



# Native Vegetation Clearing Permit Application [Purpose Permit] – Supporting Documentation

Aurizon Bulk WA

Report

JBS&G 68057 | 163,965

11 December 2024





**We acknowledge the Traditional Custodians of Country throughout Australia and their connections to land, sea and community.**

We pay respect to Elders past and present and in the spirit of reconciliation, we commit to working together for our shared future.

Caring for Country The Journey of JBS&G  
Artist: Patrick Caruso, Eastern Arrernte





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## Abbreviations

Term	Definition
ASS	Acid Sulfate Soils
DBCA	Department of Biodiversity Conservation and Attractions
CBD	Central Business District
CCW	Conservation Category Wetland
EP Act	<i>Environmental Protection Act 1986</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESA	Environmentally Sensitive Area
FCT	Floristic Community Type
ha	Hectares
IBRA	Interim Biogeographic Regionalisation for Australia
km	Kilometres
LGA	Local Government Authority
mm	Millimetres
NVCP	Native Vegetation Clearing Permit
PEC	Priority Ecological Community
REW	One Resource Enhancement Wetland
SWA2	Swan Coastal Plan Subregion – Swan Coastal Plain 2
TEC	Threatened Ecological Community
VT	Vegetation Type

# 1. Introduction

## 1.1 Purpose and scope

This document has been prepared to support the Native Vegetation Clearing Permit (NVCP) application for assessment under s51E of the *Environmental Protection Act 1986* (EP Act) and includes the following information relating to clearing impacts:

- An overview of the existing environmental conditions and values of the areas;
- An evaluation of the proposed clearing against the 'Ten Clearing Principles' listed under Schedule 5 of the EP Act; and
- Environmental approvals and management requirements.

## 1.2 Project background

In 2022, Australia Western Railroad PTY LTD (a wholly owned company of Aurizon Holdings Limited) prepared and submitted a NVCP application for approximately 1.6 ha. The outcome was an approved NVCP which was used to clear 0.31 ha of the 1.6 ha of land (**Appendix B**).

During the period in which the clearing permit was active, several factors impeded the completion of the clearing plans:

- Uncertainty about development under the new (now repealed) *Aboriginal Cultural Heritage Act 2021*;
- Recommendations from an Aboriginal cultural heritage due diligence assessment, which have led the business to exercise caution in proceeding with development across all areas; and
- A Noongar Standard Heritage Agreement is now being negotiated which will include an Aboriginal cultural heritage survey of the areas requiring clearing.

In 2024 Aurizon Holdings Limited's NVCP was nearing expiration and when requesting to extend the permit, DWER had advised to resubmit a new application.

Aurizon Holdings Limited are continuing to expand their operations into the same undeveloped areas of land at the Kwinana Rail Depot (the site), located along Mounsey Road, Kwinana Beach, within the City of Kwinana as their previous application entailed. The site comprises portions of Lot 511 (52.31 ha) in the east and Lot 512 (13.09 ha) in the west on Deposited Plan 41203. Both lots include existing areas of:

- Narrow-and-standard gauge railway;
- Container terminal operations; and
- Railway maintenance facilities.
- As part of the expansion, the clearing of approximately 1.29 ha of native vegetation is required to facilitate equipment storage areas, parking, and roads. The proposed clearing areas are shown in **Figure 1.1**.

A permit duration of 1 January 2025 to 30 December 2028 is requested to allow sufficient time for clearing plans to occur, considering the complexities associated with the Aboriginal cultural heritage surveys outlined above.



### 1.3 Location, ownership and tenure

The site is located approximately 40km southwest of the Perth Central Business District (CBD). The Proposed clearing area comprises a total of 1.29 ha, with 0.76 ha within Lot 512 (west) and 0.53ha located within Lot 511 (east).

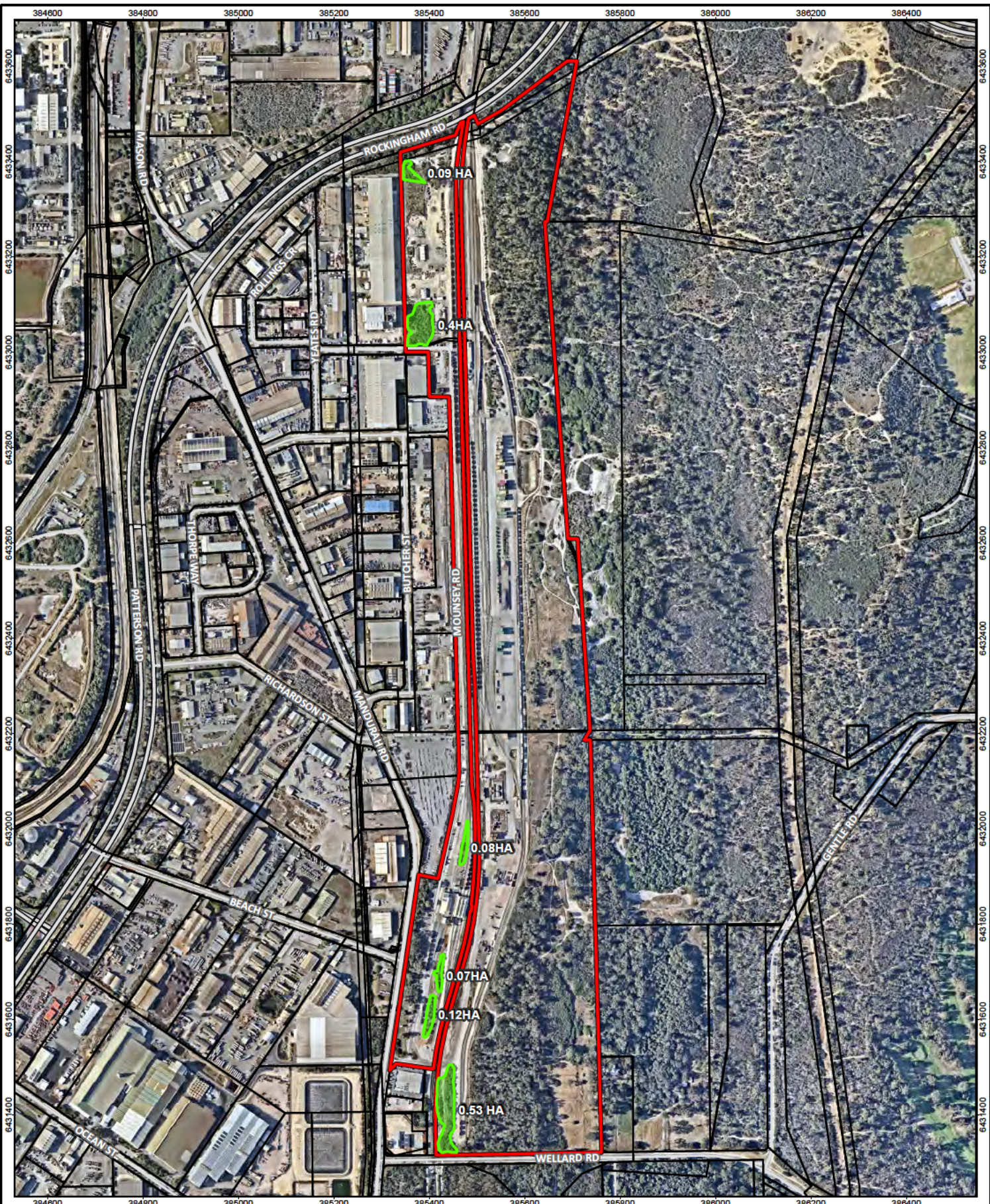
Site identification details for the proposed clearing area are provided in **Table 1.1**.

**Table 1.1: Site identification details for Lot 511 and 512**

Subject	Detail
Lot address	Lot 511 and 512 on Plan 41203
Common name of site	Kwinana Rail Depot, 30 Mounsey Road Kwinana Beach
Current certificate of title	<b>Appendix A</b>
Current site owner	Australia Western Railroad Pty Ltd – Ultimate Holding Company Aurizon Holdings Limited
Local Government Authority	City of Kwinana
Current MRS Zoning	Railways (Reserve)
Current LPS Zoning	General industry (Kwinana)

**Figure 1.1: Proposed clearing**





<b>Legend</b> Lot 511 and 512 Rockingham Road Clearing area (Total - 1.29ha) Cadastral boundary (LGATE - 002) <b>Roads (LGATE - 195)</b> Highway Major road Minor road Track	Scale: 1:10,500 at A4 		<b>Kwinana Rail Depot</b> <b>30 Mounsey Road</b> <b>Kwinana, WA</b>	
	Coord. Sys. GDA2020 MGA Zone 50 			<b>PROPOSED CLEARING AREAS WITHIN</b> <b>KWINANA RAIL DEPOT</b>
	Job Number: 68057			
	Client: Aurizon Limited		<b>FIGURE 1.1</b>	
	Version: A	Date: 22-Nov-2024		
	Drawn By: ianandagoda	Checked By: HGavin		





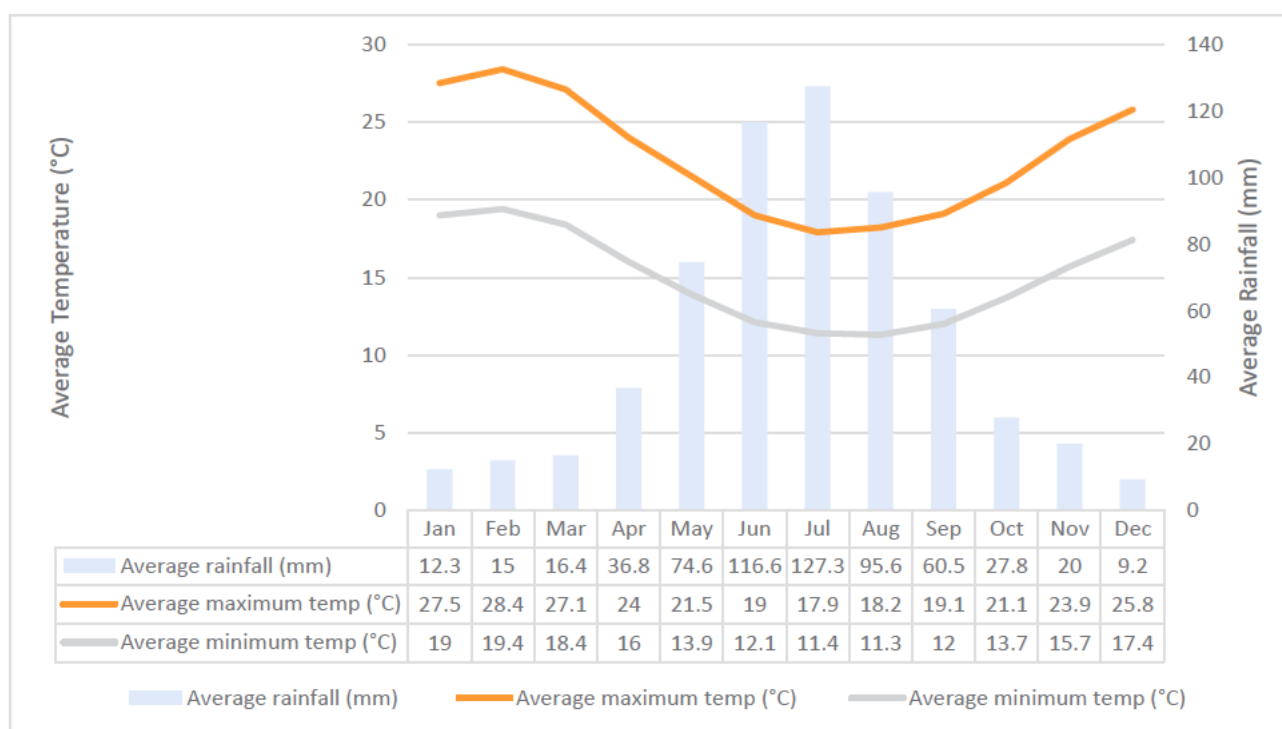
## 2. Existing environment

The following environmental assessments have been conducted for the site to inform this purpose permit application:

- *Reconnaissance flora and vegetation survey and black cockatoo habitat assessment – Lots 511 and 512 Rockingham Road, Kwinana Beach (Strategen, 2020).*

### 2.1 Climate

The Kwinana Beach locality experiences a Mediterranean climate characterised by mild, wet winters and warm to hot, dry summers. The nearest Bureau of Meteorology (BoM) weather station at Garden Island HSF (Station No. 9256) provides average monthly climate statistics for the Kwinana Beach locality (Figure 2.1). Average annual rainfall recorded at Garden Island HSF since 2001 is 602.4 mm (BoM 2024). Rainfall may occur at any time of year; however, most occurs in winter in association with cold fronts from the southwest. Highest temperatures occur in February, with average monthly maximum reaching 28.4 °C while lowest temperatures occur in August, which has an average monthly minimum of 11.3 °C (BoM 2024).



**Figure 2.1: Mean Monthly climatic data (temperature and rainfall) for Garden Island HSF (since 2001) (BoM 2024)**



## 2.2 Geology, landforms and soils

The site is located within the Swan Coastal Plain 2 (SWA2 – Swan Coastal Plain subregion) of Western Australia (Mitchell et al. 2002). The Swan Coastal Plain comprises five major geomorphologic systems that lie parallel to the coast, namely (from west to east) the Quindalup Dunes, Spearwood Dunes, Bassendean Dunes, Pinjarra Plain and Ridge Hill Shelf (Churchward & McArthur 1980; Gibson et al. 1994). Each major system is composed of further subdivisions in the form of detailed geomorphologic units (Churchward & McArthur 1980; Semeniuk 1990; Gibson et al. 1994). Beard (1990) describes the Swan Coastal Plain as a low-lying coastal plain, often swampy, with sandhills also containing dissected country rising to the duricrusted Dandaragan plateau on Mesozoic, mainly sandy, yellow soils.

Specifically, the site is located on the Quindalup Dunes landform unit (Churchward & McArthur 1980) and is characterised by sandy soils with occasional limestone outcropping.

## 2.3 Acid Sulfate soils

Acid Sulfate Soils (ASS) are naturally occurring, iron-sulphide rich soils, sediments or organic substrates, formed under waterlogged conditions. If exposed to air, these sulphides can oxidise and release sulphuric acid and heavy metals. This process can occur due to drainage, dewatering or excavation.

A search of the Swan Coastal Plain ASS risk maps (DWER 2017) indicates that there is no mapped risk of ASS occurring within 3 m of natural soil surface within the clearing footprint area.

## 2.4 Hydrology

Mapping of the geomorphic wetlands of the Swan Coastal Plain (Figure 2.2) indicates no wetlands are present within the site. One Resource Enhancement Wetland (REW) and one Conservation Category Wetland (CCW) (UFI 6375 and UFI 6389 respectively) are mapped directly to the east of the eastern boundary of the Survey Area (Figure 2.2)

## 2.5 Conservation areas

There are two Bush Forever sites within 5 km of the site (Figure 2.2), including:

- Leda and adjacent bushland, Leda (site 349) which shares a boundary along the eastern side of the Survey Area; and
- Lake Cooloongup, Lake Walyungup and adjacent bushland, Hillman to Port Kennedy (site 356), which is situated approximately 3 km to the south of the Survey Area.

The nearest DBCA managed land is directly to the south of the site, immediately to the south of Wellard Rd.

## 2.6 Environmentally sensitive areas

A defined wetland including a CCW and the area within 50 metres of the wetland is listed as an Environmentally Sensitive Area (ESA) under the EP Act. The southeast corner of the site contains 0.003 ha of an ESA associated with the buffer of the CCW (UFI 6389; Figure 2.2).

In addition to the above, an indicative Threatened Ecological Community (TEC) buffer is present on the southern half of the site. This boundary has not been shown and instead TEC's are shown (along with Priority Ecological Communities (PECs)) in Figure 2.6 based on actual survey data.

## 2.7 Vegetation and flora

Lots 511 and 512 were subject to a flora and vegetation and black cockatoo habitat assessment by then Strategen (now JBS&G). The field survey of Lot 511 was conducted by two ecologists from Strategen on 15 May 2019. Lot 512 was surveyed separately by one ecologist on 6 August 2019. An additional survey was conducted within a small, vegetated island within Lot 511 on 18 September 2019, in order to record significant

tree data not previously recorded. The survey was conducted in accordance with guidelines provided in *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016)*.

Details of this survey have been discussed below in the context of the site and the proposed clearing areas.

### 2.7.1 Regional Vegetation

The site comprises two Beard (1981) vegetation associations; 998 which is described as medium woodland; tuart; and 3048 described as Shrublands, scrub- heath on the Swan Coastal Plain (Beard 1981; Heddle et al, 1980). Based on regional vegetation complex mapping (Heddle et al. 1980) the site comprises two vegetation complexes: Cottesloe Central and South and Quindalup (Figure 2.3). Of these associations 32.16% of the Cottesloe Central and South complex, and 60.49% of the Quindalup complex remain at the state, IBRA region, and Local Government Authority (LGA) extents (GoWA 2019a). Neither of these vegetation associations are considered poorly represented, given the proportion of the pre-European extent remaining is well above the 10% threshold that applies to constrained areas of the Swan Coastal Plain.

### 2.7.2 Vegetation

#### 2.7.2.1 Vegetation type and condition

Three native vegetation types (VTs) were defined and mapped within the site by JBS&G (Figure 2.4). The native vegetation types, description and areas within the clearing footprint are provided in Table 2.1.

**Table 2.1: Vegetation types within clearing footprint**

Vegetation type	Description	Clearing footprint (ha)	% clearing footprint
1	<i>Eucalyptus gomphocephala</i> mid woodland over <i>Acacia rostellifera</i> tall shrubland over mixed grassland and herbland of weedy species.	0.01	1.15%
2	<i>Acacia rostellifera</i> shrubland over herbland of introduced species.	1.09	84.57%
3	Woodland of <i>Banksia grandis</i> and <i>Banksia attenuata</i> over shrubland of <i>Acacia rostellifera</i> , <i>Xanthorrhoea preissii</i> and <i>Macrozamia riedlei</i> over herbland of mixed native and introduced species	0	0%
Cleared <sup>1</sup>	Includes areas completely cleared for infrastructure, fire breaks and informal tracks, as well as highly degraded areas devoid of native vegetation or with only occasional native species.	0.18	14.28%
<b>Total</b>		<b>1.29</b>	<b>100%</b>

The Survey Area shows signs of having been degraded for a long period of time, in part due to its proximity to rail depot infrastructure. Understorey species were almost completely absent from the majority of the site, with only occasional native species other than the upper stratum of *Eucalyptus gomphocephala* and mid stratum of *Acacia rostellifera* scrub. The only area with some intact understorey was VT3, on the northeastern boundary.

As a result of the heavy disturbance to vegetation within the site, vegetation condition ranged from Completely Degraded to Good (Figure 2.5; Keighery 1994).

<sup>1</sup> For the purpose of the clearing permit application, it has been assumed that clearing boundaries comprising vegetation type 'Cleared' may contain native vegetation, based on observations during the survey and the vegetation type descriptions within the survey report (Strategen 2020).

A summary of the vegetation condition within the clearing footprint area is provided in Table 2.2 and depicted in Figure 2.5.

**Table 2.2: Vegetation condition within clearing footprint**

Vegetation condition	Clearing footprint (ha)	% clearing footprint
Completely degraded	0.18	14.28%
Degraded	1.11	85.72%
Good	0	0
<b>TOTAL</b>	<b>1.29</b>	<b>100%</b>

### 2.7.2.2 Threatened and Priority Ecological Communities

Given the location of the site, the Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain TEC, listed under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) Act on 4 July 2019, was considered to have the potential to occur. Given this, vegetation within the site was assessed against the diagnostic criteria in the Approved Conservation Advice (incorporating listing advice) for the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain Threatened Ecological Community (Tuart Woodland TEC; Strategen 2020). The assessment found that although Tuart woodlands are present within the site, occurring across five separate patches, only two of the patches met the diagnostic criteria to be classified as Tuart Woodland TEC. These two patches do not occur within the clearing boundaries.

Furthermore, the determination of the presence of a Tuart Woodlands and Forests of the Swan Coastal Plain Priority Ecological Community (Tuart Woodland PEC) is usually based on affinity of vegetation data with known Floristic Community Types (FCTs) as defined by Gibson et al. (1994). As only two species were present within the majority of VT1, insufficient species diversity was present to enable meaningful further analysis. However, due to the presence of known dominant species of this PEC within VT1 (*Eucalyptus gomphocephala*), and the lack of more detailed diagnostic criteria, the Tuart Woodland PEC was considered to be present within all patches of Tuart woodlands within the site as identified by Strategen 2020.

With respect to the clearing footprint, a small portion of Tuart Woodland PEC (0.01 ha; Figure 2.6) is located within one proposed clearing area in the northern portion of the site; however, it should be noted that the vegetation within this clearing area contains very few native species and is in a Degraded condition and does not contain any *Eucalyptus gomphocephala* trees.

### 2.7.3 Flora

A total of 13 native vascular plant taxa from 11 plant families were recorded from relevés within the site. The relatively low number of plant genera recorded reflects the disturbed nature of the site.

#### 2.7.3.1 Conservation significant flora

No Threatened or Priority flora species were recorded within the site, and therefore no conservation significant flora species are present within the proposed clearing areas.

#### 2.7.3.2 Introduced flora

Native vegetation on site has been disturbed due the presence of aggressive invasive weed species. The majority of native vegetation present comprised an understorey of weed species, such as herbland weeds and weedy grasses.

## 2.8 Fauna habitat

The fauna assemblage is constrained by the limited range of environments present in the site and the adjacent development areas. Given the highly degraded nature of the site and the nearby Bush Forever areas, the site and proposed clearing footprint are not considered significant fauna habitat.

A black cockatoo habitat assessment was conducted over the site by Strategen (now JBS&G) in 2019 to confirm habitat values.

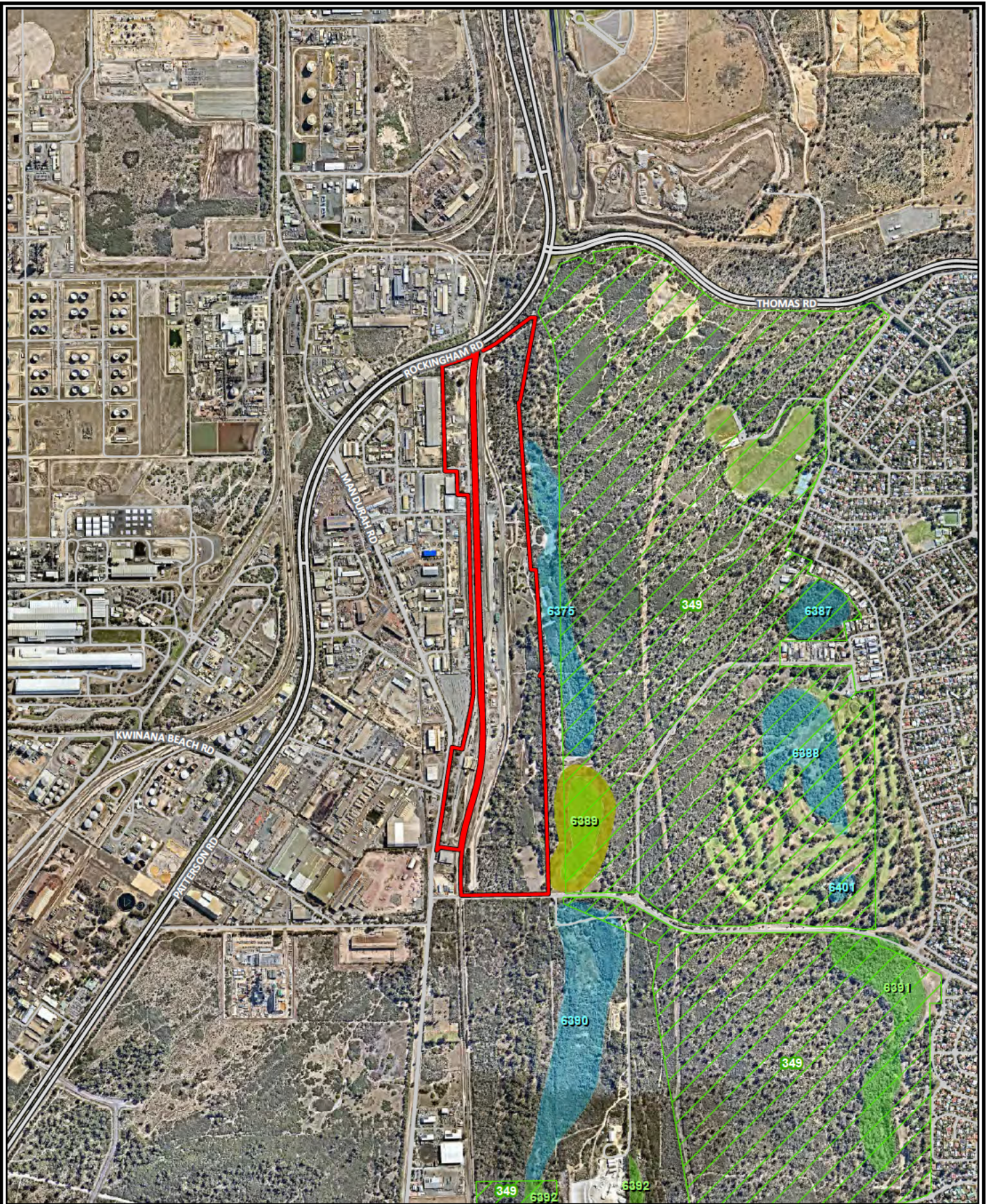
A total of 327 significant trees were recorded within the site (largely *Eucalyptus gomphocephala*) by Strategen (2020). Of these, 12 trees contained visible hollows of at least 10 cm diameter. None of these trees are located within the proposed clearing areas (Figure 2.7).

Foraging habitat quality within the clearing areas ranges from predominately Nil (0.18 ha) to Very Poor (0.57 ha). A small portion of the northern clearing areas contains moderate foraging habitat (0.01 ha), although the vegetation condition of this portion was recorded as Degraded, therefore foraging value is limited (Figure 2.7).



**Figure 2.2: Wetlands, Bush Forever, and Conservation Areas**

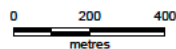




**Legend**

- Lot 511 and 512 Rockingham Road
- Conservation wetland UFI6389 50m buffer
- Bush Forever site (DPLH)
- Geomorphic wetlands (DBCA)
- Conservation
- Resource enhancement
- Highways
- Main road
- Minor road

Scale 1:20,000 at A4



**Kwinana Rail Depot**  
30 Mounsey Road Kwinana, WA

Coord. Sys. GDA2020 MGA Zone 50



**WETLANDS, BUSH FOREVER AND  
CONSERVATION AREAS**

Job No: 62860

Client: Aurizon Limited

**FIGURE 2.2**

Version: A

Date: 13-Jun-2022

Drawn By: ianandagoda

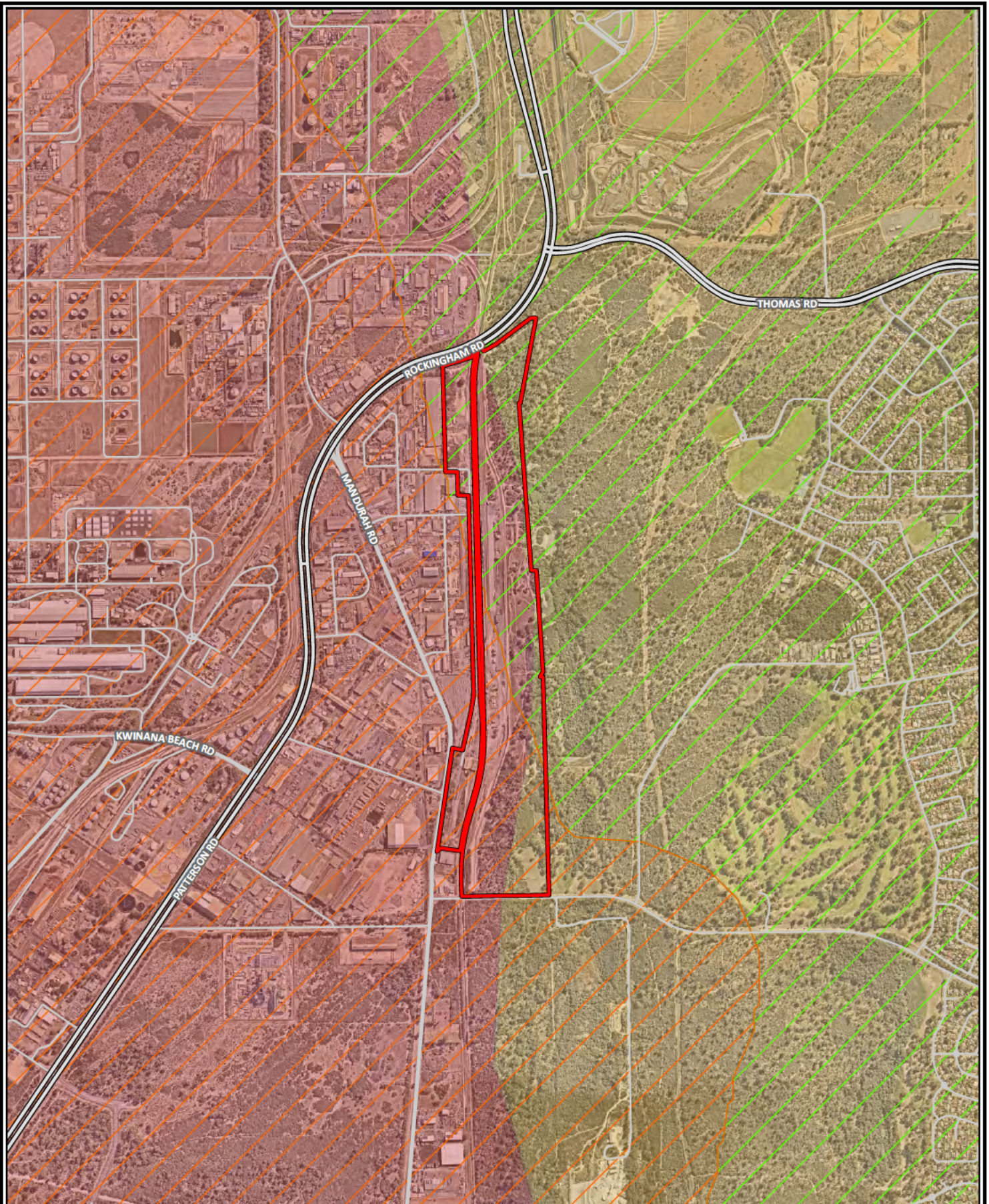
Checked By: CT





**Figure 2.3: Regional vegetation**



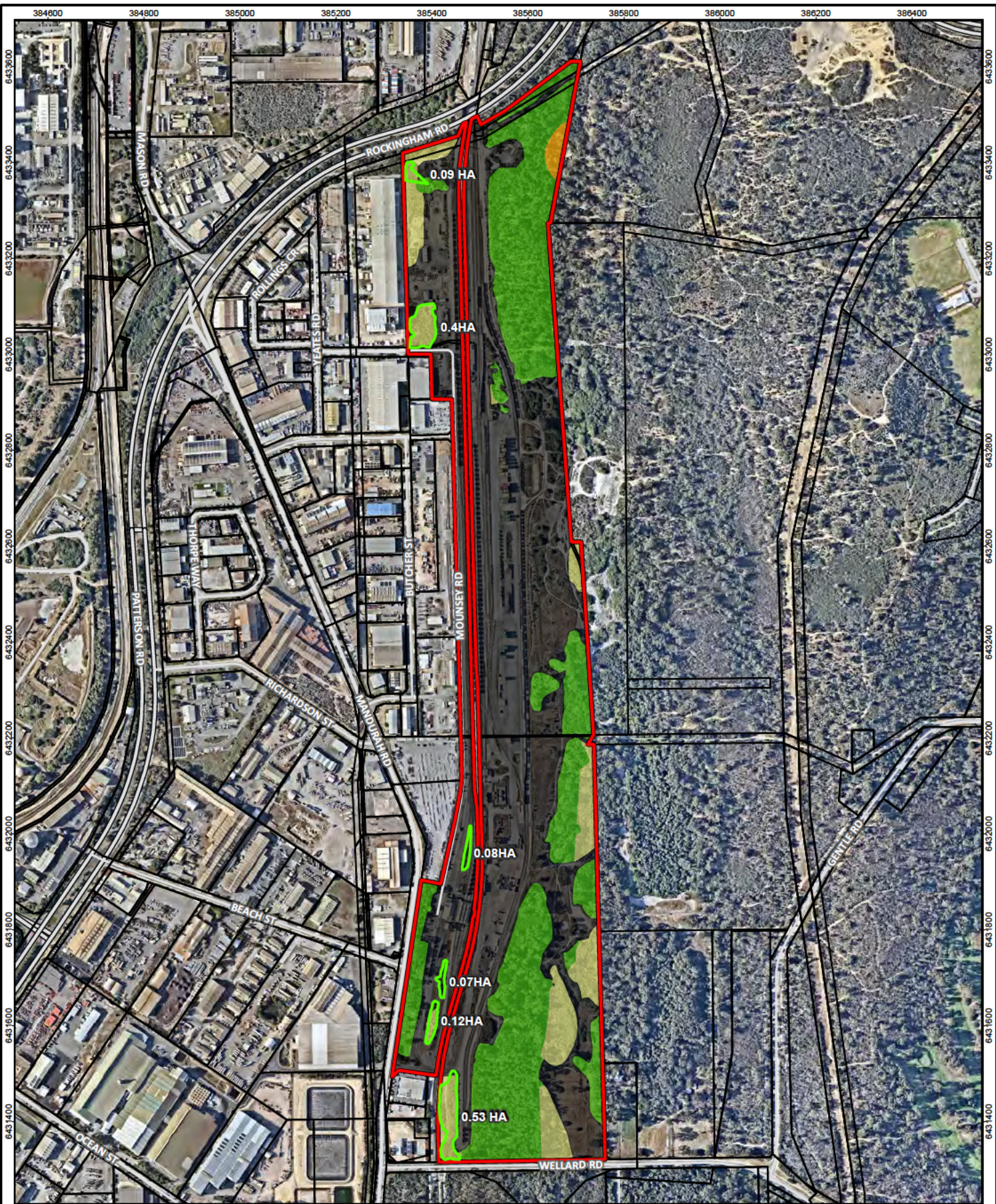


<b>Legend</b> Lot 511 and 512 Rockingham Road Vegetation complexes (DBCA) Cottesloe Complex-Central and South Quindalup Complex Beards vegetation (DPIRD) Rockingham 3048 Spearwood 998 Highways Main road Minor road	Scale 1:20,000 at A4 	<b>Kwinana Rail Depot</b> 30 Mounsey Road Kwinana, WA
	Coord. Sys. GDA2020 MGA Zone 50 	<b>REGIONAL VEGETATION</b>
	Job No: 62860	<b>FIGURE 2.3</b>
	Client: Aurizon Limited	
	Version: A Drawn By: ianandagoda	Date: 13-Jun-2022 Checked By: CT



**Figure 2.4: Vegetation types**





- Legend**
- Lot 511 and 512 Rockingham Road
  - Clearing area (Total - 1.29ha)
  - Cadastral boundary (LGATE - 002)
  - Roads (LGATE - 195)
    - Highway
    - Major road
    - Minor road
    - Track

- Vegetation type**
- VT1
  - VT2
  - VT3
  - Cleared

Scale: 1:10,500 at A4

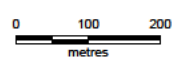
Coord. Sys. GDA2020 MGA Zone 50

Job Number: 68057

Client: Aurizon Limited

Version: A

Drawn By: ianandagoda



Date: 22-Nov-2024

Checked By: HGavin

**Kwinana Rail Depot**  
30 Mounsey Road  
Kwinana, WA

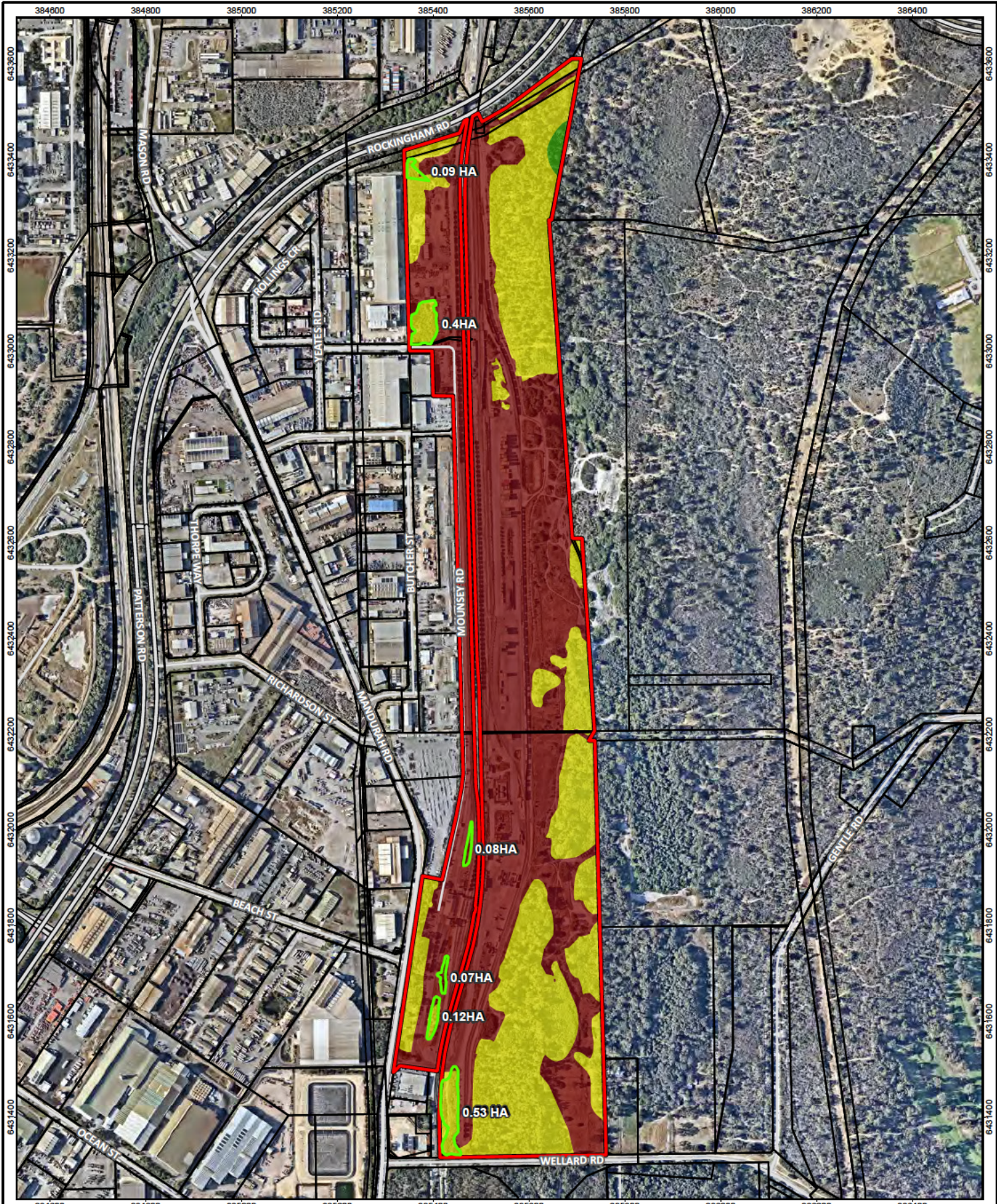
**VEGETATION TYPE**

**FIGURE 2.4**



**Figure 2.5: Vegetation condition**





**Legend**

Lot 511 and 512 Rockingham Road

Clearing area (Total - 1.29ha)

Cadastral boundary (LGATE - 002)

Roads (LGATE - 195)

Highway

Major road

Minor road

Track

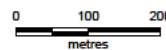
**Vegetation condition**

Good

Degraded

Completely degraded

Scale: 1:10,500 at A4



Coord. Sys. GDA2020 MGA Zone 50



Job Number: 68057

Client: Aurizon Limited

Version: A

Date: 22-Nov-2024

Drawn By: ianandagoda

Checked By: HGavin

**Kwinana Rail Depot  
30 Mounsey Road  
Kwinana, WA**

**VEGETATION CONDITION**

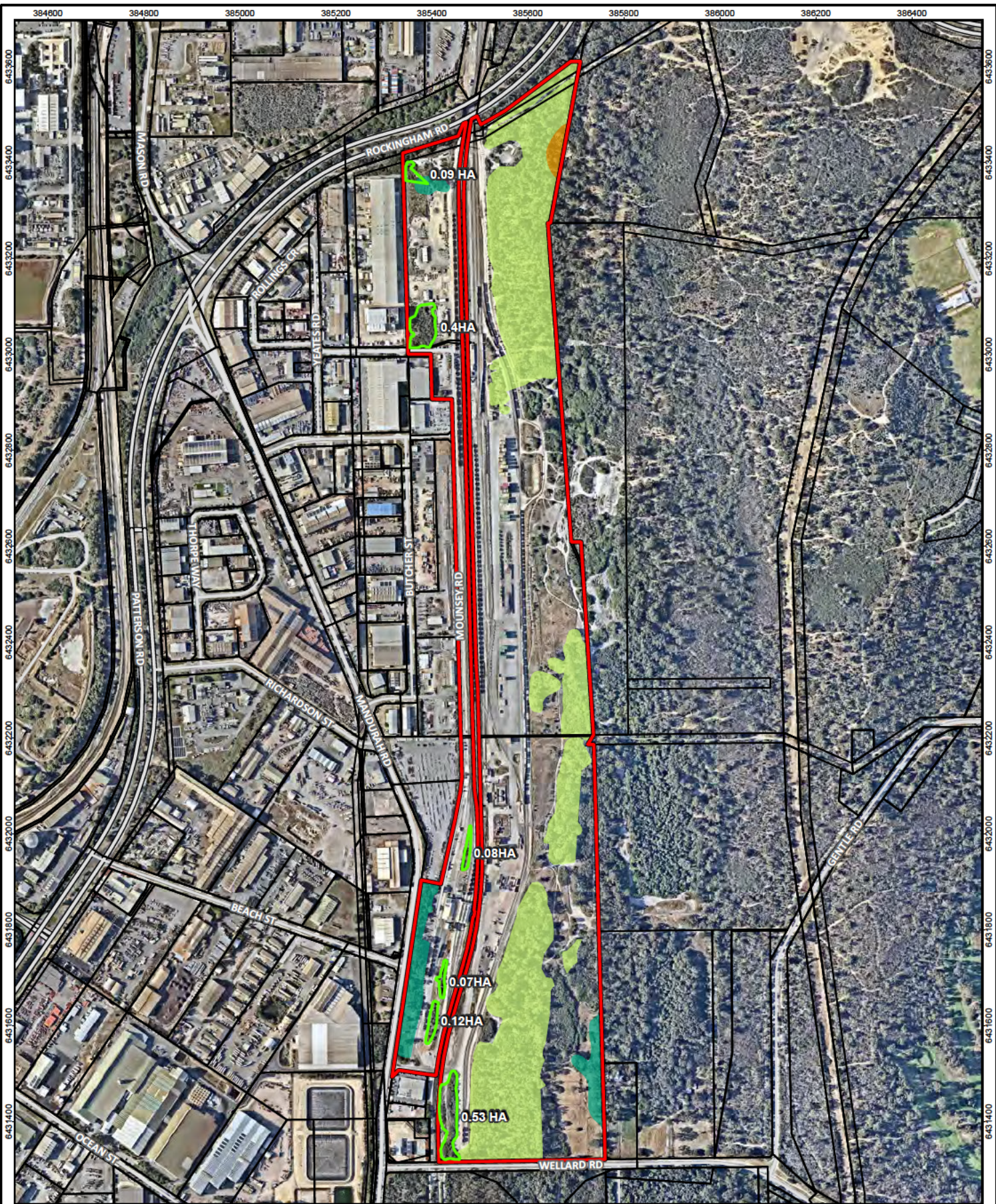
**FIGURE 2.5**





**Figure 2.6: Threatened and Priority Ecological Communities**





**Legend**

- Lot 511 and 512 Rockingham Road
- Clearing area (Total - 1.29ha)
- Cadastral boundary (LGATE - 002)
- Roads (LGATE - 195)
  - Highway
  - Major road
  - Minor road
  - Track
- Threatened and priority ecological communities
  - Banksia Woodland PEC
  - Tuart Woodland PEC
  - Tuart Woodland PEC and TEC

Scale: 1:10,500 at A4

Coord. Sys. GDA2020 MGA Zone 50

Job Number: 68057

Client: Aurizon Limited

Version: A

Drawn By: ianandagoda

0 100 200 metres

↑

Date: 22-Nov-2024

Checked By: HGavin

**Kwinana Rail Depot  
30 Mounsey Road  
Kwinana, WA**

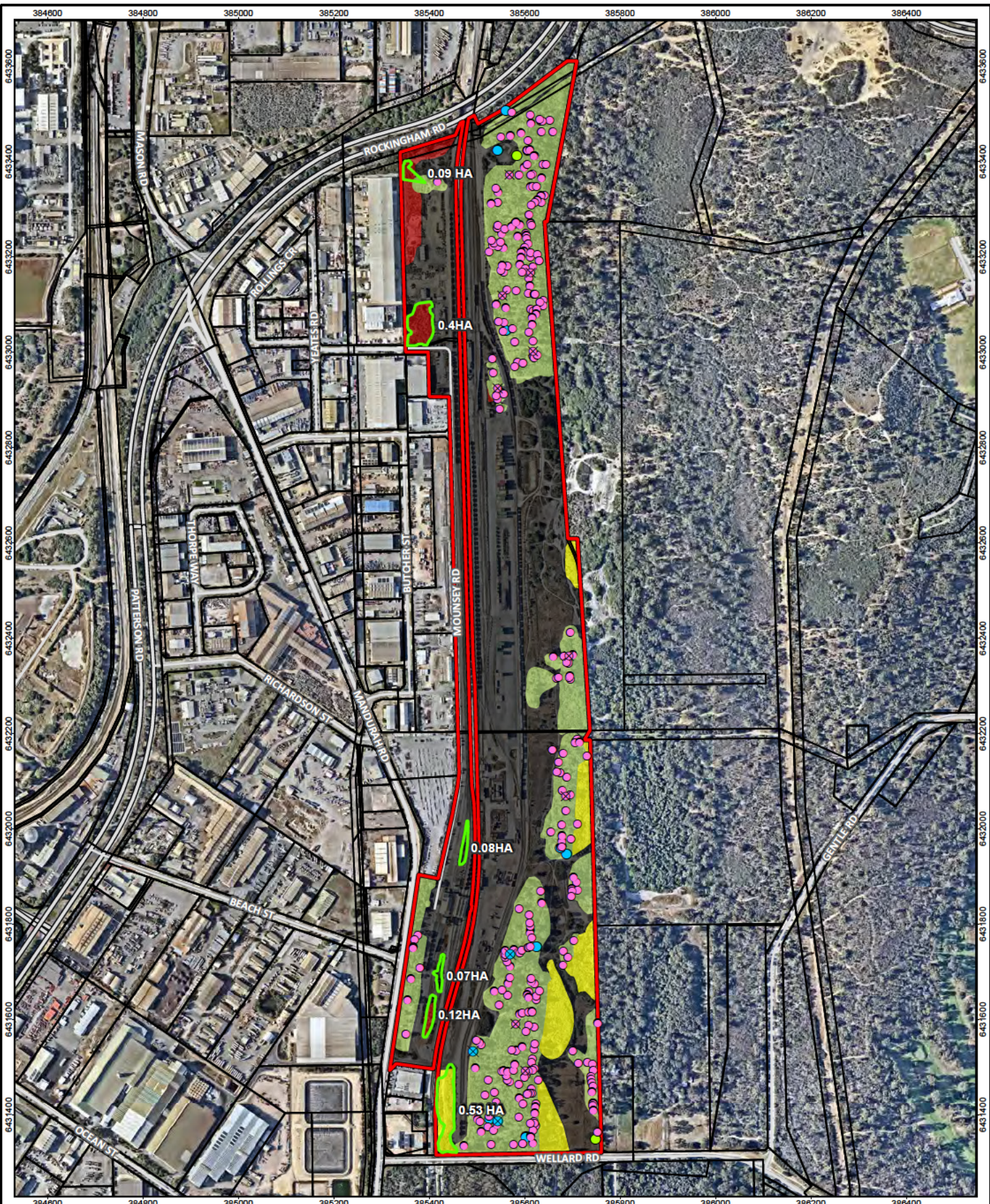
**THREATENED AND PRIORITY  
ECOLOGICAL COMMUNITIES**

**FIGURE 2.6**



**Figure 2.7: Black cockatoo habitat**





<b>Legend</b> Lot 511 and 512 Rockingham Road Clearing area (Total - 1.29ha) Cadastral boundary (LGATE - 002) <b>Significant trees</b> <b>Hollows present</b> <i>Eucalyptus gomphocephala</i> Stag <b>No hollows</b> <i>Eucalyptus gomphocephala</i> <i>Eucalyptus sp.</i> Stag		<b>Potential foraging habitat</b> Moderate Poor Very poor Nil <b>Roads (LGATE - 195)</b> Highway Major road Minor road Track		Scale: 1:10,500 at A4  Coord. Sys. GDA2020 MGA Zone 50  Job Number: 68057 Client: Aurizon Limited Version: A Date: 22-Nov-2024 Drawn By: ianandagoda Checked By: HGavin		<b>Kwinana Rail Depot</b> <b>30 Mounsey Road</b> <b>Kwinana, WA</b> <b>BLACK COCKATOO HABITAT</b> <b>FIGURE 2.7</b> 	
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### 3. Assessment against the EP Act clearing principles

An assessment of the proposed clearing against the ten clearing principles is provided in Table 3.1.

The ten clearing principles are defined under Schedule 5 of the EP Act and are considered prior to the decision being made to issue a clearing permit.

This assessment demonstrates that the proposed removal of 1.29 ha of native vegetation is not at variance with any of the clearing principles. On this basis, it is anticipated that the proposed clearing at the Kwinana Rail Depot can be permitted to occur.

**Table 3.1: Assessment against the ten principles of the EP Act Schedule 5 for clearing native vegetation**

Principle	Assessment	Conclusion
(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.	<p>The application areas were subject to a flora and vegetation assessment undertaken in 2019 by then Strategen (now JBS&amp;G). Vegetation predominately consists of <i>Acacia rostellifera</i> shrubland over herbland of introduced species, and areas considered 'cleared', which are devoid of native vegetation or with only occasional native species.</p> <p>A small area in the northern clearing area contains Tuart Woodland PEC, however the vegetation condition was noted as Degraded.</p> <p>Of the native vegetation present within the proposed clearing areas, the condition ranges from Degraded to Completely Degraded.</p> <p>Based on the low level of biological diversity within the clearing area, clearing is not expected to be at variance with this principle.</p>	Not at variance.
(b) Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	<p>The proposed clearing area shows signs of being degraded by clearing, human disturbance and invasive weeds, reducing the value of the site for significant fauna.</p> <p>A black cockatoo habitat assessment was undertaken by Strategen-JBS&amp;G (previously Strategen) in May 2019. During this survey no significant trees were recorded within the proposed clearing permit area.</p> <p>In addition, foraging habitat quality within the proposed clearing areas ranges from Very Poor to Nil. A small portion (0.01 ha), of the northern clearing area contains Moderate quality foraging habitat, although the vegetation condition was noted as Degraded, therefore foraging habitat is limited.</p> <p>The proposed clearing area is not considered to represent habitat critical for fauna species, therefore the nature and scale of vegetation to be cleared is not considered to be significant at a local or regional scale in regard to indigenous fauna habitat.</p>	Not at variance.
(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	<p>Based on the survey undertaken then Strategen (now Strategen-JBS&amp;G) in 2019, 13 native vascular plant taxa from 11 plant species were recorded within the site. Although no Threatened or Priority flora species were recorded within the site, and therefore it can be inferred that none are present within the proposed clearing areas.</p> <p>The low number of plant genera recorded reflects the disturbed nature of the site.</p> <p>Based on the absence of conservation significant flora and highly degraded condition of vegetation within the site, the proposed clearing is unlikely to be at variance with this principle.</p>	Not at variance.

Principle	Assessment	Conclusion
<p>(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.</p>	<p>The vegetation identified within the then Strategen (2020) survey within the clearing footprint does not resemble a known TEC.</p> <p>As a result the proposed clearing will not be at variance with this principle.</p>	<p>Not at variance.</p>
<p>(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.</p>	<p>The proposed clearing areas lie within Vegetation Associations 998 and 3048. Of which there is 36.25% of Vegetation Association 998, and 25.25% of Vegetation Association 3048, remaining within the IBRA region.</p> <p>The proposed clearing areas also lie within the Cottesloe Central and South, and Quindalup vegetation complexes. Of which there is 32.16% of the Cottesloe Central and South complex, and 60.49% of the Quindalup complex remaining within the IBRA region.</p> <p>Therefore, both vegetation associations and vegetation complexes within the proposed clearing areas have a current extent well above the 10% retention target for constrained areas within the Swan Coastal Plain.</p> <p>Based on the already extensively cleared nature and absence of remnant vegetation within the surrounding land, the proposed clearing areas are unlikely to be at variance with this principle.</p>	<p>Not at variance.</p>
<p>(f) Native vegetation should not be cleared if it is growing in or in association with a watercourse or wetland.</p>	<p>Mapping of Geomorphic wetlands of the Swan Coastal Plain indicated that no wetlands are present within the proposed clearing areas. One Resource Enhancement Wetland and one Conservation Category Wetland (UFI 6375 and UFI 6389 respectively) are mapped directly to the east of the Kwinana Rail Depot.</p> <p>As no Geomorphic wetlands are present within the proposed clearing areas, and the small extent of clearing is unlikely to impact surrounding wetlands to the east, the proposed clearing is therefore unlikely to be at variance with this principle.</p>	<p>Not at variance.</p>
<p>(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.</p>	<p>Based on the small scale of clearing required, and that the surrounding area has been heavily modified for industrial purposes, the proposed clearing is not expected to increase salinity, waterlogging, nutrient export, water erosion, wind erosion, or soil acidity.</p> <p>Based on the above, the proposed clearing is unlikely to be at variance with this principle.</p>	<p>Not at variance.</p>
<p>(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.</p>	<p>There are two Bush Forever sites within 5 km of the clearing areas. Leda (Site 349) shared a boundary along the eastern side of the site, and Hillman to Port Kennedy (site 356), situated approximately 3 km south of the site. Additionally, the nearest DBCA managed land is directly south of the site, immediately to the south of Wellard Rd.</p> <p>None of these sites will be impacted by the proposed clearing, as clear demarcation boundaries for clearing areas will be installed, as well as implementation of dust stabilisation controls.</p> <p>Due to mitigation and avoidance strategies via obvious clearing boundary, no impacts to nearby conservation areas are anticipated. Therefore, the proposed clearing is unlikely to be at variance with this principle.</p>	<p>Not at variance.</p>



Principle	Assessment	Conclusion
(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 small scale of clearing required is not expected to cause sediment or nutrient impacts to wetlands, soil acidity or increased salinity. Therefore, the proposed clearing is unlikely to be at variance with this principle.	Not at variance.
(j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the intensity of flooding.	The small scale of clearing required is not expected to alter hydrological processes to the extent that it is likely to cause or exacerbate the incidence of flooding. Therefore, the proposed clearing is unlikely to be at variance with this principle.	Not at variance.

## 4. Environmental approvals and management

The key approval identified as being required and/or potentially required to support the proposed clearing include the following:

- Native Vegetation Clearing permit (NVCP) under s 51E of the EP Act; and
- Development Application in accordance with City of Kwinana Metropolitan Region Scheme zoning development requirements.

Based on the known environmental values of the site and the proposed clearing areas, a referral under the *Environmental Protection and Biodiversity Conservation Act 1999* is not anticipated to be required.

The assessment against the 10 clearing principles concluded that the proposed clearing, whilst resulting in minor reduction in Tuart Woodland PEC will not result in a significant impact to any flora or fauna species, or TECs, particularly with consideration of the proposed mitigation and management measures outlined below.

### 4.1 Environmental mitigation and management

The location of the proposed clearing area has been selected with consideration of the existing environment and quality of native vegetation. As such, the development has been located in a degraded areas and has avoided areas of TEC or which provide potentially suitable breeding habitat for black cockatoos.

Given the proposed clearing areas are within a broader area of already cleared and industrially developed land, incidental impacts to the surrounding environment are not expected. The proposed clearing will be undertaken in a manner that effectively manages dust and hygiene, and that will avoid impacts to retained vegetation and fauna in the surrounding area. Management actions will include:

- Ensure suitably qualified wildlife spotter/handler is on call during clearing works;
- Stabilise cleared areas with methods such as wetting, mulching, or other sealing material; and
- Clearly marking the vegetation required to be cleared.

## 5. Conclusion

The proposed clearing will result in the removal of approximately 1.29 ha of native vegetation in Degraded to Completely Degraded condition. An assessment against the ten clearing principles listed in Schedule 5 of the EP Act has indicated that the proposed clearing is not at variance of any of the principles and can therefore be permitted to occur.

In addition, Aurizon Holdings Limited has committed to implementing appropriate mitigation measures, including having wildlife spotters on call and stabilising cleared areas, to ensure minimal adverse impacts on the surrounding environment.

This application has been developed with due consideration of the relevant cultural values, and Aurizon Holdings Limited remains committed to ongoing consultation with Aboriginal stakeholders and other relevant authorities to address any concerns that may arise during the course of the clearing process.



## 6. Limitations

### Scope of services

This report (“the report”) has been prepared by JBS&G in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and JBS&G. In some circumstances, a range of factors such as time, budget, access and/or site disturbance constraints may have limited the scope of services. This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

### Reliance on data

In preparing the report, JBS&G has relied upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report (“the data”). Except as otherwise expressly stated in the report, JBS&G has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (“conclusions”) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. JBS&G has also not attempted to determine whether any material matter has been omitted from the data. JBS&G will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to JBS&G. The making of any assumption does not imply that JBS&G has made any enquiry to verify the correctness of that assumption.

The report is based on conditions encountered and information received at the time of preparation of this report or the time that site investigations were carried out. JBS&G disclaims responsibility for any changes that may have occurred after this time. This report and any legal issues arising from it are governed by and construed in accordance with the law as at the date of this report.

### Environmental conclusions

Within the limitations imposed by the scope of services, the preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted environmental consulting practices. No other warranty, whether express or implied, is made, including to any third parties, and no liability will be accepted for use or interpretation of this report by any third party.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

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Rev No.	Copies	Recipient	Date
A	1: Electronic	Aurizon Bulk WA	27-Nov-2024
0	1: Electronic	DWER	11-Dec-2024

### 1.1.1.2 Document Status

Rev No.	Author/s	Reviewer	Approved for Issue		
		Name	Name	Signature	Date
0	C Milne H Gavin	R Mason	B Hollyock		11-Dec-2024



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