby (*Notamacropus Irma*, listed as P4 by DBCA) - Potential

The remaining 83 species were considered unlikely to occur.

5.3.3 Fauna – field survey

Fauna diversity

A total of 34 vertebrate fauna species were recorded during the field survey completed by ELA (2026), comprised of 28 birds, four mammals and two reptiles. Of the 34 species recorded, 29 were native and five were introduced.

Threatened and Priority Fauna

Three conservation significant fauna species were recorded during the ELA (2026) field survey:

- Carnaby's Cockatoo – observed flying overhead and perching in a Flooded gum
- FRTBC – observed flying overhead
- Rainbow bee-eater – observed flying overhead

All four of the conservation significant fauna species assessed as having a Potential or Likely pre-survey LOO were considered to still have a Potential LOO post-survey (ELA, 2026).

Detail of the LOO assessment for these species is provided in Table 37.

The results of opportunistic fauna records from the AECOM (2024) and SLR (2025) surveys also recorded observations of Carnaby's Cockatoo and FRTBC. In addition, both of these surveys recorded evidence of the Quenda. No other conservation significant fauna were identified during the field surveys conducted by AECOM (2024) and SLR (2025).

Figure 17 displays the records of Threatened and Priority fauna identified during biological surveys.

Table 37 Likelihood of occurrence assessment for Threatened and Priority Fauna (ELA, 2026)

Taxon	Common Name	EPBC Act	BC Act / DBCA	Habitat	Pre-survey	Justification	Post-survey	Justification
Zanda latirostris	Carnaby's Black Cockatoo	EN	EN	Carnaby's Cockatoo is endemic to southwest WA with populations extending from the Murchison River to Esperance, and inland to Coorow, Kellerberrin and Lake Cronin. Foraging habitat for this species includes native shrubland, kwongan heathland and woodland dominated by proteaceous plant species including Banksia, Hakea and Grevillea, Eucalypt and Corymbia woodlands and pine plantations.	Likely	Suitable habitat likely to be present, has been previously recorded within the survey area (2005).	Recorded	Directly observed within survey area
Calyptorhynchus banksii naso	Forest Red-tailed Black-Cockatoo	VU	VU	Inhabits dense Jarrah, Karri and Marri forests which receive more than 600 mm average annual rainfall. Known to feed in more open agricultural areas and metropolitan Perth	Likely	Recent nearby records (within 300m) from 2017. Suitable habitat likely to be present.	Recorded	Directly observed within survey area
Merops ornatus	Rainbow bee-eater	M	-	Occurs in open forests, woodlands and shrublands and in clear areas near water. Occurs throughout mainland Australia where it is widespread	Potential	Suitable habitat such as woodland may be present within the survey area.	Recorded	Directly observed within survey area
Falco peregrinus	Peregrine falcon	-	OS	The Peregrine Falcon is found in most habitats, from rainforests to the arid zone, and at most altitudes, from the coast to alpine areas. It requires abundant prey and secure nest sites, and prefers coastal and inland cliffs or open woodlands and forests near water in trees with old rave or Wedge-tailed Eagle nests, and may even be found nesting on high city buildings	Potential	A record from 2003 occurs 600m from the survey area. Suitable habitat may occur within the survey area.	Potential	Suitable habitat present (woodland and in proximity to water source).
Neelaps calonotos	Western black-striped snake	-	P3	The Black-striped Snake occurs only along the Swan Coastal Plain with the bulk of this species' known distribution occurring in the Perth region; however, there have been recent records of this species further north near Dongara and Eneabba suggesting it has a broader distribution. This species occurs on dunes and sand plains vegetated with heaths and eucalypt/banksia woodlands.	Potential	A historical record occurs within the survey area. Additional records occur within 5km. Suitable habitat may occur within the survey area.	Potential	Suitable habitat including Banksia/Eucalypt woodland recorded.

Taxon	Common Name	EPBC Act	BC Act / DBCA	Habitat	Pre-survey	Justification	Post-survey	Justification
Isoodon fusciventer	Quenda, Southwestern brown bandicoot	-	P4	Inhabits scrubby, often swampy, vegetation with dense cover up to 1 m high, often feeds in adjacent forest and woodland that is burnt on a regular basis and in areas of pasture and cropland lying close to dense cover. Populations inhabiting Jarrah and Wandoo forests are usually associated with watercourses.	Potential	Suitable habitat may occur within the survey area. A previous record from 2013 occurs within the survey area.	Potential (ELA, 2026); however evidence of the species was recorded during the AECOM (2024) and SLR (2025) field surveys	Suitable habitat recorded.
Notamacropus irma	Western brush wallaby	-	P4	Inhabits open forest or woodland, particularly favouring open, seasonally wet flats with low grasses and open scrubby thickets. It is also found in some areas of mallee and heathland, and is uncommon in karri forest.	Potential	A previous record from 2006 is located approximately 1km north of the survey area. Suitable habitat may occur within the survey area	Potential	Suitable habitat including open woodland recorded.

5.3.4 Habitat types

A total of 10 fauna habitat types, covering 183.3 ha, were identified and mapped by ELA (2026) within the survey area. Mixed open woodlands and shrubland habitat type was the most common within the survey area and PDE, comprising 89.1 ha and 13.18 ha, of the surveyed area and PDE, respectively (ELA, 2026).

The 1.55 ha portion of the PDE associated with Neerabup Terminal that was not included within the ELA (2026) survey area is covered by the AECOM (2023 and 2024) survey area. All 1.55 ha were mapped as Adenanthos/Plantation fauna habitat type by AECOM. Details are also included in Table 38.

Descriptions of the identified fauna habitat types and an assessment of their potential suitability for conservation significant fauna are provided in Table 38. Fauna habitat mapping for the PDE is shown in Figure 17.

Where fauna habitat has been inferred for the survey gap areas, the inferred area is presented in brackets following the area value of the surveyed extent of each habitat type.

Cleared areas (89.9 ha of the surveyed area and 0.43 ha inferred as cleared) are excluded from the table as they do not represent suitable habitat for fauna.

Table 38 Fauna habitat types mapped within the Survey Area and PDE (ELA, 2026)

Habitat Type	Description	Conservation significant fauna species potentially utilising habitat	Extent within Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
Banksia woodland	This habitat is aligned with the BaBmBi vegetation community. It consists primarily of *Banksia attenuata, Banksia menziesii and Banksia ilicifolia* low open woodlands over mixed shrublands. It occurs on brown grey to grey sandy loam flats and slopes.	• Carnaby's cockatoo • Peregrine falcon • Rainbow bee-eater • Western black-striped snake	1.4	0.04	0.05
Banksia woodland with emergent trees	This habitat is aligned with the BsppEtAf, CcBaBi, EmBaBm and EPP_ErEtBspp vegetation communities. It consists of primarily of mixed Banksia spp. woodlands over mixed shrublands, with the occurrence of emergent trees of Marri, Jarrah, Rudis or Blackbutt. It occurs on brown grey to grey sandy loam flats and slopes.	• Carnaby's cockatoo • Forest red-tailed black cockatoo • Rainbow bee-eater • Peregrine falcon • Western black-striped snake	36.3	2.04	2.69
Cleared areas with scattered trees and/or shrubs	This habitat consists primarily of cleared areas with scattered pine trees and/or grass trees over a weedy herbaceous understory. It occurs on brown grey sandy soils. No	• Carnaby's cockatoo • Forest red-tailed black cockatoo • Rainbow bee-eater	12.7	3.33	4.40

Habitat Type	Description	Conservation significant fauna species potentially utilising habitat	Extent within Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
	quadrats or relevés were established in this vegetation community.	• Western brush wallaby			
Melaleuca closed depression	This habitat is aligned with the MpAgLs and MpAsHa vegetaiton communities. It comprises *Melaleuca preissiana* forest or woodland over mixed shrublands. It occurs on closed depression with grey brown sand to sandy loam.	• Carnaby's cockatoo • Rainbow bee-eater • Quenda • Western brush wallaby	2.7	0.00	0.00
Mixed open shrublands on sand	This habitat is aligned with the XpAcMf vegetation community. It consists of *Xanthorrhoea preissii, Adenanthos cygnorum* and *Macrozamia fraseri* mid open shrubland on sandy flats.	• Carnaby's cockatoo • Rainbow bee-eater • Western brush wallaby	0.9	0.26	0.34
Mixed open woodlands and shrublands	This habitat is aligned with the EPP_Ec, EPP_ErMpNf, EPP_PpEmNf, MpNfAc and MXP vegetation communities. It consists primarily of mixed open woodlands and shrublands, with many of the areas comprising previously cleared ex-pine plantation, some of which has been naturally revegetated. It occurs on grey brown sandy loam on flats, slopes and open depression.	• Carnaby's cockatoo • Forest red-tailed black cockatoo • Rainbow bee-eater • Peregrine falcon • Quenda • Western brush wallaby	89.1	13.18 (0.29)	17.79
Pine plantation	This habitat is aligned with the PP vegetation community. It consists of pine plantation (**Pinus pinaster*) mid open forest, with typically little to no native understorey. It occurs on grey brown sandy loam on flats and slopes.	• Carnaby's cockatoo • Rainbow bee-eater	19.5	2.92 (0.14)	4.04
Adenanthos / Plantation	Fauna habitat mapped by AECOM (2023) for the portion of the Neerabup Terminal that is not covered by the ELA (2026) survey. This habitat consists of isolated pine trees over native regrowth. Regrowth species include woollybush (*Adenanthos cygnorum var. cygnorum*), grasstree and *Macrozamia fraseri.* As the habitat is primarily open, it provides little variety in terms of microhabitats for conservation significant fauna species..	• Carnaby's cockatoo • Forest red-tailed black cockatoo • Quenda • Rainbow bee-eater	1.55	1.55	2.05

Habitat Type	Description	Conservation significant fauna species potentially utilising habitat	Extent within Survey Area (ha)	Extent within the PDE (ha)	Proportion of PDE (%)
Rehabilitation	This habitat consists of urban areas rehabilitated by Main Roads WA with a variety of native species.	• Carnaby's cockatoo • Rainbow bee-eater	5.4	4.38	3.79
Managed gardens and roadside treelines	This habitat is aligned with the MG vegetation community. It consists of a variety of planted species as decorative roadside trees, park areas, garden areas and private property with planted species. It occurs on grey sand on flats and slopes.	• Carnaby's cockatoo • Forest red-tailed black cockatoo • Rainbow bee-eater	15.3	6.79 (0.6)	9.76

5.3.5 Black Cockatoo Assessment

ELA conducted a targeted black cockatoo habitat assessment within the survey area in accordance with the *Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo, and the Forest Red-tailed Black cockatoo (DAWE 2022).* The survey area occurs within the non-breeding range of Carnaby's Cockatoo, within the 'likely to occur' range of the FRTBC and is outside of the predicted range of Baudin's Cockatoo (DAWE, 2022). Previous records of all three Black Cockatoo species occur within 12 km of the survey area.

The desktop assessment completed by ELA (2026) identified 1,496 records of Black Cockatoos within 12 km of the survey area. This included (Figure 18):

- 1,431 records of Carnaby's Cockatoo
- 11 records of Baudin's Cockatoo
- 12 records of white-tailed black cockatoo (not differentiated between Carnaby's and Baudin's)
- 42 records of FRTBC

A total of 16 confirmed white-tailed (Carnaby's and/or Baudin's) roosts, four FRTBC roosts and ten joint roosts (white-tailed and forest red-tailed) roost occur within 12 km of the survey area (Figure 18). An additional 16 unconfirmed roosts and four cleared roosts also occur within 12 km of the survey area. The closest known roost occurs approximately 30 m west of the survey area (confirmed white-tailed roost; WANGNAR003) (ELA, 2026).

There is one instance of confirmed breeding of a Carnaby's Cockatoo in a natural hollow and 12 instances of Carnaby's Cockatoo in artificial hollows within 12 km of the survey area, with the last recorded use of these hollows being in 2019 and 2024, respectively (ELA, 2026).

Based on a desktop assessment of the Native Vegetation Extent (DPIRD-005) dataset intersected with Vegetation Complexes of the Swan Coastal Plain (DBCA-046), approximately 26,173.3 ha of remnant native vegetation exists within a 12 km buffer of the PDE. Of this native vegetation, approximately 24,704.2 ha is considered potentially suitable habitat for Black Cockatoo species, based on presence of

tall Eucalypt species (Jarrah, Tuart) and foraging species such as Banksia. This represents approximately 94% of available remnant native vegetation within 12 km of the PDE (Table 39 and Figure 19).

There are six mapped water sources within 12 km of the PDE include Lake Gnangara, Lake Joondalup, Lake Goolelal, Lake Adams, Mariginup Lake and Jandabup Lake, which may provide drinking water sources for Black Cockatoos.

A 12 km buffer of available foraging resources for Black Cockatoos represents the distance Black Cockatoos will generally forage while breeding (DAWE, 2022).

Table 39 Potential Black Cockatoo habitat (remnant vegetation extent) – 12 km buffer (GoWA, 2026)

Vegetation complex – SCP (DBCA-046)	Description	Extent within 12 km buffer (ha)	Potential habitat (ha)
Bassendean Complex-Central and South	Vegetation ranges from woodland of *Eucalyptus marginata* (Jarrah) - *Allocasuarina fraseriana* (Sheoak) - Banksia species to low woodland of Melaleuca species, and sedgelands on the moister sites. This area includes the transition of *Eucalyptus marginata* (Jarrah) to *Eucalyptus todtiana* (Pricklybark) in the vicinity of Perth.	1,816.7	1,816.7
Bassendean Complex-Central and South Transition	Woodland of *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) with well defined second storey of *Allocasuarina fraseriana* (Sheoak) and Banksia grandis (Bull Banksia) on the deeper soils and a closed scrub on the moister sites. The understorey species reflect similarities with the adjacent vegetation complexes.	217.9	217.9
Bassendean Complex-North	Vegetation ranges from a low open forest and low open woodland of Banksia species - *Eucalyptus todtiana* (Pricklybark) to low woodland of Melaleuca species and sedgelands which occupy the moister sites.	11,339.3	11,339.3
Bassendean Complex-North Transition	A transition complex of low open forest and low woodland of Banksia species - *Eucalyptus todtiana* (Pricklybark) on a series of high sand dunes. The understorey species reflect similarities with both the Bassendean-North and Karrakatta-North vegetation complexes.	1,801.7	1,801.7
Cottesloe Complex-Central and South	Mosaic of woodland of *Eucalyptus gomphocephala* (Tuart) and open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri); closed heath on the Limestone outcrops.	3,939.9	3,939.9
Herdsman Complex	Sedgelands and fringing woodland of *Eucalyptus rudis* (Flooded Gum) - Melaleuca species.	536.9	0.0
Karrakatta Complex-Central and South	Predominantly open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) and woodland of *Eucalyptus marginata* (Jarrah) - Banksia species. *Agonis flexuosa* (Peppermint) is co-dominant south of the Capel River.	1,777.7	1,777.7
Karrakatta Complex-North	Predominantly low open forest and low woodland of Banksia species - *Eucalyptus todtiana* (Pricklybark), less consistently open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus todtiana* (Pricklybark) - Banksia species.	272.8	272.8

Vegetation complex – SCP (DBCA-046)	Description	Extent within 12 km buffer (ha)	Potential habitat (ha)
Karrakatta Complex-North Transition	A transition complex of low open forest and low woodland of Banksia species - *Eucalyptus todtiana* (Pricklybark) on the transition zone of a series of high sand dunes between Bassendean-North and Karrakatta-North.	1,155.6	1,155.6
Pinjar Complex	Vegetation ranges from woodland of *Eucalyptus marginata* (Jarrah) - Banksia species to a fringing woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca preissiana* (Moonah) and sedgelands.	1,379.4	1,379.4
Quindalup Complex	Coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of *Melaleuca lanceolata* (Rottnest Teatree) - *Callitris preissii* (Rottnest Island Pine), the closed scrub of *Acacia rostellifera* (Summer-scented Wattle) and the low closed *Agonis flexuosa* (Peppermint) forest of Geographe Bay.	627.8	0.0
Southern River Complex	Open woodland of *Corymbia calophylla* (Marri) - *Eucalyptus marginata* (Jarrah) - Banksia species with fringing woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca rhaphiophylla* (Swamp Paperbark) along creek beds.	1,000.3	1,000.3
Yanga Complex	Predominantly a closed scrub of Melaleuca species and low open forest of *Casuarina obesa* (Swamp Sheoak) on the flats subject to inundation. On drier sites the vegetation reflects the adjacent vegetation complexes of Bassendean and Coonambidgee.	304.4	0.0
Total (ha)		**26,173.3**	**24,704.2**
Percentage of total remnant vegetation (26,173.3 ha) within 12 km of the PDE		**100%**	**94.4%**

Foraging habitat

The foraging value (i.e. quality) of vegetation to Black Cockatoos depends upon several factors, including:

- Foraging plant species present
- Extent and density (including projected foliage cover) of foraging species
- Overall structure and condition of foraging species present
- Connectivity, proximity to known breeding and roosting sites
- Presence of weeds and/or tree deaths (i.e. disease or drought).

The foraging habitat for each species of Black Cockatoo is defined in Table 40.

Table 40 Black Cockatoo foraging habitat definition (as per ELA, 2026)

Species	Habitat definition
Carnaby's Cockatoo	Mainly feeds in native shrubland, kwongan heathland, and woodland. Food items include seeds, flowers, and nectar of native proteaceous plant species (i.e. *Banksia* spp., *Hakea* spp., *Grevillea* spp.), as well as *Callistemo*n spp., and Marri (*Corymbia calophylla*). Also feeds on the seeds of introduced species including *Pinus* spp., *Erodium* spp., wild radish, canola, almonds, macadamia, and pecan nuts; insects and insect larvae; occasionally flesh and juice of apples and persimmons; and liquidambar.

Species	Habitat definition
Baudin's Cockatoo	Mainly feeds in eucalypt woodlands and forest and proteaceous woodlands and heath. Food items primarily include seeds of Marri, rarely Jarrah (*Eucalyptus marginata*), and seeds of native proteaceous plant species (e.g. *Banksia* spp. and *Hakea* spp.). Also feeds on insects and insect larvae; pith of kangaroo paw (*Anigozanthos flavidus*); tips of *Pinus* spp.; M*acadamia* spp.; almonds and pecans; seeds of apples, pears, and persimmons.
FRTBC	Mainly feeds in Jarrah and Marri woodlands and forest and edges of Karri (*Eucalyptus diversicolor*) forests including Wandoo (*E. wandoo*) and Blackbutt (*E. patens*). Food items primarily include seeds of Marri and Jarrah. Also feeds on Allocasuarina cones, fruits of Snottygobble (*Persoonia longifolia*) and Mountain Marri (*Corymbia haematoxylon*). Other less important foods include: Blackbutt, Bullich (*Eucalyptus megacarpa*), *Allocasuarina fraseriana, Hakea* spp., Tuart (*Eucalyptus gomphocephala*), Redheart Moit (*Eucalyptus decipiens*), and Bushy Yate (*Eucalyptus lehmanii*). Also some introduced eucalypts such as river red gum (*E. camaldulensis*) and flooded gum (*E. rudis*).

Fauna habitat delineated and mapped within the survey area was assigned a foraging quality score using the Bamford (2020) foraging assessment scoring tool. Suitable foraging habit for each of the three species is present within the survey area and no foraging evidence was recorded for any of the three Black Cockatoo species within the survey area during the ELA field survey (2026). However, AECOM (2024) recorded Carnaby's Cockatoo and FRTBC foraging during their field survey.

A foraging habitat score for Baudin's Cockatoo has been assigned due to suitable foraging species being present, despite the Proposal occurring outside of the known distribution for the species and post-survey LOO assessments completed by ELA (2026) and AECOM (2024) classifying Baudin's as having a Low/Unlikely LOO within the PDE.

Table 41, Table 42 and Table 43 detail the extent of foraging habitat and its value for Carnaby's Cockatoo, Baudin's Cockatoo and FRTBC mapped by ELA (2026) within the survey area, respectively. Where a foraging score was assigned for inferred fauna habitat types, this is indicated in brackets following the value of the surveyed area.

Table 41 Foraging habitat recorded for Carnaby's Cockatoo

Quality Score	Criteria Summary	Associated fauna habitat	Extent (ha) within survey area	Extent (ha) within PDE
6	Presence of suitable foraging plant species at a high density (i.e. primary food sources present at 40-60% projected foliage cover (PFC), secondary food sources at >60% PFC) and presence of preferred food sources at several strata.	• Banksia woodland • Banksia woodland with emergent trees	37.7	2.08

Quality Score	Criteria Summary	Associated fauna habitat	Extent (ha) within survey area	Extent (ha) within PDE
4	Suitable foraging species present at a low density (i.e. primary food sources present at <10% PFC, secondary food sources present at 10-20% PFC).	• Managed gardens and roadside treelines • Mixed open shrublands on sand • Mixed open woodlands and shrublands • Pine plantation • Adentanthos/Plantation	124.9	24.7 (1.03)
1	Presence of some scattered foraging species but <2% PFC.	• Cleared areas with scattered trees and/or shrubs • Melaleuca closed depression • Rehabilitation	20.7	7.71
0 (Nil)	No foraging value. No Proteaceae, eucalyptus, or other potential sources of food.	• Cleared	89.9	39.75 (0.43)
Total			**273.2**	75.71

Table 42 Foraging habitat recorded for Baudin's Cockatoo

Quality Score	Criteria Summary	Associated fauna habitat	Extent (ha) within survey area	Extent (ha) within PDE
5	Presence of suitable foraging plant species at a low to moderate density (i.e. food sources present at 20-40% PFC).	• Banksia woodland • Banksia woodland with emergent trees • Pine Plantation • Adenanthos/Plantation	57.2	6.55 (0.14)
4	Suitable foraging species present but at a lower density (i.e. food sources present at 10-20% PFC).	• Mixed open shrublands on sand • Mixed open woodlands and shrublands	90.1	13.44 (0.29)
2	Suitable foraging species present at a low density (i.e. food sources present at 1-5% PFC.	• Rehabilitation	5.4	4.38
1	Presence of some scattered foraging species but <1% PFC.	• Cleared areas with scattered trees and/or shrubs • Managed gardens and roadside treelines • Melaleuca closed depression	30.6	10.12 (0.6)
0 (Nil)	No foraging value. No suitable Proteaceae, eucalyptus, or other potential sources of food.	• Cleared	89.9	39.75 (0.43)
Total			**273.2**	**75.71**

Table 43 Foraging habitat recorded for FRTBC

Quality Score	Criteria Summary	Associated fauna habitat	Extent (ha) within survey area	Extent (ha) within PDE
5	Suitable foraging species present but at a lower density (i.e. food sources present at 10-20% PFC).	• Banksia woodland with emergent trees	36.3	2.04
2	Suitable foraging species present at a low density (i.e. food sources present at 1-5% PFC.	• Managed gardens and roadside treelines • Mixed open woodlands and shrublands	104.4	19.97 (0.89)
1	Presence of some scattered foraging species but <1% PFC.	• Rehabilitation	5.4	4.38
0 (Nil)	No foraging value. No suitable Proteaceae, eucalyptus, or other potential sources of food.	• Banksia woodland • Cleared areas with scattered trees and/or shrubs • Melaleuca closed depression • Mixed open shrublands on sand • Pine Plantation • Adenanthos/Plantation • Cleared	127.1	47.58 (0.57)
Total			**273.2**	**75.71**

A total of 35.52 ha of foraging habitat for Black Cockatoos was mapped within the PDE, comprising:

- Carnaby's Black Cockatoo – 35.52 ha ranging from a foraging quality score of 1 (Negligible) to 6 (Moderate) (Figure 20)
- Baudin's Black Cockatoo – 35.52 ha ranging from a foraging quality score of 1 (Negligible) to 5 (Moderate) (Figure 21)
- FRTBC – 27.28 ha ranging from a foraging quality score of 1 (Negligible) to 5 (Moderate) (Figure 22)

Breeding habitat

Breeding habitat for Black Cockatoos is defined as habitat that contains known, suitable or potential nesting trees (ELA, 2026). Table 44 provides detailed criteria for each type of nesting tree.

Table 44 Black Cockatoo nesting tree definitions (ELA, 2026)

Species	Habitat definition
Known nesting tree	Trees (live or dead but still standing) which contain a hollow where black cockatoo breeding has been recorded or which demonstrates evidence of breeding (i.e. showing evidence of use through scratches, chew marks, or feathers).
Suitable nesting tree	Trees with suitable nesting hollows present, although no evidence of use. Note that any species of tree may develop suitable hollows for breeding.

Species	Habitat definition
Suitable nesting hollow	Any hollow with dimensions suitable for use for nesting by black cockatoos (Carnaby's Cockatoo 23-30 cm [EPA 2019], Baudin's Cockatoo 30-40 cm [Chapman 2008]. Forest Red-tailed Black Cockatoo 12-41cm [Chapman 2008]). Suitable nest hollows are only found in live trees with a diameter at breast height (DBH) of at least 500 mm. Usually this will be a natural hollow, but artificial hollows may also be suitable in some circumstances (for example, where the artificial hollow has been specifically designed for use by black cockatoos). Note that artificial hollows have only been shown to have value for Carnaby's Cockatoos to date.
Potential nesting tree	Trees that have a suitable DBH to develop a nest hollow but do not currently have hollows. For most species of trees, suitable nest hollows are only found in live trees with a DBH of at least 500 mm. Trees suitable to develop a nest hollow in the future are 300-500 mm DBH. Note that many species of eucalypt may develop suitable hollows for breeding.

All potential nesting trees encountered within the survey area were recorded with a differential GPS (<1 m accuracy) and visually assessed from the ground with binoculars for the presence of suitable nest hollows. These trees were also assigned a nesting and/or hollow rank, with suitable hollows assessed using a pole-mounted camera where appropriate. Table 45 provides the potential breeding tree nest and/or hollow ranking definitions. ELA (2026) methodology did not include consideration of introduced eucalyptus species.

Table 45 Potential breeding tree nest and/or hollow ranking (ELA, 2026)

Rank	Description of tree nests and/or hollows
1	Activity at hollow observed; adult (or immature) bird seen entering or emerging from hollow. Can also be used for a known nest tree active in the previous 12 months (although this should be noted in the description). Note that activity at a hollow does not absolutely mean that breeding is occurring unless a young bird in hollow is observed.
2	Hollow of suitable size[1] visible with chew marks around entrance. Record if chew-marks are recent or old.
3	Potentially suitable hollow visible but no chew marks present at entrance; or potentially suitable hollow suspected to be present - as suggested by structure of tree, such as large, vertical trunk broken off at a height of >8m; but note that hollow height is contextual. Carnaby's Black-Cockatoo will nest in hollows
4	Tree with large hollows or broken branches that might contain large hollows, but hollows or potential hollows (nest chamber) are not vertical or near-vertical; thus a tree with or likely to have hollows of sufficient size but not to have hollows of the angle preferred by black-cockatoos. Trees with low but otherwise suitable hollows can also be assigned a rank or 4, depending on the species of black cockatoo likely to be present.
5	Tree lacking large hollows or broken branches that might have large hollows; a tree with more or less intact branches and a spreading crown.

[1]ELA takes a precautionary approach and identifies potentially suitable hollows as those with an entrance diameter over 10 centimetres (cm) that could potentially accommodate black cockatoos, which requires a diameter opening range of 12-41 cm.

The AECOM (2024) survey also included a targeted Black Cockatoo habitat assessment. Trees with a suitable diameter at breast height (DBH) (>500 mm) were recorded and assessed for breeding suitability (i.e. presence of hollows). Potential nesting trees that met the DAWE (2022) definition of "*trees that have a suitable DBH to develop nest hollows, but do not currently have hollows. Trees suitable to develop nest hollow in the future are 300-500 mm DBH)"* were also recorded. AECOM's assessment included introduced eucalyptus species.

The SLR (2025) survey assessed habitat trees against the following criteria:

- Tree taxa is known to form suitable hollows, including trees endemic to the southwest WA such as Jarrah (*Eucalyptus marginata*), Marri (*Corymbia calophylla*), Tuart (*E. gomphocephala*), Karri (*E. devrsicolor*), Wandoo (*E. wandoo*) and Salmon Gum (*E. salmonopholia*) and non-endemic *Eucalyptus* and *Corymbia* trees
- Tree is of a suitable DBH to develop a nest hollow (>500mm), regardless of the presence or absence of hollows
- Tree contains hollows (observed from the ground) with an estimated opening diameter of greater than 100mm

Recorded trees were then categorised as potential, suitable or known nesting trees as adapted from the *Referral guideline for 3 WA threatened black cockatoo species* (DAWE, 2022) and given a ranking of 1-5 based on the black cockatoo and potential nesting tree ranking system developed by Bamford Consulting Ecologists.

The field survey data from the ELA (2026), AECOM (2024) and SLR (2025) surveys has been collated to provide a comprehensive inventory of the breeding habitat for Black Cockatoos present within the PDE.

ELA recorded a total of 39 potentially suitable breeding trees within the survey area, comprising:

- 17 Flooded Gum (*Eucalyptus rudis)*
- 10 Marri (*Corymbia calophylla*)
- 8 Jarrah (*Eucalyptus marginata*)
- 3 Tuart (*Eucalyptus gomphocephala*)
- One Stag

The majority of the trees (36) were considered potential nesting trees with a hollow rank of 5 – 'Tree lacking large hollows or broken branches that might have large hollows, a tree with more or less intact branches and a spreading crown' (ELA, 2026). Three trees were considered potentially suitable breeding trees with a hollow rank of 3 – 'Potentially suitable hollow visible but no chew marks present at entrance' (ELA, 2026).

AECOM (2024) recorded a total of 29 potential nesting trees within the PDE, all the trees recorded lacked hollows. SLR (2025) recorded a total of 17 potential nesting trees within the PDE and one suitable nesting tree with one hollow (potentially active as chew marks noted as visible on rim). As drone or pole-top camera assessment of hollows was not within the SLR (2025) scope, a conservative approach has been taken, and the suitable nesting tree is considered to contain an active hollow. The FFHEMP includes specific conditions for the management of the suitable nesting tree as part of pre-clearance surveys.

Of the 39 potentially suitable breeding trees recorded by ELA (2026) within the survey area, only six are located within the PDE. All six trees are potential nesting trees (hollow rank 5). Therefore, a total of 52 potential nesting tree and one suitable nesting tree have been identified with the PDE from all three surveys (Figure 23). Details of the location of the suitable nesting tree identified are provided in Table 46.

Table 46 Details of the suitable nesting tree identified within the PDE

Tree species	DBH (mm)	Latitude (GDA94)	Longitude (GDA94)	Observations
Introduced Eucalypt	875	-31.7841754	115.8636531	Potential hollow approx. 4.5 m above ground, chew marks visible around the rim

Roosting habitat

Night roosting habitat for Black Cockatoos is defined as habitat that contains one or a group of potential roosting trees:

- Known roosting tree – a tree (generally the tallest), native or introduced known to be used for night roosting or which demonstrates evidence of roosting. Usually close to an important water source and within an area of high-quality foraging habitat. During the breeding season, male black cockatoos roost in the vicinity of the nesting trees, therefore a breeding area may also be considered to be night roosting habitat.
- Potential roosting tree – a tall tree of any species in close proximity to water.
- Potential roosting habitat within the survey area (ELA, 2026) was delineated by mapping tall trees in close proximity to water (within 12 km).

Fauna habitat types containing large trees as well as any identified breeding tree (+5 m buffer) was mapped as potential roosting habitat for all three Black Cockatoo species. A total of 160.2 ha was mapped as potential roosting habitat within the survey area:

- Banksia woodland with emergent trees (36.3)
- Managed gardens and roadside treelines (15.3)
- Mixed open woodlands and shrublands (89.1)
- Pine Plantation (19.5)

A total of 27.51 ha of potential roosting habitat (inclusive of 1.03 ha of inferred area) occurs within the PDE.

5.3.6 Short Range Endemic and conservation significant invertebrates

A desktop assessment was undertaken by Invertebrate Solutions (2026a) which included an assessment of the Western Australian Museum (WAM) databases, DBCA records and the DCCEEW PMST to identify short range endemic (SRE) and conservation significant invertebrate fauna that have the potential to occur within the PDE.

Three conservation significant native bees were identified as having a Moderate or High LOO within the PDE due to the presence of suitable habitat (Invertebrate Solutions, 2026a) These include:

- Douglas' Broad-headed Bee (*Hesperocolletes douglasi* listed as CR under the EPBC Act and BC Act) – High LOO.
- Woolly Bush Bee (*Hylaeus globuliferus*, listed as DBCA P3) – High LOO
- A short-tongued Bee (*Leioproctus contrarius* listed as P3) – Moderate LOO.

Two Confirmed SRE species were identified during the desktop assessment as having a High LOO within the PDE due to their known distributions and habitat associations (Invertebrate Solution, 2026a). These include:

- *Antichiropus whistleri* (SRE species) – High LOO
- Swan Coastal Plain Shield-backed Trapdoor Spider (*Idiosoma sigillatum*, SRE and listed as DBCA P3) – High LOO.

Due to the high likelihood of the above species occurring within the PDE, Western Power commissioned a targeted field survey for the PDE and supporting impact assessment. The impact assessment technical memorandum prepared by Invertebrate Solutions (2026b) was informed by the targeted field survey and further refined the extent of suitable habitat for the conservation significant invertebrate and SRE species with a High LOO within the PDE.

Note that the impact assessment memorandum prepared by Invertebrate Solutions utilises habitat mapping from earlier surveys, being AECOM (2024) and SLR (2025). The spatial data provided with the memorandum delineating the boundaries of suitable conservation significant and SRE invertebrate fauna habitat have been cross referenced against the fauna habitat mapping completed by ELA (2026) to inform the EIA and allow for consistency within the ERD. The memorandum was also written assuming that the extent of suitable habitat mapped within the PDE would be cleared. However, additional avoidance and minimisation measures will result in a reduced area of impact to suitable habitat. Further detail is discussed in Section 5.5.2.

Details of the suitable habitat for these species and its extent within the PDE are provided in Table 47.

Table 47 Conservation significant and SRE invertebrates and their suitable habitat (Invertebrate Solutions, 2026a and 2026b)

Species	Conservation Status (EPBC Act / BC Act)	Suitable Habitat	Presence of suitable habitat within the PDE	Extent of suitable habitat within the PDE (ha)
Hesperocolletes douglasi	CR / CR	Very little is known of this species and floristic associations are still being determined, with the currently known list including *Philotheca spicata, Patersonia occidentalis,* two species of *Stylidium*, a species of *Scaevola* and species from Fabaceae and Myrtaceae.	The most likely habitat is within undisturbed Banksia woodland located adjacent to the PDE, and not being impacted by the Proposal. It is considered that 2.40 ha at most within the PDE comprises suitable habitat, associated with the northern-most corridor (Figure 24).	2.40
Hylaeus globuliferus	- / P3	Wide distribution in WA from north of Eneabba through to the southern wheatbelt and SCP, and east long the south coast to the Fitzgerald National Park Known to be associated with *Adenanthos cygnorum* and *Banksia attenuata* amongs other native plants. Most records from the SCP are historical in nature, with the most recent record from 2017.	Both *Adenanthos cygnorum* and *Banksia attenuata* occur within remnant native vegetation and revegetated areas in the PDE. These occurrences of mainly *Adenanthos cygnorum* provide up to 4.02 ha of habitat within the PDE. However, it is noted that the extents of Banksia woodland adjacent to the PDE provides higher quality habitat for the species.	3.77
Leioproctus contrarius	- / P3	Known to be associated with both *Scaevola sp repens* var *repens* and *Lechenaultia* spp.	Habitat within the PDE assessed as potentially suitable is considered to be minimal, comprising up to 2.52 ha at most. This species is considered to have a low LOO within the PDE based on the outcomes of the targeted filed survey completed by Invertebrate Solutions.	2.40
Antichiropus whistleri	- / -	Known distribution from WAM records from the Perth suburb of Nedlands north to past Muchea with another cluster of records near Cataby. Many of the records within the Perth metropolitan area are historical and it is highly likely that much of the habitat for this species within the metro area has been cleared for urban development.	Considered to only have 2.93 ha of suitable habitat associated with the northern portion of the PDE where deeper accumulation of leaf litter that retains moisture may occur in the existing vegetation.	2.73

Species	Conservation Status (EPBC Act / BC Act)	Suitable Habitat	Presence of suitable habitat within the PDE	Extent of suitable habitat within the PDE (ha)
Idiosoma sigillatum	- / P3	Dominant idiopid trapdoor spider on the SCP where it occurs from Dalyellup north to Ledge Point with the eastern limit of its range along the sandy foothills of the Darling Escarpment, from Boyanup north to at least Gingin. Burrows usually occur in Banksia woodland and heathland on sandy soils.	Targeted field survey identified up to 2.52 ha of potentially suitable habitat for the species within the PDE.	2.40

5.4 Proposed mitigation

The mitigation hierarchy has been applied in accordance with the Statement of environmental principles, factors, objectives and aims of EIA (EPA, 2023b). Impact avoidance has been applied rigorously as the primary mitigation through the design process to date on the Proposal, and will continue during detailed design, construction, and operations, to mitigate the Proposal's impact on terrestrial fauna.

These principles, and the order in which they have been applied, are:

- Avoid: reducing the Impact Area and locating activities to avoid direct and indirect impacts on conservation significant fauna species habitat.
- Minimise: minimising direct and indirect impacts where they cannot be completely avoided.
- Rehabilitate: actively repairing, rehabilitating or restoring temporary impacted areas as soon as possible to promote long-term habitat recovery.
- Offset (where necessary): providing suitable offsets for activities that result in significant adverse environmental impacts.

Numerous Proposal design iterations have been undertaken with consideration of ecological values identified and mapped through surveys. Avoidance mechanisms have particularly been applied for areas of Black Cockatoo foraging habitat and potential nesting trees through the adjustment of pole and powerline locations.

These measures are outlined in Table 48.

Table 48 Mitigation and avoidance actions proposed for Terrestrial Fauna

Potential impact	Mitigation Hierarchy
Avoid	
Proposal siting	• Basic Fauna surveys, a Short-Range Endemic (SRE) desktop assessment, targeted invertebrate field survey and targeted Black Cockatoo surveys have been completed between 2023-2025 to identify the fauna values within the PDE and inform route selection for the transmission corridor. • Multiple alignments underwent a Multi-Criteria Analysis (MCA) which considered economic, environment, heritage, planning and social impacts. Alignments located further east were identified as having a higher environmental impact due to increased clearing of vegetation being required (particularly pine plantation) and were therefore not selected. • Span over areas have been identified within the PDE where no clearing is proposed for either construction or for the purposes of meeting safe electrical clearances as vegetation height at maturity is low enough that the required safe separation distance from the conductor is maintained. These span over areas align with Banksia Woodlands TEC/PEC, which represents high value habitat for Black Cockatoos and conservation significant invertebrates. Span over areas have allowed for approximately 2 ha of clearing of Banksia Woodlands TEC/PEC to be avoided. • Alignment has been located such that it does not introduce any additional fragmentation to fauna habitat. • Alternative methodologies for line stringing, such as back hand stringing and drone stringing will be implemented to reduce the clearing footprint required in Banksia Woodlands TEC/PEC – high value foraging habitat for Black Cockatoos and conservation significant invertebrate species.
Minimise	

Potential impact	Mitigation Hierarchy
Management Plans	• Proposed clearing has been minimised as far as practicable during the design phase to reduce the extent of disturbance required. • A fauna spotter will be present during clearing activities to manage any potential interactions with fauna and with the authority to stop clearing works where fauna is identified within the clearing footprint. • A hold point has been put in place in the FFHEMP for 19 potential nesting trees and the one suitable breeding tree identified adjacent to Gnangara Lake. These 20 trees are located on the very edge of the electrical clearance buffer and will be risk assessed during construction as to whether they present a falls risk and can be retained without impacting on the safe operation of the transmission line. • Twice daily trench inspections will be completed for any trenches that remain open for longer than 24 hours. • Any trenches or open excavations will be fitted with adequate fauna egress. • Stormwater and sedimentation controls will be implemented to prevent impacts to SRE habitat • The Proposal's FFHEMP and CEMP will provide objective and outcome based targets aimed at minimising impacts to conservation significant fauna during construction and operation of the Proposal.
Rehabilitate	
Rehabilitate vegetation	• Areas of fauna habitat cleared for the purposes of construction, that are not required for ongoing maintenance activities, will be rehabilitated. These areas will be identified during the post-construction phase of the Proposal in accordance with the outcome-based criteria specified in the Proposal's FVEMP. Significant residual impacts have been calculated by conservatively assuming all clearing approved within the PDE will be permanent.
Offset	
Offset strategy	• An offset strategy has been developed for the Proposal's impacts to the three threatened species of Black Cockatoo to support the referral under the EPBC Act. The intent is for this offset strategy to also be used for assessment of the Proposal under Part V of the EP Act under the NVCP application process.

5.5 Potential environmental impacts

5.5.1 Identified environmental impacts

Potential Direct Impacts

The Proposal has the potential to result in the following direct impacts to Terrestrial Fauna.

Table 49 Potential Direct Impacts to Terrestrial Fauna

Proposal activity	Potential Direct impact	Relevance to Proposal
Clearing for construction	Loss of fauna habitat	Yes. The proposed clearing of 31.71 ha of habitat includes habitat identified as potentially suitable for native fauna. Detailed discussion is provided in Section 5.5.2.
	Loss of critical habitat for Threatened and Priority fauna	Yes. Proposal requires clearing of 31.71 ha of habitat, portions of which are identified as critical fauna habitat for Threatened fauna.

Proposal activity	Potential Direct impact	Relevance to Proposal
		Detailed discussion is provided in Section 5.5.2.
Construction and operation activities	Fauna injury or mortality from vehicle strike and/or entrapment	Yes. Vehicle movements during construction and operations, and trenching activities have the potential to introduce increased risk of fauna injury or mortality. Detailed discussion is provided in Section 5.5.2.

Potential Indirect Impacts

The Proposal has the potential to result in the following indirect impacts to Terrestrial Fauna.

Table 50 Potential indirect impacts to Terrestrial Fauna

Proposal activity	Potential Indirect impact	Relevance to Proposal
Construction activities (including access, import of fill, material movements)	Introduction and/or spread of weeds and disease (such as dieback) resulting in reduced quality of critical habitat for Threatened and Priority fauna.	Yes. Weeds of National Significance and dieback risk areas have been identified within the PDE. Detailed discussion is provided in Section 5.5.2.
	Alteration of fauna behaviour and use of habitat due to light, noise and vibration emissions.	Yes. Given construction activities will occur across a linear corridor it will be of limited duration and intensity in any one location. It is not anticipated that potential impacts to fauna from light, noise and vibration will be significant, and that they can be adequately managed via control measures stipulated in the Proposal CEMP.
	Attraction of feral animals resulting in increased predation risk to Threatened and Priority fauna.	Yes. The Proposal is located in a highly disturbed environment and construction is unlikely to increase the abundance of feral animals already known to the area. Waste management measures detailed in the FFHEMP are considered sufficient to mitigate the risk of attracting feral animals to the area.
Clearing for construction	Fragmentation of fauna habitats and ecological linkages.	Yes. Clearing for the Proposal results in the interruption of mapped ecological linkages. Detailed discussion is provided in Section 5.5.2.
Hot works and construction and operational activities	Accidental fires leading to loss of critical habitat for Threatened and Priority fauna.	Yes. Construction and operation of the new transmission line infrastructure has the potential to cause accidental fires. These risks will be managed via a Bushfire and Emergency Response Management Plan.

5.5.2 Predicted direct environmental impacts

Loss of fauna habitat

Unavoidable impacts to fauna habitat within the PDE, include clearing of a maximum of 31.71 ha of fauna habitat.

The Proposal's direct impacts to fauna habitat types are detailed in Table 51. Note that cleared areas (40.18 ha within the PDE) are excluded as they present no habitat value to fauna. Where fauna habitat type has been inferred, the inferred area value is included in brackets following the value of the surveyed extent.

Table 51 Direct impacts to Fauna Habitat types

Habitat Type	Extent within the PDE (ha)	Extent within the IA (ha)
Banksia woodland	0.04	0.04
Banksia woodland with emergent trees	2.04	0.29
Cleared areas with scattered trees and/or shrubs	3.33	3.33
Melaleuca closed depression	0.00	0.00
Mixed open shrublands on sand	0.26	0.03
Mixed open woodlands and shrublands	13.18 (0.29)	12.55
Pine plantation	2.92 (0.14)	2.98
Adenanthos / Plantation	1.55	1.55
Rehabilitation	4.38	3.81
Managed gardens and roadside treelines	6.79 (0.6)	7.13
Total	**35.52**	**31.71**

A summary of the impacts to Priority species Known to occur within the Impact Area and Priority species identified as having a High or Moderate likelihood of occurrence within the IA is presented in Table 52.

Direct impacts to Threatened fauna species, such as the three threatened species of Black Cockatoo and Douglas' Broad-headed bee are discussed separately in the subsections below.

Table 52 Direct Impacts to Other Conservation Significant Fauna

Conservation significant species	EPBC Act	BC Act	Post-survey LOO	Habitat extent within PDE (ha)	Habitat extent within IA (ha)	Assessment of impacts
Quenda (*Isoodon fusciventer*)	-	P4	Recorded (AECOM, 2024 and SLR, 2025)	15.02	14.10	**Not significant.** There are 120 DBCA records of the species within 1 km of the PDE (DBCA, 2026) and evidence of the species was recorded during the AECOM (2024) and SLR (2025) surveys. Suitable habitat for the species is well represented in the local area, with the adjacent large remnant patches of vegetation unimpacted by the Proposal. Habitat impacted by the Proposal is primarily in degraded condition and unlikely to represent critical habitat for the species. The avoidance and mitigation measures implemented by Western Power and captured in the FFHEMP for the Proposal are sufficient to ensure no significant impacts to the species from the implementation of the Proposal. The Proposal is not considered likely to have as significant impact on the species.
Western brush wallaby (*Notamacropus irma*)	-	P4	Potential	13.47	12.58	**Not significant.** The species inhabits open forest or woodland, particularly favouring open, seasonally wet flats with low grasses and open scrubby thickets. Suitable habitat for the species is well represented within the local area, with the ELA (2026) survey identifying 92.7 ha of suitable habitat. Impacts from the Proposal will only result in 13.6% reduction in habitat available to the species within the surveyed area. Given the degraded quality of vegetation and extensive existing disturbance within the PDE, the habitat impact by the Proposal is not considered to represent critical habitat for the species. The avoidance and mitigation measures implemented by Western Power and captured in the FFHEMP for the Proposal are sufficient to ensure no significant impacts to the species from the implementation of the Proposal.
Peregrine falcon (*Falco peregrinus*)	-	OS	Potential	15.55	12.88	**Not significant.** Suitable habitat for the species is well represented in the local area, with the ELA (2026) survey identifying 126.8 ha of suitable habitat within the survey area. Impacts from the Proposal will only result in a 10% reduction in

Conservation significant species	EPBC Act	BC Act	Post-survey LOO	Habitat extent within PDE (ha)	Habitat extent within IA (ha)	Assessment of impacts
						habitat available to the species within the surveyed area. The species distribution extends across Australia and as such, the habitat impacted by the Proposal is not considered to represent critical habitat for the species. This, in conjunction with the avoidance and mitigation measures implemented by Western Power and captured in the FFHEMP for the Proposal are sufficient to ensure no significant impacts to the species from the implementation of the Proposal.
Rainbow bee-eater (*Merops ornatus*)	M	-	Recorded (ELA, 2026)	35.52	31.71	**Not significant.** Species occurs throughout mainland Australia where it is widespread (ELA, 2026), as such habitat within the PDE is not considered to represent critical habitat for the species. All fauna habitat types mapped by ELA (2026), comprising 183.3 ha, were considered to be suitable habitat for the species. Clearing for the Proposal will result in 17% reduction in available habitat for the species within the surveyed area. Given the vegetation is in predominantly Degraded condition and higher condition vegetation in large remnant patches of vegetation is available directly adjacent to the PDE, clearing is not considered likely to have a significant impact on the species. The avoidance and mitigation measures implemented by Western Power and captured in the FFHEMP for the Proposal are sufficient to ensure no significant impacts to the species from the implementation of the Proposal.
Western black-striped Snake (*Neelaps calonotos*)	-	P3	Potential	2.08	0.33	**Not significant.** The Black-striped Snake is restricted to the coastal sandplains between Mandurah and Cataby, with isolated populations north, near Eneabba and Dongara (Wilson & Swan, 2023). Preferred habitat for the species includes dunes, sandplains vegetated with heaths and *Eucalyptus/ Banksia* woodlands (Bush, Maryan, Browne-Cooper, & Robinson, 2010). There are four records on the DBCA database within 1 km of the PDE, of these, one is located within the PDE but is a historical record from 1976. (DBCA, 2026). Suitable habitat was identified within the surveyed area (37.7 ha). Of this only 0.33 ha will be impacted by clearing activities for the Proposal, resulting in a 0.86% reduction in locally available habitat.

Conservation significant species	EPBC Act	BC Act	Post-survey LOO	Habitat extent within PDE (ha)	Habitat extent within IA (ha)	Assessment of impacts
						Banksia woodlands are noted as suitable habitat, which is well represented in higher condition in the areas adjacent to the PDE. Impacts to Banksia woodland have been actively avoided as part of Proposal avoidance and mitigation. The avoidance and mitigation measures implemented by Western Power and captured in the FFHEMP for the Proposal are sufficient to ensure no significant impacts to the species from the implementation of the Proposal.
Swan Coastal Plain Shield-backed Trapdoor Spider (*Idiosoma sigillatum*)	-	P3	Unlikely (Invertebrate Solutions, 2026b)	2.52	2.31	**Not significant.** This species has a Confirmed SRE status. Remnant habitats in Banksia woodland and heathland on sandy soils (Rix *et al*., 2018) although it does occur in other woodland areas. This species may utilise areas where native understorey density in Banksia Woodlands is higher, generally associated with vegetation condition of 'Good' or better (Invertebrate Solutions, 2026b). The Proposal has sought to avoid impacts to areas of Banksia woodland in Good or better condition, with impacts to native vegetation being predominantly to vegetation in Degraded or worse condition. The Banksia woodland in degraded or worse condition is not likely to represent critical habitat for the species as it lacks the necessary understorey to support the species. The Impact Assessment Technical Memorandum prepared by Invertebrate Solutions (2026b) assessed Proposal impacts to the species to be low (not significant), in consideration of the avoidance and mitigation measures implemented by Western Power and captured in the FFHEMP for the Proposal.
Woolybush Bee, Native Bee (*Hylaeus globuliferus*)	-	P3	Potential (Invertebrate Solutions, 2026b)	4.02	3.52	**Not significant.** Banksia woodland adjacent to the PDE that is of higher quality provides far better habitat for the Woolybush Bee than what has been mapped within the PDE (Invertebrate Solutions, 2026b). As such, habitat impacted by the Proposal is not considered to represent critical habitat for the species. The Impact Assessment Technical Memorandum prepared by Invertebrate Solutions (2026b) assessed Proposal impacts to the species to be low (not significant), in consideration of the avoidance and mitigation measures

Conservation significant species	EPBC Act	BC Act	Post-survey LOO	Habitat extent within PDE (ha)	Habitat extent within IA (ha)	Assessment of impacts
						implemented by Western Power and captured in the FFHEMP for the Proposal.
A Short-tongued Bee (*Leioproctus contrarius*)	-	P3	Unlikely (Invertebrate Solutions, 2026b)	2.52	2.31	**Not significant.** Targeted field survey results detailed in the Impact Assessment Technical Memorandum prepared by Invertebrate Solutions (2026b) revised the LOO assessment for the species to low due to only minimal potentially suitable habitat being identified within the PDE. The memorandum assessed Proposal impacts to the species to be low (not significant), in consideration of the avoidance and mitigation measures implemented by Western Power and captured in the FFHEMP for the Proposal.
Antichiropus whistleri	-	-	Potential (Invertebrate Solutions, 2026b)	2.93	2.50	**Not significant.** Potential habitat for the species occurs predominantly in the northern portion of the PDE, associated with deeper accumulations of leaf litter. The Impact Assessment Technical Memorandum prepared by Invertebrate Solutions (2026b) assessed Proposal impacts to the species to be low (not significant), in consideration of the avoidance and mitigation measures implemented by Western Power and captured in the FFHEMP for the Proposal.

Fauna habitat within and adjacent to the PDE is already highly fragmented by roads and residential and agricultural properties. Clearing for the Proposal will not introduce any additional fragmentation, with the proposed corridor for the transmission line being situated on the edges of large patches of remnant native vegetation and within existing road reserves and cleared areas. Vegetation condition mapping indicates that the habitat present within the PDE and IA is primarily in Degraded or worse condition, and therefore unlikely to represent critical habitat for fauna.

The infrastructure proposed to be constructed (poles with overhead transmission lines) will not represent a physical barrier to fauna and therefore will not prevent their ability to continue to move across the landscape. The terrestrial fauna habitats proposed for clearing are well represented in the broader surveyed area and local area and as such, it is not considered likely that the habitat within the PDE represents critical habitat for any of the conservation significant fauna species identified as having the potential to occur within the PDE.

Avoidance measures implemented by Western Power in the design phase and management actions detailed in the Proposal FFHEMP aimed at avoiding and minimising impacts to Terrestrial Fauna are considered sufficient to ensure that there will not be a significant impact to terrestrial fauna

Given the above, the potential impacts to native fauna from loss of habitat are not expected to be so significant to necessitate assessment of the Proposal under Part IV of the EP Act. Potential impacts can be adequately addressed and conditions for management imposed via the NVCP process under Part V of the EP Act, via assessment against Principle (b) (refer to Table B2-2, Appendix B.2 for further detail).

Loss of critical habitat for Black-Cockatoos

The primary threat to Black Cockatoos is the loss and fragmentation of habitat as a result of native vegetation clearing. This includes the loss of nesting trees, roosting habitat, foraging habitat (including non-native vegetation), fragmentation of breeding habitat from foraging resources and the mortality of individual birds (DAWE, 2022). The introduction or spread of dieback (*Phytophthora cinnamomi*) and other plant diseases can also contribute to the decline of habitat (DAWE, 2022).

A total of 31.71 ha of Black Cockatoo foraging habitat was mapped within the Proposal's IA. The Proposal presents the following impacts to the foraging habitat for the three species of Black Cockatoo (Table 53):

- Carnaby's Black Cockatoo – 31.71 ha ranging from a foraging quality score of 1 (Negligible) to 6 (Moderate)
- Baudin's Black Cockatoo – 31.71 ha ranging from a foraging quality score of 1 (Negligible) to 5 (Moderate)
- FRTBC – 23.78 ha ranging from a foraging quality score of 1 (Negligible) to 5 (Moderate)

A detailed breakdown of the extent of impacts to each mapped foraging quality is provided in Table 53. Figure 20, Figure 21 and Figure 22 map the foraging habitat for each of the three species within the PDE.

Table 53 Foraging habitat for each of the three species of Black Cockatoo within the PDE and IA

Foraging Habitat Quality	Carnaby's Cockatoo		Baudin's Cockatoo		Forest Red-tailed Black Cockatoo	
	PDE (ha)	IA (ha)	PDE (ha)	IA (ha)	PDE (ha)	IA (ha)
6: Moderate	2.08	0.33	0.00	0.00	0.00	0.00
5: Moderate	0.00	0.00	6.55 (0.14)	4.87	2.04	0.29
4: Moderate	24.7 (1.03)	24.24	13.44 (0.29)	12.58	0.00	0.00
3: Low to Moderate	0.00	0.00	0.00	0.00	0.00	0.00
2: Low	0.00	0.00	4.38	3.81	19.97 (0.89)	19.68
1: Negligible	7.71	7.14	10.12 (0.6)	10.46	4.38	3.81
0: Nil	39.75 (0.43)	33.33	39.75 (0.43)	33.33	47.58 (0.57)	41.28
Total (ha) (excluding 0: Nil)	**35.52**	**31.71**	**35.52**	**31.71**	**27.28**	**23.78**

A total of 52 potential nesting trees and one suitable breeding tree (Table 46) were recorded within the PDE during the ELA (2026), AECOM (2024) and SLR (2025) Black Cockatoo habitat assessments. All 53 trees are proposed to be cleared as part of the implementation of the Proposal due to the height of the mature trees breaching the minimum electrical clearance required to be maintained in order to safely operate the transmission line.

No known roosting sites or roosting activity were recorded within the PDE or Impact Area, however there are numerous records of confirmed roosting sites within 12 km of the PDE. ELA (2026) identified fauna habitat types that were considered potential roosting habitat for all three Black Cockatoo species. Table 54 details the direct impacts to roosting habitat from the implementation of the Proposal.

Table 54 Direct impacts to roosting habitat

Habitat Type	Extent within the PDE (ha)	Extent within the IA (ha)
Banksia woodland with emergent trees	2.04	0.29
Managed gardens and roadside treelines	6.79 (0.6)	7.13
Mixed open woodlands and shrublands	13.18 (0.29)	12.55
Pine Plantation	2.92 (0.14)	2.98
Adenanthos Plantation	1.55	1.55
Total	**27.51**	**24.50**

Desktop assessment has identified the presence of approximately 24,704.2 ha (Table 39) of potential foraging habitat within a 12 km radius of the Proposal. Black Cockatoos are highly mobile species and are expected to forage both within and outside the IA amongst available foraging resources in the local area and are unlikely to be dependent on a particular patch of foraging habitat within the IA.

Span over areas have been targeted for areas mapped as Banksia TEC/PEC within the PDE where no clearing is proposed for either construction or the purposes of meeting safe electrical clearances as vegetation height at maturity is low enough that the required safe separation distance from the

conductor is maintained. This has allowed for approximately 2 ha of clearing of Banksia TEC/PEC to be avoided within the PDE. Banksia woodlands represent a high value foraging resource for Black Cockatoos and as such, avoidance of areas of TEC/PEC has allowed for significant impacts to high quality foraging habitat for Black Cockatoos to simultaneously be avoided.

Additionally, alternative stringing methodology such as manual stringing and drone stringing has been employed through areas of TEC to avoid clearing for construction within these areas. The alternative methodology allows for the standard sized 50 m x 50 m brake and winch pads to be significantly reduced or for a pad to not be required altogether.

Controls have been included in the FFHEMP (Appendix E.2) which require pre-clearance inspections of potential nesting trees and the suitable breeding tree for Black Cockatoo activity to be undertaken prior to clearing, as well as the requirement for a fauna spotter to be present during clearing works with the authority to stop works if a Black Cockatoos are spotted. A hold point has also been put in place for 19 potential nesting trees and the one suitable breeding tree identified adjacent to Gnangara Lake. These 20 trees are located on the very edge of the electrical clearance buffer and will be risk assessed during construction as to whether they present a falls risk and can be retained without impacting on the safe operation of the transmission line. For the purposes of the EIA it is assumed all potential nesting trees within the IA will be cleared. In addition, the suitable breeding tree will not be cleared during the Black Cockatoo breeding season.

The avoidance and mitigation measures implemented by Western Power have minimised potential impacts to Black Cockatoos such that it is considered that assessment under Part IV of the EP Act is not required and that the NVCP process under Part V of the EP Act (Principle b) can adequately assess the potential risk of the Proposal's clearing impacts to native vegetation to the species (refer to Table B2-2, Appendix B.2 for further detail).

In addition, the clearing proposed for the construction of the Proposal triggers the requirement for referral under the EPBC Act, in accordance with the *Referral Guidelines for 3 WA Threatened Black Cockatoo Species* (DAWE, 2022). As such, Western Power has referred the Proposal under the EPBC Act. DCCEEW have sufficient regulatory powers and authority to assess the significance of, and impose conditions for the management of, direct impacts resulting from clearing of both native and non-native vegetation to the three threatened species of Black Cockatoo.

Loss of critical habitat for Douglas' Broad-headed Bee

The Douglas' Broad-headed Bee was previously known only from Rottnest Island where it was presumed extinct until 2015 when an extant specimen was recorded from near Pinjar (less than 10 km from the PDE). This species is considered to have a High LOO due to potential habitat occurring within or adjacent to the PDE and consideration of the DCCEEW distribution modelling (Invertebrate Solutions, 2026).

A targeted field survey for the bee species was undertaken during March-April 2026 and did not record the species. Suitable habitat for the species was identified within the PDE, represented by Mixed open woodlands and shrublands within the northernmost section of the PDE (Figure 24). However, the

species was considered to have a low LOO post-survey with the most likely suitable habitat for the species being the undisturbed Banksia woodland adjacent to the Proposal.

The Proposal will directly impact 2.31 ha of potential habitat for the Douglas' Broad Headed Bee, 2 ha of which has been mapped in Degraded condition (Table 55).

Table 55 Direct impacts to Douglas' Broad-headed Bee habitat

Habitat Type	Extent within the PDE (ha)	Extent within the IA (ha)
Mixed open woodlands and shrublands	2.31	2.31
Banksia woodlands with emergent trees	0.09	0.00

The impact assessment technical memorandum prepared by Invertebrate Solutions (2026b) considered the impacts to the Douglas' Broad-headed bee from the implementation of the Proposal to not be significant, given the avoidance of impacts of the high-quality Banksia woodland adjacent to the PDE. In addition, the memorandum included management measures that were recommended to be implemented to further ensure no significant impacts to the species occurs. These have been captured in the FFHEMP (Appendix E.2) for the Proposal.

Vehicle strike and fauna entrapment

Vehicle movements associated with construction and operational activities has the potential to cause or increase the risk of fauna injury, death or displacement due to increased frequency of interactions between fauna and heavy and light vehicles. The FFHEMP (Appendix **Error! Reference source not found.**) has been prepared to manage and mitigate the potential impacts to MNES listed threatened fauna associated with vehicle movements during construction and operational activities. The CEMP will similarly reflect these conditions to capture the potential impacts of vehicle strikes to other native fauna.

Excavation and trenching works required for the construction of the Proposal has the potential to cause or increase the risk of fauna injury or death due to entrapment. The FFHEMP (Appendix **Error! Reference source not found.**) includes conditions for the installation of fauna egress within any open excavations or trenches and the requirement for twice daily (am/pm) inspections of any trenches that will remain open for greater than a one-day period. The CEMP will similarly reflect these conditions to capture the potential impacts of entrapment to other native fauna.

It is considered that implementation the mitigation measures detailed in the Proposal FFEMP will be sufficient that there will be no significant residual indirect impacts to threatened fauna species resulting from vehicle strikes and/or entrapment.

5.5.3 Predicted indirect environmental impacts

Fauna habitat quality decline due to weeds and disease

Indirect impacts to fauna habitat have the potential to occur as a result of construction and operational activities of the Proposal. This may include changes in vegetation structure, species composition and ecological function due to indirect impacts from construction activities as a result of vehicle and heavy

equipment movement introducing and/or spreading weed species and disease such as *Phytophthora* dieback. A FVEMP and Hygiene Management Plan (Appendix **Error! Reference source not found.** and Appendix **Error! Reference source not found.**, respectively) have been developed for the Proposal to manage risks associated with weeds and disease and their potential impacts to fauna habitat.

As these indirect impacts are primarily associated with clearing activities, the NVCP process under Part V of the EPA act is considered to have the appropriate regulatory authority to assess the significance and impose conditions for management of impacts associated with the implementation of the Proposal. In addition, in areas of State Forest, the DAS permitting system presents an additional regulatory mechanism that can manage potential indirect impacts from weeds and dieback. The DAS application requires the applicant to demonstrate implementation of the mitigation hierarchy such that risks to the environmental, economic and social values of the State managed land are minimised to as low as reasonably practicable (ALARP principle) (refer to Table B2-2, Appendix B.2 for further detail).

In addition, Western Power has referred the Proposal under the EPBC Act due to the direct and indirect impacts of the Proposal to MNES, specifically the three threatened species of Black Cockatoo and Douglas' Broad-headed bee. The DCCEEW has statutory authority under the EPBC Act to assess the significance of, and impose conditions for management of, impacts associated with the implementation of the Proposal (refer to Table B2-2, Appendix B.2 for further detail).

Light, noise and vibrations

Proposal construction activities associated have the potential to introduce increased light, noise and vibration emissions, resulting in impacts to local fauna population health and movements.

These impacts are expected to be limited in duration as works proceed along the linear corridor and are not concentrated in any location for an extended period. In addition, nightworks will be limited to works that require closure of public roads to reduce impacts to traffic, and as such will not introduce any additional light pollution to these areas due to the existing streetlights present. Standard industry controls are considered adequate to manage the potential risk to threatened fauna from light, noise and vibration emissions such that there will be no significant residual impacts. These controls have been included in the FFEMP and will be reflected in the PC's CEMP supplied to Western Power prior to construction of the Proposal.

Attraction of feral pest animals

Introduced species were observed during field surveys, including cats and rabbits. The presence of introduced species can impact native fauna by increasing competition or predation. They can also contribute to the spread of disease and degradation of habitat.

Aspects of human activities that may encourage introduced species include:

- Inappropriate management of food scraps and other wastes may provide additional food sources
- Clearing/ disturbance may result in increased predation opportunities (loss of cover) or an increased prevalence of flora species (e.g. grasses) more favoured to introduced species.

The Proposal CEMP and FFHEMP include management measures for waste to minimise the risk of attracting feral pests. Implementation of these management measures are sufficient such that there will be no significant residual indirect impact to Terrestrial Fauna.

Fragmentation of fauna habitat and ecological linkages

The Proposal includes development of linear infrastructure, which has the potential to impact on fauna habitat by increasing habitat fragmentation and loss of habitat connectivity. As the PDE corridor is located within a largely disturbed and metropolitan area, reflected by the significant proportion of modified fauna habitat types recorded, existing remnant patches of vegetation are already fragmented. The transmission line corridor has been located such that it does not introduce any additional fragmentation to remnant vegetation patches and the infrastructure constructed will consist of overhead lines which will not impede fauna movement across ecological linkages.

High value fauna habitats are well represented in the Gnangara Moore River State Forest and Bush Forever Sites, and the Proposal is located in an area of relatively high existing disturbance, therefore it is considered that faunal dispersal is unlikely to be significantly impacted by the Proposal.

Accidental bushfire

As the Proposal relates to construction largely along existing roads, the implementation of the Proposal is unlikely to significantly impact on existing fire regimes. A change in fire regimes is often associated with increased human activity, leading to a degradation of natural ecosystems. Fire is a major determining factor in affecting species composition. It can cause disturbance of vegetation but can also be required for regeneration of some species. The Proposal lies adjacent to areas of native vegetation, including Banksia woodlands, which are susceptible to impacts from high frequency fire regimes (DEE, 2016).

Western Power has a Bushfire Management Strategy which includes standard construction and operational controls to appropriately control the risk of fire and will be implemented for both the construction and operation stages of the Proposal. This will include identifying potential ignition sources and/ or activities with the potential to lead to fire, and preventable measures. Weed management will reduce the risk of fires caused by the Proposal spreading to nearby vegetation. Fire is considered manageable, and the implementation of the Proposal is unlikely to significantly impact existing fire regimes or increase the likelihood of fires.

5.5.4 Cumulative impacts to Terrestrial Fauna

Cumulative impacts to Terrestrial Fauna have been assessed in the desktop cumulative impact assessment for the PDE (Appendix D.12).

Clearing of Black Cockatoo habitat within the Proposal IA will contribute the following to foreseeable cumulative impacts on the species within the SCP:

- 0.006% for Carnaby's Black Cockatoo
- 0.011% for Baudin's Cockatoo

- 0.021% for FRTBC

Given the conservation status of the three threatened species the Proposal's contribution to cumulative impacts has the potential to be significant but can be addressed via the assessment process under the EPBC Act.

Indirect impacts are not considered likely to contribute to cumulative impacts given their limited duration and intensity and with the mitigation measures that will be implemented via the FFHEMP and CEMP.

5.6 Assessment and consideration of significance of residual impact

Residual impacts remaining after application of the mitigation hierarchy has been considered regarding the 'significance' of impacts on EPA Factor Terrestrial Fauna and summarised in Table 56. This assessment is based on EPA (2023b) *Statement of Environmental Principles, Factors, Objectives and Aims of EIA*.

Table 56 Assessment of significance of residual impact on Terrestrial Fauna

Significant matters	Significance of residual impacts in regional context
Object and principles of the Act	Specialist surveys have been undertaken by suitably qualified consultants to assess fauna habitat and the likelihood for fauna species to occur. Surveys were completed in accordance with EPA guidelines. The Proposal design focused strongly impact avoidance wherever practicable, informed by the surveys and assessments completed. Avoidance to the point of lowest possible impact is a precautionary approach which limits reliance on minimise, rehabilitate and offset impacts. The precautionary principle has been applied through: • Evolving Proposal design informed by environmental studies to minimise impacts • Design to place pole and powerline locations within existing easements, clearing tracks and roads to avoid additional clearing of fauna habitat, where practicable. • Avoidance of higher quality fauna habitat by prioritising clearing of vegetation in Degraded or worse condition
Values, sensitivity and quality of the environment that is likely to be impacted	Three listed conservation significant fauna species were recorded in the PDE, including two threatened species (Carnaby's Cockatoo and FRTBC) and one Priority species (Quenda, P4). None of the fauna habitats identified within the PDE are considered to represent critical habitat. The Proposal will result in the clearing of up to 31.71 ha of Black Cockatoo foraging habitat ranging in quality from Moderate (6) to Negligible (1). The loss up to 1 suitable breeding tree (one hollow) and 52 potential nesting trees (no hollows) for Black Cockatoos. The Proposal will result in the clearing of 2.31 ha of Douglas' Broad-headed bee habitat.
All stages and components of the Proposal	The impact assessment considers components of the Proposal that might impact Terrestrial Fauna.
Extent (intensity, duration, magnitude and footprint) of likely impacts	For the purposes of the EIA, all clearing proposed has been considered permanent. However, the FVEMP requires a review of the final cleared footprint one month following completion of construction to identify any areas within the PDE that can be rehabilitated.

Significant matters	Significance of residual impacts in regional context
	The condition stipulates rehabilitation will be managed via a Revegetation Management Plan (RMP). Indirect impacts from weed, disease and fire are limited to the construction period which may potentially cause habitat degradation. Indirect impacts from dust, noise, vibration and light emissions are expected to be insignificant and limited to the construction period. Construction and clearing actions will take place progressively over a one to one and half-year period, with an operational life of >50 years (permanent infrastructure).
Resilience of the environment to cope with the impacts, including pressures such as climate change	A significant proportion of the Proposal's Impact Area is already degraded or disturbed. Climate change is predicted to lead to increased drought and extreme weather events in the region, which would increase pressure on native vegetation. As the Proposal is seeking to upgrade the SWIS to enhance renewable energy generation in the area, it will therefore seek to mitigate climate change pressures.
Consequence of application of the mitigation hierarchy	Application of the mitigation hierarchy will result in no significant indirect impacts to Terrestrial Fauna. Application of the mitigation hierarchy has identified that it is likely that significant residual direct impacts to Black Cockatoos resulting from clearing activities remain, and may require offsets. However, assessment of significance and the requirement for offsets can be adequately managed via: • Part V of the EP Act • Referral under the EPBC Act • DAS permitting system under the CALM Act and BC Act for State managed lands
Consequence of the likely impacts	Direct loss of threatened fauna habitat leading to a decline in the populations of threatened fauna species in the area.
Likely environmental outcomes, and whether they are consistent with the EPA environmental factor objectives	Likely environmental outcomes are presented in Table 57.
Cumulative effects	The Proposal has sought to avoid and minimise potential impacts to threatened fauna and threatened fauna habitat at all stages of design and development. This has allowed the IA to be significantly reduce such that clearing for the Proposal is estimated to only contribute up to 0.02% to foreseeable cumulative impacts to all three Black Cockatoo species (Appendix D.12).
Holistic impacts	The Proposal involves clearing up to 31.71 ha of vegetation, resulting in the loss of native flora, TEC/ PECs, ESAs (including Bush Forever sites and DBCA-managed land), and fauna habitat. This may lead to direct fauna mortalities, visual amenity loss, weed invasion, and degradation of nearby ecosystems. Clearing of vegetation growing in association with a wetland could alter hydrological regimes and affect surrounding vegetation health.
Level of confidence in the predicted residual impacts and success of the proposed mitigation	The EIA for the Proposal has been informed by biological surveys undertaken for the Proposal, in accordance with relevant EPA Technical Guidance and with no significant limitations noted. Western Power, as an organisation, has an established Environmental Management System in place, with policies and procedures that regulate construction and operation activities such that potential impacts to the environment are avoided and minimised.
Public interest about the likely effect of the proposal on the environment and relevant public information	Western Power has engaged with relevant stakeholders, as identified in Table 6. Primary concerns have been the removal of mature vegetation, impacts to Black Cockatoos and impacts to visual amenity.

Significant matters	Significance of residual impacts in regional context
Other Approvals	Table B2-2 in Appendix B.2 details the other approvals processes that can assess the significance of, and impose conditions for the management of, residual impacts identified for the Proposal. The primary impacts of Proposal implementation result from clearing activities and are of low enough magnitude that they can be suitably managed under the NVCP process under Part V of the EP Act. As the three threatened species of Black Cockatoo and Douglas' Broad-headed Bee are listed MNES under the EPBC Act, potential impacts of the proposal to these threatened species can be managed by DCCEEW and their assessment of the Proposal as a 'Controlled Action'. Additional approvals such as the DBCA DAS permit and DA process under the Planning Act provide further mechanisms for assessing and managing potential impacts to fauna and fauna habitat quality.

5.7 Environmental outcomes

The Proposal will be implemented in accordance with the environmental outcomes for Terrestrial Fauna detailed in Table 57.

Table 57 Environmental Outcomes for Terrestrial Fauna

Environmental Outcome	How outcomes will be measured and assured
• Clearing of up to 31.71 ha of fauna habitat	Part V of the EP Act - NVCP conditions and compliance reporting
• Clearing of Black Cockatoo foraging habitat, comprising: – Up to 31.71 ha of Negligible to Moderate quality foraging habitat for Carnaby's Cockatoo (*Zanda latirostris*) – Up to 31.71 ha of Negligible to Moderate quality foraging habitat for Baudin's Cockatoo (*Zanda banksii*) – Up to 23.78 ha of Negligible to Moderate quality foraging habitat for Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*)	Part V of the EP Act - NVCP conditions and compliance reporting EPBC Act – assessment of significance of impacts to MNES (Threatened species) and Proposal FFEMP
• Clearing of up to 1 suitable breeding tree (one hollow) and 52 potential nesting trees (no hollows) for Black Cockatoos	Part V of the EP Act - NVCP conditions and compliance reporting EPBC Act – assessment of significance of impacts to MNES (Threatened species) and Proposal FFEMP
• Clearing of up to 24.50 ha of potential Black Cockatoo roosting habitat	Part V of the EP Act - NVCP conditions and compliance reporting EPBC Act – assessment of significance of impacts to MNES (Threatened species) and Proposal FFEMP
• Clearing of up to 2.31 ha of potential habitat for Douglas' Broad-headed Bee (*Hesperocolletes douglasi*)	Part V of the EP Act - NVCP conditions and compliance reporting EPBC Act – assessment of significance of impacts to MNES (Threatened species) and Proposal FFEMP
• No threatened fauna injury or mortality from vehicle strike and/ or entrapment as a result of Proposal activities	EPBC Act – assessment of significance of impacts to MNES (Threatened species) and Proposal FFEMP

Environmental Outcome	How outcomes will be measured and assured
• Minimise indirect impacts to fauna habitat quality from the introduction and/or spread of weeds and disease (such as dieback), fragmentation and fire.	Part V of the EP Act - NVCP conditions and compliance reporting EPBC Act – assessment of significance of impacts to MNES (Threatened species) and Proposal FFEMP and FVEMP CALM Act – DBCA DAS permit

6. Inland waters

6.1 EPA objective

The objective of the Inland Waters EPA factor is *'To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected'* (EPA, 2018a).

6.2 Relevant policy and guidance

The following policy and guidance documents have been considered throughout this section:

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018)
- Environmental Factor Guideline – Inland Waters (EPA, 2018a)
- Identification and investigation of acid sulfate soil and acidic landscapes (DER, 2015a)
- Treatment and management of soil and water in acid sulfate soil landscapes (DER, 2015b)
- Water Quality Protection Note (WQPN) 13: Dewatering of soils at construction sites (DoW, 2012)
- WQPN 44: *Infrastructure – Road, transportation and* utility corridors (DWER, 2025).

6.3 Receiving environment

6.3.1 Studies and surveys

Table 58 presents relevant studies undertaken and proposed.

Table 58 Inland Waters Surveys completed for the Proposal

Survey	Survey Date	Report Date	Author
Desktop Assessment A desktop assessment for Inland Waters factors for the Proposal's Survey Study Area and surrounding landscape was completed by GHD (2026). The desktop assessment was completed in accordance with EPA's Environmental Factor Guideline for Inland Waters.	2026	Results have been included in this Environmental Review Document in the below sections	GHD Pty Ltd
T0621770: NBT-MUL WGA Double Circuit: Geotechnical Investigation Report (2026) Appendix D.9	January – February 2026	April 2026	CMW Geosciences

Adequacy of Surveys

The desktop assessment was completed in accordance with EPA's Environmental Factor Guideline for Inland Waters.

The Geotechnical Investigation Report prepared by CMW Geosciences is limited in its application due to the scope not including testing for Acid Sulfate Soils and groundwater monitoring being limited to five bores that were installed, with groundwater level often inferred from boreholes and Cone Penetration Testing (CPT) locations.

In addition, CMW (2026) also noted that groundwater measurements were likely to represent seasonal lows based on the time of measurement and higher groundwater elevation can be expected during seasonal high periods which typically occur during September and October.

6.3.2 Hydrogeology

Groundwater

Groundwater level was recorded at five locations across the PDE at wells installed by CMW (2026) as part of the geotechnical investigations. Levels were recorded at two separate sampling events within March. Table 59 provides details of the results of the monitoring. Figure 4 indicates the location of the monitoring wells installed.

Table 59 Groundwater monitoring wells and results (CMW, 2026)

Well Location	Date installed	Groundwater depth (m bgl)	
		Sampling Event 1 (17/03/2026)	Sampling Event 2 (31/03/2026)
BH21	16/02/2026	10.50	12.34
BH53	19/02/2026	5.20	6.84
BH77	20/02/2026	12.12	11.16
BH133	09/02/2026	5.22	5.14
BH165	12/02/2026	9.65	10.14

Acid Sulfate Soils

Acid sulfate soils (ASS) include Actual Acid Sulfate Soils (AASS) and Potential Acid Sulfate Soils (PASS). AASS generate acidity in situ, whereas PASS have potential to generate acidity if disturbed and/or oxidised.

DWER ASS Risk Mapping for the Swan Coastal Plain (DWER-055) (GoWA, 2026) maps ASS in three classes and identifies the following within the PDE (Figure 3):

- 1.33 ha of the PDE is mapped as "*High to Moderate risk of ASS occurring within 3 m of natural soil surface*" – these locations are generally in association with the Geomorphic Wetlands that also intersect the PDE (CMW, 2026).
- 55.53 ha of the PDE is mapped as "*Moderate to Low risk of ASS occurring within 3 m of natural soil surface*" – these locations are predominantly to the north of Ocean Reef Road.

The remainder of the PDE (18.85 ha) predominantly along Ocean Reef Road, is mapped has having "*No known risk of ASS occurring within 3 m of natural surface*" (or deeper).

Riparian / Groundwater dependent vegetation

ELA (2026) identified five vegetation communities within the survey area associated with lowland areas surrounding wetlands - four communities surrounding Gnangara Lake and one associated with Hawkins Road Swamp Conservation Category wetland (ELA, 2026) The identified vegetation communities align

with areas mapped as Ground Water Dependent Ecosystems by the Bureau of Meteorology Groundwater Dependent Ecosystems Atlas (ELA, 2026).

Table 60 provides details of the extent of these vegetation communities within the ELA survey area and PDE and these are mapped in Figure 25. None of the inferred vegetation communities for the survey gap areas were representative of riparian or groundwater dependent vegetation.

Table 60 Riparian / Groundwater dependent vegetation within the PDE (ELA, 2026)

Vegetation Community	Associated wetland	Extent within the survey area (ha)	Extent within in the PDE (ha)
MpAgLs	Lake Gnangara	1.40	0.00
MpAsHa	Lake Gnangara	1.30	0.00
XpAcMf	Lake Gnangara	0.90	0.26
CcBaBi	Lake Gnangara	0.80	0.13
MpNfAc	Hawkins Road Swamp	0.90	0.11
Total		**5.30**	**0.50**

In addition, Banksia Woodlands TEC is considered to be a partial GDE, with groundwater drawdown and changes to hydrological regimes identified as a key threat to the ecological community (DCCEEW, 2016), particularly during dry seasonal periods when surface water availability is limited. The TEC relies on access to groundwater to maintain physiological function and ecological resilience, and changes to groundwater regime can result in altered species composition and increased vulnerability to secondary stressors, such as disease and fire (DBCA, 2023).

There is 1.98 ha of Banksia Woodland TEC mapped within the PDE.

Pole foundation construction methodology

It is assumed that 171 steel poles will be installed as part of the construction of the Proposal. Based on the preliminary information provided in the geotechnical investigation report, 92 of the 171 poles have been identified as intersecting groundwater (CMW, 2026).

Pole foundations will consist of an augered hole drilled to a maximum depth of 12 m and with an average diameter of 2 m with a casing or sleeve installed to stabilise the augered area (pile). Wet conditions will be maintained within the pile (no drying or aeration will be used). Concrete will be poured into the pile using a tremie pipe using a continuous pour technique that will displace water within the pile to the surface. Displaced water will be collected via vacuum extraction and stored in sealed tanks which will be either:

- Taken offsite for disposal in appropriate facilities
- Allowed to reinfiltrate into the ground at the pole location (only where there is no risk of impacts to water quality).

Construction will be for an estimated duration of 2-3 days per pole foundation with any active interaction with groundwater limited to a single day, during drilling and concrete placement only.

Construction for pole foundations does not require sustained groundwater extraction via pumping and will therefore not result in any drawdown of the aquifer or hydraulic impact beyond the excavation footprint. It is estimated, based on the potential maximum dimensions of the pile (12 m depth and 2 m in diameter), and average groundwater level (as informed by CMW, 2026) that the typical water volume that will be displaced per foundation will be 21 m^3.

The maintenance of 'wet' conditions significantly reduces the risk of ASS as it limits the exposure of soil to the air where it could potentially oxidise.

6.3.3 Hydrology

Geomorphic Wetlands

Four Geomorphic Wetlands of the Swan Coastal Plain (DBCA-019) intersect the PDE, representing each of the three categories: Conservation Category, Resource enhancement and Multiple use (GoWA, 2026).

Table 61 outlines the extent of the Geomorphic wetlands within the PDE and these are mapped in Figure 5.

Table 61 Geomorphic wetlands within PDE

Geomorphic Wetland (name)	UFI	Category	Classification	Extent within PDE (ha)
Hawkins Road Swamp	UFI 8093	Conservation Category	Sumpland	0.22
Unnamed	UFI 8118	Multiple Use	Dampland	0.24
Unnamed	UFI 8113	Multiple Use	Sumpland	0.02
Unnamed	UFI 8101	Resource Enhancement	Dampland	0.09
			Total	0.57

6.4 Proposed mitigation

The mitigation hierarchy has been applied in accordance with the Statement of environmental principles, factors, objectives and aims of EIA (EPA, 2023a). Impact avoidance has been applied rigorously through the design process, and will continue during detailed design, construction, and operations, as the primary mitigation of Proposal's impact on inland waters.

- Avoid: reducing the Impact Area and locating activities to avoid direct and indirect impacts on inland waters.
- Minimise: minimising direct and indirect impacts where they cannot be completely avoided.
- Rehabilitate: actively repairing, rehabilitating or restoring impacted areas, as soon as possible, to promote long-term recovery.
- Offset (where necessary): providing suitable offsets for significant adverse environmental impacts.

Error! Reference source not found. Table 62 outlines the mitigation measures that have and/or will be implemented to reduce potential impacts to Inland Waters.

Table 62 Mitigation and avoidance actions for Inland Waters

Potential impact	Mitigation Hierarchy
Avoid	
Proposal siting	• New infrastructure has been located within existing road reserves and utilises existing tracks where possible to avoid additional clearing within wetland areas and impeding surface water flow. • Where possible, pole locations have been located outside of wetland areas to avoid impacting water quality from excavation, and to reduce the likelihood of dewatering being required for pole installation. • Multiple alignments underwent a Multi-Criteria Analysis (MCA) which considered economic, environment, heritage, planning and social impacts. Alignments located further east were identified as having a higher environmental impact due to increased clearing of vegetation being required and were therefore not selected.
Minimise	
Pole locations	• Pole locations have been chosen to minimise impacts to wetlands and reduce proximity to riparian and groundwater dependent vegetation • Utilisation of wet construction techniques for pole foundations where water is displaced and saturated soil conditions are maintained. This removes the need for dewatering and reduces the risk of generating ASS by maintaining anerobic conditions.
Baseline monitoring	• Baseline monitoring for ASS at pole locations to determine where ASS management will be required. • Baseline sampling of groundwater quality from a representative location of PDWSA aquifers
Management plans	• If ASS is identified at pole locations from the baseline monitoring, an ASS Management Plan will be developed and included as part of the CEMP for the Proposal. • Water management will be a required component of the CEMP where controls for the management of the water displaced as a result of the wet construction techniques will be specified. • FVEMP includes clearing controls for within wetland areas to mitigate the risk of sedimentation and impacts to surface water quality.
Rehabilitate	
Vegetation rehabilitation	• Areas of riparian/groundwater dependent vegetation growing in association with wetlands cleared for the purposes of construction, that are not required for ongoing maintenance activities, will be rehabilitated, targeting stabilisation of soils to reduce risk of soil erosion impacting water quality post-construction. These areas will be identified during the post-construction phase of the Proposal in accordance with the outcome-based criteria specified in the Proposal's FVEMP. Significant residual impacts have been calculated by conservatively assuming all clearing approved within the PDE will be permanent.

6.5 Potential environmental impacts

6.5.1 Identified environmental impacts

Potential Direct Impacts

The Proposal may result in the following potential direct impacts to Inland Waters.

Table 63 Potential direct impacts to Inland Waters

Proposal activity	Potential Direct impact	Relevance to Proposal
Construction activities	Clearing impacts to Geomorphic wetlands	Yes. Proposal requires clearing of 0.04 ha of within areas mapped as Geomorphic wetlands. Detailed discussion is provided in Section 6.5.2
	Loss of riparian/groundwater dependent vegetation	Yes. Proposal requires clearing of 0.17 ha of riparian vegetation/groundwater dependent vegetation Detailed discussion is provided in Section 6.5.2
	Impacts to groundwater and surface water quality within wetland areas	Yes. Proposal construction works occur within mapped boundaries of Geomorphic wetlands. Detailed discussion is provided in Section 6.5.2
	Decline in the availability and quality of waters within PDWSA	No. The Proposal construction methodology for pole foundations does not require dewatering. Detailed discussion is provided in Section 6.5.2

Potential Indirect Impacts

The Proposal has the potential to result in the following indirect impacts to Inland Waters.

Table 64 Potential indirect impacts to Inland Waters

Proposal activity	Potential Indirect impact	Relevance to Proposal
Construction activities	Changes to hydrological regimes and water quality of adjacent wetlands	Yes. Proposal construction works occur within mapped boundaries of Geomorphic wetlands. Detailed discussion is provided in Section 6.5.3
	Decline in condition of groundwater dependent vegetation within and adjacent to the PDE through drawdown	No. The Proposal construction methodology for pole foundations does not require dewatering. Detailed discussion is provided in Section 6.5.3

6.5.2 Predicted direct environmental impacts

Clearing of wetlands and riparian/groundwater dependent vegetation

Clearing for the Proposal includes 0.04 ha within the mapped boundaries of two Geomorphic wetlands, one conservation category wetland (UFI 8093) and one resource enhancement wetland (UFI 8101). Details of the extent of the proposed impacts to these wetlands is provided in Table 65

Table 65 Direct impacts to geomorphic wetlands

Geomorphic Wetland Type	Extent within PDE (ha)	Extent within IA (ha)
Multiple Use	0.26	0.00
Resource Enhancement	0.09	0.01
Conservation Category Wetland	0.22	0.03
Total	**0.57**	**0.04**

In addition, the Proposal requires clearing of up to 0.17 ha of riparian/groundwater dependent vegetation. Noting that this vegetation is in part associated with the mapped extents of the Geomorphic wetlands within the PDE and as such the values are not cumulative. Table 66 details the extent of the riparian/groundwater dependent vegetation proposed to be cleared.

Table 66 Direct impacts to riparian/groundwater dependent vegetation

Vegetation Community	Associated wetland	Extent within in the PDE (ha)	Extent within the IA (ha)
XpAcMf	Lake Gnangara	0.26	0.03
CcBaBi	Lake Gnangara	0.13	0.03
MpNfAc	Hawkins Road Swamp	0.11	0.11
Total		**0.50**	**0.17**

The avoidance and mitigation measures Western Power has implemented, and the management actions captured in the FVEMP that relate to clearing of wetlands have significantly reduced the scale of the potential impacts of the Proposal on Inland Waters. Clearing of wetlands has been reduced to only 7% of the extent within the PDE and is predominantly of vegetation in Degraded condition.

Wester Power engaged with DBCA regarding management of the proposed impacts to Hawkins Roads Swamp and the potential to rehabilitate the area after construction as measure to offset any clearing impacts. DBCA indicated that the wetland has and continues to be used for track work which has contributed to degradation over time and that the system is highly modified. It was suggested that other higher value wetland areas be considered for offset instead of rehabilitation of Hawkins Road Swamp.

As these impacts are primarily associated with clearing activities and of relatively low significance, the NVCP process under Part V of the EPA act is considered to have the appropriate regulatory authority to assess the significance and impose conditions for management of impacts associated with the implementation of the Proposal. Specifically, through assessment of whether the proposed clearing is at variance with Principle (f) and (i). In addition, a Bed and Banks permit will be applied for under the RIWI Act for the proposed disturbance to wetlands. If significant residual impacts are identified, DWER has the regulatory authority to condition the requirement for offsets (refer to Table B2-2, Appendix B.2 for further detail).

Groundwater quality and quantity within wetlands and PDWSAs

The Proposal requires the construction of an estimated 171 steel poles and foundations as part of the transmission line infrastructure. A wet construction methodology for the poles has been selected to

minimise risk of impacts associated with ASS and to remove the requirement for any sustained groundwater extraction via pumping.

Implementation of this methodology significantly reduces the potential for impacts to groundwater quality and quantity as it ensures there will be no drawdown of the aquifer and no hydraulic impacts beyond the excavation footprint, groundwater will be displaced from the pile as concrete is poured in via the tremie pipe. In addition, construction at each pole location will be of a limited duration (2-3 days) with any active interaction with groundwater limited to a single day, during drilling and concrete placement only.

The PDE intersects a 1.34 ha area mapped as 'High to Moderate risk of ASS occurring within 3 m of natural soil surface' according to DWER ASS risk mapping (DWER-055) (GoWA, 2026). There is the potential for excavation activities in these areas to result in contamination of groundwater quality from exposure of acid sulfate soils.

Baseline ASS testing will be undertaken at pole locations within mapped 'High to Moderate risk ASS' areas prior to the commencement of construction. If ASS is identified during baseline testing, the Principle Contractor will be required to develop an ASS Management Plan (ASSMP) and the plan will be submitted as part of the CEMP with the DA.

The use of wet construction techniques will also minimise the risk of impacts to groundwater quality from exposure of ASS. Augered drilling techniques allow for the maintenance of saturated (anerobic) conditions, avoiding open excavations, where soil can be oxidised.

Water management will form a critical component of the CEMP, which will be submitted in support of the DA. The Principle Contractor will be required to include:

- Clear controls for the containment, storage and disposal of water displaced from pole foundations.
- Baseline groundwater quality testing and post-construction groundwater quality testing to demonstrate no impacts to groundwater quality within the PDWSAs has resulted from the implementation of the Proposal.

It is considered that the potential impacts of the Proposal to groundwater quality/quantity are low given the use of 'wet' techniques for construction of the pole foundations. The provision of an ASSMP and water management actions in the CEMP is considered sufficient to ensure that potential impacts to groundwater quality/quantity remain low throughout the construction of the Proposal.

Surface water quality within wetland areas

There is potential for contamination of surface water during construction of the Proposal from:

- Accidental release of hazardous materials associated with refuelling and servicing of equipment and vehicles
- Exposure of ASS from excavation activities.

The construction of the Proposal does not require high volumes of chemicals and hydrocarbons and any servicing or refuelling of equipment will occur at designated laydown areas (in proximity to Neerabup Terminal), outside of the mapped boundaries of watercourses and wetlands. The risk of significant

impact to surface water quality is considered to be low and can be adequately managed via the implementation of the controls captured in the CEMP. Examples of controls that will be required to be included are:

- Wash down facilities for mechanical plant or vehicles are to be located a minimum of 100 m away from any surface water course or wetland and designed to direct any wastewater to a designated sump for containment
- No refuelling, repair or maintenance of plant and equipment, or any on-site use or storage of chemicals is permitted to occur within a mapped wetland or water course
- All service vehicles and equipment must carry a spill kit

Impacts to surface water quality that may result from clearing activities, such as erosion of soils leading to sedimentation and increased turbidity of surface water, are not considered to be significant, given the small scale of clearing required, the highly disturbed landscape and through the implementation of management actions captured in the FVEMP and CEMP. It is considered that these impacts can be assessed via the NVCP process under Part V of the EPA act. DWER have the appropriate regulatory authority to assess the significance and impose conditions for management of impacts associated with the implementation of the Proposal. Specifically, through assessment of whether the proposed clearing is at variance with Principle (g) and (i). In addition, a Bed and Banks permit will be applied for under the RIWI Act for the proposed disturbance to wetlands (refer to Table B2-2, Appendix B.2 for further detail).

6.5.3 Predicted indirect environmental impacts

Changes to hydrological regimes

Proposal activities are not expected to result in changes to surface water flows, nor affect the functioning of adjacent wetlands. The existing hydrological regimes are in a largely modified state due to historical clearing, plantation and existing infrastructure (roads and transmission lines) within the PDE. Earthworks and clearing within the 20 m-wide PDE are not expected to be of sufficient scale to cause substantial hydrological changes in the local area.

Any earthworks that will result in a disturbance to a watercourse or wetland will require a Bed and Banks Permit, issued under the RIWI Act. The RIWI Act provides DWER with the regulatory authority to assess the potential impacts of a proposed activity to the environmental values associated with a watercourse and empowers DWER to impose and enforce conditions attached to a Bed and Banks Permit. It is considered that the potential impacts from the Proposal to watercourses and/or wetlands can be sufficiently managed through the Bed and Banks Permit process (refer to Table B2-2, Appendix B.2 for further detail).

The NVCP process will also serve as an additional regulatory mechanism to assess the potential impacts to hydrological regimes via Principle (f), which considers the impact of clearing activities on the quality of surface water and/or groundwater (refer to Table B2-2, Appendix B.2 for further detail).

The CEMP developed for the Proposal will include mitigation measures aimed at avoiding and minimising impacts to hydrological regimes and will be submitted in support of applications made for an

NVCP and Bed and Banks Permit to demonstrate that sufficient controls are in place such that there will be no significant residual impacts to hydrological regimes.

Decline in condition of groundwater dependent vegetation

The construction methodology for pole foundations does not require any active pumping of groundwater and will therefore not result in any drawdown to the aquifer.

Therefore, no impact to the availability of groundwater to riparian and groundwater dependent vegetation and no resulting impacts to the condition of vegetation as a result of the implementation of the Proposal are anticipated

6.5.4 Cumulative impacts to Inland Waters

The EPA defines cumulative environmental impacts as the successive, incremental and interactive effects of a proposal combined with past, present and reasonably foreseeable future activities. For Inland Waters, cumulative impacts are typically expressed through progressive changes to hydrology, water quality, and ecological function, rather than discrete, site-specific disturbances (EPA, 2018a; EPA, 2026).

An estimated 90% of the SCP wetlands, have been already been lost or irreversibly degraded due to well-known causes such as nutrient enrichment; the invasion of exotic flora and fauna, loss of fringing vegetation, and altered hydrological regimes caused by groundwater abstraction, urbanisation, agriculture, plantations and a drying climate (Nanda, et al., 2021; DPAW, 2016).

The Proposal is situated within a historically cleared and urbanised landscape, where the majority of land is already used for residential, industrial, infrastructure, plantation purposes. The Proposal is designed to integrate with existing infrastructure and easements to reduce impact to environmental values, utilising areas of degraded vegetation and cleared road reserves wherever practicable.

Cumulative impacts to Inland Waters have been assessed based on a high-level desktop cumulative impact assessment for Geomorphic Wetlands, PDWSAs and aquatic and terrestrial GDEs the PDE (Appendix D.12).

At the Regional scale (SCP), the extent of Geomorphic Wetlands in the PDE represents approximately 0.00004 % and 0.00005 % of foreseeable impacts across the SCP for Conservation and Resource Enhancement Geomorphic Wetlands, respectively.

Construction of pole foundations is not anticipated to result in any impacts to the quantity of groundwater within PDWSAs as ‘wet’ techniques rely on the displacement of water only, with no sustained pumping of groundwater required.

The avoidance and mitigation measures implemented by Western Power has allowed for impacts to Inland Waters to be minimised such that construction of the Proposal will not significantly contribute to cumulative impacts in the broader SCP region.

6.6 Assessment and consideration of significance of residual impact

Residual impacts, remaining after application of the mitigation hierarchy, have been considered in regard to the 'significance' of impact upon EPA Factor Inland Waters and summarised in Table 67. This assessment is based on the various matters outlined in the EPA (2023b) *Statement of Environmental Principles, Factors, Objectives and Aims of EIA*.

Table 67 Assessment of significance of residual impact on Inland Waters

Significant matters	Significance of residual impacts in regional context
Object and principles of the Act	Specialist preliminary surveys, undertaken by suitably qualified consultants, have been undertaken to identify inland water values. Surveys were completed in accordance with EPA guidelines. Proposal design focused strongly on avoidance of impacts wherever practicable, informed by specialist surveys and assessments. Avoidance of impacts is a precautionary approach which limits reliance on minimise, rehabilitate and offset. The avoidance principle has been applied through: • Evolving Proposal design informed by environmental studies. • Pole placement within existing easements to avoid additional clearing of wetlands riparian/groundwater dependent vegetation, where viable.
Values, sensitivity and quality of the environment that is likely to be impacted	The Proposal is located within the following PDWSAs: • Gnangara Underground Water Pollution Control Area (P1 and P2) • Perth Coastal and Gwelup Underground Water Pollution Control Area (P3) The PDE intersects three Geomorphic Wetlands, including one CCW, which may be impacted by dewatering activities: • UFI 8039 Hawkins Road Swamp (CCW) • UFI 8118 Unnamed (Multiple Use) • UFI 8101 Unnamed (Resource Enhancement) The Proposal will clear 0.04 ha within the following wetlands: • 0.03 ha within UFI 8039 (conservation category) • 0.01 ha within UFI 8101 (resource enhancement)
All stages and components of the Proposal	The impact assessment considers all components of the Proposal that might impact Inland Waters.
Extent (intensity, duration, magnitude and footprint) of likely impacts	Impacts resulting from potential contamination from exposure of ASS material are limited to the construction period. Potential impacts to surface water quality form erosion and sedimentation due to clearing are limited to the construction period. Impacts resulting from clearing activities will be permanent in some areas. The FVEMP requires a review of the final cleared footprint one month following completion of construction to identify any areas within the PDE that can be rehabilitated. The condition stipulates rehabilitation will be managed via a Revegetation Management Plan. Construction and clearing actions will take place progressively over a one to one and half-year period, with an operational life of >50 years (permanent infrastructure).
Resilience of the environment to cope with the impacts, including pressures such as climate change	A significant proportion of the Proposal's Impact Area is already degraded or disturbed. Climate change is predicted to lead to increased drought and extreme weather events in the region, which would increase pressure on native vegetation. As the Proposal is seeking to upgrade the SWIS to enhance renewable energy generation in the area, it will therefore seek to mitigate climate change pressures.

Significant matters	Significance of residual impacts in regional context
Consequence of application of the mitigation hierarchy	Application of the mitigation hierarchy will result in no significant indirect impacts and no significant direct impacts to Inland Waters. Alternative approval mechanisms are considered more appropriate to assess and manage any potential impacts of the Proposal to Inland Waters, these include the DA process, NVCP process and Bed and Banks permit process.
Consequence of the likely impacts	Direct loss of conservation category wetland areas. Application of the mitigation hierarchy has identified the potential for residual impacts. However, assessment of significance and the requirement for offsets can be adequately managed via: • Part V of the EP Act • Referral under the EPBC Act • DAS permitting system under the CALM Act and BC Act for State managed lands • DA process under the Planning Act.
Likely environmental outcomes, and whether they are consistent with the EPA environmental factor objectives	Refer to Table 68.
Cumulative effects	At the Regional scale (SCP), the extent of Geomorphic Wetlands in the PDE represents approximately 0.00004 % and 0.00005 % of foreseeable impacts across the SCP for Conservation and Resource Enhancement Geomorphic Wetlands, respectively. The avoidance and mitigation measures implemented by Western Power has allowed for impacts to Inland Waters to be minimised such that construction of the Proposal will not significantly contribute to cumulative impacts in the broader SCP region.
Holistic impacts	The Proposal involves clearing up to 31.71 ha of vegetation, resulting in the loss of native flora, Threatened Ecological Communities, Environmentally Sensitive Areas, and fauna habitat. This may lead to direct fauna mortalities, visual amenity loss, weed invasion, and degradation of nearby ecosystems. Clearing of vegetation growing in association with a wetland could alter hydrological regimes and affect surrounding vegetation health. The Proposal's construction also presents an increased groundwater quality risk within a PDWSA due to potential spills and contamination associated with exposure of ASS materials.
Level of confidence in the predicted residual impacts and success of the proposed mitigation	The EIA for the Proposal has been informed by biological surveys undertaken for the Proposal, in accordance with relevant EPA Technical Guidance and with no significant limitations noted. Western Power, as an organisation, has an established Environmental Management System in place, with policies and procedures that regulate construction and operation activities such that potential impacts to the environment are avoided and minimised
Public interest about the likely effect of the proposal on the environment and relevant public information	Western Power has engaged with relevant stakeholders, as identified in Table 6. Primary concerns have been the removal of mature vegetation, impacts to Black Cockatoos and impacts to visual amenity.
Other Approvals	Table B2-2, Appendix B.2 details the other approvals processes that can assess the significance of, and impose conditions for the management of, residual impacts identified for the Proposal. The impacts to Inland Waters of Proposal implementation that result from clearing activities are of low enough magnitude that they can be suitably managed under the NVCP process under Part V of the EP Act and the Bed and Banks Permit process under the RIWI Act.

Significant matters	Significance of residual impacts in regional context
	Additional approvals such as the DA process under the Planning Act provide further mechanisms for assessing and managing potential impacts to Inland Waters through the requirement of a CEMP (including ASS and water management for construction).

6.7 Environmental outcomes

The Proposal will be implemented in accordance with the environmental outcomes for Inland Waters detailed in Table 68.

Table 68 Environmental Outcomes for Inland Waters

Environmental Outcome	How outcomes will be measured and assured
• Clearing impacts of up to 0.04 ha of Geomorphic Wetlands, comprised of: – 0.03 ha of Conservation Category Wetlands – 0.01 ha of Resource Enhancement wetlands	Part V of the EP Act - NVCP conditions and compliance reporting Bed and Banks Permit RIWI Act – Permit conditions and compliance reporting
• Clearing of up to 0.17 ha of riparian/groundwater dependent vegetation	Part V of the EP Act - NVCP conditions and compliance reporting Bed and Banks Permit RIWI Act – Permit conditions and compliance reporting
• No impacts to groundwater and surface water quality within wetland areas attributable to Proposal implementation	Part V of the EP Act - NVCP conditions and compliance reporting (only for impacts to water quality that result from clearing) Bed and Banks Permit RIWI Act – Permit conditions and compliance reporting (only for impacts to water quality that result from disturbance to bed and banks) DA under the Planning Act – condition of approval being the compliance with supplied EMPs (e.g. CEMP and ASSMP)
• Minimise impacts to hydrological regimes within wetlands that may result from earthworks and/or dewatering for construction.	Part V of the EP Act - NVCP conditions and compliance reporting Bed and Banks Permit RIWI Act – Permit conditions and compliance reporting

7. Social Surroundings

7.1 EPA objective

The EPA's environmental objective for the factor Social Surroundings is: *"To protect social surroundings from significant harm"* (EPA, 2023a). This recognises the importance of ensuring that social surroundings are not significantly affected due to the implementation of a proposal or scheme.

7.2 Relevant policy and guidance

The following policy and guidance documents have been considered throughout this section:

- Environmental Factor Guideline – Social Surroundings (EPA, 2023a)
- Technical Guidance: EIA of Social Surroundings – Aboriginal Cultural Heritage (EPA, 2023)
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields (ICNIRP, 2010)
- Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) Guidelines and World Health Organisation (WHO) Environmental Health Criteria for electric and magnetic fields (EMF).

7.3 Receiving environment

7.3.1 Studies and surveys

Table 69 outlines the relevant studies undertaken for Social Surroundings to determine baseline conditions and inform Proposal avoidance and design.

Table 69 Social Surroundings Surveys completed for the Proposal

Survey	Survey Date	Report Date	Author
Archaeological and Ethnographic Site Identification Heritage Survey of Western Power's Neerabup–Wangara CEL North Activity Area	9-11 December 2025	The report produced by ALS for the Proposal has not yet been finalised and requires review and authorisation from Whadjuk Aboriginal Corporation.	Aboriginal Land Services (ALS)
CEL North Neerabup-Wangara EMF studies	2025	22/12/2025	GHD Pty Ltd
A desktop assessment for Social Surroundings factors for the Proposal's Survey Study Area and surrounding landscape was completed by GHD (2026). The desktop assessment was completed in accordance with the EPA's Environmental Factor Guideline for Social Surroundings (EPA, 2023) and Technical Guidance – Aboriginal Cultural Heritage (2023)	2026	Results have been included in this Environmental Review Document in the below sections	GHD Pty Ltd

Adequacy of Surveys

The Aboriginal Heritage survey report produced by ALS for the Proposal has not yet been finalised and requires review and authorisation from Whadjuk Aboriginal Corporation.

The EMF study did not identify any limitations.

7.3.2 Aboriginal cultural heritage

On 5 June 2025, Western Power issued an activity notice to the South West Aboriginal Land and Sea Council (SWALSC) pertaining to a new double circuit 132 kV transmission line between Neerabup Terminal and Wangara Substation. SWALSC deemed the proposed activity required surveying, as such a heritage survey was undertaken in consultation with Whadjuk Aboriginal Consultants nominated by the Whadjuk Aboriginal Corporation and led by Aboriginal Land Services (ALS).

An Archaeological and Ethnographic Site Identification Heritage Survey was undertaken over three days from 9 to 11 December 2025 by seven Whadjuk Aboriginal Consultants, three ALS heritage consultants and two Western Power representatives. The survey report is in the process of being finalised with the Whadjuk Aboriginal Corporation.

Since completion of the Aboriginal Heritage survey, the PDE has been amended and now includes areas that are outside of the area surveyed by the Whadjuk Aboriginal Corporation and ALS. Western Power will be issuing a second Activity Notice to Whadjuk Aboriginal Corporation in mid-May 2026 detailing the changes to the PDE and requesting guidance as to whether a supplementary survey is required to address the currently unsurveyed areas within the PDE.

If any Aboriginal Heritage sites are identified within the PDE, the appropriate approvals will be sought in consultation with the Whadjuk Aboriginal Corporation and in consideration of the AH Act.

Gnangara Lake is a registered Aboriginal Heritage site (Place ID 3772), the boundary of which is located approximately 17 m east of the PDE (at its closest point).

Historic heritage

Local Heritage Surveys (formerly Municipal Inventories) (DLPH-008) list places that are or may become of historical heritage significance to an LGA. One place listed in the City of Wanneroo Local Heritage Survey intersects the PDE (GoWA, 2026): Place Number 14289: Old Block Road, Mangano Place, Wanneroo. This site has historic value for its association with the methods of road building and transport in the 19th century. This site has significance for its association with the period of convict labour in WA (Heritage Council, 2026a).

No state (DPHL-006) or nationally registered places occur within the PDE. Four state and twelve nationally registered places occur within 5 km of the PDE (GoWA, 2026). Historical Heritage Places that intersect the PDE and occur within the vicinity of the Proposal are mapped in Figure 27.

Consultation with the City of Wanneroo has not identified any concerns regarding Proposal impacts to Place Number 14289.

7.3.3 Electromagnetic fields (EMF)

In 2025, GHD completed an Electromagnetic Field (EMF) Study (GHD, 2025), to determine potential impacts from EMF on sensitive receptors as a result of the operation of the Proposal (Appendix D.10). This study involved:

- Modelling the proposed double circuit 132 kV transmission line to simulate magnetic and electric fields associated operation.
- Comparison with relevant national and international standards and guidelines to demonstrate compliance.
- Study conclusions show that:
- All electric and magnetic fields are within reference levels required by relevant regulatory authorities.
- The highest simulated electric field, at nominal human height, near the proposed transmission line is 18.2 % of the associated public exposure reference level.
- The highest simulated magnetic flux density at nominal human height, near the proposed transmission line, is 14 % of the associated public exposure reference level.
- Transmission line design follows the principle of prudent avoidance, to minimise the impact of electric and magnetic fields where the cost of doing so is reasonable.

7.4 Proposed mitigation

The mitigation hierarchy has been applied in accordance with the Statement of environmental principles, factors, objectives and aims of EIA (EPA, 2023b). Impact avoidance has been rigorously applied as the primary mitigation through the Proposal design process, and will continue during detailed design, construction, and operations, to mitigate impact on social surroundings.

- Avoid: reducing the Impact Area and locating activities to avoid direct and indirect impacts on social surroundings.
- Minimise: minimising direct and indirect impacts where they cannot be completely avoided.
- Rehabilitate: actively repairing, rehabilitating or restoring temporary impacted areas as soon as possible to promote long-term recovery.
- Offset (where necessary): providing suitable offsets for activities that result in significant adverse environmental impacts.

Proposed control measures to minimise identified potential impacts to Social Surroundings are presented in Table 70.

Table 70 Mitigation and avoidance actions proposed for Social Surroundings

Potential impact	Mitigation Hierarchy
Avoid	
Proposal siting	• The alignment has been located within road reserves and State owned land as far as practicable to avoid impacts to private property. Where the PDE intersects private property, it is solely to capture the clearing of vegetation that is required to meet electrical clearance requirements, distribution enabling works (undergrounding/pole removals) and customer reconnections. Limited and isolated activities associated with the construction of the transmission line pole foundations and line stringing will occur on private property.

Potential impact	Mitigation Hierarchy
	• The alignment was moved to the Southern side of Ocean Reef Road, the preferred route indicated by the Whadjuk Traditional Owners. This option has also avoided impacts to private landowners on the northern side of Ocean Reef Road. • Consultation with City of Wanneroo regarding the alignment resulted in relocation of the line route to minimise impacts to the East Wanneroo District Structure Plan.
Baseline surveys	• An ethnographic and archaeological survey has been completed with the Whadjuk Traditional Owners in December 2025. If any new Sites are identified in the report, the AH Act is the appropriate statutory mechanism for managing any potential impacts. • An electric and magnetic Frequency (EMF) study (GHD, 2025) has been completed for the future double circuit 132 kV transmission line which indicates that EMFs are within ARPANSA and WHO reference levels.
Minimise	
Management plans	• A Proposal-specific CEMP, addressing dust, fire, noise and vibration impacts and mitigation controls, will be prepared by the Principal Contractor and supplied to Western Power prior to commencement of any construction works. • Potential impacts to Gnangara Lake (Place ID 3772) that may result from installation of pole foundations will be mitigated via the measures detailed in Section 6.4.
Stakeholder engagement	• Ongoing engagement with City of Wanneroo and directly affected landowners will be undertaken throughout the construction period. • Results of the EMF study have been communicated to private landowners located adjacent to new alignment. • Ongoing engagement with the Whadjuk Aboriginal Corporation will be undertaken throughout the construction period. • Western Power has chance finds processes in place for Aboriginal Cultural Heritage throughout project lifecycle which will be administered in consultation with Whadjuk Aboriginal Corporation.
Rehabilitate	
Vegetation rehabilitation	• Areas of native vegetation cleared for the purposes of construction, that are not required for ongoing maintenance activities, will be rehabilitated. These areas will be identified during the post-construction phase of the Proposal in accordance with the outcome-based criteria specified in the Proposal's FVEMP. Significant residual impacts have been calculated by conservatively assuming all clearing approved within the PDE will be permanent.

7.5 Potential environmental impacts

7.5.1 Identified environmental impacts

Potential Direct Impacts

The Proposal has the potential to result in the following direct impacts to Social Surroundings.

Table 71 Potential direct impacts to Social Surroundings

Proposal activity	Potential Direct impact	Relevance to Proposal
Clearing for construction	Disturbance of unidentified Aboriginal heritage items and/or places	No. An Aboriginal Heritage Survey has been completed for the Proposal. If the results of the survey indicate potential impacts to Aboriginal Heritage, the appropriate approvals will be sought in

Proposal activity	Potential Direct impact	Relevance to Proposal
		consultation with the Whadjuk Aboriginal Corporation in consideration of the AH Act. Additionally, Western Power has chance finds processes in place for Aboriginal Cultural Heritage throughout the Proposal life-cycle which will be administered in consultation with Whadjuk Aboriginal Corporation.
	Disturbance of intangible Aboriginal heritage values	No. An Aboriginal Heritage Survey has been completed for the Proposal. If the results of the survey indicate potential impacts to Aboriginal Heritage, the appropriate approvals will be sought in consultation with the Whadjuk Aboriginal Corporation in consideration of the AH Act. Western Power has chance finds processes in place for Aboriginal Cultural Heritage throughout the Proposal life-cycle which will be administered in consultation with Whadjuk Aboriginal Corporation.
	Disturbance of one Municiple heritage site listed on the Wanneroo Municipal Heritage Inventory,	No. Consultation with the City of Wanneroo has not identified any concerns with the Proposal implementation and potential impacts to Place Number 14289.

Potential Indirect Impacts

The Proposal has the potential to result in the following indirect impacts to Social Surroundings.

Table 72 Potential indirect impacts to Social Surroundings

Proposal activity	Potential Indirect impact	Relevance to Proposal
Construction activities	Dust emissions causing nuisance to human receptors	Yes. Sections of the Proposal are located within urban residential areas and adjacent to major roads. Detailed discussion is provided in Section 7.5.2
	Noise and vibration emissions causing nuisance to sensitive receptors	Yes. Sections of the Proposal are located within urban residential areas and adjacent to major roads. Detailed discussion is provided in Section 7.5.2
	Increased local traffic causing nuisance to local communities	Yes. Sections of the Proposal are located within urban residential areas and adjacent to major roads. Detailed discussion is provided in Section 7.5.2

Proposal activity	Potential Indirect impact	Relevance to Proposal
	Degradation of intangible Aboriginal Heritage values connected to the environment.	Yes. Management and mitigation of these impacts has been addressed in Sections 4, 5 and 6, particularly indirect impacts to Gnangara Lake.
	Damage to private property from construction of transmission infrastructure	No. Where the PDE and IA intersect private property, it is solely to capture the clearing of vegetation that is required to meet electrical clearance requirements, distribution enabling works and customer reconnections. No activities associated with the construction of transmission infrastructure, including pole foundations and line stringing, will occur on private property.
Operation of the Proposal	EMF impacts to sensitive receptors	No. An EMF study has been completed for the Proposal which has confirmed all electric and magnetic fields are within reference levels required by relevant regulatory authorities.
	Impacts to Traditional Owner access and use of land	No. Proposal infrastructure is not located within any known Aboriginal Heritage sites. The individual pole locations connected by overhead transmission lines does not present an impediment for the movement of individuals across the landscape.
	Impacts to visual amenity	Yes. Sections of the Proposal are located within urban residential areas and adjacent to major roads. Detailed discussion is provided in Section 7.5.2.

7.5.2 Predicted indirect environmental impacts

Dust, Noise and Vibration emissions

It is anticipated that construction activities for the Proposal will result in the generation of dust, noise and vibration emissions that have the potential to impact nearby sensitive receptors, especially were the Proposal is located adjacent to major roads and within residential areas.

Potential impacts from dust, noise and vibration will be managed through a CEMP provided by the Principal Consultant to Western Power and standard industry controls, such as:

- Noise guidelines under the Environmental Protection (Noise) Regulations 1997 – regulation 13
- Australian Standard AS 2436-2010 which provides guidance on noise and vibration controls
- Use of water carts for dust suppression and limits to clearing activities during high wind conditions

It is considered that potential impacts are not so significant to necessitate assessment of the Proposal under Part IV of the EP Act given that impacts are limited to the construction period and will be of limited duration in any one location as construction proceeds along the proposed alignment. The significance of impacts and adequacy of controls can be appropriately assessed via the DA process under the Planning and Development Act, where the CEMP will be submitted in support of the DA (refer to Table B2-2, Appendix B.2 for further detail).

Increased local traffic

Construction activities will result in increased traffic and/or slower traffic due to heavy vehicle movements, which may cause nuisance to the local community.

Western Power has engaged with the directly impacted residents and City of Wanneroo to inform them of the potential impacts and for guidance on appropriate controls. Where road closures are required for construction activities, night-works will be undertaken to minimise the impacts to traffic flow.

A Traffic Management Plan (TMP) will be developed by the Principal Contractor and will be submitted as part of the DA. It is considered that indirect impacts resulting from increased traffic during construction of the Proposal are not significant given they are limited to the construction period only and can be appropriately assessed and managed via the DA process under the Planning and Development Act (refer to Table B2-2, Appendix B.2 for further detail).

Visual amenity

There is the potential for impacts to visual amenity from the Proposal, however these are not considered to be significant given the proposed infrastructure is reflective of existing infrastructure already present.

It is considered that indirect impacts resulting from visual amenity can be appropriately assessed and managed via the DA process under the Planning and Development Act (refer to Table B2-2, Appendix B.2 for further detail).

Gnangara Lake (Place ID 3772)

The proximity of Gnangara Lake to the Proposal is such that it has the potential to be indirectly impacted by construction activities where construction of pole foundations may have the potential to impact the groundwater and surface water quality that feeds into Gnangara Lake.

Management measures for these potential impacts to Gnangara Lake are synonymous with those outlined in Section 6 of the ERD for potential impacts to Inland Waters.

7.5.3 Cumulative impacts to Social Surroundings

Cumulative impacts to Social Surroundings have been assessed based on a high-level desktop cumulative impact assessment for Aboriginal heritage and Historic heritage within the PDE (Appendix D.12).

No disturbance of Aboriginal Heritage sites is expected within the PDE, therefore it is considered unlikely that the Proposal will contribute to cumulative impacts.

The East Wanneroo District Structure Plan (EWDSP) sets out the long-term vision and planning recommendations for accommodating a growing population in this area and aligns with the Perth and Peel @3.5 million North-West subregional planning framework (WAPC, 2018; 2021).

Large infrastructure projects outlined in the EWDSP include the intended alignment of the Whiteman Yanchep Highway to be located between Old Yanchep Road and Gnangara Road. This highway forms the eastern edge of urbanisation in East Wanneroo and is located mainly in existing State Forest and will be the subject of a formal reservation process under the Metropolitan Region Scheme (MRS) (WAPC, 2021).

There are also two options for a possible future rail link identified in Perth and Peel @3.5 million (WAPC, 2018). Option 1 utilises the median of the proposed Whiteman Yanchep Highway. Option 2 utilises a 70-metre wide corridor which departs from the Whiteman Yanchep Highway alignment and runs through the urban areas of the EWDSP serving stations at the district and neighbourhood centres (WAPC, 2021).

The primary impacts to Social Surroundings are a result of construction activities that will be limited to a finite period and will be transient along the alignment, not occurring in any one location for the entire construction period. The proposed infrastructure is similar to existing transmission line infrastructure that exists within the Perth metropolitan area and is not considered to contribute significantly to cumulative impacts relating to visual amenity.

7.6 Assessment and consideration of significance of residual impact

Residual impacts remaining after application of the mitigation hierarchy have been considered with regard to the 'significance' of impact on EPA Factor Social Surroundings and summarised Table 73. This assessment has been based on the various matters outlined in the EPA (2023b) *Statement of Environmental Principles, Factors, Objectives and Aims of EIA*.

Table 73 Assessment of significance of residual impact on Social Surroundings

Significant matters	Significance of residual impacts in regional context
Object and principles of the Act	Specialist surveys, undertaken by suitably qualified consultants, to assess social surroundings and reduce scientific uncertainty have been completed in accordance with EPA guidelines. The Proposal design strongly focused on the avoidance of impacts, directly informed by completed surveys, and multiple design iterations. This approach has avoided impacts to the point of lowest possible impact and is a precautionary approach which limits a reliance on minimisation, rehabilitation and offset impacts. The precautionary principle has been applied through: • Evolving Proposal design informed by Aboriginal Heritage surveys and EMF studies to minimise impacts • Ongoing engagement with Traditional Owners. • Engagement and discussion with affected landowners and consideration of any issues raised.

Significant matters	Significance of residual impacts in regional context
Values, sensitivity and quality of the environment that is likely to be impacted	An ethnographic and archaeological survey has been completed with the Whadjuk Traditional Owners in December 2025. If any new Sites are identified in the report, the AH Act is considered to be the appropriate statutory mechanism for managing any potential impacts. One historical heritage places listed on the City of Wanneroo Municipal Heritage Inventory intersects the PDE. The Proposal is unlikely to impact on the heritage values of this place and consultation with the City of Wanneroo has not identified any concerns. There is the potential for indirect impacts to human receptors from dust, noise and vibration, and traffic during the construction of the Proposal. Operation of the Proposal may have indirect impacts to visual amenity and impacts associated with EMF to human receptors.
All stages and components of the Proposal	The impact assessment considers all components of the Proposal that might impact Social Surroundings.
Extent (intensity, duration, magnitude and footprint) of likely impacts	Indirect impacts from dust, noise and vibration and traffic are limited to the construction period. Impacts to visual amenity are not considered significant as the Proposal is located within a developed urban residential area. EMF studies have concluded there is no risk of impacts associated with EMF. Construction and clearing actions will take place progressively over a one to one and half-year period, with an operational life of >50 years (permanent infrastructure).
Resilience of the environment to cope with the impacts, including pressures such as climate change	A significant proportion of the Proposal's Impact Area is within extensively developed, urban areas. Climate change is predicted to lead to increased drought and extreme weather events in the region, which would increase pressure on native vegetation. As the Proposal is seeking to upgrade the SWIS to enhance renewable energy generation in the area, it will therefore seek to mitigate climate change pressures.
Consequence of application of the mitigation hierarchy	Application of the mitigation hierarchy will result in no significant residual impacts to Social Surroundings.
Consequence of the likely impacts	Impacts are not likely to represent a significant impact.
Likely environmental outcomes, and whether they are consistent with the EPA environmental factor objectives	Likely environmental outcomes are presented in Table 74.
Cumulative effects	The Proposal is not expected to result in significant cumulative impacts, particularly given the majority of potential impacts to Social Surroundings are limited to the construction period and will be managed via a CEMP. The Proposal footprint has been restricted to road reserves and no transmission infrastructure will be situated on private property. The avoidance and mitigation measures implemented by Western Power are such that the Proposal is not considered to result in a significant cumulative impact.
Holistic impacts	The Proposal involves clearing up to 31.71 ha of vegetation, which may result in temporary dust generation, noise, vibration during construction. These can be effectively managed via the CEMP. Clearing and installation of new infrastructure is unlikely to result in a decline in visual amenity, given the Proposal's location within a developed urban residential area.

Significant matters	Significance of residual impacts in regional context
Level of confidence in the predicted residual impacts and success of the proposed mitigation	The EIA for the Proposal has been informed by biological surveys undertaken for the Proposal, in accordance with relevant EPA Technical Guidance and with no significant limitations noted. Western Power, as an organisation, has an established Environmental Management System in place, with policies and procedures that regulate construction and operation activities such that potential impacts to the environment are avoided and minimised.
Public interest about the likely effect of the proposal on the environment and relevant public information	Western Power has engaged with relevant stakeholders, as identified in Table 6. Primary concerns have been the removal of mature vegetation, impacts to Black Cockatoos and impacts to visual amenity.
Other Approvals	Table B2-2 in Appendix B.2 details the other approvals processes that can assess the significance of, and impose conditions for the management of, residual impacts identified for the Proposal. Ongoing engagement with both Traditional Owners and the City of Wanneroo to manage impacts to sensitive values, and the ability for other regulatory mechanisms, such as the DA process under the Planning and Development Act, to manage potential impacts to Social Surroundings, supports the expectation that the Proposal will not have a significant residual impact on this EPA Environmental Factor.

7.7 Environmental outcomes

The Proposal will be implemented in accordance with the environmental outcomes for Social Surroundings detailed in Table 74.

Table 74 Environmental Outcomes for Social Surroundings

Environmental Outcome	How outcomes will be measured and assured
• Minimise indirect impacts from dust, noise and vibration and traffic during construction	DA under the Planning and Development Act – condition of approval being the compliance with supplied EMPs (e.g. CEMP)
• Minimise impacts to ongoing access to land utilised for traditional use or custom by Whadjuk Traditional Owners	Via ongoing engagement with the Whadjuk Aboriginal Corporation
• Avoid and minimise adverse impacts resulting from the implementation of the Proposal to Aboriginal cultural heritage within and surrounding the PDE	Via ongoing engagement with the Whadjuk Aboriginal Corporation. If the Proposal will cause disturbance to Registered Aboriginal Sites or places with potential to be a Registered Aboriginal Site, Ministerial consent to impact these places under section 18 of the AH Act, or Authority under the *Aboriginal Heritage Regulations 1974* will first be sought. Consultation with the Whadjuk Aboriginal Corporation will be required as part of the heritage approval process.

8. Offsets

Under the WA Environmental Offsets Policy (GoWA, 2011) environmental offsets are required to counterbalance significant residual impacts associated with implementation of a Proposal.

The EIA completed for the Proposal has identified the potential for significant residual impacts to environmental values as a result of Proposal implementation. However, the Proposal presents a relatively low-impact infrastructure development, and its environmental and social footprint is not considered to warrant formal assessment under Part IV of the EP Act. Western Power is targeting a 'Not Assessed' level of assessment for the referral of the Proposal, with other existing statutory mechanisms suitable to assess and manage the Proposal, including the determination of any offsets that may be required.

As such, an Offset Strategy has been developed for the Proposal to support the referral under the EPBC Act. The intent is for this Offset Strategy to also be used for assessment of the Proposal under Part V of the EP Act under the NVCP application process.

Offsets for Bush Forever Sites are addressed in the Proposal Offset Strategy and have been selected in accordance with SPP2.8.

9. Matters of National Environmental Significance

A separate assessment of impacts to MNES listed under the EPBC Act has been developed to support assessment of the Proposal as a 'Controlled Action' under the EPBC Act. This assessment has been completed against the MNES *Significant Impact Guidelines 1.1* (DoE, 2013).

A review was undertaken to determine whether MNES are known or likely to be present within a 5 km buffer of the PDE. The potential occurrence of MNES (excluding marine species) was informed at a desktop level by the EPBC Act Protected Matters Search Tool (Appendix D.13) and summarised in Table 75.

Table 75 Review of MNES present/ potentially present within a 5 km buffer of the PDE

MNES	Presence/ potential presence
World heritage sites	None present
National heritage places	None present
Ramsar Wetlands	None present
Threatened species and ecological communities	Threatened Fauna Eighteen threatened fauna species may occur (comprising 12 birds, three mammals, one fish and two insects). Threatened Flora Twenty-two threatened flora species or species habitat may occur. Threatened Ecological Communities Four TECs may occur: – Banksia Woodlands of the Swan Coastal Plain TEC – Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain TEC – Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain – Empodisma peatlands of southwestern Australia
Migratory species	Fifteen migratory overfly marine, terrestrial and wetland species may occur.
Nuclear actions	Not applicable
Commonwealth marine areas	None present
Great Barrier Reef	Not applicable
A water resource, in relation to coal seam gas development and large coal mining development	Not applicable
Commonwealth Land	Five located within a 5 km buffer of the PDE, associated with the Department of Defence and Australia Post.
Commonwealth Heritage Place Overseas	Not applicable
Commonwealth or Commonwealth Agency	Not applicable

9.1 Threatened fauna

Four Threatened fauna species listed under the EPBC Act are considered to have potential habitat present within the PDE, including:

- Carnaby's Black Cockatoo (*Zanda latirostris)* – EN
- Baudin's Black Cockatoo (*Zanda baudinii*) – EN
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksia naso)* – VU
- Douglas' Broad-headed Bee (*Hesperocolletes douglasi*) – CR.

9.1.1 Threatened Black Cockatoo Species

Black Cockatoos are long-lived, slow-breeding birds that display strong pair bonds, characteristics that are considered to exacerbate the effects of population decline and habitat loss, resulting in slow population recovery. All three species of Black Cockatoos, Baudin's Black Cockatoo, Carnaby's Black Cockatoo and the Forest Red-Tailed Black Cockatoo are endemic to south-west Western Australia (DAWE, 2022).

Overall populations of WA's Black Cockatoo species are declining, largely driven by habitat loss and key threats facing these species include:

- Habitat loss and degradation:
    - Loss and isolation of mature, hollow-bearing trees required for breeding
    - Lack of younger trees required to replace older trees, leading to future hollow shortages
    - Loss, degradation and fragmentation of foraging habitat
- Interactions with humans:
    - Death or injury due to vehicle strike
    - Disturbance to birds from noise, light and vibrations.

The black cockatoo habitat assessment completed by ELA (2026) for the PDE identified suitable foraging habitat for all three threatened species, ranging in quality from Moderate (6) to Negligible (1) based on the Bamford Consulting Ecologists habitat scoring tool (2020). Foraging evidence of Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo was recorded by AECOM (2024) and SLR (2026) throughout the PDE.

Foraging habitat scores were assigned to the habitat within the PDE for Baudin's due to the presence of suitable foraging species. However, both the ELA (2026) and AECOM (2024) fauna surveys considered Baudin's Cockatoo as having a Low/Unlikely LOO post-survey, given the PDE is located outside of the known distribution for the species.

The Proposal has sought to utilise existing cleared and disturbed areas wherever possible, particularly avoided areas of Banksia woodlands, which represents a high-quality foraging resource for Black Cockatoos. Clearing of suitable foraging habitat for Black Cockatoos will be limited to a maximum of 31.71 ha, with the majority of clearing impacting vegetation in Degraded or worse condition.

The Proposal presents the following impacts to the foraging habitat for the three species of Black Cockatoo (A detailed breakdown of the extent of impacts to each mapped foraging quality is provided in

Table 53. Figure 20, Figure 21 and Figure 22 map the foraging habitat for each of the three species within the PDE.

):

- Carnaby's Black Cockatoo – 31.71 ha ranging from a foraging quality score of 1 (Negligible) to 6 (Moderate)
- Baudin's Black Cockatoo – 31.71 ha ranging from a foraging quality score of 1 (Negligible) to 5 (Moderate)
- FRTBC – 23.78 ha ranging from a foraging quality score of 1 (Negligible) to 5 (Moderate)

A total of 52 potential nesting trees and one suitable breeding tree (Table 46) were recorded within the PDE during the ELA (2026), AECOM (2024) and SLR (2025) Black Cockatoo habitat assessments. All 53 trees are proposed to be cleared as part of the implementation of the Proposal due to the height of the mature trees breaching the minimum electrical clearance required to be maintained in order to safely operate the transmission line.

No known roosting sites or roosting activity were recorded within the PDE or Impact Area, however there are numerous records of confirmed roosting sites within 12 km of the PDE. ELA (2026) identified fauna habitat types that were considered potential roosting habitat for all three Black Cockatoo species, of which 24.50 ha is proposed to be cleared.

The proposed clearing of foraging habitat and nesting trees triggers the requirement for referral of the Proposal under the *Referral Guideline for 3 WA Threatened Black Cockatoo Species* (DAWE, 2022). Assessment of significance of impacts to all three Black Cockatoo species and the requirement for offsets will be considered through the EPBC Act referral assessment process.

9.1.2 Douglas' Broad-headed Bee, Rottnest Bee (*Hesperocolletes douglasi*)

The Douglas' Broad-headed Bee was previously known only from Rottnest Island where it was presumed extinct until 2015 when an extant specimen was recorded from near Pinjar (less than 10 km from the PDE). This species is considered to have a High LOO due to potential habitat occurring within or adjacent to the PDE and consideration of the DCCEEW distribution modelling (Invertebrate Solutions, 2026).

A targeted field survey for the bee species was undertaken during March-April 2026 and did not record the species. Suitable habitat for the species was identified within the PDE, represented by Mixed open woodlands and shrublands within the northernmost section of the PDE (Figure 24). However, the species was considered to have a low LOO post-survey with the most likely suitable habitat for the species being the undisturbed Banksia woodland adjacent to the Proposal.

The Proposal will directly impact 2.31 ha of potential habitat for the Douglas' Broad Headed Bee (Table 55)

The impact assessment technical memorandum prepared by Invertebrate Solutions (2026b) considered the impacts to the Douglas' Broad-headed bee from the implementation of the Proposal to not be significant, given the avoidance of impacts of the high-quality Banksia woodland adjacent to the PDE. In addition, the memorandum included management measures that were recommended to be

implemented to further ensure no significant impacts to the species occurs. These have been captured in the FFHEMP for the Proposal.

9.2 Threatened Flora

No Threatened flora species listed under the EPBC Act were recorded within the PDE during the field surveys completed by ELA (2026) and AECOM (2024).

9.3 Threatened Ecological Communities

Two TECs listed under the EPBC Act were confirmed to be present during the survey completed by ELA (2026):

- Banksia Woodlands of the Swan Coastal Plain TEC (Banksia Woodlands TEC) – EN
- Tuart Woodlands and Forests of the Swan Coastal Plain (Tuart TEC) – CR.

Table 13 details the patch assessments completed for vegetation communities identified as potentially being representative of Banksia Woodland TEC within the ELA (2026) survey area.

Table 14 details the patch assessments completed for vegetation communities identified as potentially being representative of Tuart Woodlands TEC within the ELA (2026) survey area.

9.3.1 Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community

The Banksia Woodlands TEC is listed as Endangered under the EPBC Act. The TEC is a woodland associated with the Swan Coastal Plain, typically comprising of a prominent tree layer of *Banksia* with the scattered eucalypts and other tree species present within or above the Banksia canopy (DEE, 2016). The understorey is species rich with wildflowers, including sclerophyllous shrubs, sedges and herbs.

Banksia Woodlands can vary in structure across the Swan Coastal Plain but generally are all united dominant Banksia component which contains one of the four key species – *Banksia attenuata, B. menziesii, B. prionotes* and/or *B. ilicifolia* (DEE, 2016).

The TEC provides vital habitat for several conservation significant species, including Carnaby's Black Cockatoos and Forest Red-Tailed Black Cockatoos, and also provides various ecosystem services for surrounding landscapes including flood mitigation, carbon storage and recreational amenities (DEE, 2016).

Identified threatening processes for Banksia Woodlands communities (DEE, 2016), relevant to the Proposal include:

- Vegetation clearance resulting in fragmentation.
- Impacts from weed invasion, including dieback diseases.
- Fire regime change, including altered frequency, intensity and seasons.
- Hydrological degradation
- Climate change.

A total of 1.98 ha of Banksia Woodlands TEC comprised of four patches has been mapped within the PDE, of which 0.24 ha is proposed to be cleared as part of construction of the Proposal. Clearing will occur within three of the identified patches, however, the proposed impacts will not result in any of the patches no longer meeting the DEE (2016b) thresholds for classification as TEC based on remaining patch condition and size.

The significance of impacts to Banksia TEC and potential for offsets will be assessed via referral of the Proposal under the EPBC Act.

9.3.2 Tuart Woodlands and Forests of the Swan Coastal Plain Threatened Ecological Community

The Tuart woodlands TEC is listed as Critically Endangered under the EPBC Act. The TEC is a woodland associated with the Swan Coastal Plain, primarily defined by the presence of *Eucalytpus gomphocephala* in the uppermost canopy. The understorey is often relatively open, including many non-woodu species from Asteraceae, Cyperaceae, Restionaceae and Orchidaceae families (DEE, 2016).

Tuart co-occurs with most other canopy species on the Swan Coastal Plain, although these vary in their likelihood of co-occurrence. Other frequently occurring canopy or sub-canopy species include *Banksia attenuata* and *Agonis flexuosa* (DEE, 2016).

Identified threatening processes for Tuart Woodland communities (DEE, 2016), relevant to the Proposal include:

- Clearing and fragmentation of vegetation
- Impacts from weed invasion, including dieback diseases.
- Fire regime change, including altered frequency, intensity and seasons.
- Hydrological degradation
- Climate change.

A total of 0.12 ha of Tuart Woodlands TEC comprised of two patches has been mapped within the PDE, of which 0.08 ha is proposed to be cleared as part of construction of the Proposal. Clearing will occur within only one of the identified patches and will not result in the patch no longer meeting the DEE (2016b) thresholds for classification as TEC based on remaining patch condition and size.

9.4 Migratory species

The ELA (2026) PMST identified 48 Listed Migratory bird species which have an indicative distribution within the PDE and 10 km buffer area. Excluding marine migratory, there are 14 wetland and terrestrial migratory bird species which have an indicative distribution within the PDE and buffer area (DCCEEW, 2026).

A LOO assessment of the migratory bird species was undertaken by ELA (2026) which did not identify any species as likely to occur, with the exception of the Rainbow bee-eater which was recorded flying overhead during the field survey.

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Appendix A

Scoping

Not Required

Appendix B

Legislative Context

B.1 Environmental Impact Assessment Process

The key legislative requirements relating to the Proposal are outlined in Table B1-1 and reflect the details provided in the EPA (2025) Form – Referral of a proposal under s.38 of the EP Act.

Table B1-1 Environmental impact assessment process

Legislative Instrument	Aspect	Description
Part IV of the EP Act	Type of proposal	Significant proposal – new
	Date of referral	4 May 2026
	Level of assessment requirements	Not assessed.
	Approved proposal amendments	N/A
EPBC Act	Does the proposal involve an action that may be or is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)?	Yes.
	Has the proposed action been referred? If yes, when was it referred and what is the reference number (EPBC No.)?	Yes. Date: 4 May 2026 EPBC No. TBD
	If referred, has a decision been made on whether the proposed action is a controlled action? If 'yes', check the appropriate box and provide the decision in an attachment.	No decision made.
	If the proposal is determined to be a controlled action, do you request that this proposal be assessed under a Bilateral Agreement or as an accredited assessment?	No.

B.2 Other approvals and regulation

Information on relevant decision-making authorities, legislation and other approvals required (via parallel processing or at a later date) is provided in Table B2-1.

Table B2-1 Other decision-making authority approvals

Decision-making authority	Legislation or Agreement regulating the activity	Proposal element	Approval required/amended
Department of Climate Change, Energy, the Environment and Water (DCCEEW)	*Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)	Potential significant impacts to Matters of National Environmental Significance (MNES) resulting from the implementation of the Proposal, specifically Threatened fauna species and Threatened Ecological Communities (TEC)	Approval of 'Controlled Action'.
Department of Water and Environmental Regulation (DWER)	Part V of the *Environmental Protection Act 1986* (EP Act).	Clearing of native vegetation required for the construction of the Proposal.	Native Vegetation Clearing Permit (if the EPA considers the proposal to not be significant and chooses to 'Not Assess' the Proposal under Part IV of the EP Act).
Department of Planning, Lands and Heritage (DPLH)	*Planning and Development Act 2005* (Planning Act)	Clearing of native vegetation required for the construction of the Proposal within Bush Forever Sites. Construction of infrastructure and changes to land use planning under the Metropolitan Region Scheme.	Development Application.
Department of Biodiversity Conservation and Attractions (DBCA)	*Conservation and Land Management Act 1984* (CALM Act)	Any activities that may disturb land or vegetation on DBCA managed estate.	Disturbance Approval System (DAS) Permit.
Department of Water and Environmental Regulation (DWER)	*Rights in Water and Irrigation Act 1914* (RIWI Act)	Disturbance to bed and banks that may be required to construct the Proposal.	Section 11/17/21A permit to interfere with bed and banks.

Other decision-making processes that can mitigate the potential impacts of the Proposal on the environment are outlined in Table B2-2. The Environmental Factors that are considered in the table are limited to those identified as significant and relevant to the Proposal, as per Section 3, Table 8.

Table B2-2 Other statutory decision-making processes which can mitigate potential impacts to the environment

Environmental impact	How is the impact regulated by other decision-making process(es)?	Limit(s) of the decision-making process(es) to regulate the impact	Likely environmental outcome of decision-making process(es), and consistency with EPA objective	Conditions, enforcement, and review process required by decision-making process(es)	Stakeholder engagement in decision-making process(es)
Flora and Vegetation					
Clearing of vegetated areas with high biodiversity: • Banksia Woodlands of the SCP Priority Ecological Community (P3 PEC) • Low lying *Banksia attenuata* woodlands or shrubland (FCT21c) (P3 PEC) • Tuart Woodlands of the SCP (P3 PEC) Indirect impacts to vegetated areas with high biodiversity: • Banksia Woodlands PEC, FCT21c PEC, and Tuart Woodlands PEC from incidence and spread of weeds and disease (such as dieback). Clearing of native vegetation and Bush Forever Sites Indirect impacts to native vegetation (including Bush Forever Sites) from: • Incidence and spread of weeds and disease (such as dieback) • Unplanned fire (caused by construction and/or operation activities)	Part V of the EP Act – Native Vegetation Clearing Permit (NVCP). Permit applications must demonstrate that the proposed clearing is not at variance with the 10 clearing principles outlined in *A guide to the assessment of applications to clear native vegetation under Part V Division 2 of the Environmental Protection Act 1986* (DER, 2014). Principle (a) specifically deals with clearing of native vegetation with high biodiversity (such as PECs) and Principle (h) with clearing of native vegetation that may impact on environmental values of any adjacent or nearby conservation area (including Bush Forever Sites) Where a Proposal is considered to be at variance, DWER can impose conditions on the proponent via permit conditions and stipulate the requirement for offsets for any significant residual impacts identified. DWER must consider all other approved environmental policy and guidelines when assessing a clearing permit (S.51P of the EP Act).	The NVCP process is limited to regulating impacts that result from clearing activities only. Given the impacts to the PECs resulting from the construction and operation of the Proposal are limited to clearing, this limitation is not considered to be a significant impediment to the ability of the NVCP process to regulate the impact. The NVCP process is purpose built for assessing impacts (both direct and indirect) to native vegetation, therefore it is not anticipated that there are any limitations to this process to regulate the impact.	Likely environmental outcomes: • Approval of up to 0.21 ha of clearing within Banksia Woodlands PEC. • Approval of clearing of up to 0.03 ha of Low lying *Banksia attenuata* woodlands or shrubland (FCT21c) PEC • Approval of clearing of up to 0.08 ha of Tuart Woodlands PEC • Minimise indirect impacts to PECs resulting from the incidence and/or spread of weeds and disease (such as dieback). The NVCP process requires demonstration of the implementation of the mitigation hierarchy (avoid, minimise, rehabilitate and offset). Where clearing cannot be avoided, conditions for provision of management plans and/or offsets can be imposed by DWER to counterbalance significant residual impacts. Based on the avoidance measures implemented so far by Western Power in the design and location of the Proposal and the ability for DWER to implement further conditions to limit clearing and biodiversity impacts, it is considered that the EPA objective can be met.	In accordance with s.51G, 51H and 51I of the EP Act, DWER is empowered to attach conditions to the NVCP that are proportionate to the assessed potential impacts on the environment. NVCPs include standard conditions that limit the amount and location of clearing, as well as mitigation measures relating to the management of weeds, topsoil and rehabilitation. DWER are also able to include conditions tailored to a proposal's specific requirements and identified environmental values. NVCPs can stipulate the requirement for monitoring for compliance against conditions and annual reporting of compliance to DWER under s.51J of the EP Act. DWER can also condition the permit applicant to allow DWER to undertake compliance inspections. DWER is empowered to undertake 'enforcement actions' where non-compliance or breaches with the EP Act are identified under s.70 of the EP Act.	S 101A(1), 101A(3) and 101A(4) of the EP Act provides for any permit applicants or third parties (including the general public) to appeal against DWER's determination or any of the conditions attached to an approved permit, within the legislated timeframe.

Environmental impact	How is the impact regulated by other decision-making process(es)?	Limit(s) of the decision-making process(es) to regulate the impact	Likely environmental outcome of decision-making process(es), and consistency with EPA objective	Conditions, enforcement, and review process required by decision-making process(es)	Stakeholder engagement in decision-making process(es)
Clearing of Banksia Woodlands of the SCP Threatened Ecological Community (TEC). Clearing of Tuart Woodlands of the SCP TEC. Indirect impacts to Banksia Woodlands TEC and Tuart Woodlands TEC from incidence and spread of weeds and disease (such as dieback)	EPBC Act – referral and assessment of an action. DCCEEW will assess any action referred to the Department under the EPBC Act that has the potential to impact Matters of National Environmental Significance (MNES), which includes threatened ecological communities. An action determined to be a 'Controlled Action' under the EPBC Act will be required to be undertaken in accordance with the set of conditions determined by DCCEEW following assessment of the action.	An EPBC Act approval is limited to the identified MNES that the proposal will impact. The Banksia Woodlands TEC and Tuart Woodlands TEC are listed MNES under the EPBC Act, as such it is considered that there are no limitations to the ability of the EPBC Act to regulate impacts to the TECs. DCCEEW have powers under the EPBC Act to regulate any impacts that may result from the implementation of an action to TECs, inclusive of clearing related impacts.	Likely environmental outcomes: • Approval of up to 0.24 ha of clearing within Banksia Woodlands TEC. • Approval of up to 0.08 ha of clearing within Tuart Woodlands TEC • Minimise indirect impacts to TECs resulting from the incidence and/or spread of weeds and disease (such as dieback The referral process under the EPBC Act requires a proponent to assess the significance of a proposal's impacts to identified MNES and demonstrate implementation of the mitigation hierarchy to avoid and/or minimise significant impacts. Where significant residual impacts cannot be avoided, DCCEEW has the authority to impose conditions for the provision of management plans and/or offsets. Based on the avoidance measures implemented so far by Western Power in the design and location of the Proposal, the provision of a Flora and Vegetation EMP for the Proposal, and the ability for DCCEEW to implement further conditions to limit clearing and biodiversity impacts, it is considered that the EPA objective can be met.	Section 134 of the EPBC Act empowers the Minister to attach conditions to project approvals in order to protect, repair, or mitigate damages to environmental matters. DCCEEW drafts conditions for proposals on a case-by-case basis, with sufficiently broad powers to impose special conditions relating to the specific impacts of a proposal to MNES. Approvals under the EPBC Act include standard conditions for monitoring of compliance against approval conditions, reporting of breaches to conditions and provision of an annual environmental report to DCCEEW.	Once a referral is validated by DCCEEW it is published on the EPBC Act Public Portal for 10 business days for public comment. Under the EPBC Act, the Minister may set the assessment level of a Proposal to include public comment on assessment information, where the Proposal is advertised for a minimum of 20 days for the public to comment.
Clearing of vegetation within Bush Forever Sites	*Planning and Development Act 2005* - State Planning Policy 2.8 (SPP2.8) Bushland policy for the Perth Metropolitan region. Development Applications must demonstrate that bushland protection and management issues are appropriately addressed and integrated with broader land use planning. An applicant may be required to provide an environmental report in support of the development application to demonstrate what measures have been undertaken to minimise impacts to Bush Forever Sites.	Limited to impacts to areas of native vegetation that occur within Bush Forever Sites identified under SPP2.8.	Likely environmental outcomes: • Approval of up to 0.65 ha of Bush Forever Sites, comprising: – 0.63 ha in Site No 193 – 0.02 ha in Site No 326	Under s.171P(1) the Western Australia Planning Commission (WAPC) must consider a significant development application and determine whether to either: • Grant approval for the development without conditions • Grant approval for the development with conditions • Refuse approval for the development Conditions applied to the DA will consider all phases of the Proposal and are likely to require the implementation of management plans including a Construction EMP and Bushfire Management Plan. Under s.171V(1), if the development is not constructed in accordance with conditions, the WAPC has powers of a responsible authority. This includes preventing the completion of the development.	Under s.171Y(1) an applicant may make an appeal to the State Administrative Tribunal to review the WAPC's decision.

Environmental impact	How is the impact regulated by other decision-making process(es)?	Limit(s) of the decision-making process(es) to regulate the impact	Likely environmental outcome of decision-making process(es), and consistency with EPA objective	Conditions, enforcement, and review process required by decision-making process(es)	Stakeholder engagement in decision-making process(es)
Indirect impacts to native and nonnative vegetation within State managed lands that can result from: • Incidence and spread of weeds and disease (such as dieback) • Unplanned fire (caused by construction and/or operation activities)	The Disturbance Approval System (DAS) regulated by DBCA requires individuals and/or organisations to apply for permission to conduct activities on DBCA managed lands authorised under the CALM Act and BC Act. DAS Permit applicants must demonstrate that proposed activities will not impact conservation values by addressing the requirements of the DAS online form. Where an applicant fails to demonstrate appropriate controls and management of potential environmental impacts, DBCA can reject the permit and thus the approval for the applicant to conduct activities within DBCA lands.	Limited to activities that occur within State-managed land authorised under the CALM Act and BC Act.	Likely environmental outcomes: • Minimise indirect impacts to native vegetation within DBCA managed lands from incidence and spread of weeds and disease • Minimise indirect impacts to native vegetation within DBCA managed lands from unplanned fires.	DBCA can apply conditions to the Permit approved under the DAS under the relevant sections of the CALM Act and BC Act. The DAS application requires the applicant to demonstrate implementation of the mitigation hierarchy such that risks to the environmental, economic and social values of the State managed land are minimised to as low as reasonably practicable (ALARP principle)	DBCA may request evidence of the applicant's engagement with any other relevant stakeholders as part of its assessment of the DAS Permit application.
Terrestrial Fauna					
Clearing of native vegetation that contains: • foraging habitat for the three threatened species of Black Cockatoo. • suitable habitat for conservation significant fauna (including invertebrate fauna). Indirect impacts to native vegetation that contains: • critical habitat for Black Cockatoos and conservation significant fauna (including invertebrate fauna) from incidence and spread of weeds and disease (such as dieback).	Part V of the EP Act – Native Vegetation Clearing Permit (NVCP). Permit applications must demonstrate that the proposed clearing is not at variance with the 10 clearing principles outlined in *A guide to the assessment of applications to clear native vegetation under Part V Division 2 of the Environmental Protection Act 1986* (DER, 2014). Principle (b) specifically deals with clearing of significant fauna habitat. Where a Proposal is considered to be at variance, DWER can impose conditions on the proponent via permit conditions and stipulate the requirement for offsets for any significant residual impacts identified.	The NVCP process is limited to regulating impacts to Black Cockatoo habitat that result from clearing activities only, and only Black Cockatoo habitat that is comprised of native vegetation (excludes pines). Given the proposal involves the clearing of pine plantations, suitable foraging habitat for Black Cockatoos, the NVCP process is limited in its capacity to regulate some of the proposal's impacts. However, the referral of the proposal under the EPBC Act addresses this gap (see line item below). The NVCP process is limited to regulating impacts to conservation significant fauna (other than Black Cockatoos) and their habitat that result from clearing activities only, and only those species listed under the BC Act or DBCA listed Priority species.	Likely environmental outcomes: • Approval of up to 31.71 ha of clearing of Carnaby's Cockatoo foraging habitat • Approval of up to 31.71 ha of clearing of Baudin's Cockatoo foraging habitat • Approval of up to 23.78 ha of clearing of FRTBC foraging habitat • Clearing of up to 52 potential nesting trees and one suitable nesting tree for Black Cockatoos • Approval of up to 2.31 ha of clearing of Douglas' Broad-headed bee habitat • Minimise indirect impacts to Black Cockatoo habitat resulting from the incidence and/or spread of weeds and disease (such as dieback The NVCP process requires demonstration of the implementation of the mitigation hierarchy (avoid, minimise, rehabilitate and offset). Where clearing cannot be avoided, conditions for provision of management plans and/or offsets can be imposed by DWER to counterbalance significant residual impacts. Based on the avoidance measures implemented so far by Western Power in the design and location of the Proposal and the ability for DWER to implement further conditions to limit clearing and biodiversity impacts, it is considered that the EPA objective can be met.	In accordance with s.51G, 51H and 51I of the EP Act, DWER is empowered to attach conditions to the NVCP that are proportionate to the assessed potential impacts on the environment. NVCPs include standard conditions that limit the amount and location of clearing, as well as mitigation measures relating to the management of weeds and requirement for fauna spotters. DWER are also able to include conditions tailored to a proposal's specific requirements and identified environmental values. NVCPs can stipulate the requirement for monitoring for compliance against conditions and annual reporting of compliance to DWER under s.51J of the EP Act. DWER can also condition the permit applicant to allow DWER to undertake compliance inspections. DWER is empowered to undertake 'enforcement actions' where non-compliance or breaches with the EP Act are identified under s.70 of the EP Act.	S 101A(1), 101A(3) and 101A(4) of the EP Act provides for any permit applicants or third parties (including the general public) to appeal against DWER's determination or any of the conditions attached to an approved permit, within the legislated timeframe.

Environmental impact	How is the impact regulated by other decision-making process(es)?	Limit(s) of the decision-making process(es) to regulate the impact	Likely environmental outcome of decision-making process(es), and consistency with EPA objective	Conditions, enforcement, and review process required by decision-making process(es)	Stakeholder engagement in decision-making process(es)
Clearing of native and nonnative vegetation that contains: • foraging habitat for the three threatened species of Black Cockatoo. • suitable habitat for conservation significant invertebrate fauna. Indirect impacts to native and nonnative vegetation that contains: • critical habitat for Black Cockatoos and conservation significant invertebrate fauna from incidence and spread of weeds and disease (such as dieback). Direct impacts to the three threatened species of Black Cockatoo resulting in injury and/or death. Indirect impacts to the three threatened species of Black Cockatoo from noise, light and vibration.	EPBC Act – referral and assessment of an action. DCCEEW will assess any action referred to the Department under the EPBC Act that has the potential to impact Matters of National Environmental Significance (MNES), which includes threatened fauna species and their habitat. An action determined to be a 'Controlled Action' under the EPBC Act will be required to be undertaken in accordance with the set of conditions determined by DCCEEW following assessment of the action.	An EPBC Act approval is limited to the identified MNES that the proposal will impact. The three threatened species of Black Cockatoo and conservation significant invertebrate are listed MNES under the EPBC Act, as such it is considered that there are no limitations to the ability of the EPBC Act to regulate impacts to the three threatened species of Black Cockatoo and conservation significant invertebrate.	Likely environmental outcomes: • Approval of up to 31.71 ha of clearing of Carnaby's Cockatoo foraging habitat • Approval of up to 31.71 ha of clearing of Baudin's Cockatoo foraging habitat • Approval of up to 23.78 ha of clearing of FRTBC foraging habitat • Clearing of up to 52 potential nesting trees and one suitable nesting tree for Black Cockatoos • Approval of up to 2.31 ha of clearing of Douglas' Broad-headed bee habitat • Minimise indirect impacts to Black Cockatoo habitat resulting from the incidence and/or spread of weeds and disease (such as dieback • No death or injury to the three threatened species of Black Cockatoo as a result of proposal activities • Minimise indirect impacts to the three threatened species of Black Cockatoo from noise, light and vibration. The referral process under the EPBC Act requires a proponent to assess the significance of a proposal's impacts to identified MNES and demonstrate implementation of the mitigation hierarchy to avoid and/or minimise significant impacts. Where significant residual impacts cannot be avoided, DCCEEW has the authority to impose conditions for the provision of management plans and/or offsets. Based on the avoidance measures implemented so far by Western Power in the design and location of the Proposal, the provision of a Fauna and Fauna Habitat EMP for the Proposal, and the ability for DCCEEW to implement further conditions to limit clearing and biodiversity impacts, it is considered that the EPA objective can be met.	Section 134 of the EPBC Act empowers the Minister to attach conditions to project approvals in order to protect, repair, or mitigate damages to environmental matters. DCCEEW drafts conditions for proposals on a case-by-case basis, with sufficiently broad powers to impose special conditions relating to the specific impacts of a proposal to MNES. Approvals under the EPBC Act include standard conditions for monitoring of compliance against approval conditions, reporting of breaches to conditions and provision of an annual environmental report to DCCEEW.	Once a referral is validated by DCCEEW it is published on the EPBC Act Public Portal for 10 business days for public comment. Under the EPBC Act, the Minister may set the assessment level of a Proposal to include public comment on assessment information, where the Proposal is advertised for a minimum of 20 days for the public to comment.
Inland Waters					

Environmental impact	How is the impact regulated by other decision-making process(es)?	Limit(s) of the decision-making process(es) to regulate the impact	Likely environmental outcome of decision-making process(es), and consistency with EPA objective	Conditions, enforcement, and review process required by decision-making process(es)	Stakeholder engagement in decision-making process(es)
Clearing within wetlands, including conservation category wetlands. Clearing of riparian and groundwater dependent vegetation. Impacts to surface water and groundwater quality that may result from clearing activities (ASS exposure, erosion and sedimentation.	Part V of the EP Act – Native Vegetation Clearing Permit (NVCP). Permit applications must demonstrate that the proposed clearing is not at variance with the 10 clearing principles outlined in *A guide to the assessment of applications to clear native vegetation under Part V Division 2 of the Environmental Protection Act 1986* (DER, 2014). Principle (i) specifically deals with clearing activities that may cause the deterioration in the quality of surface water and/or groundwater. Principle (h) deals with clearing activities that may have an impact on the environmental values of any adjacent conservation area (such as CCWs). Principle (f) addresses impacts to native vegetation cleared growing in association with a watercourse or wetland. Where a Proposal is considered to be at variance, DWER can impose conditions on the proponent via permit conditions and stipulate the requirement for offsets for any significant residual impacts identified.	The NVCP permit is limited to impacts that result from clearing activities only and is only applicable to State protected inland water values. However, the conservation status of the wetlands impacted by the Proposal means Principle (h) is applicable, whereby the potential impacts of the Proposal to the broader environmental value of the CCWs will need to be considered. Given the primary impacts to the CCWs from the Proposal are related to clearing activities, it is not considered that the NVCP process has any limitations to its capacity to regulate impacts.	Likely environmental outcomes: • Approval of clearing of up to 0.03 ha of vegetation associated with a CCW • Minimise indirect impacts to conservation areas from the introduction and/or spread of weeds and disease (such as dieback) • No degradation of the surface water/groundwater quality within CCWs associated with the implementation of the Proposal, when compared to pre-implementation levels	In accordance with s.51G, 51H and 51I of the EP Act, DWER is empowered to attach conditions to the NVCP that are proportionate to the assessed potential impacts on the environment. NVCPs include standard conditions that limit the amount and location of clearing, as well as mitigation measures relating to the management of risks associated with erosion and sedimentation of waterbodies. DWER are also able to include conditions tailored to a proposal's specific requirements and identified environmental values. NVCPs can stipulate the requirement for monitoring for compliance against conditions and annual reporting of compliance to DWER under s.51J of the EP Act. DWER can also condition the permit applicant to allow DWER to undertake compliance inspections. DWER is empowered to undertake 'enforcement actions' where non-compliance or breaches with the EP Act are identified under s.70 of the EP Act.	S 101A(1), 101A(3) and 101A(4) of the EP Act provides for any permit applicants or third parties (including the general public) to appeal against DWER's determination or any of the conditions attached to an approved permit, within the legislated timeframe.
	A Bed and Banks permit under the RIWI Act will be required if any activity or works associated with the Proposal might interfere with, obstruct, or destroy the bed or banks of a watercourse, wetland or surrounds. DWER assesses key environmental considerations associated with water courses and groundwater aquifers prior to granting a permit under the RIW Act. Specifically, DWER will consider potential impacts to environmental values associated with a watercourse, potential impacts to other water users and sustainable use of the water resource.	A Bed and Banks permit is limited to regulating direct impacts to a watercourse or wetland. Indirect impacts from activities occurring adjacent to a watercourse or wetland may not be able to be regulated adequately by a Bed and Banks permit. Given the Proposal directly intersects the mapped boundary of the Hawkins Road Swamp CCW, this is not considered to be a significant limitation. The Proposal's potential indirect impacts to Gnangara Lake CCW will not be able to regulated by a Bed and Banks permit, however can be sufficiently addressed by either a NVCP or via groundwater management measures detailed in a CEMP.	If a Bed and Banks permit is granted, it will specify the scope and duration of the permitted activity and may include conditions relevant to the activities that will interfere with the bed and banks of the watercourse. The requirements under the RIWI Act can therefore ensure that the EPA objective for Inland Waters is met.	DWER may 'prescribe terms, conditions and restrictions' under Schedule 1 of the RIWI Act. All terms must be adhered to as long as the licence exists. The issue of Bed and Banks permits are guided by the overarching objectives of the RIWI Act which includes the management of water resources and protection of their ecosystems. Under Schedule 1 s18 of the RIWI Act, DWER is empowered to enforce any conditions attached to an approved permit. This includes the issuing of notices and monetary fines.	Under s26GG and 26GI of the RWI Act, an applicant may appeal the licence to have the State Administrative Tribunal review the Ministers decision.

Environmental impact	How is the impact regulated by other decision-making process(es)?	Limit(s) of the decision-making process(es) to regulate the impact	Likely environmental outcome of decision-making process(es), and consistency with EPA objective	Conditions, enforcement, and review process required by decision-making process(es)	Stakeholder engagement in decision-making process(es)
Contamination of groundwater quality due to exposure of ASS material.	*Planning and Development Act 2005* (Planning Act) – lodgement of a Development Application (DA) for assessment and approval by the Western Australia Planning Commission (WAPC). Part 10, clause 43 of the Metropolitan Region Scheme (MRS) under the Planning Act outlines the 'Matters to be considered' that the determining authority needs to assess before being able to grant approval of a DA. This includes: • Cl.43(d) any environmental protection policy approved under the EP Act • Cl. 43(m) the likely effect of the proposal on the natural environment and any means that are proposed to protect, or mitigate impacts on, the natural environment Clause 44(1) states that the commission may consult on the proposed development of land with any public authority the Commission considers appropriate. This allows WAPC to engage with environmental regulatory departments for subject-matter-expert advice on environmental aspects of an application. The DA can require a condition of approval for the development to be undertaken in accordance with the management plans, such as: • Construction Environmental Management Plan: – Erosion and sediment control – Stormwater Management – Dust, Noise and Vibration Management – Dieback Management – Fire and Emergency Response – Groundwater management • Traffic Management Plan • Occupational Health and Safety Management	The DA process is limited in its application to developments that occur within the MRS and where no valid exemption applies. This is not considered to be a limitation for this Proposal, as the proposed linear corridor is wholly located within the MRS and will be subject to a DA.	Likely environmental outcomes: • Approval of the DA will include the condition for the development to be undertaken in accordance with the relevant management plans supplied as part of the supporting documentation.	Under s.171P(1) the WAPC must consider a significant development application and determine whether to either: • Grant approval for the development without conditions • Grant approval for the development with conditions • Refuse approval for the development Conditions applied to the DA will consider all phases of the Proposal and are likely to require the implementation of management plans including a Construction EMP and Bushfire Management Plan. Under s.171V(1), if the development is not constructed in accordance with conditions, the WAPC has powers of a responsible authority. This includes preventing the completion of the development.	Under s.171Y(1) an applicant may make an appeal to the State Administrative Tribunal to review the WAPC's decision. Clause 44(1) states that the commission may consult on the proposed development of land with any public authority the Commission considers appropriate. This allows for the WAPC to engage with environmental regulatory departments for their advice on the suitability of management plans and the accuracy of the applicant's assessment of environmental impacts of the Proposal.
Social Surroundings					

Environmental impact	How is the impact regulated by other decision-making process(es)?	Limit(s) of the decision-making process(es) to regulate the impact	Likely environmental outcome of decision-making process(es), and consistency with EPA objective	Conditions, enforcement, and review process required by decision-making process(es)	Stakeholder engagement in decision-making process(es)
Potential impacts to Aboriginal Heritage Sites and intangible cultural values associated with areas within the PDE.	*Aboriginal Heritage Act 1972* (AH Act) and Aboriginal Heritage Regulation 1974 – provides an avenue for a proponent to seek approval to enter or disturb an Aboriginal Heritage site via: • Section 16 – authorisation to enter, excavate, examine or remove anything on an Aboriginal site • Section 18 – consent for impact on an Aboriginal site • Regulation 10 – authorisation for minor activities and impacts • Regulation 7 – authorisation to bring plant and equipment to an Aboriginal site.	The AH Act is limited in its application as it only applies where a Proposal will directly impact a known heritage site or known cultural value. Where there are potential indirect impacts to known heritage sites in proximity or adjacent to a Proposal, the AH Act may not apply.	An Archaeological and Ethnographic Site Identification Heritage Survey was undertaken over three days from 9 to 11 December 2025 by seven Whadjuk Aboriginal Consultants, three ALS heritage consultants and two Western Power representatives. The survey report is in the process of being finalised with the Whadjuk Aboriginal Corporation. If any Aboriginal Heritage sites are identified within the PDE, the appropriate approvals will be sought in consultation with the Whadjuk Aboriginal Corporation and in consideration of the AH Act	Section 18(3)(a) and 18(3)(b) allows for the Minister to attach any conditions to the consent of use of the Aboriginal site and to amend or introduce new conditions in the event new information about the Aboriginal site becomes available. Penalties for non-compliance with conditions of the AH Act are authorised under Part VII of the Act.	A Section 16 authorisation or Section 18 consent cannot be submitted by a proponent without demonstrating engagement with the impacted Aboriginal group. Section 18(5) allows for a native title part to make an appeal to the State Administrative Tribunal for a review of a decision made under the AH Act.
Amenity impacts during construction including: • Noise and vibration • Dust • Visual • Traffic	*Planning and Development Act 2005* (Planning Act) – lodgement of a Development Application (DA) for assessment and approval by the Western Australia Planning Commission (WAPC). Part 10, clause 43 of the Metropolitan Region Scheme (MRS) under the Planning Act outlines th 'Matters to be considered' that the determining authority needs to assess before being able to grant approval of a DA. This includes: • Cl.43(d) any environmental protection policy approved under the EP Act • Cl. 43(m) the likely effect of the proposal on the natural environment and any means that are proposed to protect, or mitigate impacts on, the natural environment Clause 44(1) states that the commission may consult on the proposed development of land with any public authority the Commission considers appropriate. This allows WAPC to engage with environmental regulatory departments for subject-matter-expert advice on environmental aspects of an application. The DA can require a condition of approval for the development to be undertaken in accordance with the management plans, such as: • Construction Environmental Management Plan: – Erosion and sediment control – Stormwater Management – Dust, Noise and Vibration Management – Dieback Management – Fire and Emergency Response • Traffic Management Plan • Occupational Health and Safety Management	The DA process is limited in its application to developments that occur within the MRS and where no valid exemption applies. This is not considered to be a limitation for this Proposal, as the proposed linear corridor is wholly located within the MRS and will be subject to a DA.	Likely environmental outcomes: • Approval of the DA will include the condition for the development to be undertaken in accordance with the relevant management plans supplied as part of the supporting documentation.	Under s.171P(1) the WAPC must consider a significant development application and determine whether to either: • Grant approval for the development without conditions • Grant approval for the development with conditions • Refuse approval for the development Conditions applied to the DA will consider all phases of the Proposal and are likely to require the implementation of management plans including a Construction EMP and Bushfire Management Plan. Under s.171V(1), if the development is not constructed in accordance with conditions, the WAPC has powers of a responsible authority. This includes preventing the completion of the development.	Under s.171Y(1) an applicant may make an appeal to the State Administrative Tribunal to review the WAPC's decision. Clause 44(1) states that the commission may consult on the proposed development of land with any public authority the Commission considers appropriate. This allows for the WAPC to engage with environmental regulatory departments for their advice on the suitability of management plans and the accuracy of the applicant's assessment of environmental impacts of the Proposal.

B.3 Land tenure

The Proposal is located in the City of Wanneroo and intersects land zoned and reserved under the Metropolitan Region Scheme (MRS) (GoWA, 2025b). The Proposal is subject to the provisions of the City's District Planning Scheme No. 2 (DPLH, 2001), East Wanneroo District Structure Plan (WAPC, 2021) and Perth and Peel @3.5million (WAPC, 2018) land use planning and infrastructure frameworks. The MRS divides land into zones and reservations and provides the legal basis for future land use planning throughout the Perth Metropolitan Region.

Table B3-1 shows the majority of the PDE intercepts areas zoned or reserved as State forests Rural/ Rural – water protection, and Primary regional roads/ Other regional roads (GoWA, 2026) (Figure 6).

Table B3-1 Land zoning

MRS description	Area within the PDE (ha)	Proportion of the PDE (%)
Zones		
Industrial	8.01	10.58
Rural	8.91	11.77
Rural - water protection	4.64	6.13
Urban	0.13	0.17
Urban deferred	0.33	0.44
Reserves		
State forests	36.06	47.63
Regional open space	5.33	7.04
Public purposes - public utilities	0.35	0.46
Primary regional roads	2.44	3.22
Other regional roads	9.5	12.55
Total (ha)	**75.71**	**100.00**

The PDE has avoided intersecting private property as far as practicable, with the majority of tenure intersected being crown land or road reserve.

B.4 Object and principles of the EP Act

Table B4-1 outlines how the EP Act principles have been considered in relation to the Proposal.

Table B4-1 Consideration of the Principles of the EP Act

Principle	Consideration
The precautionary principle	Baseline studies have been undertaken to understand the environmental and social values of the proposed PDE. The studies have enabled the minimisation of any potential impacts in the design as far as practicable.
The principle of intergenerational equity	Measures have been taken to minimise impacts on the environment so that ecological functions are maintained for future generations. The Proposal is a component of the Clean Energy Link Program which involves the construction of infrastructure that will support the transition to greater renewable energy generators supporting the SWIS.
Principles relating to improved valuation, pricing and incentive mechanisms	The design and operation of the Proposal have been informed by ecological assessments and conducted in and around the PDE to maintain biological diversity and ecological integrity adjacent to the PDE. Ecological considerations have been made on a regional scale to consider connectivity.
The principle of the conservation of biological diversity and ecological integrity	Environmental goals have been established, and waste minimisation goals are to be realised throughout the construction of the Proposal.
The principle of waste minimisation	The waste hierarchy will be implemented during the construction of the Proposal, namely: Avoidance of waste sources at the source Reuse and recycling of materials where possible Waste removal from site.

Appendix C

Other environmental factors or matters

C.1 Environmental Factors

In addition to the key environmental factors discussed in this ERD, the Proposal has the potential to interact with several other environmental factors considered by the EPA:

- Landforms
- Subterranean fauna
- Terrestrial Environmental Quality
- Air Quality
- Greenhouse Gas Emissions
- Human Health.

Discussion on these factors, including the receiving environment and the potential significance to the Proposal is provided in the table below. Given the Proposal's location, the marine environmental factors are not considered relevant to this Proposal.

Table C1-1 Other environmental factors

Environmental factor	EPA environmental objective	Receiving environment	Significance to proposal
Landforms	The EPA's environmental objective for the factor Landforms is: *"To maintain the variety and integrity of distinctive physical landforms so that environmental values are protected"* (EPA, 2018b).	The PDE is situated in the Swan Coastal Plain geomorphological region of WA, specifically on the Bassendean and Spearwood systems. The topography of the surrounding areas varies from the gentle grade of Malaga to the south to the undulating remnant dunes in the Gnangara Moore River State Forest. Construction of the Proposal is not expected to significantly alter any landforms.	The Proposal is expected to meet the EPA objective for Landforms.

Environmental factor	EPA environmental objective	Receiving environment	Significance to proposal
Subterranean Fauna	The EPA's environmental objective for the factor Subterranean Fauna is: *"To protect subterranean fauna so that biological diversity and ecological integrity are maintained"* (EPA, 2016c).	A desktop assessment undertaken for the nearby Malaga Ellenbrook Line (MEL) Project determined that no subterranean fauna species listed under the BC Act or EPBC Act are likely to occur or have known habitat within the Survey Study Area (Invertebrate Solutions, 2020). Two stygofauna species were determined to be present within the MEL desktop assessment study area (including the Development Envelope). Due to the highly uniform nature of the Gnangara Mound within the Bassendean Sands that are present throughout the MEL desktop assessment study area, these species are likely to be relatively widespread across the northern Swan Coastal Plain (Invertebrate Solutions, 2020). The desktop assessment determined that there were no troglofauna records within the MEL study area and there is a very low likelihood of troglofauna being present within the Survey Study Area due to a lack of interconnected voids (Invertebrate Solutions, 2020).	Desktop assessment results indicate that no impacts to subterranean fauna are expected. The Proposal is expected to meet the EPA objective for Subterranean Fauna.
Terrestrial Environmental Quality	The EPA's environmental objective for the factor Terrestrial Environmental Quality is: *"To maintain the quality of land and soils so that environmental values are protected"* (EPA, 2016d).	The site is mapped by DWER (GoWA, 2026) as predominantly being at a low to moderate risk of ASS within 3 m of the ground surface. Portions of the PDE intersect mapped areas of high risk of ASS and portions of the south are considered not to be at risk.	Potential acidification of groundwater and soils may occur if ASS are not appropriately managed during the dewatering and excavation required to construction. Potential spills and leaks of hydrocarbons or other substances during construction and operation may also impact this factor if not managed appropriately. The risk of these impacts is considered negligible and can be appropriately managed via a CEMP.

Environmental factor	EPA environmental objective	Receiving environment	Significance to proposal
Air Quality	The EPA's environmental objective for the factor Air Quality is: *"To maintain air quality and minimise emissions so that environmental values are protected"* (EPA, 2020b).	The closest DWER air quality monitoring location is at Duncraig, approximately 10 km west of the northern end of the PDE. In 2022, Duncraig met all relevant National Environment Protection (Ambient Air Quality) Measure standards (DWER, 2024).	Emissions as a result of clearing, earthworks and construction are expected to be minimal and limited to the construction phase of the Proposal. The Proposal is expected to meet the EPA objective for Air Quality.
Greenhouse gas emissions	The EPA's environmental objective for the factor Greenhouse gas emissions is: *"To minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable"* (EPA, 2024a)	The Proposal is not likely to have a significant impact on Greenhouse Gas Emissions, noting the EPA will typically consider this factor when projects exceed 100,000 tonnes of CO_2-e Scope 1 emissions each year.	The Proposal is not considered to cause significant impacts to GHG emissions. The Proposal is expected to meet the EPA objective for GHG emissions.
Human Health	The EPA's environmental objective for the factor Human Health is: *"To protect human health from significant harm"* (EPA, 2016b)	The PDE does not contain any significant sources of radiation that may impact upon human health.	The Proposal is not considered to cause significant impacts to human health. The Proposal is expected to meet the EPA objective for Human Health.

Appendix D

Relevant technical studies and investigations

D.1 Ecological Assessment of the Wangara to Neerabup Terminal 132 kV Transmission Line Project (ELA, 2026)

D.2 Clean Energy Link Swan Coastal Plain Flora, Vegetation and Fauna Assessment (AECOM, 2024)

D.3 Neerabup Terminal Transmission Corridor Preliminary Flora and Vegetation, Fauna and Black Cockatoo Surveys (SLR, 2026)

D.4 Joyce Road and Mulga Road, 218 Clean Energy Link North Flora and Vegetation Assessment (PGV, 2026)

D.5 NREP 1 – NT-NBT 330 kV Line Flora, Vegetation and Fauna Assessment (AECOM, 2023)

D.6 *Phytopthora* Dieback Occurrence Report for Clean Energy Link Neerabup-Wangara Survey (Glevan Consulting, 2026)

D.7 Short Range Endemic Invertebrate Assessment of NBT-WGA 132 kV Line (Invertebrate Solutions, 2026a)

D.8 NBT-WGA 132 kV Line Project – Short Range Endemic Invertebrate Fauna Impact Assessment Technical Memorandum (Invertebrate Solutions, 2026b)

D.9 NBT-MUL WGA Double Circuit – Geotechnical Investigation Report (CMW Geosciences, 2026)

D.10 Electromagnetic Field Study (GHD, 2025)

D.11 Turkey Road Site Visit Memorandum

D.12 Cumulative Impact Assessment

Cumulative environmental impacts are the successive, incremental and interactive impacts on the environment of a proposal with one or more past, present and reasonably foreseeable activities (EPA, 2025). Reasonably foreseeable future activities are defined by EPA as third party (or proponent) activities which are already approved, are in a government approvals process, or are otherwise reasonably likely to proceed:

- For proposals assessed at the level of environmental review – at the time an Environmental Review Document for a proposal is accepted
- For proposals assessed at the level of assessment on referral information – at the time the final referral or required additional information is accepted
- Existing activities that are reasonably expected to be ongoing.

Cumulative impacts to environmental values resulting from the current PDE and other proposals in the surrounding area (within 5 km of the PDE) and across the SCP were assessed, in the following table, focusing on environmental values that are at risk of being impacted by the Proposal, including:

- Native vegetation
- Native vegetation within mapped vegetation complexes
- Bush Forever and Reserves
- Banksia Woodlands
- Carnaby's Cockatoo foraging habitat
- Forest Red-tailed Black Cockatoo foraging habitat
- Baudins Black Cockatoo foraging habitat.
- Geomorphic wetlands
- Public Drinking Water Source Areas
- Aquatic and Terrestrial GDEs
- Aboriginal cultural Heritage and Lodged Places
- Local and State European heritage places

Calculations undertaken for the cumulative impact assessment provide a high-level evaluation of each dataset within areas intersected by the Proposal and other readily identifiable projects located within 5 km of the Proposal. These calculations provide indicative, high-level information on the extent of overlap with each dataset with other projects but do not identify the specific activities being undertaken or the extent/ type of impacts associated with individual projects.

Cumulative impact assessment – Methods Statement

Banksia TEC

Datasets from DataWA and Find Environmental Data were used to estimate the extent of the Banksia TEC. A pairwise intersect of the Vegetation Complexes - Swan Coastal Plain (DBCA-046) and Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141) was completed with the

resulting output clipped to the SCP IBRA subregion (SWA) (SWA IBRA Bioregion). A filter for Vegetation associated with the Banksia TEC was applied as outlined below and in Table C2 a & b of the Banksia Woodlands conservation advice (DEE, 2016).

Vegetation Complex	Description
Strongly associated. The majority of mapped extent comprises Banksia woodlands.	
Bassendean Complex-Central and South	Vegetation ranges from woodland of *Eucalyptus marginata* (Jarrah) - *Allocasuarina fraseriana* (Sheoak) - Banksia species to low woodland of Melaleuca species, and sedgelands on the moister sites. This area includes the transition of *Eucalyptus marginata* (Jarrah) to *Eucalyptus todtiana* (Pricklybark) in the vicinity of Perth.
Bassendean Complex-North	Vegetation ranges from a low open forest and low open woodland of Banksia species *Eucalyptus todtiana* (Pricklybark) to low woodland of Melaleuca species and sedgelands which occupy the moister sites.
Bassendean Complex-North Transition	A transition complex of low open forest and low woodland of Banksia species - *Eucalyptus todtiana* (Pricklybark) on a series of high sand dunes. The understorey species reflect similarities with both the Bassendean-North and Karrakatta-North vegetation complexes.
Caladenia Complex	Mosaic of vegetation from adjacent vegetation complexes of Karrakatta, Yanga and Bassendean.
Cartis Complex	Low open forest to open forest of *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) - *Corymbia haematoxylon* (Mountain Marri) with definite second storey of Banksia spp.
Coonambidgee Complex	Vegetation ranges from a low open forest and low woodland of *Eucalyptus todtiana* (Pricklybark) - *Banksia attenuata* (Slender Banksia) - *Banksia menziesii* (Firewood Banksia) - *Banksia ilicifolia* (Holly-leaved Banksia) with localised admixtures of *Banksia prionotes* (Acorn Banksia) to an open woodland of *Corymbia calophylla* (Marri) - Banksia species.
Cottesloe Complex-North	Predominantly low open forest and low woodland of *Banksia attenuata* (Slender Banksia) - *Banksia menziesii* (Firewood Banksia) - *Eucalyptus todtiana* (Pricklybark); closed heath on the Limestone outcrops.
Cullula Complex	Mixture of low oopen forest of Banksia species - *Eucalyptus todtiana* (Pricklybark) and open woodland of *Corymbia calophylla* (Marri) with second storey of *Eucalyptus todtiana* (Pricklybark) - *B. attenuata* - *Banksia menziesii* (Firewood Banksia) - *Banksia ilicifolia* (Holly-leaved Banksia).
Karrakatta Complex-North	Predominantly low open forest and low woodland of Banksia species E- *Eucalyptus todtiana* (Pricklybark), less consistently open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus todtiana* (Pricklybark) - Banksia species.
Karrakatta Complex-North Transition	A transition complex of low open forest and low woodland of Banksia species - *Eucalyptus todtiana* (Pricklybark) on the transition zone of a series of high sand dunes between Bassendean-North and Karrakatta-North.
Mogumber Complex-South	Open woodland of *Eucalyptus calophylla*, with some admixture of *Eucalyptus marginata* (Jarrah) and a second storey of *Eucalyptus todtiana* (Pricklybark) - *Banksia attenuata* - *Banksia menziesii* (Firewood Banksia) - *Banksia ilicifolia* (Holly-leaved Banksia).
Moondah Complex	Low closed to low open forest of *Banksia attenuata* (Slender Banksia) - *Banksia menziesii* (Firewood Banksia) - *Eucalyptus todtiana* (Pricklybark) - *Banksia prionotes* (Acorn Banksia) on slopes, open woodland of *Corymbia calophylla* (Marri) - Banksia species in valley.
Reagan Complex	Vegetation ranges from low open woodland of Banksia species *Eucalyptus todtiana* (Pricklybark) to closed heath depending on the depth of soil.
Moderately associated. Up to about half the mapped extent is likely to comprise Banksia woodlands.	

Vegetation Complex	Description
Strongly associated. The majority of mapped extent comprises Banksia woodlands.	
Cannington Complex	Mosaic of vegetation from adjacent vegetation complexes of Bassendean, Karrakatta, Southern River and Vasse.
Forrestfield Complex	Vegetation ranges from open forest of *Corymbia calophylla* (Marri) - *Eucalyptus wandoo* (Wandoo) - *Eucalyptus marginata* (Jarrah) to open forest of *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) - *Allocasuarina fraseriana* (Sheoak) - Banksia species. Fringing woodland of *Eucalyptus rudis* (Flooded Gum) in the gullies that dissect this landform.
Karrakatta Complex-Central and South	Predominantly open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) and woodland of *Eucalyptus marginata* (Jarrah) - Banksia species. *Agonis flexuosa* (Peppermint) is co-dominant south of the Capel River.
Southern River Complex	Open woodland of *Corymbia calophylla* (Marri) - *Eucalyptus marginata* (Jarrah) - Banksia species with fringing woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca rhaphiophylla* (Swamp Paperbark) along creek beds.
Minor association. Only a small proportion of the mapped extent may comprise Banksia woodlands.	
Bassendean Complex – Central and South – Transition Vegetation Complex	Woodlands of *E. marginata – C. calophylla* with well-defined second storey of *A. fraseriana* and *B. grandis* on deeper soils and a closed scrub on the moister sites. The understorey species reflect similarities with the adjacent vegetation complexes.
Bootine Complex	Predominantly low open forest of *E. todtiana – B. attenuata – B. menziesii – B. ilicifolia* with a woodland of *E. rudis – M. rhaphiophylla* on lake margins transitioning to sedgelands.
Cottesloe Central and South	Mosaic of woodland of *E. gomphocephala – E. marginata – E. calophylla*; closed heath on the limestone outcrops.
Karamal Complex South	Dominated by an open forest of jarrah-marri with a definite second storey of *Banksia grandis* on the gravelly soils and *B. attenuata* and *B. menziesii* on the sandier soils.
Mogumber Complex North	Dominated by open and closed heaths of *Allocasuarina humilis*, *Banksia sphaerocarpa*, several unnamed *Banksia* species, *Xanthorrhoea preissii*, and many other species, in particular of the families Myrtaceae, Proteaceae, Fabaceae and Ericaceae occur on the low rises.
Pinjar Complex	Vegetation ranges from woodland of *E. marginata – Banksia* species to a fringing woodland of *E. rudis – M. preissiana* and sedgelands.

Tuart TEC

Datasets from DataWA and Find Environmental Data were used to estimate the extent of the Tuart TEC locally and regional. A pairwise intersect of the Tuart Woodlands (DBCA-048) and Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141) datasets was completed with the resulting output clipped to the SCP IBRA subregion (SWA) (SWA IBRA Bioregion). A pairwise intersect with DBCA - Legislated Lands and Waters (DBCA-011) was completed to estimate the extent within conservation reserves (within 5 km buffer of the PDE).

Carnaby's Cockatoo foraging habitat

Datasets from DataWA and Find Environmental Data were used to estimate the extent of Carnaby's Cockatoo foraging habitat. A pairwise intersect of the Carnabys Cockatoo Areas requiring investigation as feeding habitat in the Swan Coastal Plain (SCP) IBRA Region (DBCA-057) and Swan Coastal Plain and

Perth-Peel Native Vegetation Extent 2024 (DWER-141) was completed with the resulting output clipped to the SCP IBRA subregion (SWA) (SWA IBRA Bioregion).

Forest Red-tailed Black Cockatoo foraging habitat

Datasets from DataWA and Find Environmental Data were used to estimate the extent of Forest Red-tailed Black Cockatoo foraging habitat. A pairwise intersect of the Vegetation Complexes - Swan Coastal Plain (DBCA-046) and Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141) was completed with the resulting output clipped to the SCP Perth IBRA subregion (SWA) (SWA IBRA Bioregion). A filter for Vegetation Complexes likely to provide foraging resources, based on a vegetation summary description and reported Forest Red-tailed Black Cockatoo foraging species (DAWE, 2022) was applied. This included the following vegetation complexes: Abba, Bassendean-Central and South, Bassendean-Central and South Transition, Beermullah, Cannington, Cartis Cottesloe-Central and South, Dardanup, Forrestfield, Gingin, Guildford, Karamal-North, Karamal-South, Karrakatta-Central and South, Mogumber-South, Mungala, Pinjar, Southern River, Vasse, Wannamal, Yoongarillup.

Baudin's Cockatoo foraging habitat

Datasets from DataWA and Find Environmental Data were used to estimate the extent of Forest Red-tailed Black Cockatoo foraging habitat. A pairwise intersect of the Vegetation Complexes - Swan Coastal Plain (DBCA-046) and Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141) was completed with the resulting output clipped to the SCP Perth IBRA subregion (SWA) (SWA IBRA Bioregion). A filter for Vegetation Complexes likely to provide foraging resources, based on a vegetation summary description and reported Baudin's Black Cockatoo foraging species (DAWE, 2022) was applied. This included the following vegetation complexes: Abba Complex, Bassendean Complex-Central and South, Bassendean Complex-Central and South Transition, Bassendean Complex-North, Bassendean Complex-North Transition, Beermullah Complex, Bootine Complex, Caladenia Complex, Cannington Complex, Cartis Complex, Cokelup Complex, Coonambidgee Complex, Cottesloe Complex-Central and South, Cottesloe Complex-North, Cullula Complex, Dardanup Complex, Forrestfield Complex, Gingin Complex, Guildford Complex, Karamal Complex-North, Karamal Complex-South, Karrakatta Complex-Central and South, Karrakatta Complex-North, Mogumber Complex-North, Mogumber Complex-South, Moondah Complex, Mungala Complex, Pinjar Complex, Reagan Complex, Southern River Complex, Vasse Complex, Wannamal Complex, and Yoongarillup Complex.

Approved proposals and clearing permits

Datasets from DataWA and Find Environmental Data were used to broadly estimate the cumulative environmental impacts of the project locally and across the SCP IBRA subregion. Proposals that have the potential to impact the listed environmental values were identified using the EPA Referred Significant Proposals (DWER-120) dataset (DWER, 2025b).

Only proposals currently under assessment or having recently been approved by the EPA were included in the assessment, and the dataset was filtered for proposals from 2023 onwards. The dataset was also filtered to only include proposals with a level of assessment of 'Assess - Referral Information', 'Public Environmental Review', or 'Environmental Review - No public view' and excluded the Forest

Management Plan proposals. Impacts resulting from clearing permits issued by the DWER were identified using the Clearing Instruments Activities (Areas Approved to Clear) (DWER-076) dataset (DWER, 2025a). This dataset was filtered for clearing permits with a status of 'Amended' or 'Granted'. The two filtered datasets had all fields dissolved and then merged together to create one proposals layer. The below table provides more detail on how the following table was populated.

Inland Waters

The following datasets from DataWA and the Bureau of Meteorology (BoM) **Groundwater Dependent Ecosystems Atlas** (BoM, 2026) were used to broadly estimate the cumulative environmental impacts of the Proposal on Inland Waters locally and across the SCP IBRA subregion:

- Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)
- Public Drinking Water Source Areas (DWER-033)
- Aquatic GDEs within Swan Coast-Avon River region
- Terrestrial GDEs within Swan Coast-Avon River region.

Social Surroundings

The following datasets from DataWA were used to broadly estimate the cumulative environmental impacts of the Proposal on Social Surroundings locally and across the SCP IBRA subregion:

- Aboriginal Cultural Heritage - Register (DPLH-099)
- Aboriginal Cultural Heritage - Lodged (DPLH-100)
- Heritage Council WA - Local Heritage Survey (DPLH-008)
- Heritage Council WA - State Register (DPLH-006).

Environmental value	Clearing within the Proposal (ha)	Other approved proposals and DWER clearing permits within 5 km of the PDE (ha)	Foreseeable cumulative impact within 5 km of the PDE (ha)	Other approved proposals and DWER clearing permits across the SCP (ha)	Foreseeable cumulative impact across the SCP (ha)	Estimated total native vegetation remaining extent across the SCP (ha)	% of impact from foreseeable cumulative impacts across the SCP	% of impact from Current Proposal across the SCP
Column	**a**	**b**	**c**	**d**	**e**	**f**	**h**	**i**
General geoprocessing	**Clip to PDE**	**Clip to 5 km buffer of PDE** **Intersect with proposals (described above)**	**N/A**	**Clip to SWA** **Intersect with proposals (described above)**	**N/A**	**Clip to SWA**	**N/A**	**N/A**
Flora and vegetation								
Native vegetation	Native vegetation mapped in the PDE	Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141)	=a+b	Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141)	=a+d	Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141)	=e/f*100	=a/f*100
Native Vegetation within Complex	Native vegetation mapped in the PDE intersect with Vegetation Complexes - Swan Coastal Plain (DBCA-046)	Vegetation Complexes - Swan Coastal Plain (DBCA-046)	=a+b	Vegetation Complexes - Swan Coastal Plain (DBCA-046)	=a+d	Vegetation Complexes - Swan Coastal Plain (DBCA-046)	=e/f*100	=a/f*100
Vegetation within Bush Forever	Native vegetation mapped in the PDE intersect with Region Scheme - Special Areas (DPLH-022) filtered for bush forever	Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141) intersect with Region Scheme - Special Areas (DPLH-022) filtered for bush forever	=a+b	Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141) intersect with Region Scheme - Special Areas (DPLH-022) filtered for bush forever	=a+d	Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141) intersect with Region Scheme - Special Areas (DPLH-022) filtered for bush forever	=e/f*100	=a/f*100

Environmental value	Clearing within the Proposal (ha)	Other approved proposals and DWER clearing permits within 5 km of the PDE (ha)	Foreseeable cumulative impact within 5 km of the PDE (ha)	Other approved proposals and DWER clearing permits across the SCP (ha)	Foreseeable cumulative impact across the SCP (ha)	Estimated total native vegetation remaining extent across the SCP (ha)	% of impact from foreseeable cumulative impacts across the SCP	% of impact from Current Proposal across the SCP
Vegetation within Reserves (Class A)	Native vegetation mapped in the PDE intersect with DBCA - Legislated Lands and Waters (DBCA-011) filtered for Class A reserves	Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141) intersect with DBCA - Legislated Lands and Waters (DBCA-011) filtered for Class A reserves	=a+b	Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141) intersect with DBCA - Legislated Lands and Waters (DBCA-011) filtered for Class A reserves	=a+d	Swan Coastal Plain and Perth-Peel Native Vegetation Extent 2024 (DWER-141) intersect with DBCA - Legislated Lands and Waters (DBCA-011) filtered for Class A reserves	=e/f*100	=a/f*100
Banksia Woodlands	Banksia Woodlands mapped in the PDE	As described above	=a+b	As described above	=a+d	As described above	=e/f*100	=a/f*100
Tuart Woodlands	Tuart Woodlands mapped in the PDE	As described above	=a+b	As described above	=a+d	As described above	=e/f*100	=a/f*100
Terrestrial Fauna								
Native vegetation Carnaby's Cockatoo foraging habitat	Carnaby's Cockatoo foraging habitat mapped in the PDE	As described above	=a+b	As described above	=a+d	As described above	=e/f*100	=a/f*100
Native vegetation Forest Red-tailed Black Cockatoo foraging habitat	Forest Red-tailed Black Cockatoo foraging habitat mapped in the PDE	As described above	=a+b	As described above	=a+d	As described above	=e/f*100	=a/f*100
Native vegetation Baudin's foraging habitat	Baudin's foraging habitat mapped in the PDE	As described above	=a+b	As described above	=a+d	As described above	=e/f*100	=a/f*100
Inland Waters								

Environmental value	Clearing within the Proposal (ha)	Other approved proposals and DWER clearing permits within 5 km of the PDE (ha)	Foreseeable cumulative impact within 5 km of the PDE (ha)	Other approved proposals and DWER clearing permits across the SCP (ha)	Foreseeable cumulative impact across the SCP (ha)	Estimated total native vegetation remaining extent across the SCP (ha)	% of impact from foreseeable cumulative impacts across the SCP	% of impact from Current Proposal across the SCP
Geomorphic wetlands (conservation)	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for conservation category	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for conservation category	=a+b	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for conservation category	=a+d	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for conservation category	=e/f*100	=a/f*100
Geomorphic wetlands (multiple use)	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for multiple use category	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for multiple use category	=a+b	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for multiple use category	=a+d	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for multiple use category	=e/f*100	=a/f*100
Geomorphic wetlands (resource enhancement)	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for resource enhancement category	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for resource enhancement category	=a+b	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for resource enhancement category	=a+d	Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) filtered for resource enhancement category	=e/f*100	=a/f*100
Public Drinking Water Source Areas	Public Drinking Water Source Areas (DWER-033)	Public Drinking Water Source Areas (DWER-033)	=a+b	Public Drinking Water Source Areas (DWER-033)	=a+d	Public Drinking Water Source Areas (DWER-033)	=e/f*100	=a/f*100
Swan Coast-Avon River aquatic Groundwater Dependent Ecosystems	Aquatic GDEs within Swan Coast-Avon River region (BoM, 2025)	Aquatic GDEs within Swan Coast-Avon River region (BoM, 2025)	=a+b	Aquatic GDEs within Swan Coast-Avon River region (BoM, 2025)	=a+d	Aquatic GDEs within Swan Coast-Avon River region (BoM, 2025)	=e/f*100	=a/f*100

Environmental value	Clearing within the Proposal (ha)	Other approved proposals and DWER clearing permits within 5 km of the PDE (ha)	Foreseeable cumulative impact within 5 km of the PDE (ha)	Other approved proposals and DWER clearing permits across the SCP (ha)	Foreseeable cumulative impact across the SCP (ha)	Estimated total native vegetation remaining extent across the SCP (ha)	% of impact from foreseeable cumulative impacts across the SCP	% of impact from Current Proposal across the SCP
Swan Coast-Avon River terrestrial Groundwater Dependent Ecosystems	Terrestrial GDEs within Swan Coast-Avon River region (BoM, 2025)	Terrestrial GDEs within Swan Coast-Avon River region (BoM, 2025)	=a+b	Terrestrial GDEs within Swan Coast-Avon River region (BoM, 2025)	=a+d	Terrestrial GDEs within Swan Coast-Avon River region (BoM, 2025)	=e/f*100	=a/f*100
Social Surroundings								
Registered Aboriginal Cultural Heritage Places	Aboriginal Cultural Heritage - Register (DPLH-099)	Aboriginal Cultural Heritage - Register (DPLH-099)	=a+b	Aboriginal Cultural Heritage - Register (DPLH-099)	=a+d	Aboriginal Cultural Heritage - Register (DPLH-099)	=e/f*100	=a/f*100
Lodged Aboriginal Cultural Heritage Places	Aboriginal Cultural Heritage - Lodged (DPLH-100)	Aboriginal Cultural Heritage - Lodged (DPLH-100)	=a+b	Aboriginal Cultural Heritage - Lodged (DPLH-100)	=a+d	Aboriginal Cultural Heritage - Lodged (DPLH-100)	=e/f*100	=a/f*100
Local European heritage places	Heritage Council WA - Local Heritage Survey (DPLH-008)	Heritage Council WA - Local Heritage Survey (DPLH-008)	=a+b	Heritage Council WA - Local Heritage Survey (DPLH-008)	=a+d	Heritage Council WA - Local Heritage Survey (DPLH-008)	=e/f*100	=a/f*100
State European heritage places	Heritage Council WA - State Register (DPLH-006)	Heritage Council WA - State Register (DPLH-006)	=a+b	Heritage Council WA - State Register (DPLH-006)	=a+d	Heritage Council WA - State Register (DPLH-006)	=e/f*100	=a/f*100

Cumulative impact assessment results

Datasets from DataWA were used to broadly estimate predicted cumulative impacts both locally (within 5 km of the PDE) and across the SCP IBRA region. Proposals that have the potential to impact the listed environmental values were identified using the EPA Referred Significant Proposals (DWER-120) dataset (DWER, 2025b). Only proposals currently under assessment or having recently been approved by the EPA (2023 to current) were included in the assessment. Impacts resulting from clearing permits issued by the DWER were identified using the Clearing Instruments Activities (Areas Approved to Clear) (DWER-076) dataset (DWER, 2025a). Clearing permits with a status of 'Amended' or 'Granted' were included in the assessment.

Foreseeable cumulative impacts associated with the current Proposal are summarised in the following table and have been assessed based on the Methods Statement. In considering cumulative impacts, clearing of native vegetation for construction of the Proposal will result in 0.001 to 1.019% impact across the SCP.

Foreseeable cumulative impacts associated with the Proposal in the surrounding area (within a 5 km buffer of the Proposal) and across the SCP (SWA)

Environmental value	Extent of Proposal Impacts (ha)	Other approved proposals and DWER clearing permits within 5 km of the PDE (ha)	Foreseeable cumulative impact within 5 km of the PDE (ha)	Other approved proposals and DWER clearing permits across the SCP (ha)	Foreseeable cumulative impact across the SCP (ha)	Estimated total native vegetation remaining extent across the SCP (ha)	% of impact from foreseeable cumulative impacts across the SCP	% of impact from Current Proposal across the SCP
Flora and vegetation								
Native vegetation	13.34	217.14	230.48	8976.74	8990.08	580237.07	1.55	0.002
Native Vegetation within Bassendean Complex-North	0.00	61.21	61.21	2359.39	2359.39	56470.45	4.18	0.00
Native Vegetation within Bassendean Complex-Central and South	0.63	1.01	1.64	2858.72	2859.35	20819.93	13.73	0.003
Native Vegetation within Bassendean Complex-North Transition	0.02	1.30	1.32	165.48	165.5	18407.81	0.90	0.0001
Native Vegetation within Karrakatta Complex-Central and South	0.00	96.12	96.12	160.40	160.40	11942.18	1.34	0.00
Native Vegetation within Pinjar Complex	0.00	1.60	1.60	1.60	1.60	1408.93	0.11	0.00
Vegetation within Bush Forever	0.65	71.89	72.54	706.42	707.07	49730.92	1.42	0.001
Vegetation within Reserves (Class A)	37.07	62.72	99.79	661.99	699.06	114593.88	0.61	0.03

Environmental value	Extent of Proposal Impacts (ha)	Other approved proposals and DWER clearing permits within 5 km of the PDE (ha)	Foreseeable cumulative impact within 5 km of the PDE (ha)	Other approved proposals and DWER clearing permits across the SCP (ha)	Foreseeable cumulative impact across the SCP (ha)	Estimated total native vegetation remaining extent across the SCP (ha)	% of impact from foreseeable cumulative impacts across the SCP	% of impact from Current Proposal across the SCP
Banksia Woodlands of the SCP	0.24	209.25	209.49	6613.13	6613.37	251835.73	2.63	0.00009
Tuart Woodlands of the SCP	0.08	20.63	20.71	115	115.08	20545.869	0.56	0.0004
Terrestrial Fauna								
Carnaby's Cockatoo foraging habitat – native vegetation	31.71	158.43	190.14	7567.48	7599.19	491267.60	1.55	0.006
Forest Red-tailed Black Cockatoo foraging habitat – native vegetation	23.78	148.03	171.81	3956.31	3980.09	111320.98	3.58	0.021
Baudin's Black Cockatoo foraging habitat – native vegetation	31.71	209.25	240.96	6805.07	6836.78	274067.55	2.49	0.011
Inland Waters								
Geomorphic wetlands (Conservation)	0.03	70.50	70.53	1579.76	1579.79	73465.04	2.15	0.00004
Geomorphic wetlands (Multiple Use)	0.00	3.61	3.61	15061.10	15061.10	261598.60	5.76	0.00
Geomorphic wetlands (Resource Enhancement)	0.01	3.20	3.21	797.27	797.28	19234.53	4.15	0.00005
Swan Coast-Avon River aquatic Groundwater Dependent Ecosystems	0.00	77.31	77.31	951.94	951.94	45505.11	2.09	0.00

Environmental value	Extent of Proposal Impacts (ha)	Other approved proposals and DWER clearing permits within 5 km of the PDE (ha)	Foreseeable cumulative impact within 5 km of the PDE (ha)	Other approved proposals and DWER clearing permits across the SCP (ha)	Foreseeable cumulative impact across the SCP (ha)	Estimated total native vegetation remaining extent across the SCP (ha)	% of impact from foreseeable cumulative impacts across the SCP	% of impact from Current Proposal across the SCP
Swan Coast-Avon River terrestrial Groundwater Dependent Ecosystems	0.17	289.03	289.2	2176.69	2176.86	78934.89	2.76	0.0002
Social Surroundings								
Registered Aboriginal Cultural Heritage Places	0.00	5.55	5.55	1765.15	1765.15	172117.02	1.03	0.00
Lodged Aboriginal Cultural Heritage Places	0.00	8.68	8.68	186.62	186.62	42963.81	0.43	0.00
Local European heritage places	0.00	115.20	116.30	888.84	889.94	104803.40	0.85	0.00
State European heritage places	0.00	0.00	0.00	21.74	21.74	10421.63	0.21	0.00

D.13 EPBC Act Protected Matters Report (DCCEEW, 2026)

Appendix E

Environmental Management Plans

E.1 Flora and Vegetation Environmental Management Plan

E.2 Fauna and Fauna Habitat Environmental Management Plan

E.3 Hygiene Management Plan