Chandala Battery Energy Storage System (BESS)

Native Vegetation Clearing Permit

Supporting Report

July 2026

CAPE ENVIRONMENTAL

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Native Vegetation Clearing Permit Application Supporting Report					
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1 INTRODUCTION

1.1 Overview

The proponent (DC Project SPV-1 Pty Ltd as trustee for the DC Project Trust 1) is proposing to construct and operate a stand-alone Battery Energy Storage System (BESS) at the existing Chandala Mineral Sands Processing Plant, an industrial facility owned and operated by Tronox Management Pty Ltd.

The battery modules and connecting infrastructure are proposed to be located on land that has previously been disturbed for the industrial land use, however as the BESS requires an asset protection zone (APZ) to protect the asset from bushfire, some native vegetation is proposed to be cleared to ensure the APZ meets *State Planning Policy 3.7 Bushfire* (DPLH, 2024a) and the Planning for Bushfire Guidelines (DPLH, 2024b).

The proposed native vegetation clearing is **0.9** hectares within a 4.3 hectares development envelope.

The proponent has undertaken a review of the proposed clearing area and determined that a clearing permit is not required to clear the vegetation that has been planted within the boundary of the Chandala Processing Plant. These areas have previously been cleared.

However, a clearing permit may be required for the area of remnant vegetation within the APZ.

1.2 Rationale and approach

This document has been prepared to support a Native Vegetation Clearing Permit application under Part V of the WA *Environmental Protection Act 1986* (EP Act). It is intended to provide the background information and rationale for the proposed clearing.

It has also been informed by the Western Australian Government guidance documents:

- Guideline: Native vegetation clearing referrals (DWER, 2021).
- A guide to the exemptions and regulations for clearing native vegetation under Part V of the *Environmental Protection Act 1986* (DWER, 2019).
- Clearing Regulation fact Sheet: Clearing for fire protection (building protection zones) *Environmental Protection Act 1986* (DWER, 2015).
- Procedure: Native vegetation clearing permits (DWER, 2021b)
- Green Energy Proponent Guidelines (DWER, n.d.)
- Planning Policy 3.7 Bushfire. Prepared under Section 26 of the *Planning and Development Act 2005*. (DPLH, 2024a).

- Planning for Bushfire Guidelines for the implementation of State Planning Policy 3.7 Bushfire. (DPLH, 2024b).
- Bushfire Management Plan Manual. (DPLH, 2024c).

1.3 Background

The proposed Chandala BESS Project is a stand-alone BESS proposed to be established at the Chandala Mineral Sands Processing Plant owned and operated by Tronox Management Pty Ltd (Figure 1).

The Chandala Mineral Sands Processing Plant has been developed in accordance with numerous approvals, including Ministerial Statement 50, Ministerial Statement 958 and Mining Lease G 70/275. The proposed clearing for the BESS is inside the areas approved for disturbance under these approvals.

The proposal is adjacent to the existing Chandala switchyard (Figure 2) and the WA Government Southwest Interconnected System (SWIS), accordingly the required 330 kV transmissions lines are already existing and operational. The proposal does not require additional transmission lines.



Figure 1 Proposed Clearing Location

2 Project Description

The Project will comprise up to 4 battery modules, each module containing eight (8) DC containers and four (4) AC skids. Additionally, there will be two (2) transformers. BESS specifications are outlined below

Table 1 Project Specifications

Aspect	Details
Project Name	Chandala BESS
Location	722 Old Gingin Road, Muchea in the Shire of Chittering 50 km north of Perth and 5km north of the Muchea townsite
Number of Modules	4 battery modules (each module containing eight (8) DC containers and one (1) AC skid), one (1) main transformer and one (1) auxiliary transformer that will service all BESS modules.
Total Installed Capacity	38 MW / 322 MWh
Connectivity	Tie into existing switchyard (Kerr McGee Muchea) and Kerr McGee Substation via 132 kV transmission line, immediately adjacent to the project. No additional transmission required.
BESS Operational Life	25 years (starting 2028)
Vegetation clearing required	0.9 ha of native vegetation

2.1 Location

The proposal BESS site is considered highly modified and significantly disturbed.

The proposed BESS project is approximately 2 hectares in area and overlays 1 individual land parcel owned in freehold by Tronox Management Pty Ltd:

- 722 Old Gingin Road, Muchea WA 6501 (Vol/Folio: 1845/479).

In addition:

- the site is overlayed by general Purpose Mining Lease G70/275 granted under the Mining Act 1978.
- The land is zoned *Agricultural Resources* and Special Uses: Mineral Sands Processing Plant under the Local Planning Scheme Number 6.

The proposal in located within the mining lease of Tronox's Chandala Mineral Sands Processing Plant which has been continuously operational since 1989. The BESS and supporting infrastructure have been located on land within the mining lease with a particular focus on land that has previously been disturbed for industrial use.

2.2 Clearing Timing

Project clearing will commence following the receipt of all necessary approvals which is anticipated in 2026.

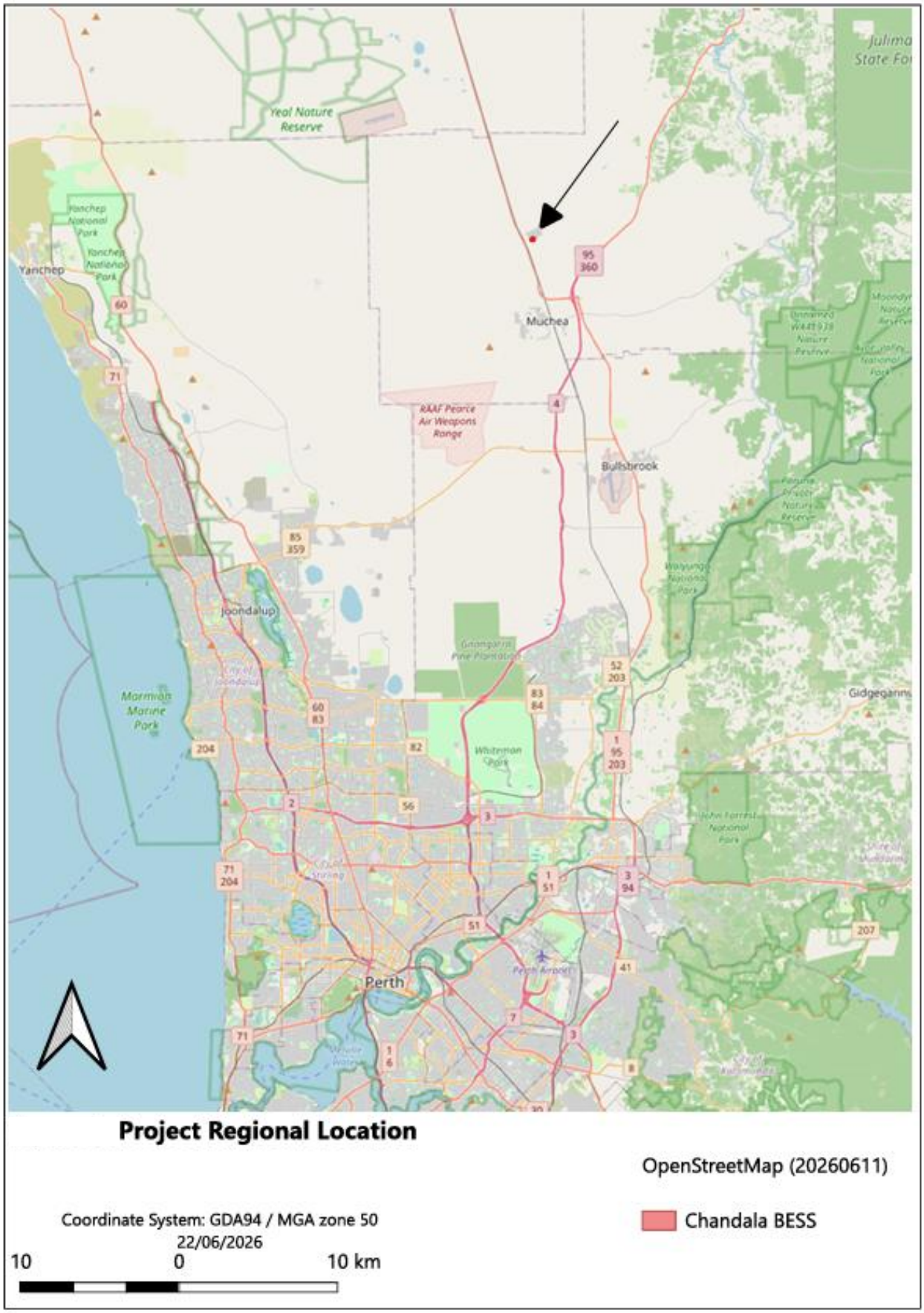


Figure 2 Project Regional Location



Figure 3 Project Location with Indicative BESS layout

3 Land Use Context

3.1 Existing Land Use

The Chandala BESS is located on industrial land, being the Chandala Mineral Sand Processing Plant (Chandala Processing Plant) owned and operated by Tronox Management Pty Ltd. The Chandala Processing Plant was established in 1989 following the issuance of Ministerial Statement 50 on 9th December 1988. The Chandala Processing Plant receives minerals sands from the Cooljarloo Mineral Sands Mine approximately 100 km further north. The plant separates the mined mineral sands into discreet minerals, such as ilmenite and zircon, and also upgrades ilmenite into high-quality titanium rich synthetic rutile via the synthetic rutile plant (Tronox, n.d).

3.2 Approvals

The Tronox Chandala Processing Plant operates under numerous existing approvals held by Tronox Management Pty Ltd:

- Ministerial Statement 50: Mineral Sands Dry Processing Plant, Muchea, subsequently amended via Ministerial Statement 67
- Ministerial Statement 59: Synthetic Rutile Plant, Muchea (1989), subsequently replaced by Ministerial Statement 412 in 1996, then both subsequently replaced by Ministerial Statement 958 in 2014.
- General Purpose Mining Lease G70/275
- Chandala Mineral Separation Plant Mining Proposal
- Chandala Mineral Separation Plant Closure Plan
- Operating Licence L5939/1988/11

The site was previously regulated via the *Mineral Sands (Cooljarloo) Mining and Processing Agreement Act 1988,* however this agreement expired in 2020.

3.2.1 Ministerial Statements

Table 2 of Ministerial Statement 958 permits vegetation clearing within the area labelled Figure 1 up to 53 ha. The proposed Chandala BESS is located inside the Ministerial Statement 958 approved boundary and within the area approved for clearing vegetation for the Chandala Synthetic Rutile Plant (refer to Figure 4).

The proposed clearing area is also located inside the boundary approved by Ministerial Statement 050.

Whilst the vegetation proposed to be cleared to allow development of the BESS is inside the approved disturbance boundaries of Ministerial Statements 050 and 958, the proponent for the BESS is not the proponent currently holding these approvals.

3.2.2 Mining Lease

The proposed Chandala BESS is located inside the boundary of General Purpose Mining Lease G70/275 (refer to Figure 5). The most recent Mining Proposal for the site (Tronox, 2024) designates the land use for the proposed BESS project as "Transport and Services". The Mining Proposal has designated the BESS area as proposed disturbance. The BESS area has been reported as already disturbed in the Mining Rehabilitation Fund 2024/25 reports (DMPE, 2025).

3.2.3 State Agreement Act

The original construction of the Chandala Processing Plants was granted under the *Mineral Sands (Cooljarloo) Mining and Processing Agreement Act 1988* (State Agreement Act). The State Agreement continued to apply into the operational phase until March 2020 when the agreement expired. The original construction, including land clearing, and operations, including plant upgrades, were approved under this legislation.

Upon expiry of the act, the mining tenements and associated mining authorisations transitioned to the *Mining Act 1978*, administered by DMPE (previously DMIRS).

3.2.4 Development Approval

The proposed BESS project will be obtaining a Development Approval (DA) under the *Planning and Development Act 2005*. The planning approval is required to consider:

- Planning Policy 3.7 Bushfire. Prepared under Section 26 of the *Planning and Development Act 2005*. (DPLH, 2024a).
- Planning for Bushfire Guidelines for the implementation of State Planning Policy 3.7 Bushfire. (DPLH, 2024b).

As a result, the project is likely to require a Bushfire Management Plan as a condition of the DA. The Bushfire Management Plan will articulate that clearing of native vegetation is required to accommodate asset protection zones. This is likely to result in an approval to clear vegetation required under another law.



Figure 4 The Area Labelled Figure 1 from Ministerial Statement 958

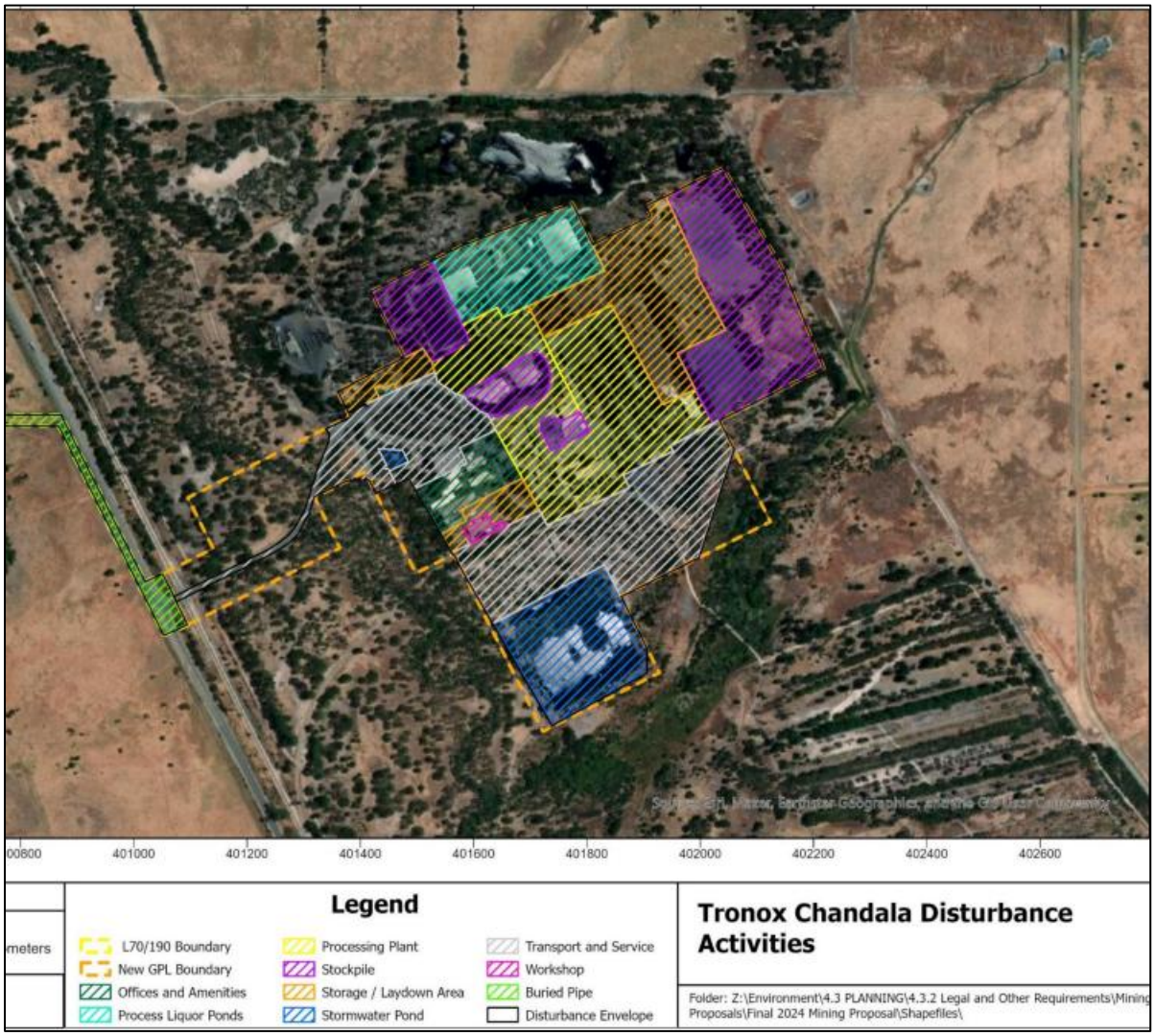


Figure 5 Chandala Disturbance Activities from the Chandala Mining Proposal (2024)

4 Existing Environment

The Project Area is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregions. The Swan Coastal Plain bioregion is characterised by a Mediterranean climate with hot, dry summers and cool, wet winters.

The closest meteorological station with long-term climate data is Pearce RAAF Station (Station No. 9053) approximately 4.5 km from Chandala (BOM, 2026). The long-term average rainfall from Pearce RAAF Station is 650 mm and long-term average maximum temperature is 25.3 °C (BOM, 2026).

4.1 Topography

The land surrounding the Chandala site is generally flat and low-lying sloping down from east to west. Areas surrounding the Site are prone to periodic flooding.

4.2 Surrounding Land Use

The dominant land use in the surrounding area is cattle and sheep grazing combined with rural lifestyle residency. The nearest town is Muchea, 5 km south.

A BESS project, proposed by Neoen approximately 3 km southwest has been proposed (Umwelt, 2022). This project was assessed and approved by the Joint Development Assessment Panel (JDAP) in November 2022.

4.3 Environmentally Sensitive Areas

The proposed BESS project is not located in an Environmentally Sensitive Area as defined by the Clearing Regulations.

The nearest ESA is approximately 700 m southeast, being a swan coastal plain wetland (Figure 6).

4.4 Conservation Areas

The proposed BESS project is not in nor adjacent to any conservation areas.

There are three areas of conservation significance outside and in the general proximity of the Chandala site. The Chandala Nature Reserve is located ~3.4 kilometres north, the Bullsbrook Nature Reserve located ~12 km south and parts of the Gnangara-Moore River State Forest located within approximately 6.3 km west.

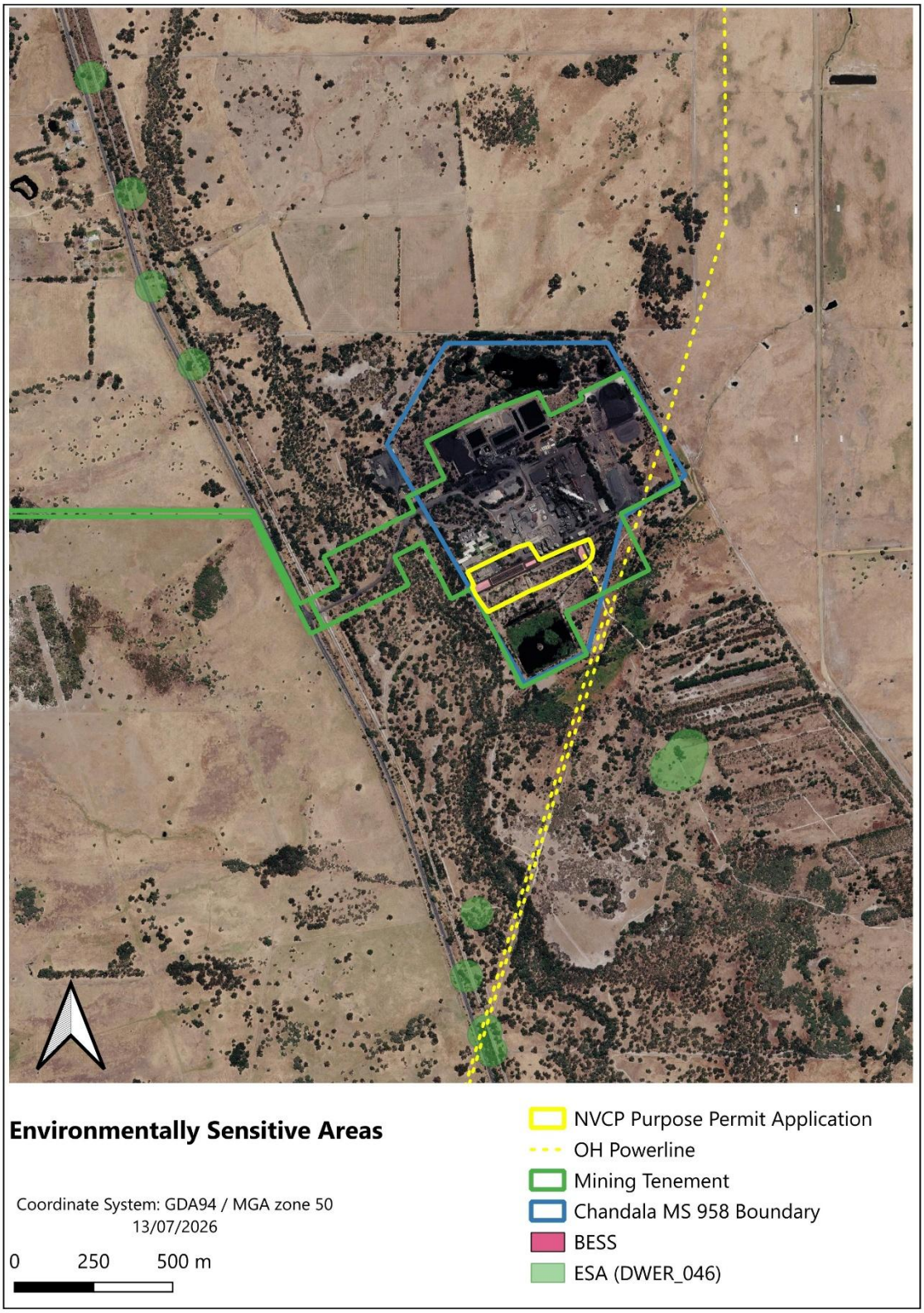


Figure 6 Environmentally Sensitive Areas (ESA)

4.5 Ecology

4.5.1 Vegetation

Historic

The Site is located within the Swan Coastal Plain in the Swan Coastal Plain 2 (SWA2) IBRA subregion. The Swan Coastal Plain is low lying coastal plain dominated by Banksia or Tuart on sand soils. The SWA2 subregion is described as 'composed of colluvial and Aeolian sands, alluvial river flats and coastal limestone (Mitchell et al, 2002).'

The Processing Plant was developed on land that was primarily used for agriculture and as a consequence the southern portion of the property consists of pasture. Prior to construction, portions of the northern section of the plant area were covered with parkland cleared (i.e. with limited understory due to grazing) where banksia woodland was interspersed with marri and jarrah. The western region was fringed by the vegetation associated with Chandala Brook (Maunsell, 1988b). The remnant vegetation was considered by the EPA to be well represented in other locations on the Coastal Plain in better condition and in more pristine environments (EPA, 1988). Tree planting of the land surrounding the plant has been undertaken throughout the life of the operations in accordance with a detailed landscaping and planting programme. The key functions of the programme were to screen the plant, lower the water table and improve the fringing river vegetation.

Planting of trees *within* the plant area was largely to provide amenity and shade. Weed control programs have also been implemented across the area. Present vegetation within the plant area is a mixture of native, exotic and weed species in various conditions (Western Botanical, 2013).

Tronox reports (2024) that prior to development of the processing facilities the plant site in 1989, the site was highly disturbed and extensively infected by dieback (*Phytophthora cinnamomi)* (TiWest 1995). Tronox has implemented a dieback management plan in order to manage the spread and impact of dieback.

Recent

A field survey for vegetation was undertaken in July 2024 (Umwelt, 2024). This assessment was an out of season survey, with the aim being to assess if the area is likely to support significant flora and vegetation, based on the species identifiable at time of survey, vegetation types present and condition of the vegetation. Three relevés and 57 vegetation observation points were surveyed in the Survey Area, with this data used to prepare structural vegetation classification and mapping (including vegetation condition mapping). No quadrats were surveyed (as per EPA 2016), due to both the timing of the

survey (outside of the primary survey season, spring) and degraded nature of the vegetation present.

The vegetation of the Survey Area was mapped and described via structural classification from floristic and structural data recorded at relevés and vegetation observation points. Due to the long history of disturbance within the 2024 survey area, there were many areas that still possess tree or large shrub taxa, but have other structural layers comprised largely of introduced taxa, or with significantly reduced native taxon diversity and are no longer considered to represent intact remnant vegetation. The classification of vegetation was therefore divided into two categories:

- Vegetation Types (VTs) and
- Highly Modified Areas (HMAs).

It is likely that many of the Highly Modified Areas are degraded versions of described VTs, however it is not possible to confidently align them given their condition. Two VTs and 12 highly modified areas were described and mapped in the Survey Area. The two VTs included VTs BW (Banksia Woodland) and CpRcS (*Callitris pyramidalis* / *Regelia ciliata* shrubland); both of which were mapped as Degraded to Completely Degraded.

The majority of the vegetation of the Survey Area was rated as Completely Degraded with the vegetation structure of these areas was no longer intact, comprising of weed species with isolated native trees and shrubs, or comprising of previously cleared areas with the majority of vegetation present being planted trees and shrubs. A total of 8.7 ha (16.1 % of the Survey Area) was rated as Degraded, with the vegetation structure severely impacted by multiple disturbances including partial clearing, aggressive weeds, grazing and potential Phytophthora Dieback.

No vegetation within the Survey Area was considered to be in good or better condition.

A qualitative assessment of the relevé data recorded during the 2024 survey was undertaken to assess for the Swan Coastal Plain (SCP) Floristic Community Types (FCTs) potentially present within the Survey Area. It was considered that the vegetation mapped as BW is potentially representative of Gibson et. al. (1994) SCP FCTs 23a or 21c; however, the vegetation was too degraded to confidently align an FCT. It is unlikely that assessment through the use of quadrat data collection and classification analyses would be confident in determining SCP FCT due to the poor condition of the vegetation and relative lack of understory taxa. VT CpRcS was assessed via vegetation observation points. It is possible that this VT represents Gibson et. al. (1994) FCT 4; however, the vegetation structure has been impacted such that it is not possible to align this with an SCP FCT.

Umwelt considered further spring assessment of the Survey Area was not necessary based on the severely impacted vegetation present, with no vegetation rated as Good or better, mapped within the Survey Area.

No vegetation assessed in 2024 (Umwelt) was considered a Priority or Threatened Ecological Community.



Figure 7 Vegetation Types



Figure 8 Vegetation Condition mapping

4.5.2 Regional Remnant Vegetation

There is significant remnant vegetation in the lands surrounding the Chandala processing plant, including 3.8 km west of the site which forms part of the Gnangara Underground Water Pollution Control Area, Public Drinking Water Source Area. This area is designated "Priority 1" protection level. Priority 1 (P1) areas are usually assigned over crown land covered with native vegetation and are managed to avoid water quality risks. Most land uses and activities are inappropriate in P1 areas. Vegetation clearing is P1 areas is highly regulated.

Between the Gnangara Underground Water Pollution Control Area, Public Drinking Water Source Area and the Chandala site is an extensive area of unallocated crown land (UCL) with intact remnant vegetation. The UCL is approximately 2 km from the Chandala Plant.

There is also significant remnant vegetation in the nearby Gnangara-Moore River State Forest, located 6.3 km west of Chandala.

4.5.3 Flora

The Chandala Site was surveyed for flora and vegetation in 2024. A total of 70 discrete vascular flora taxa were recorded in the Chandala Survey Area in 2024. A total of 20 introduced flora taxa were recorded within the Study Area by the survey. Of these, one is a Declared Pest under the *Biosecurity and Agriculture Management Act 2007* (BAM Act), being *Zantedeschia aethiopica* (Arum Lily).

No listed significant flora taxa (excluding one planted occurrence of *Grevillea fililoba* (P1)) were recorded by the survey. *Grevillea fililoba* (P1) naturally occurs east of Geraldton, typically occurring on slopes, hills and breakaways, typically with laterite. This taxon is not naturally present in the Survey Area (planted), and therefore, the individual recorded is not considered to be significant. An assessment of the likelihood of occurrence of significant flora taxa identified that all 65 significant flora taxa known to occur within the Desktop Study Area are considered unlikely to occur in the Survey Area. This was due to habitat not considered to be present, either through landforms/soil not present in the Survey Area, or through the vegetation condition being too degraded to support populations of these taxa (Degraded; Completely Degraded).

The lower stratum of the vegetation throughout the Survey Area comprised predominantly of pasture weeds, with the mid and upper stratums also severely impacted by historical clearing activities and potential Phytophthora Dieback.

4.5.4 Fauna

Historic

A fauna assessment was undertaken for the original site Notice of Intent 1989 by Dr Mike Bamford (1988). The 1988 survey records that the site was subject to grazing by cattle and sheep and some of the land had been cleared. There were some areas of remnant vegetation on the Chandala site. The faunal assemblage was described as depauperate due to use as livestock grazing.

Recent

A fauna field survey was undertaken in February 2024 (Bamford Consulting Ecologists, 2024). The focus of the survey was on describing the general environment in terms of vegetation and soil types (Vegetation and Substrate Associations; VSA), and assessing habitat for black-cockatoos.

The proposed BESS project includes:

- Area C. Patch of banksia woodland to open woodland with completely degraded understorey (i.e. all grassy weeds). Mostly Slender Banksia, but few a Firewood Banksia, Holly-leaf Banksia *Banksia ilicifolia* and at least one Swamp Banksia *Banksia littoralis*. Presumably a remnant of the original woodland.
- Disturbed Plant Site

There were no threatened fauna species identified by the survey work, with the exception of foraging habitat potentially suitable for Carnaby Black Cockatoo. No evidence for foraging was observed during the survey, however tree species present (Banksia sp) are recognised as foraging species.

Black Cockatoo Habitat

The Chandala site lies within the range of Carnaby's and the Forest Red-tailed Black Cockatoos, but outside the range of Baudin's Black-Cockatoo (DCCEEW 2024 a, b & c). BCE has recorded opportunistic records of Carnaby's observed onsite, suggesting Carnaby's visit the site, but probably infrequently and in small numbers. In addition, Forest Red-tailed Black-Cockatoo was recorded only in June 2010 and May 2021. Forest Red-tail cockatoos are becoming a moderately regular visitor to the Chandala site, and are likely targeting the scattered groves of Marri. There is no marri in the BESS project Area.

A Habitat Quality Scoring (HQS) exercise was undertaken for both species (Carnaby's and Forest red-tailed), with most of the larger Chandala site being of very low foraging value (total HQS of 1/10). Within the proposed BESS project, the HQS was 3/10 for Carnaby's due to the presence of Banksia trees, albeit in poor condition. There was no foraging habitat for Forest red-tailed Black Cockatoos in the BESS proposal area (Bamford, 2024).

For both context and species presence, the areas of Banksia are small and in poor condition, and thus the allocation for context and species presence is low.

Table 2 HQS in Banksia Vegetation and Substrate Association at Chandala

Species	Veg Condition (/6)	Context (/3)	Density (/3)	HQS (/10)
Carnaby's Black Cockatoo	3	0	0	3
Forest red-tailed Black Cockatoo	1	0	0	1

(Source: Bamford, 2024)

Breeding habitat for black-cockatoos

There is no evidence of Black Cockatoo breeding at Chandala.

Potential nesting trees for Black Cockatoos at Chandala have been surveyed and assessed as (Bamford, 2024). The survey found no potential nest trees in the BESS proposed site.

The closest tree with DBH > 50 cm is located approximately 35 m south of the NVCP application area, located on the edge of the stormwater pond. This tree was assigned a ranking of 5 – *large tree with no suitable hollows*. This tree is a *Eucalyptus globulus* (Tasmanian Blue Gum). *Eucalyptus globulus* is a listed problematic environmental weed in the Swan NRM Region, in which Chandala is located (DBCA Florabase, 2026).

Black-cockatoo roosting

Roosting by black-cockatoos has never been recorded in the Chandala site despite evening surveys (evenings are when the birds aggregate to roost) throughout the year since the mid 1990s (Bamford, 2024). The nearest known roost in the Birdlife Australia Great Cocky Count database is 6km to the south.

4.6 Heritage

4.6.1 Aboriginal Heritage

Two surveys for Aboriginal sites were undertaken in August 1987 and July 1988 (O'Connor and Quartermaine, 1987 and O'Conner, Quartermaine and Bodney 1988) as part of the original Chandala approvals. These surveys identified two archaeological sites within the Chandala property, but outside the tenement boundaries (see Section 4.6). They also noted the significance of the Ellen Brook / Chandala Brook system. A map of Aboriginal site is provided, Figure 9.

4.6.2 European Heritage

Review of the State Heritage database (inHerit) database did not identify any statutory State Heritage places within the vicinity of the Site (Heritage Council, 2026). The nearest State Heritage site located > 15 km away.

Review of the Australian Heritage Database did not identify any registered World Heritage Places, Commonwealth heritage places or National Heritage Places within the vicinity of the plant site (DCCEEW, 2026).

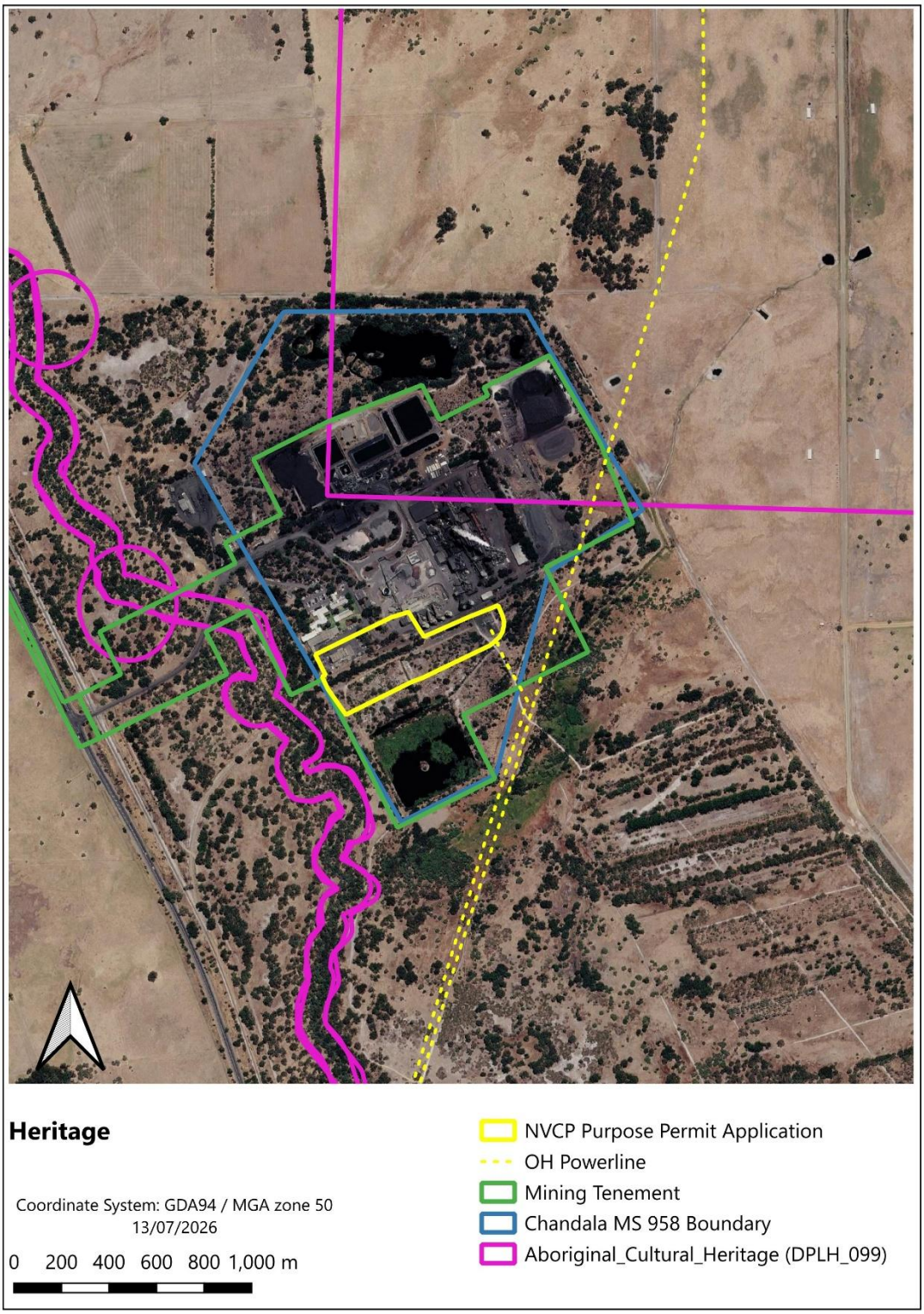


Figure 9 Heritage

Table 3 Environmental Attributes Summary

Environmental Attribute	Comments	Conclusion
Existing Clearing	The project area has been extensively cleared already for the Chandala processing Plant. Remnant vegetation that does remain is either degraded or completely degraded.	Co-locating the BESS on land already cleared for industrial use reduces clearing.
Environmentally Sensitive Area	The nearest ESA to the project is approximately 700 m southeast being a wetland	The project area is not located in an ESA
Linear Hydrology	The project area is located 300m east of Chandala Brook.	The project area is not intersected by a watercourse.
Wetlands	The project area is located 200m from a Multiple Use Wetland	The project area is not intersected by a wetland.
Conservation Reserves	The project area is located 6.3 km from the Gnangara-Moore River State Forest The project area is located 3.4 km from the Chandala Nature Reserve.	The project area is not intersected nor adjacent to land under conservation status.
Surrounding land Uses	The project area is surrounded by rural land uses.	The project area is not adjacent to land assigned for residential purposes.
Vegetation Communities	Due to the long history of disturbance, the project area does possess tree or large shrub taxa, but have other structural layers comprised largely of introduced taxa, or with significantly reduced native taxon diversity.	No Threatened Ecological Communities or Priority Ecological Communities in the project area. Vegetation present assessed as degraded or completely degraded. The vegetation is not considered to have high biodiversity values.
Flora	Due to the long history of disturbance, the project area is highly unlikely to support conservation flora.	No Threatened Flora or priority flora in the project area.
Fauna	Fauna habitat is degraded due to degraded condition of vegetation. No Black Cockatoo roosts and no actual or potential breeding trees.	Carnaby Black Cockatoo and Forest red-tailed Black Cockatoo may occasionally be present on the site foraging, however the foraging quality scores are low and there is higher quality foraging habitat within 5km.
Heritage	The project area is located 75m from the Chandala Brook heritage site. No impacts to the Brook are expected.	The project area is not intersected by a heritage site

5 Bushfire Guidance

The Chandala BESS project is located in a designated *Bushfire Prone Area* by the Fire and Emergency Services Commissioner under section 18P of the *Fire and Emergency Services Act 1998*. Designation of an area as bushfire prone reflects the potential for bushfire to affect the site.

The Chandala BESS project is required to establish an Asset Protection Zone (APZ) around the built structures. The following government publications guide bushfire decision making:

- Planning Policy 3.7 Bushfire. Prepared under Section 26 of the *Planning and Development Act 2005*. (DPLH, 2024a).
- Planning for Bushfire Guidelines for the implementation of State Planning Policy 3.7 Bushfire. (DPLH, 2024b).

The APZ is required to be a low fuel area maintained around the built structure to increase the likelihood that it will survive a bushfire, by providing a defendable space and reducing the potential for direct flame contact, radiant heat exposure and ember attack. The APZ also allows emergency services access and provides an area for firefighters and operators to defend the assets.

An APZ does not need to be an area entirely cleared of vegetation, but as a strategically designed space that considers how existing and future mature vegetation, and combustible and non-combustible features interact with and affect the built structure's resilience to bushfire. Vegetation management within an APZ should provide defendable space and be maintained to a low threat state, in perpetuity, in accordance with the requirements outlined below.

A Bushfire Risk Assessment has been undertaken for the BESS project and the assessment recommends at least a 10 m buffer around the BESS is maintained with no vegetation. A second buffer from 10 m to 53 m has been recommended for vegetation management, as outlined in Table 4. The vegetation management buffer requires clearing of some trees and shrubs.

Table 4 Asset Protection Zone Specifications

APZ Factors	Requirements
Trees (> 6m in height)	• Trunks at maturity should be a minimum distance of six metres from all elevations of the structure. • Branches at maturity should not touch or overhang a building, structure or powerline. • Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. • Canopy cover within the APZ should be < 15% of the total APZ area

APZ Factors	Requirements
	• Tree canopies at maturity should be at least 5 metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15% and are not connected to the tree canopy outside the APZ.
Shrub* and Scrub* (0.5 metres to 6 metres in height)	• Should not be located under trees or within three metres of buildings or structures. • Should not be planted in clumps >5 m^2 in area. • Clumps should be separated from each other and any exposed window or door by at least 10 metres. • Shrub and scrub >6 metres in height are to be treated as trees.
Ground covers (< 0.5m in height)	• Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load'. • Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height. • Ground covers >0.5 metres in height are to be treated as shrubs
Grass	• Grass should be maintained at a height of 100 millimetres or less, at all times. • Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
Fine Fuel load (combustible dead vegetation matter < 6mm thickness) Includes leaves, twigs, sticks, bark, grass	• Should be managed and removed on a regular basis to be maintained as low threat vegetation. • Should be maintained at < 2 tonne/ha • Mulches should be non-combustible such as stone, gravel, shells, rock or crushed mineral earth or wood mulch >5 millimetres in thickness.

6 Proposed Vegetation Clearing

The proposed native vegetation clearing is 0.9 hectares within a 4.3 hectares development envelope.

The Chandala BESS requires approximately three (3) hectares of land, which includes bushfire buffers and temporary construction laydown. The project detailed design is yet to be completed, accordingly a purpose permit is proposed to allow for some design flexibility.

Table 5 Chandala Remnant Vegetation

	Area (ha)	Already Cleared	Planted Vegetation in the Application Area	Remnant / Native Vegetation in the Application Area	Vegetation in the Application Area proposed to be cleared
NVCP Application Purpose Permit Area	4.3 ha	1.75 ha	0.75 ha	1.8 ha	0.9 ha

6.1 Bushfire Asset Protection Zones

To establish the fire break and asset protection zone (APZ) recommended by the Bushfire Risk Assessment the following activities are required

- Permanent removal of all vegetation within 10m of the BESS structure and transformers.
- The vegetation in the 10-53m APZ does not need to be removed it its entirety, but rather managed to reduce bushfire risk. Some trees and vegetation can be retained, whilst other would need to be removed. In the APZ (10-53 m buffer) the following applies:
    - reduce tree canopy cover in the APZ to 15%
    - ensure there is no continuous tree canopy
    - ensure trees > 6m in height are at least 5m apart
    - ensure there are no shrubs under trees
    - ensure clumps of shrubs are < $5m^2$
    - Pruning and trimming of retained trees to ensure no branches are within 2m of the ground.

In the indicative BESS location provided in Figure 10, there is no remnant vegetation within 10m of the BESS modules. The remnant vegetation is in the 10-53 APZ Buffer. Therefore, for the indicative location, the remnant vegetation requires selective clearing to meet the bushfire requirements.

As recommended by the Bushfire Management Plan Manual (DPLH, 2024c) any proposal for clearing of native vegetation to create and maintain APZs should be accompanied by a plan for 'replacement' areas either within or adjacent to the subject site that are proposed to be revegetated as part of the planning proposal. The Chittering Landcare centre is located adjacent to the Chandala processing Plants and has a long-standing relationship with the Tronox Chandala site for many programs, including tree plant efforts. The proponent proposes to harness the benefits of the existing relationship and provide funding to Chittering Landcare for ongoing trees planting at Chandala.

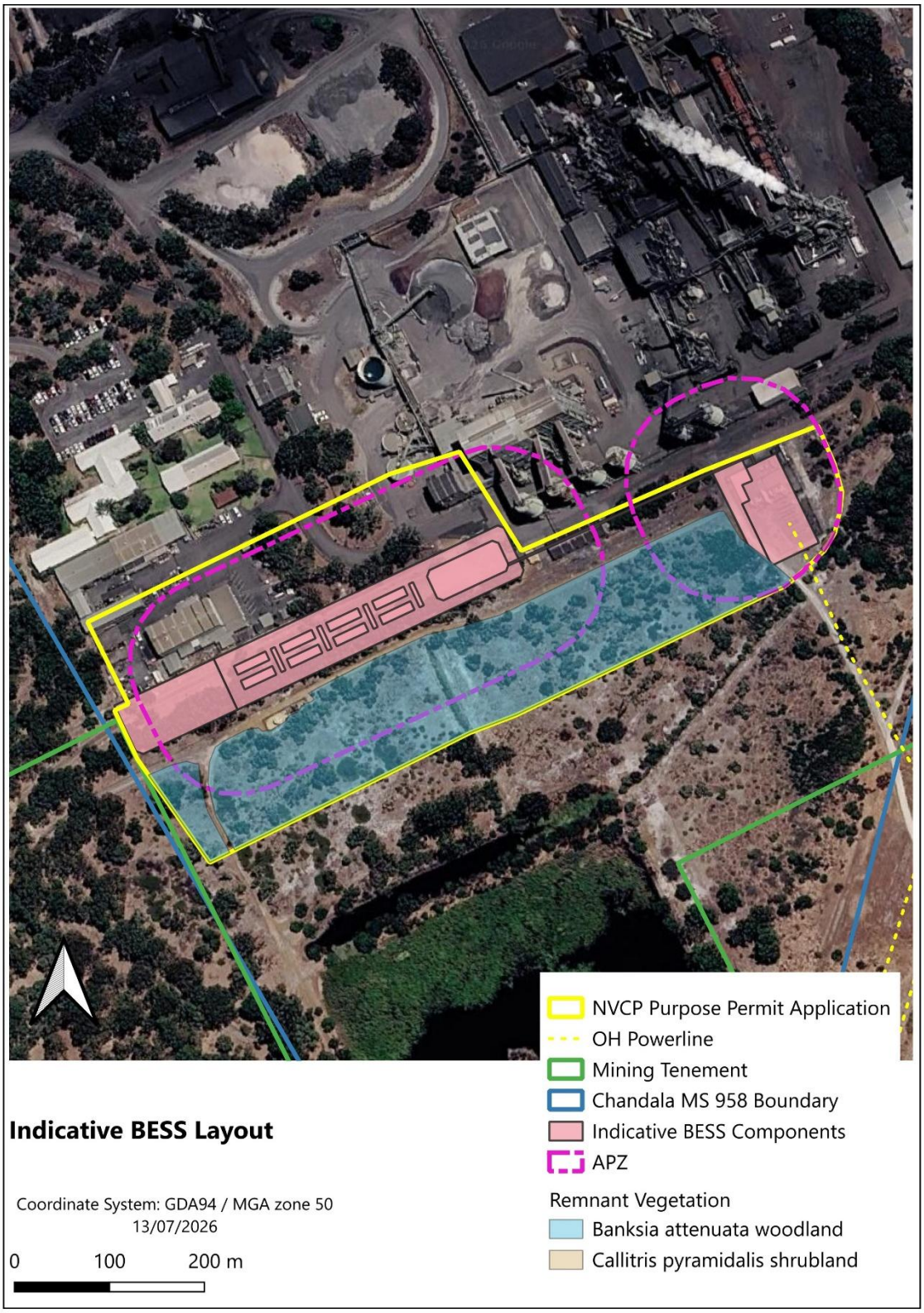


Figure 10 Indicative BESS Layout and APZ

Table 6 Assessment Against the Clearing Principles

Clearing Principle		Assessment	Outcome
a	Native vegetation should not be cleared if it comprises a high level of biological diversity	The native vegetation does not comprise a high level of biological diversity. The vegetation proposed to be cleared is in either a degraded or completed degraded condition. The vegetation lacks understorey and is located within an industrial premises.	Principle met
b	Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	The native vegetation does not comprise the whole or a part of, nor is necessary for the maintenance of a significant fauna habitat.	Principle met
c	Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	No threatened flora species (previously termed rare) are proposed to be cleared. The native vegetation if cleared will not cause listed flora to become extinct.	Principle met
d	Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.	The native vegetation does not comprise the whole or a part of, nor is necessary for the maintenance of a threatened ecological community.	Principle met
e	Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	The vegetation proposed to be cleared is within an industrial facility. It is either degraded or completely degraded condition. It is not considered a significant remnant. Whilst the Muchea area has experienced significant vegetation clearing for agriculture, there are significant and large remnants of vegetation to the west for the Gnangara Groundwater pollution control area which is restricted from clearing.	Principle met
f	Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	The native vegetation is not growing in, or in association with, an environment associated with a watercourse or wetland.	Principle met
g	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation	The native vegetation if cleared is not likely to cause appreciable land degradation. The area proposed to be cleared is small and located inside an industrial facility.	Principle met
h	Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental	The native vegetation proposed to be cleared is not adjacent to a conservation area. The native vegetation if cleared is not likely to have an impact on the environmental values of any nearby conservation areas, the closest of which is 3.5 km north.	Principle met

Clearing Principle		Assessment	Outcome
	values of any adjacent or nearby conservation area		
i	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	The native vegetation if cleared is not likely to cause deterioration in the quality of surface or underground water. Clearing of wetland vegetation within the onsite drains is avoided. These drains provide some bio-retention and bio-treatment as part of the processing plant process circuit. Retaining the drains vegetation won't impact the safety of the APZ.	Principle met
j	Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.	The area to be cleared is small. The site currently experiences waterlogging and localised flooding after prolonged rain. This isn't expected to be exacerbated by the vegetation clearing proposed.	Principle met

7 Clearing Exemptions

Clearing any native vegetation in WA is an offence, unless authorised under a Clearing Permit or an exemption applies.

7.1 Planted Trees

Intentionally planted vegetation may not be considered native vegetation in some circumstances. For example, eastern states species, such as Tasmanian Blue Gum and Lemon Scented Gum that have been planted at Chandala are not classified as native vegetation as these species are not native to Western Australia. In addition, Tasmanian Blue Gum is recognised as a problematic environmental weed in the region that requires control.

In the area of the indicative BESS, remnant vegetation was last cleared in 1989 during the construction of the original dry separation plant. Some of the remnant vegetation that was cleared in 1989 was subsequently replaced by planted tree species for amenity. These are not considered native vegetation for the purposes of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

7.1.1 Planting under Ministerial Statements

Both Ministerial Statements 50 (Dry Plant) and 59 (Synthetic Rutile Plant) from the 1980s required the proponent to plant trees for i) visual amenity and to screen the plant from the road, ii) enhance the riparian zone along Chandala Brook and/or iii) to assist in reducing waterlogging on the property. To ratify the requirement under the Ministerial Statements a *Landscape Plan* was developed. This plan outlined that the tree planting for each of these purposes was on the land owned by the proponent, however by and large outside of the processing plant boundary. The focus of the tree planting for these purposes was the property boundary, particularly the western boundary along Brand Highway and along Chandala Brook. Tree planting was also focused on the property eastern boundary as shown in Figure 11. It has been concluded the trees planted in the BESS project area, as indicated in Figure 11, were not planted to satisfy the Ministerial Statement requirements. These trees were not planted for the purpose of biodiversity conservation or land conservation.

An aerial photograph from 1989 was obtained from Landgate to review the vegetation that had already been cleared.

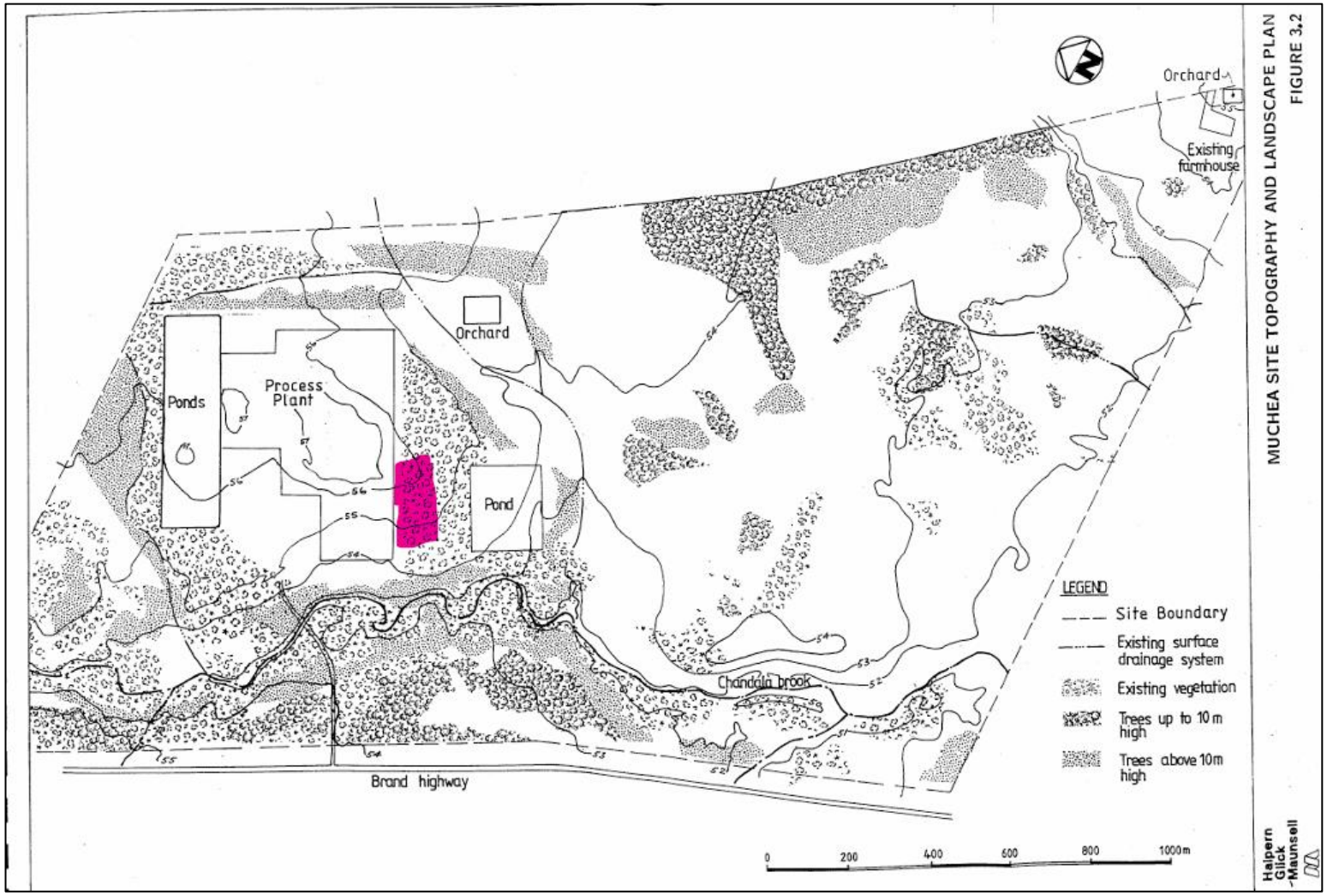


Figure 11 1988 Chandala Landscape Plan

Pink is approximate location of the BESS project

8 Management Strategies

8.1 Design Strategies

Avoidance of potential impacts through landscape-scale spatial planning and site design is considered the most effective primary means of achieving good ecological outcomes. This involves strategic siting of renewable infrastructure in areas of low ecological sensitivity, avoiding areas of high-quality habitat and migratory/movement corridors.

The Chandala BESS site has been intentionally sited largely within an existing industrial footprint that has low ecological values.

The Project's site was selected to:

- Use land previously disturbed by industry and land already cleared
- Co-locate with complementary land uses to share common use infrastructure and reduce the need for new infrastructure
- Placing the BESS immediately adjacent to existing substation and 330 kV transmission lines avoid impacts associated with new transmission corridors.
- Avoid area of high population density
- Avoid large areas of remnant native vegetation clearing
- Avoid remnant patches of native vegetation with high condition scores
- Avoid areas of medium and high value habitat for species with a high biodiversity risk rating
- Avoid listed threatened ecological communities
- Avoid records of threatened flora and threatened flora habitat
- Avoid areas of identified important breeding, roosting or foraging habitat for listed threatened or migratory bird species, including Carnaby's Black Cockatoo.
- Avoid specialised regional habitats such as caves, ridges and wetlands

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