



## CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

<b>Purpose Permit number:</b>	CPS 10072/1
<b>Permit Holder:</b>	Regional Power Corporation, trading as Horizon Power (Horizon Power)
<b>Duration of Permit:</b>	From 02 May 2024 to 02 May 2029

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

### PART I – CLEARING AUTHORISED

#### 1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of renewable energy infrastructure installation.

#### 2. Land on which clearing is to be done

Lot 505 on Deposited Plan 64832, Exmouth

#### 3. Clearing authorised

The permit holder must not clear more than 32.21 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

### PART II – MANAGEMENT CONDITIONS

#### 4. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- avoid the clearing of *native vegetation*;
- minimise the amount of *native vegetation* to be cleared; and
- reduce the impact of clearing on any environmental value.

#### 5. Weed management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

## 6. Erosion management

Construction must commence within three (3) months of undertaking clearing of *native vegetation* authorised under this permit to reduce the potential for wind and water erosion.

## 7. Directional clearing

The permit holder must:

- (a) conduct clearing authorised under this permit from one direction to the other towards adjacent *native vegetation*; and
- (b) allow a reasonable time for fauna present within the areas being cleared to move into adjacent *native vegetation* ahead of the clearing activity.

## 8. Fauna management – Western pebble-mound mouse habitat

The permit holder must avoid clearing within 50 metres of the active and inactive mounds of western pebble-mound mouse (*Pseudomys chapmani*) recorded in the *Pre-clearance targeted flora and fauna surveys Report* (GHD, February 2024).

## 9. Fauna management – subterranean fauna habitat

The permit holder must avoid clearing the *karst* feature C-455 indicated in the *Karst feature assessment report* (Invertebrate Solutions, August 2023) and its 20-metre buffer.

## 10. Fauna management

The permit holder must:

- (a) fence all excavations on the day of excavating with fine mesh to prevent fauna access; or
- (b) backfill all excavations on the day of excavating with excavated material; or
- (c) cover all excavations on the day of excavating with a cover which prevents entry to the excavations by fauna species; or
- (d) cover all bore holes at the end of each day and backfill upon completion; and
- (e) restrict clearing activities to day-light hours to avoid the possibility of injury to fauna.

## 11. Flora management – Priority flora species

The permit holder must ensure that:

- (a) clearing only one group of priority 2 flora species *Tinospora esiangkara* and three groups of priority 3 flora species *Corchorus congener*, recorded in the *Exmouth Renewable Power Infrastructure - Flora and Fauna Survey Report* (GHD, December 2022) at the following coordinates:

Species	Eastings	Northings
<i>Tinospora esiangkara</i>	202759.543899	7569879.647230
<i>Corchorus congener</i>	202683.868893	7570587.266300
	202831.620738	7570516.037830
	202926.097082	7569961.060870

- (b) no clearing occurs within 20 metres of priority 2 flora species *Tinospora esiangkara* within the permit area, except for those plants mentioned in condition 11(a), as identified in the *Exmouth Renewable Power Infrastructure - Flora and Fauna Survey Report* (GHD, December 2022) and *Pre-clearance targeted flora and fauna surveys Report* (GHD, February 2024), unless approved by the CEO in writing;
- (c) no clearing of priority 3 flora species *Corchorus congener* and *Eremophila forrestii* subsp. *capensis* within the permit area, except for those plants mentioned in condition 11(a), as identified in the *Exmouth Renewable Power Infrastructure - Flora and Fauna Survey Report* (GHD, December 2022) and *Pre-clearance targeted flora and fauna surveys Report* (GHD, February 2024), unless approved by the CEO in writing.

**12. Vegetation management – watercourses and drainage line surface flow**

Permit Holder must:

- (a) avoid clearing *riparian vegetation*;
- (b) ensure that no clearing of *native vegetation* occurs within the drainage line/river/creek areas; and
- (a) maintain the existing surface flow of any watercourse that is to be impacted by the authorised clearing.

**PART III - RECORD KEEPING AND REPORTING**

**13. Records that must be kept**

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

**Table 1: Records that must be kept**

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> <li>(a) the species composition, structure, and density of the cleared area;</li> <li>(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings;</li> </ul>

No.	Relevant matter	Specifications
		<ul style="list-style-type: none"> <li>(c) the date that the area was cleared;</li> <li>(d) the date of construction commencement;</li> <li>(e) direction of clearing;</li> <li>(f) the size of the area cleared (in hectares);</li> <li>(g) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 4;</li> <li>(h) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> in accordance with condition 5; and</li> <li>(i) actions taken in accordance with condition 12.</li> </ul>
2.	In relation to fauna management pursuant to condition 8	(a) actions taken to avoid active and inactive mounds of western pebble-mound mouse in accordance with condition 8.
3.	In relation to fauna management pursuant to condition 9	(a) actions taken to avoid the <i>karst</i> feature in accordance with condition 9
4.	In relation to flora management pursuant to condition 11	<ul style="list-style-type: none"> <li>(a) name, number of individuals of <i>priority flora</i> species cleared in accordance with condition 11(a) and the locations of cleared <i>priority flora</i> species, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings;</li> <li>(b) actions taken to avoid the clearing of <i>priority flora</i> species in accordance with condition 11(b) and 11(c).</li> </ul>

#### 14. Reporting

The permit holder must provide to the *CEO* the records required under condition 13 of this permit when requested by the *CEO*.

#### DEFINITIONS

In this permit, the terms in Table 2 have the meanings defined.

**Table 2: Definitions**

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of

Term	Definition
	the <i>EP Act</i> .
fill	means material used to increase the ground level, or to fill a depression.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
karst	an area of exposed limestone with distinctive features such as caves, caverns and sinkholes and often with underground streams.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
priority flora	means those fauna taxa describes as priority fauna, classes 1, 2, 3, 4 or 5 in the <i>Department of Biodiversity, Conservation and Attractions Threatened and Priority Fauna List for Western Australia</i> (as amended);
riparian vegetation	has the meaning given to it in Regulation 3 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.
weeds	means any plant – <ul style="list-style-type: none"> <li>(a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; or</li> <li>(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or</li> <li>(c) not indigenous to the area concerned.</li> </ul>

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**END OF CONDITIONS**



**Mathew Gannaway**  
**MANAGER**  
 NATIVE VEGETATION REGULATION

*Officer delegated under Section 20  
 of the Environmental Protection Act 1986*

8 April 2024

# Schedule 1

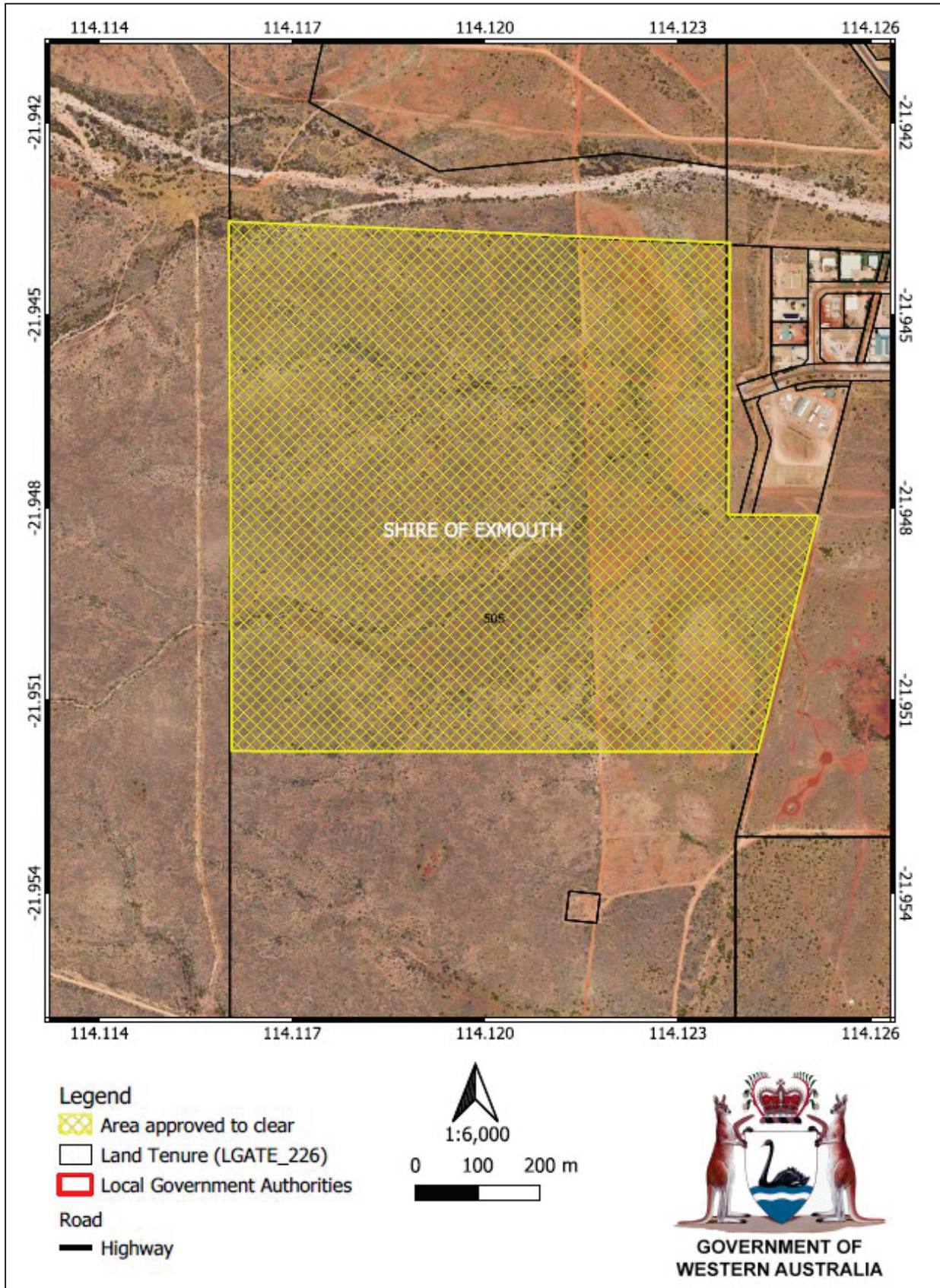


Figure 1: Map of the boundary of the area within which clearing may occur



# Clearing Permit Decision Report

## 1 Application details and outcome

### 1.1. Permit application details

<b>Permit number:</b>	CPS 10072/1
<b>Permit type:</b>	Purpose permit
<b>Applicant name:</b>	Regional Power Corporation, trading as Horizon Power (Horizon Power)
<b>Application received:</b>	10 February 2023
<b>Application area:</b>	32.21 hectares of native vegetation within a 75.7 hectare clearing footprint
<b>Purpose of clearing:</b>	Renewable energy infrastructure installation
<b>Method of clearing:</b>	Mechanical
<b>Property:</b>	Lot 505 on Deposited Plan 64832
<b>Location (LGA area/s):</b>	Shire of Exmouth
<b>Localities (suburb/s):</b>	Exmouth

### 1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area (see Figure 1, Section 1.5). The proposed clearing purpose is for renewable power infrastructure (solar farm) construction in Exmouth (Horizon Power, 2023a).

The Exmouth electricity network is a non-interconnected system, therefore, the proposed renewable infrastructure and existing power station would be the primary supply source for residential and business customers in the town and surrounding area (Horizon Power, 2023b). This project aligns with the Western Australian Climate Policy and presents an opportunity for cost-effective carbon abatement (Horizon Power, 2023b).

The project will comprise a combination of solar generation and battery storage supported by thermal generation. The project's activities consist of the construction of solar arrays generating approximately 10,300 kVA, battery, laydown and construction areas, access tracks and associated supporting infrastructure. The clearing area required for different items as follows (Horizon Power, 2023b):

- Utility corridor – 3.13 hectares
- Arrays - 250 metres x 250 metres (6.25 hectares per array) – 25 hectares
- Access tracks, fire breaks and fencing – 2.25 hectares
- Connection to existing power plant (300 metres x 10 metres) – 0.3 hectares
- Laydown and additional infrastructure elements – 1.53 hectares.

### 1.3. Decision on application

<b>Decision:</b>	Granted
<b>Decision date:</b>	8 April 2024
<b>Decision area:</b>	32.21 hectares of native vegetation within a 75.7 hectare clearing footprint, as depicted in Section 1.5, below.

## 1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and one submission was received. Consideration of matters raised in the public submission is summarised in Appendix B.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix C), relevant datasets (see Appendix G.1), the findings of a flora and fauna surveys, the clearing principles set out in Schedule 5 of the EP Act (see Appendix D), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration the purpose of the clearing is the construction of a solar farm which aligns with the state government decarbonisation policy (Horizon Power, 2023b).

The assessment identified that the proposed clearing will result in:

- impact on habitat for the Western pebble-mound mouse;
- potential impact on the habitat of subterranean species;
- impact on fauna individuals should they be present within the areas to be cleared ;
- impact on three priority flora species (*Corchorus congener*, *Eremophila forrestii* subsp. *capensis* and *Tinospora esiangkara*);
- potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- potential for land degradation due to wind and water erosion; and
- potential impact on watercourses.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the potential impacts of the proposed clearing be minimised and managed to unlikely lead to an unacceptable risk to environmental values. With the proposed management conditions, the Delegated Officer considers that there will not be a significant impact to Western pebble-mound mouse habitat, fauna individuals present at the time and for the duration of clearing, land degradation in the form of wind and water erosion and the proposed clearing is not likely to impact on adjacent vegetation and its habitat values.

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

- avoid, minimise to reduce the impacts and extent of clearing.
- take hygiene steps to minimise the risk of the introduction and spread of weeds.
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.
- avoid the active and inactive mounds of the Western pebble-mound mouse.
- avoid the karst feature C-455.
- securing of any excavations at the end of each day and backfilling once complete to avoid trapping fauna.
- avoid clearing priority flora species, except for one record of *Tinospora esiangkara* and three records of *Corchorus congener*.
- implement management measures regarding the watercourse and drainage line surface flow.
- limit the clearing during daylight hours only.
- commence the construction within three months after the clearing to reduce land degradation impacts.



1.5. Site map

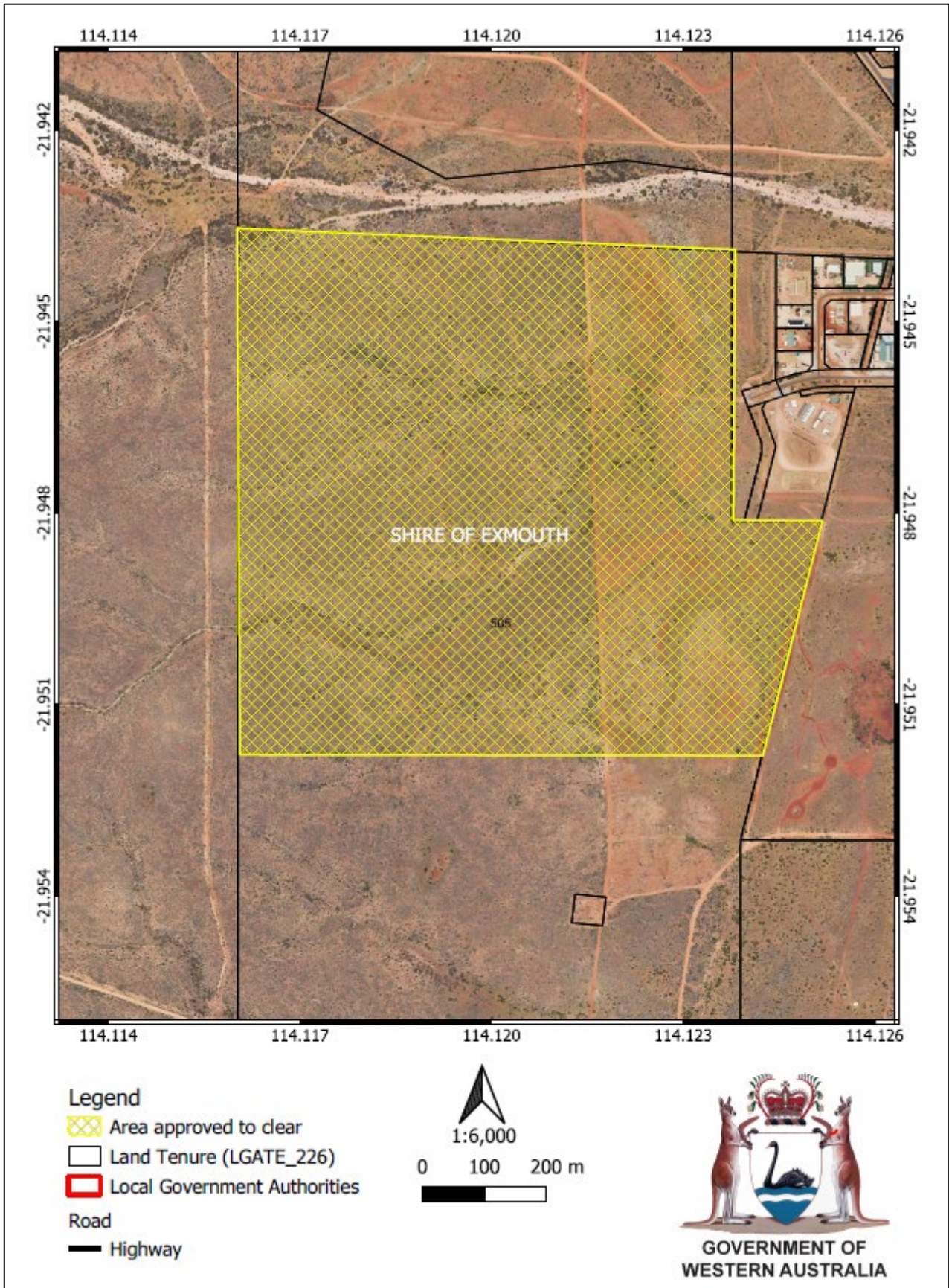


Figure 1 Map of the application area

The area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

## 2 Legislative context

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

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

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

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (P&D Act)
- *Rights in Water and Irrigation Act 1914* (RIWI Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical Guidance – *Subterranean Fauna Surveys for Environmental Impact Assessment* (EPA 2021).

## 3 Detailed assessment of application

### 3.1. Avoidance and mitigation measures

Supporting information (Horizon Power, 2023b) and additional information (Horizon Power, 2023d; 2024) were submitted by the applicant, demonstrating that avoidance and minimisation has been undertaken, specifically:

- (i) Avoidance measures in the period of site selection and project footprint development:
- Placement of the Project adjacent to the existing power station to reduce the clearing associated with additional transmission line infrastructure.
  - Utilization of the existing power station as opposed to construction of a new power station within a new footprint.
  - Placement of infrastructure in relation to avoiding the known active and inactive Western pebble-mound mouse and drainage line vegetation.
  - Maximising construction in previously disturbed areas, minimising clearing in good or better vegetation condition areas.

The applicant advised that the project site is subject to a significant number of constraints, including town planning zoning limitations; proximity to existing infrastructure including existing power station and overlap with water infrastructure easements; drainage lines and natural features including rocky terrain and slopes. Therefore, the sensitive environmental features will be considered prior to construction to prevent impacts, however they are unlikely to be completely avoided given the numerous constraints of the site (Horizon Power, 2023b).

- (ii) Mitigation measures during the design and construction:
- The applicant modified the design (Figure 2), focusing the development on the north and north-eastern corner of the application area to avoid:
    - Active and inactive mounds with a buffer of 50 metres;
    - The karst feature C-455 with a buffer of 20 metres;
    - Most of the priority flora species, except for one record of *Tinospora esiangkara* (Priority 2) and three records of *Corchorus congener* (Priority 3).
  - Clearing will be minimised where possible through placement of assets and access tracks in existing cleared locations where possible.
  - The clearing locations are to be demarcated prior to clearing activities.
  - Clearing areas are to be checked by an environmental specialist or site supervisor prior to clearing to ensure no more than 32.21 ha of clearing is undertaken.

- A pre-clearing environmental toolbox will be held so all staff are aware of their responsibilities under the permit.
- Clearing of native vegetation will be undertaken in a slow, progressive manner in one direction to allow fauna to move away from the clearing area.

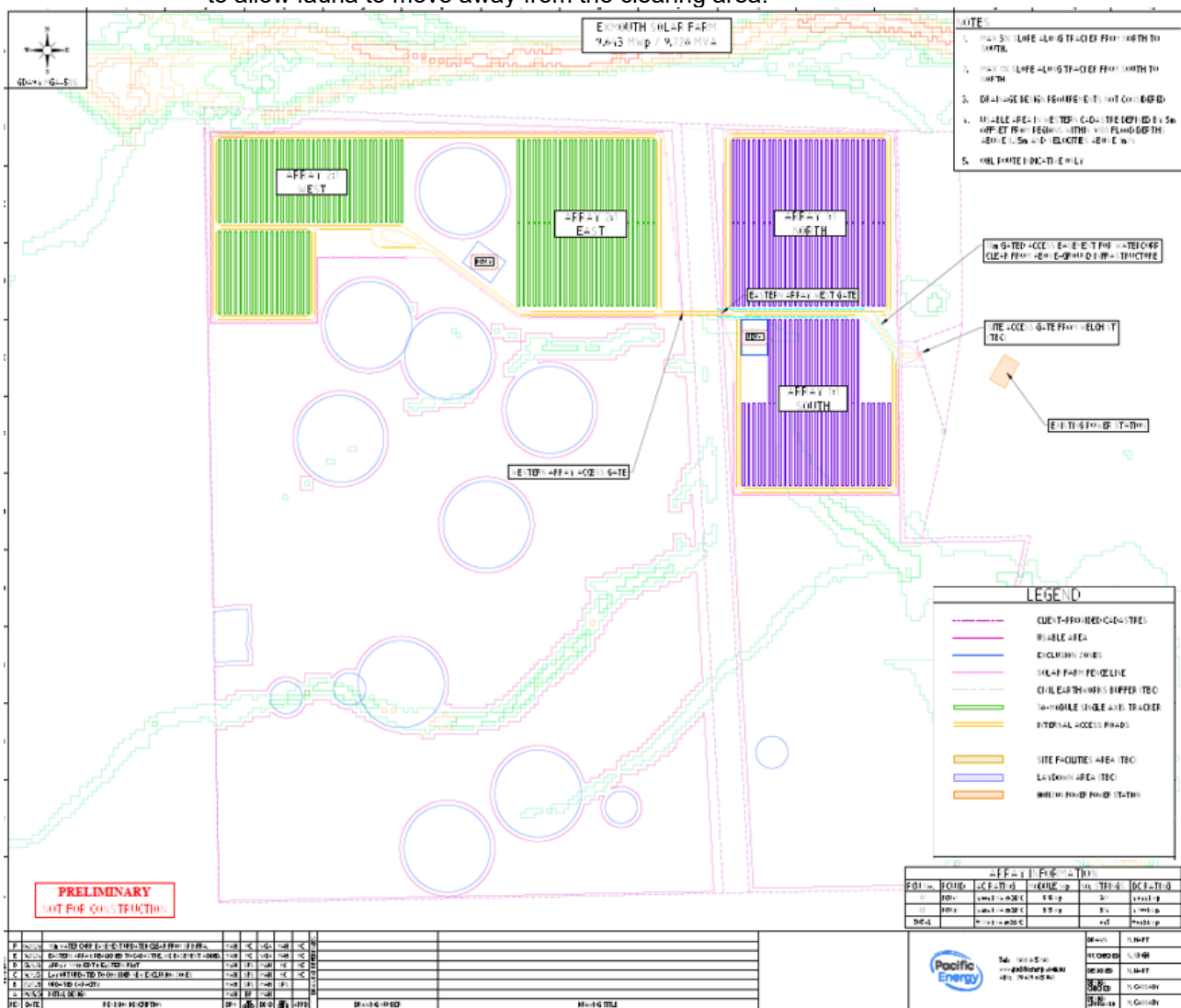


Figure 2. Modified design of the infrastructure to avoid numerous constraints of the proposed site (Horizon Power, 2024a)

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

### 3.2. Assessment of impacts on environmental values

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

The assessment against the clearing principles (see Appendix D) identified that the impacts of the proposed clearing present a risk to biological values (fauna, flora and biodiversity) and land and water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

#### 3.2.1. Biological values (Biodiversity and Fauna) - Clearing Principles (a) and (b)

##### Assessment

The desktop assessment identified that there are 76 conservation significant fauna species recorded in the local area, including 40 bird species, 15 mammal species, 11 invertebrate species, six reptile species and three fish

species. Of which, 39 of these species are migratory bird species or shorebird species associated with coastal habitats not represented within the application area and an additional five species are species only found in marine environments.

Three habitat types have been identified within the application area and described as follows:

- Stony/sandy plain (aligning with vegetation type VT01 in Figure F.1): This habitat type has patches of sandy loam, small clay pans or rocky plain with areas of limestone out cropping in association with low undulating rises. It is likely the ecotone between the undulating low hills of the eastern portion of the Cape Range and coastal sand plains. Vegetation consists of scattered *Corymbia hamersleyana* over a sparse to open mixed Acacia shrubland over a Triodia hummock grassland.
- Undulating low hills (aligning with vegetation type VT02 in Figure F.1): This habitat type comprises the eastern portion of the Cape Range with rocky limestone substrates dominant intermitted by rocky gullies and small clay sedimentary areas. *Corymbia hamersleyana* and scattered mixed shrubs over Triodia hummock grasses dominate this habitat area.
- Creek lines and minor drainage lines (aligning with vegetation type VT03 in Figure F.1): *Corymbia hamersleyana* and dense mixed Acacia shrubs often lined the edges of the drainage lines. Mixed hummock and tussock grasses and small herbs dominate the groundcover along the banks of the creeks with very few scattered plants on the rocky riverbeds. The creek lines/drainage lines were all generally in good condition with minimal weed invasion (buffel grass).

In determining the likelihood of conservation significant fauna occurring within the application area, consideration was given to the results of the preferred habitat types, number of records within the local area, proximity of records to the application area, and the type and condition of the vegetation within the application area. Based on these factors, four terrestrial fauna species and nine subterranean fauna species may possibly occur within the application area (See C.4 for fauna analysis table).

### Terrestrial species

Four terrestrial species include:

- Cape Range stone gecko (*Diplodactylus capensis*) (P2)
- Peregrine falcon (*Falco peregrinus*) (OS)
- Black-footed rock-wallaby (*Petrogale lateralis lateralis*) (EN)
- Western pebble-mound mouse (*Pseudomys chapmani*) (P4)

In addition, Department of Biodiversity, Conservation and Attractions (DBCA) advised that brush-tailed mulgara (*Dasycercus blythi* – P4) has been recently identified in close proximity to the application area. Therefore, this species is also considered.

### Cape Range stone gecko

Cape Range stone gecko (*Diplodactylus capensis*) (Priority 2) is a gecko species endemic to Australia and their distribution is particularly associated with the local landscape of Cape Range (ALA, 2008). There are 58 records of Cape Range stone gecko in the local area with the closest record only two kilometres from the application area. A biological survey has been undertaken with nocturnal searching targeting this species and no individuals were recorded (GHD, 2022). A targeted survey for Cape Range stone gecko was further conducted by undertaking 12 persons nocturnal transects across the application area and active searching where rock and debris were present (GHD, 2024a). No individuals of this species were recorded during the targeted survey (GHD, 2024a). Due to the suitable habitat for this species in the application area footprint (GHD, 2022), the proposed clearing is likely to have impacts on suitable habitat for the Cape Range stone gecko. However, considering that no Cape Range stone gecko has been recorded during the surveys and the extent of similar habitat within the local area, the impacts of the proposed clearing on habitat for this reptile species are unlikely to be significant.

### Peregrine falcon

The peregrine falcon (*Falco peregrinus*) (Other Specially Protected Fauna) is found Australia-wide and occurs in a range of habitats including woodlands, grasslands and coastal cliffs, usually near watercourses (DAWE, 2020). Preferred roosting and breeding habitat for the peregrine falcon includes granite outcrops and coastal cliffs, but in the absence of these habitats, the species has been known to utilise the nests of other bird species or tree hollows for breeding (Marchant et al., 2006). It is considered that the habitat present within the application area may also provide suitable transient foraging habitat for this species as individuals migrate through the landscape. An individual of peregrine falcon was observed at the distance of two kilometres in the west of the application area during the biological survey (GHD, 2022). As such, the peregrine falcon is likely to be a transient visitor to the application area.

However, noting that the peregrine falcon is a highly mobile species with a large home range that does not rely on special niche habitats, it is unlikely that the application area represents significant habitat for the species.

**Black-footed rock-wallaby**

Black-footed rock-wallaby (*Petrogale lateralis lateralis*) (Endangered) was historically widespread but is now restricted to parts of Cape Range, Calvert Range, granite rocks in the Avon Wheatbelt and Salisbury Island. Their habitat is associated with rocky landscape with complex caves and crevices (DBCA, 2017). More than 300 records of black-footed rock wallabies are mapped within the local area with the closest distance of two kilometres from the application area. However, considering no suitable habitat (rocky gullies) are present in the application area, the proposed clearing is unlikely to impact significant habitat for this endangered wallaby species.

**Western pebble-mound mouse**

Western pebble-mound mouse (*Pseudomys chapmani*) (Priority 4) is a native rodent and only found in Western Australia. This species’ known distribution was reported to be restricted to the non-coastal, central and eastern part of the Pilbara region (Start, 1996) and thought to be extinct in the local area (Start, 2000). The status of this species in Cape Range is unclear and known from historical evidence (DBCA, 2023; Start, 1996). There is only one record of this species mapped in the local area (50-kilometre radius) which is approximately 40 kilometres away the application area (GIS database).

The biological survey (GHD, 2022) identified nine mounds (including two mounds confirmed active) of the Western pebble-mound mouse (WPMM) in the application area. Considering the significance of the new records of this species for the Cape Range region, advice from DBCA was sought as follows (DBCA., 2023):

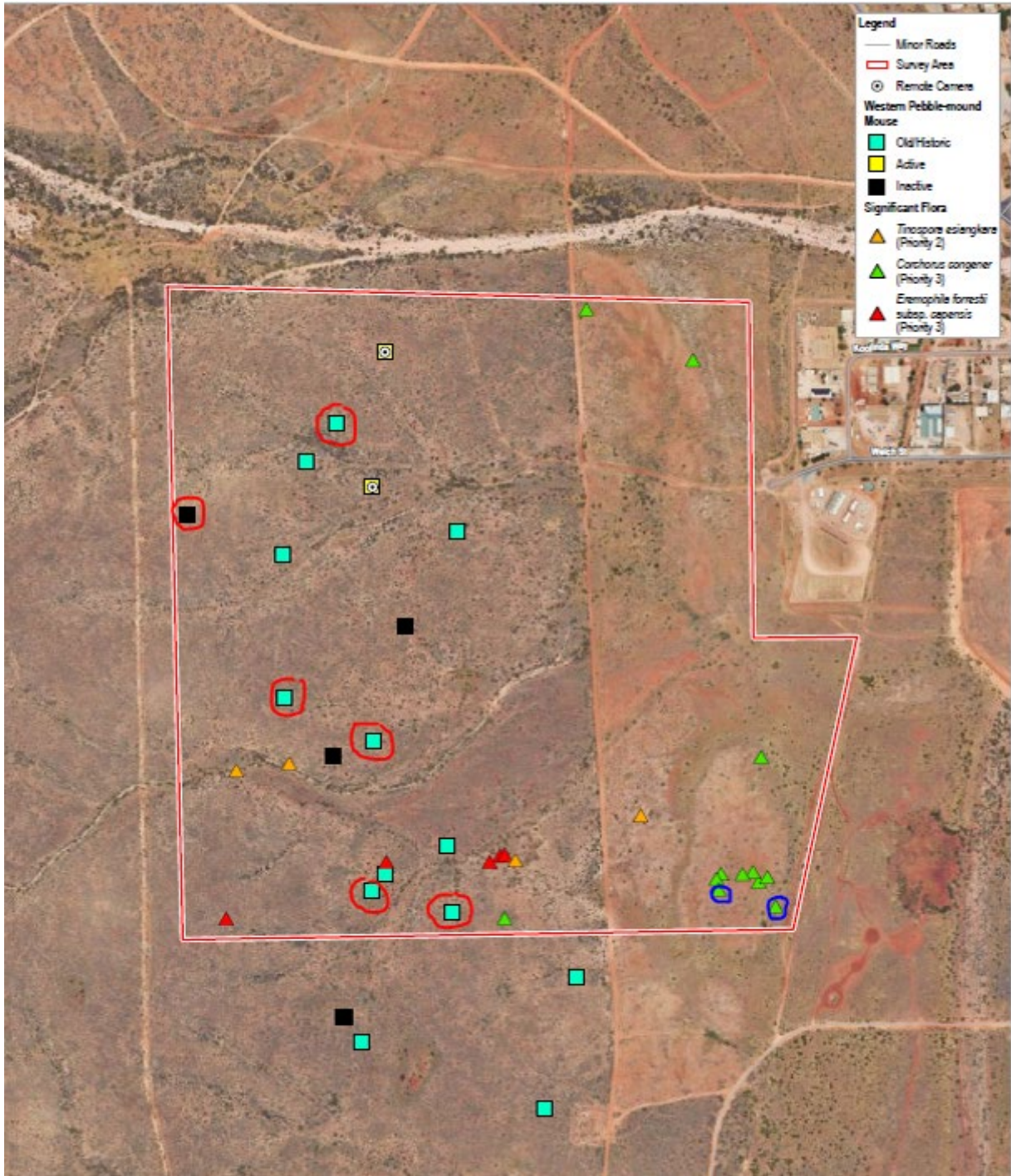
- Avoidance of active and non-active mounds is recommended.
- Further surveys for WPMM are recommended within application area and surrounding habitat to provide better understanding of the species distributions and the subpopulation significance.

A targeted survey on WPMM within the proposed clearing area was conducted in November 2023 using transects spaced 20-30 metres apart, which is considered sufficient to identify mounds in this landscape (GHD, 2024). In addition to nine mounds found in the previous survey (GHD, 2022), the targeted survey identified further six mounds and increased the number WPMM mounds within the application area to 15 mounds, including two active, three inactive and ten old/historical mounds (GHD, 2024a). The description on mound classification is in the below table.

Table 1. Classification of Western pebble-mound mouse (GHD, 2024a)

Classification	Description	Meaning
Active mound	Holes present, it is clear the mound is being tended (pebbles not “settled” and irregular), may or may not have a volcano of pebbles around hole. Mound typically devoid of debris.	Mound is currently being worked and WPMM present.
Inactive mound	Holes not present, mound is intact and appears to be tended but typically rocks “settled” and regular.	Mound intact, potential opportunistic use but not currently presenting an active state.
Old/historical mound	Mound eroded, settled, vegetation and/or debris present.	Mound abandoned

No individuals of WPMM have been identified clearly by the remote camera, which was explained due to the excessively hot conditions during the time of deploying the remote cameras that limited animal activities (GHD, 2024a).



**Figure 3.** Distribution of western pebble-mound mouse mounds (squares) and priority flora species (triangles) identified within the application area. The objects circled are those that were found further during the pre-clearance survey for the CPS 10062/1 in the same footprint for geotechnical investigation works (GHD, 2024a)

A regional survey for WPMM (GHD, 2024b) has also been conducted to identify the regional distribution of this species. Three sites surrounding the application area were investigated and 92 additional mounds were recorded on the eastern flank of the Cape Range in low undulation rocky rises and slopes (GHD, 2024b). The recorded mounds include two active, 24 inactive (with two being potentially which require further assessment to determine actual classification) and 66 old/historical mounds (GHD, 2024b).

To mitigate the impacts on the WPMM, the applicant committed to avoid active and inactive WPMM mounds within the application area with a 50-metre buffer (Horizon Power, 2024). Considering the abundance of old/historical mounds recorded in the surrounding area, and the fact that there are numerous constraints of the sites including WPMM mounds, priority flora species, karst features, and watercourses, the applicant's mitigation measures can be considered appropriate to mitigate the impacts of the proposed clearing on the habitat of this species.

### **Brush-tailed mulgara**

Brush-tailed mulgara (*Dasycercus blythi* – P4) is a nocturnal species, sheltering in borrows during the day. It occupies a range of habitat types, but primarily occur in mature hummock grasslands of spinifex, especially *Triodia basedowii* and *Triodia pungens*; with overlapping home ranges of 1.0 to 14.4 hectares. Occurrence may be influenced by the presence of better watered areas, i.e. in paleo-drainage systems or drainage lines in sandplain/dune habitats. (Menkhorst & Knight, 2011).

There are no records of the brush-tailed mulgara within the local area in the available database, however DBCA advised that this species has been recently recorded near the proposed clearing area (DBCA, 2023). The flora and fauna survey stated that the application area contains no suitable habitat for this species (GHD, 2022). Noting the above, the proposed clearing is unlikely to impact on the significant habitat of the brush-tailed mulgara. Considering DBCA advice of recent nearby records, there is the potential to impact individuals of this species if they present in the application area during the time of clearing. This potential impact will be mitigated by the application of slow directional clearing to allow fauna individuals to move into adjacent vegetation ahead of the clearing activity and restrict the clearing activities during day-light hours.

### **Subterranean species**

The application area is located only 1.2 kilometres from the critical endangered Cameron's Cave Troglotic Community (Threatened Ecological Community - TEC). Although the proposed clearing area lies outside the mapped buffer area of this TEC, DBCA have advised that the applied buffer is indicative, and the underground cave systems may extend further (DBCA, 2023). Ten subterranean fauna species (including nine threatened species) are mapped within the local area and are likely associated with the Cape Range Sub-terranean Waterways wetland system which is mapped within the application area, including:

- Eastern Cape Range bamazomus (*Bamazomus subsolanus*) (T)
- Northern Cape Range draculoides (*Draculoides brooksi*) (T)
- Cameron's Cave pseudoscorpion (*Indohya Damocles*) (T)
- Cave gudgeon (*Milyeringa veritas*) (T)
- Blind cave eel (*Ophisternon candidum*) (T)
- Lance-beaked cave shrimp (*Stygiocaris lancifera*) (T)
- Spear-beaked cave shrimp (*Stygiocaris stylifera*) (P4)
- A stygiochiropus millipede (Cape Range) (*Stygiochiropus isolatus*) (T)
- Cameron's Cave millipede (*Stygiochiropus peculiaris*) (T)

The closest records of the above subterranean species are mapped in the distance of 1.14 to 5.47 kilometres from the application area. Given that these species are subterranean, vegetation within the application area is not considered to directly provide habitat for these species, thus the proposed clearing would only be expected to impact on these species from indirect impacts of the clearing to water quality or cave habitat.

It is noted that the deepest excavation of the proposed clearing is three metres for the solar farm construction (Horizon Power, 2023b) and likely poses low risk to the recharge area of the cave systems. However, should there be karsts occurring within the application area and the karsts are connected, groundwater recharge may happen and impact on the subterranean system due to the proposed activities (DBCA, 2023). Noting this, a subterranean fauna habitat survey was requested by DWER to provide further information to determine whether the proposed clearing has impacts on the subterranean fauna habitat.

A karst survey was undertaken in July 2023 and identified eight karst features within the application area, including one previously known feature Cave C-455 and seven additional features. Survey results related to locations and detailed information of these karst features are presented in Appendix F. Most of the newly identified features are thin limestone conglomerate caprock with a maximum depth of 0.6 - 0.9 metres with some undercutting of the edges and of limited conservation significance (Invertebrate Solutions, 2023a). The applicant committed to avoid the clearing within 20 metre buffer of the feature C-455 (Horizon Power, 2023d).

The water table depth within the application area is estimated to be 7-8 metres (Invertebrate Solutions, 2023a), while the deepest excavation of the proposed clearing is three metres (Horizon Power, 2023b). Therefore, the proposed clearing is unlikely to impact to the groundwater quality and then to stygofauna species.

The geotechnical investigation revealed that no significant troglofauna habitat occurring within the application area, with fine soil present between limestone cobbles infilling any potential void spaces that would provide habitat for troglofaunal (Invertebrate Solutions, 2023b). Furthermore, the endemic troglofauna recorded from Cameron's Cave is highly unlikely to present within the application area because the discontinuous karstic Mowbowa limestone conglomerate that contains Cameron's Cave is separated from the proposed clearing area by an alluvium deposit that serves as a barrier by infilling the subterranean voids (Invertebrate Solutions, 2023a).

Considering the above information and avoidance measure proposed by the applicant, the proposed clearing is unlikely to impact on subterranean fauna habitat.

#### Conclusion

Based on the above assessment, the proposed clearing may impact on habitat of Western pebble-mound mouse and on individuals of fauna if they present at the time of clearing. It is considered that the impacts of the proposed clearing on fauna habitats can be managed to be environmentally acceptable by avoiding known Western pebble-mound mouse habitat when clearing and applying slow directional clearing method. Fencing, covering and backfilling excavations will further avoid potential injuries to fauna.

#### Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Slow directional clearing to allow fauna individuals to move into adjacent vegetation ahead of the clearing activity will minimise impact to individuals.
- Avoiding active and inactive mounds of western pebble-mound mouse.
- Avoiding the karst feature C-455.
- Clearing conducted during daylight hours.
- Fencing/covering excavations at the end of each day and backfilling once complete to avoid trapping fauna.

### **3.2.2. Biological values (flora and biodiversity) - Clearing Principle (a) and (c)**

#### Assessment:

No threatened flora species are mapped within the local area (GIS database) or were identified in the flora and fauna survey (GHD, 2022).

Given the mapped soil, vegetation types and suitable habitat, the following priority flora species may occur within the application area (see Appendix C.3 for the flora analysis table):

- *Acanthocarpus rupestris* (P2)
- *Brachychiton obtusilobus* (P4)
- *Corchorus congener* (P3)
- *Eremophila forrestii* subsp. *capensis* (P3)
- *Tinospora esiangkara* (P2)

Three records of *Corchorus congener*, *Eremophila forrestii* subsp. *capensis* and *Tinospora esiangkara* were identified within the application area (GHD, 2022, 2024a) (Figure 2). The remaining two species were not identified within the application area but in another site (Lot 550) which is located approximately 1.8 kilometres west of the proposed clearing area (GHD, 2022).

*Tinospora esiangkara* (P2) is a climbing shrub known within a very restricted distribution within the Cape Range area (extent of occurrence in Western Australia of approximately 790 square kilometres) (DBCA, 2023). A total of 25 individuals of *Tinospora esiangkara* have been recorded within both Lot 550 and 505 (360 Environmental, 2021 & GHD, 2022). These records had previously not been recorded in the area (DBCA, 2023). The flora and fauna survey (GHD, 2022) identified four individuals at four sites within the application area representing approximately 16% of the local population and approximately 11% of the regional population (DBCA, 2023). The clearing of four individuals within the application area may represent a significant local/regional impact, however, as the species is also known to occur at several locations in the Northern Territory and Queensland, impacts are unlikely to affect the conservation of the species (DBCA, 2023). The applicant modified the design to avoid most of this species' records (see section 3.1) and proposed to clear only one record of *Tinospora esiangkara* for future works (Horizon Power, 2024d). Noting DBCA advice and the mitigation measures, the proposed clearing can be considered unlikely to have a significant impact on this species.

*Corchorus congener* (P3) is a spreading shrub known from six locations across the Carnarvon and Pilbara bioregions (extent of occurrence approximately 25,000 square kilometres) (DBCA, 2023). A total of 81 individuals of *Corchorus congener* from 14 locations have been recorded within both Lot 550 and 505 in flora surveys (360 Environmental, 2021; GHD, 2022 & 2024). The flora and fauna surveys (GHD, 2022 & 2024) identified 63 individuals of *Corchorus congener* at 12 locations within the application area representing approximately 78% of the local population. DBCA advised that the clearing of all *Corchorus congener* plants within the application area may represent a significant local impact, but it is unlikely to be significant at the regional or species level (DBCA, 2023). To avoid these records, the applicant modified the design and proposed to clear seven individuals at three locations. Noting DBCA advice and applicant's mitigation measure, the proposed clearing is unlikely to significantly impact on this species.



*Eremophila forrestii* subsp. *capensis* (P3) is a shrub known from several collections within a very restricted distribution within the Cape Range peninsula (extent of occurrence in Western Australia of approximately 588 square kilometres) (DBCA, 2023). Flora surveys (360 Environmental, 2021 & GHD, 2022) located 562 individuals of *Eremophila forrestii* subsp. *capensis* from 114 sites, which represent new records within the species known distribution (DBCA, 2023). The flora and fauna survey (GHD, 2022) recorded seven individuals of *Eremophila forrestii* subsp. *capensis* at five sites within the application area, representing approximately 1% of the local population. Therefore, impacts are unlikely to be considered significant at a local, regional or species level (DBCA, 2023). In addition, the applicant committed to avoid all the records of this species within the application area. Therefore, the proposed clearing does not have an impact on this species.

Weed species of *Aerva javanica*, *Bidens bipinnata* and *Cenchrus ciliaris* were observed within the application area (GHD, 2022). The proposed clearing will increase the risk of spreading these weeds into surrounding remnant vegetation.

#### Conclusion:

The proposed clearing does not impact threatened flora and is unlikely to significantly impact on three priority flora species present within the application area. The clearing activities may pose a risk of spreading weeds to adjacent remnant vegetation.

#### Conditions:

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- avoid clearing priority flora species, except for one record of *Tinospora esiangkara* and three records of *Corchorus congener*.
- implement weed control measures to minimise the risk of the introduction and spread of weeds into adjacent remnant vegetation.

### **3.2.3. Land and water resources - Clearing Principles (f), (g) and (i)**

#### **Land**

The soil within the application area is mapped as pale sandy gravels, gravelly pale deep sand, shallow gravel over duricrust, pale deep sand, some sandy duplexes, yellow deep sand (DPIRD, 2022). The sandy nature of the soil makes it susceptible to wind erosion. Furthermore, the hilly landscape of the proposed clearing area also increases the risk of water erosion if the vegetation is cleared.

#### **Water resources**

The eastern portion of the application area lies above the Cape Range Subterranean Waterways wetland system. A karst feature survey was conducted and identified eight karst features within the application area (see Appendix F). In addition to the previously known feature Cave C-455, most of the newly identified features have depths of less than 0.9 metres (Invertebrate Solutions, 2023a). Meanwhile, the depth of groundwater within the proposed clearing area is estimated approximately seven metres under the ground level, similar to the known groundwater level from the industrial estate to the south of the application area (Invertebrate Solutions, 2023a). In addition, the deepest excavation of the proposed works is three metres (Horizon Power, 2023b). The applicant also committed to avoid clearing the cave C-455 (depth of more than four metres – Horizon Power, 2023d). Noting these measures, the proposed clearing is unlikely to impact the groundwater and the Cape Range Subterranean Waterways.

There are some minor non-perennial watercourses mapped within the application area. The proposed clearing may result in the removal of riparian vegetation which increases the mobilization of soil into the watercourse, however, this should only be a short term, localised impact and limited to during the clearing process itself. As the watercourses are non-perennial, if clearing and works are undertaken during the dry season, these impacts would be significantly reduced. These potential impacts can be mitigated by avoiding clearing vegetation within the watercourses.

Conclusion: Based on the above assessment, the proposed clearing is not likely to significantly impact the subterranean waterways but may have impacts on the surface watercourses. There is also land degradation risks due to the soil and water erosion if the vegetation is cleared.

Conditions: To address the potential impacts on the surface watercourses, the following management measures will be required as condition on the clearing permit:

- Vegetation management – watercourses and drainage line surface flow.
- Avoiding the karst feature cave C-455.

- Construction must commence no later than three months after the clearing.

### 3.3. Relevant planning instruments and other matters

The Shire of Exmouth advised their objections to the clearing for the solar farm project due to the lack of development approval and the inconsistency with the Shire's development planning (Shire of Exmouth, 2023). Horizon Power has liaised with the Shire regarding the development planning and got the Management Order P831701XE issued by the Department of Planning Plans and Heritage to utilise the site for the designated purpose of "Electricity Purposes" (Horizon Power, 2024c).

Electricity related works have been included in the definition of public works under the *Land and Public Works Amendment Act 2023*. Therefore, the proposed works (renewable energy infrastructure installation) does not require development approval due to exemptions under Section 60 of the *Energy Corporations Act 2005* and Section 6 of the P&D Act (Horizon Power, 2023c).

DWER's Water Source Protection Planning team advised that since the application area is located adjacent to a Priority 1 area of the Exmouth Water Reserve (in the west of the application area), the applicant should apply best management practice during clearing (DWER, 2023).

The application area is mapped within the Warnangura (Cape Range) Cultural Precinct. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

**End**

## Appendix A. Additional information provided by applicant

Summary of further information provided	Consideration of information
Karst feature survey and subterranean fauna impact assessment	This information is presented in Section 3.2 of the Report
Pre-clearance survey for CPS 10062/1, targeting on western pebble-mound mouse, Cape Range stone gecko and priority flora	The information is presented in Section 3.2.1 and 3.2.2 of the Report
Regional targeted survey on western pebble-mound mouse	The information is presented in Section 3.2.1 of the Report
Information on the exemptions for getting development approval, Management Order	This information is presented in Section 3.3 of the Report
Updated design	This information is presented in Section 3.1 of the Report

## Appendix B. Details of public submissions

The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and one submission was received. The summary of submitter' comments and DWER's relevant consideration are presented in the following table.

Summary of comments	Consideration of comment
The need to consider the loss of CO2 sequestration that occurs with clearing, as well as the increased emissions arising from the decomposition of the cleared material	Of relevance to the role of vegetation clearing in climate change impacts is the State Government's Native Vegetation Policy for Western Australia (Government of Western Australia, 2022), which aims for net gain in landscape-scale conservation and restoration. The Policy states that while achieving a net gain outcome is expected at a landscape scale, this is not necessarily a required outcome at an individual project level. Noting the scale of the clearing in comparison to the surrounding remnant vegetation, proposed clearing is not expected to see result in a potential change to climate change impacts.
The survey areas contain ten flora species considered to be of local significance, high value of diversity with 257 flora taxa, ten vegetation types considered to be of local significance. The majority of the survey area in excellent condition, with seven priority flora species identified.	The application area contains three priority flora species, including one Priority 2 and two Priority 3 species. DWER sought advice from DBCA who advised that the proposed clearing is unlikely to affect the conservation of Priority 2 species and is unlikely to be significant at local, regional and species level of Priority 3 species. This has been discussed in Section 3.2.2 of this Report.
Cumulative impact of the clearing should need to be considered in the decision to grant a clearing permit	Within 50-kilometre radius from the application area, approximately 562 hectares of native vegetation have been approved to be cleared, which accounts for 0.4 per cent of the current extent of vegetation. The additional clearing of 32.2 hectares under this application will account for 0.02 per cent of the current extent. The extent of remnant vegetation within the local area is more than 94 per cent of its Pre-European area. Noting these, the proposed clearing is considered unlikely to have a significant cumulative impact on the vegetation extent.
The buffer area of the Cape Range Subterranean Waterways, a Nationally Important Wetland, overlaps	The potential impacts on the Cape Range Subterranean Waterways and subterranean fauna have been

Summary of comments	Consideration of comment
the development envelope (DE). This is an unacceptable risk to take on a Nationally Important Wetland	considered and assessed under Section 3.2.1 and 3.2.3 of this Report. The proposed clearing is not likely to significantly impact the Cape Range Subterranean Waterways.
Cape Range National Park (approximately 5.5 kilometres from the DE) has the potential to be impacted by this development due to the high risk of spreading invasive species and pathogens from topsoil displacement and disturbance	Considering the relatively long distance from the application area to the Cape Range National Park, the proposed clearing is considered unlikely to directly impact on the conservation of the Cape Range National Park. Risks of spreading weeds to adjacent vegetation will be minimized by condition on the permit.
The survey area contains highly significant fauna habitat, including habitat for the Western pebble-mound mouse (P4), a species considered locally extinct previously. The impact to conservation significant species is unknown; further, more-in-depth research is required.	A targeted survey has been undertaken for the Western pebble-mound mouse. Ninety-two mounds were recorded at three sites in the surrounding areas of the application area. The relevant results of this survey have been utilised to determine the significance of impacts on this species.
Other impacts: damage tourist attractive place, damage soil, destroy and interfere culturally important sites	The potential land degradation risks have been considered and described in section 3.2.3 of this Report. The applicant is aware of Aboriginal Heritages Sites within the application area. It is the permit holder's responsibility to comply with the <i>Aboriginal Heritage Act 1972 (WA)</i> and ensure that no Aboriginal Sites of Significance are damaged through the clearing process. Consideration of impact on tourism is beyond the scope of this application assessment.
Recommendation: In the pastoral zone of the Pilbara, Murchison and Gascoyne, utilizing some pastoral leases (at least partially) in degraded or very degraded condition that have been re-possessed by the WA State Government to develop renewable energy	Noting the proposed clearing was determined to not have a significant impact, there was no requirement to consider potential offsets to counterbalance the significance of the clearing.

## Appendix C. Site characteristics

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

### C.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of an expansive area of native vegetation in the extensive land use zone of Western Australia. It is located two kilometres from the ocean. The proposed clearing area is part of a large area of remnant vegetation.  Aerial imagery indicates the local area (50-kilometre radius from the centre of the area proposed to be cleared, not including the ocean) retains approximately 94.4 per cent of the original native vegetation cover.
Ecological linkage	The application area does not lie in any formally mapped or informal ecological linkages.
Conservation areas	The nearest conservation area to the application area is Cape Range National Park which is located approximately 6.0 kilometres to the southwest of the application area.
Vegetation description	Flora and Fauna Survey (GHD, 2022) indicate the vegetation within the proposed clearing area consists of:

Characteristic	Details
	<ul style="list-style-type: none"> <li>• Plain area (VT01): <i>Corymbia hamersleyana</i> isolated trees over sparse shrubland over *<i>Cenchrus ciliaris</i> tussock grassland and <i>Triodia epactia</i> and <i>T. basedowii</i> isolated hummock grasses on sandy/clay/loam plains.</li> <li>• Area of limestone hills and ranges (VT02): <i>Melaleuca cardiophylla</i> open mid shrubland over sparse low shrubland over <i>Triodia wiseana</i> and <i>T. epactia</i> hummock grassland on low undulating rocky limestone hills and ranges.</li> <li>• Areas of Drainage Lines (VT03): <i>Corymbia hamersleyana</i> open woodland to low isolated trees over <i>Acacia</i> spp. tall shrubland over <i>Senna artemisioides</i> subsp. <i>oligophylla</i>, <i>Eremophila longifolia</i> and <i>Gossypium robinsonii</i> open mid shrubland over <i>Triodia epactia</i> isolated hummock grasses with *<i>Cenchrus ciliaris</i>, <i>Cymbopogon ambiguous</i> and <i>Themeda triandra</i> isolated tussock grasses on rocky sandy/loam broad drainage lines</li> </ul> <p>The map of the vegetation types is available in Appendix F.</p> <p>This is consistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> <li>• Cape range Beard 663, which is described as Hummock grassland with scattered shrubs or mallee <i>Triodia</i> spp. <i>Acacia</i> spp., <i>Grevillea</i> spp., <i>Eucalyptus</i> spp. (Shepherd et al, 2001)</li> </ul> <p>The mapped vegetation type retains approximately 89 per cent of the original extent (Government of Western Australia, 2019).</p> <p>Note: * introduced flora</p>
Vegetation condition	<p>Flora and Fauna Survey (GHD, 2022) indicate the vegetation within the proposed clearing area is in excellent to poor (Trudgen, 1991) condition</p> <p>The full Trudgen (1991) condition rating scale is provided in Appendix E.</p> <p>Vegetation condition mapping is available in Appendix F.</p>
Climate and landform	<p>Climate: Mean maximum temperature is 32.0 degrees Celsius.</p> <p>Mean minimum temperature is 17.84 degrees Celsius.</p> <p>Rainfall: Mean annual rainfall is 253.9 millimetres.</p> <p>Landform: Dissected limestone plateaux, hills and ridges with gorges and steep stony slopes supporting hard spinifex, sparse shrubs and eucalypts</p>
Soil description	<p>The soil is mapped as Range System 204Ra, briefly described as pale sandy gravels, gravelly pale deep sand, shallow gravel over duricrust, pale deep sand, some sandy duplexes, yellow deep sand.</p>
Land degradation risk	<p>The land is described at very low land degradation risk for acidification and salinity (DPIRD, 2022). Noting the sandy soils present, land degradation in the form of wind and water erosion may occur.</p>
Waterbodies	<p>The desktop assessment and aerial imagery indicated that there are some minor non-perennial surface watercourses running through the application area. The ocean is located approximately two kilometres east of the application area.</p>
Hydrogeography	<p>The eastern portion of the application area lies within the Cape Range Subterranean Waterways, a subterranean wetland listed in the Directory of Important Wetlands in Australia.</p> <p>The application area lies within the Pilbara Surface Water Area and the Gascoyne Groundwater Area proclaimed under the RIWI Act. The application area is located adjacent to a Priority 1 Public Drinking Water Source Area of Exmouth Water Reserve.</p>

Characteristic	Details
	Groundwater salinity within the application area is mapped as from 500 to 1000 milligrams per litre total dissolved solids.
Flora	<p>According to available databases, there are 25 priority flora species and no threatened flora species mapped within the local area. The closest recorded species is <i>Corchorus congener</i> (P3) which is mapped 500 metres away from the application area footprint.</p> <p>Three records of <i>Corchorus congener</i>, <i>Eremophila forrestii</i> subsp. <i>capensis</i> and <i>Tinospora esiangkara</i> were identified within the application area (GHD, 2022, 2024a).</p>
Ecological communities	There is one threatened critically endangered ecological community, Camerons Cave Troglobitic Community, recorded within the local area, approximately 1.7 kilometres south of the application area.
Fauna	<p>The desktop assessment identified that a total of 76 threatened or priority fauna species have been recorded within the local area (excluding the ocean), including 26 threatened fauna species, three extinct fauna species, 11 priority fauna species, and 36 specially protected fauna species.</p> <p>Five terrestrial fauna species and nine subterranean fauna species may possibly occur within the application area during to suitable habitat.</p>

### C.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Carnavon	8,382,890.35	8,360,801.46	99.74	1,020,434.08	12.17
Vegetation complex					
Beard vegetation association 663*	29,068.26	25,866.32	88.98	7,414.33	25.51
Local area					
50km radius	145,391.2	137,230.90	94.39	-	-

\*Government of Western Australia (2019)

### C.3. Flora analysis table

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

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records in local area	Were identified within the application area in the survey? [Y, N, N/A]
<i>Acanthocarpus rupestris</i>	P2	Y	Y	Y	3.9	8	N

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records in local area	Were identified within the application area in the survey? [Y, N, N/A]
<i>Brachychiton obtusilobus</i>	P4	Y	Y	Y	1.1	13	N
<i>Corchorus congener</i>	P3	Y	Y	Y	0.5	10	Y
<i>Eremophila forrestii</i> subsp. <i>capensis</i>	P3	Y	Y	Y	10.5	16	Y
<i>Tinospora esiangkara</i>	P2	Y	Y	Y	4.4	7	Y

P: priority

#### C.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records in local area	Most recent record in local area	Are surveys adequate to identify? [Y, N, N/A]
<b>Terrestrial</b>						
<i>Diplodactylus capensis</i> (Cape Range stone gecko)	P2	Y	2.3	58	2007	N/A
<i>Falco peregrinus</i> (Peregrine falcon)	OS	Y	1.3	3	2013	N/A
<i>Petrogale lateralis lateralis</i> (black-footed rock-wallaby)	EN	Y	2.0	323	2020	N/A
<i>Pseudomys chapmani</i> (Western pebble-mound mouse)	P4	limited knowledge of habitat	40.4	1	2011	Y
<b>Subterranean</b>						
<i>Bamazomus subsolanus</i> (Eastern Cape Range bamazomus)	EN	If subterranean waterways/caves/sinkholes/fissures present	5.5	55	2008	N/A
<i>Draculoides brooksi</i> (Northern Cape Range draculoides)	EN		1.1	47	2008	N/A
<i>Indohya damocles</i> (Cameron's Cave pseudoscorpion)	CR		1.4	27	1995	N/A
<i>Milyeringa veritas</i> (Cave gudgeon)	VU		1.1	99	2018	N/A
<i>Ophisternon candidum</i> (blind cave eel)	VU		1.5	26	2009	N/A
<i>Stygiocaris lancifera</i> (Lance-beaked cave shrimp)	VU		3.3	12	2018	N/A
<i>Stygiocaris stylifera</i> (Spear-beaked cave shrimp)	P4		2.0	5	1996	N/A
<i>Stygiochiropus isolatus</i> (a stygiochiropus millipede (Cape Range))	VU		2.0	6	2015	N/A
<i>Stygiochiropus peculiaris</i> (Cameron's Cave millipede)	CR		1.4	15	1994	N/A

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

## Appendix D. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a)</u>: <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment</u>:</p> <p>The area proposed to be cleared contains priority flora and suitable habitat for conservation significant fauna.</p>	May be at variance	Yes <i>Refer to Section 3.2.1 and 3.2.2, above.</i>
<p><u>Principle (b)</u>: <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment</u>:</p> <p>The area proposed to be cleared contains habitat for conservation significant fauna.</p>	At variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (c)</u>: <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment</u>:</p> <p>The area proposed to be cleared does not contain habitat for threatened flora (GHD, 2022, 2024a).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (d)</u>: <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment</u>:</p> <p>The area proposed to be cleared is not likely to contain flora indicative of a threatened ecological community or necessary for the maintenance of nearby threatened ecological communities.</p>	Not likely to be at variance	No
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e)</u>: <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment</u>:</p> <p>Extents of the mapped vegetation type and native vegetation in the local area are consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	Not likely to be at variance	No
<p><u>Principle (h)</u>: <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment</u>:</p> <p>The closest conservation area is approximately 6.0 kilometres away from the application area. Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	Not likely to be at variance	No
<b>Environmental value: land and water resources</b>		



Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (f)</u>: <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment</u>:</p> <p>The proposed clearing is within the mapped boundary of the Directory of Important Wetlands in Australia ‘Cape Range Subterranean Waterways’</p> <p>Given some minor non-perennial watercourses are recorded within the application area, the proposed clearing is within an environment associated with a watercourse or wetland.</p>	At variance	<p>Yes</p> <p><i>Refer to Section 3.2.3, above.</i></p>
<p><u>Principle (g)</u>: <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment</u>:</p> <p>Soils within the application area have a high wind and water erosion risk.</p>	May be at variance	<p>Yes</p> <p><i>Refer to Section 3.2.3, above.</i></p>
<p><u>Principle (i)</u>: <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment</u>:</p> <p>Given the number of water courses and the Cape Range Subterranean Waterways recorded within the application area, the proposed clearing may impact surface and ground water quality. However, impacts are not likely to be significant.</p>	May be at variance	<p>Yes</p> <p><i>Refer to Section 3.2.3, above.</i></p>
<p><u>Principle (j)</u>: <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment</u>:</p> <p>The topographic contours in the surrounding area indicate that the application area slopes towards the ocean which is likely to support the natural flows and reduce the flood risk. The proposed clearing is unlikely to contribute to increased incidence or intensity of flooding.</p>	Not likely to be at variance	No

## Appendix E. Vegetation condition rating scale

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

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from

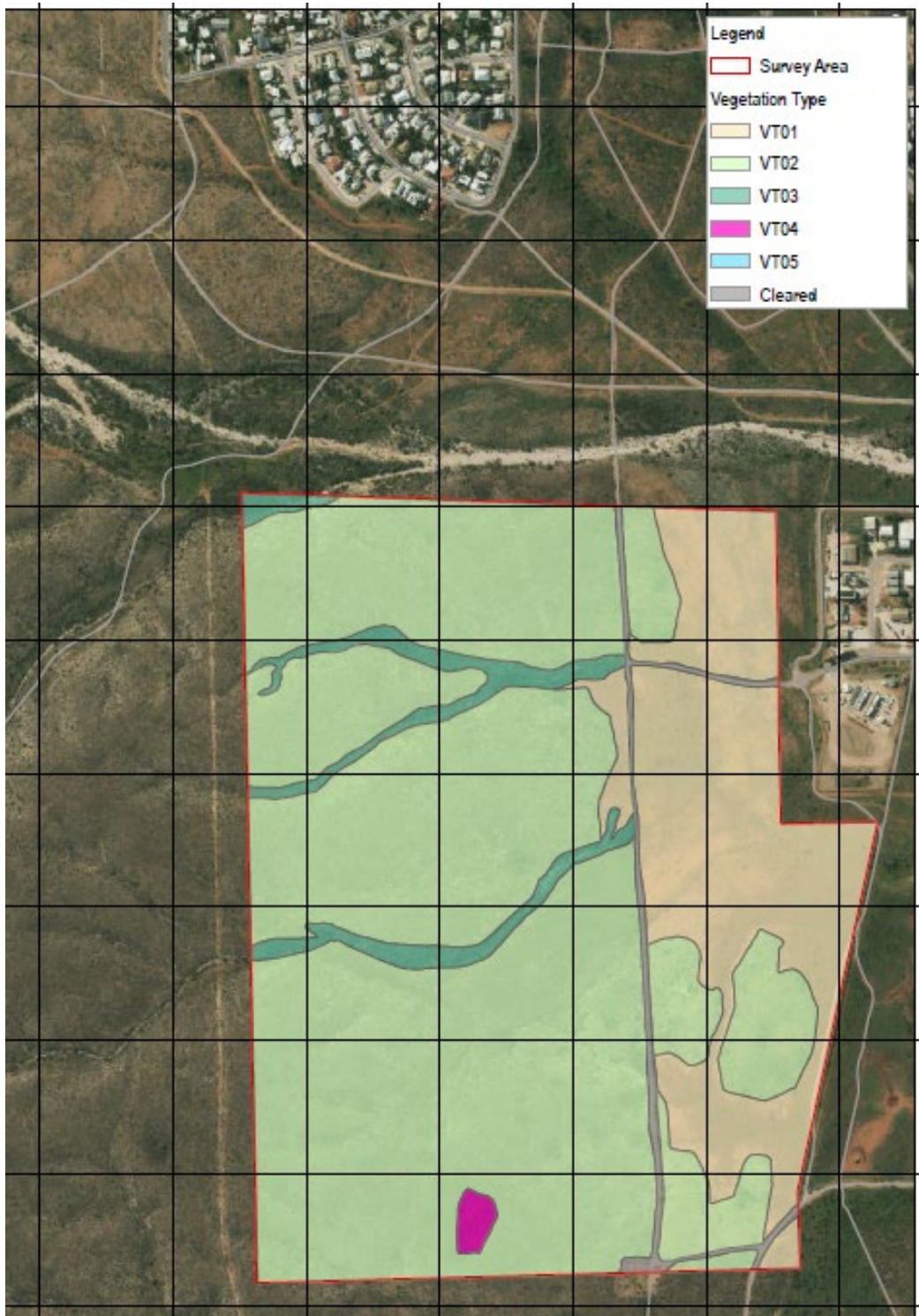
Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

**Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)**

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

**Appendix F. Biological survey information excerpts**

Maps on the distribution of vegetation types and vegetation condition in the application area identified by the Flora and Fauna Survey (GHD, 2022) are shown below. *Note: the southern part of the survey area is outside of the application area.*



**Figure F.1.** Map on vegetation types in the application area (VT01, VT02 and VT03)

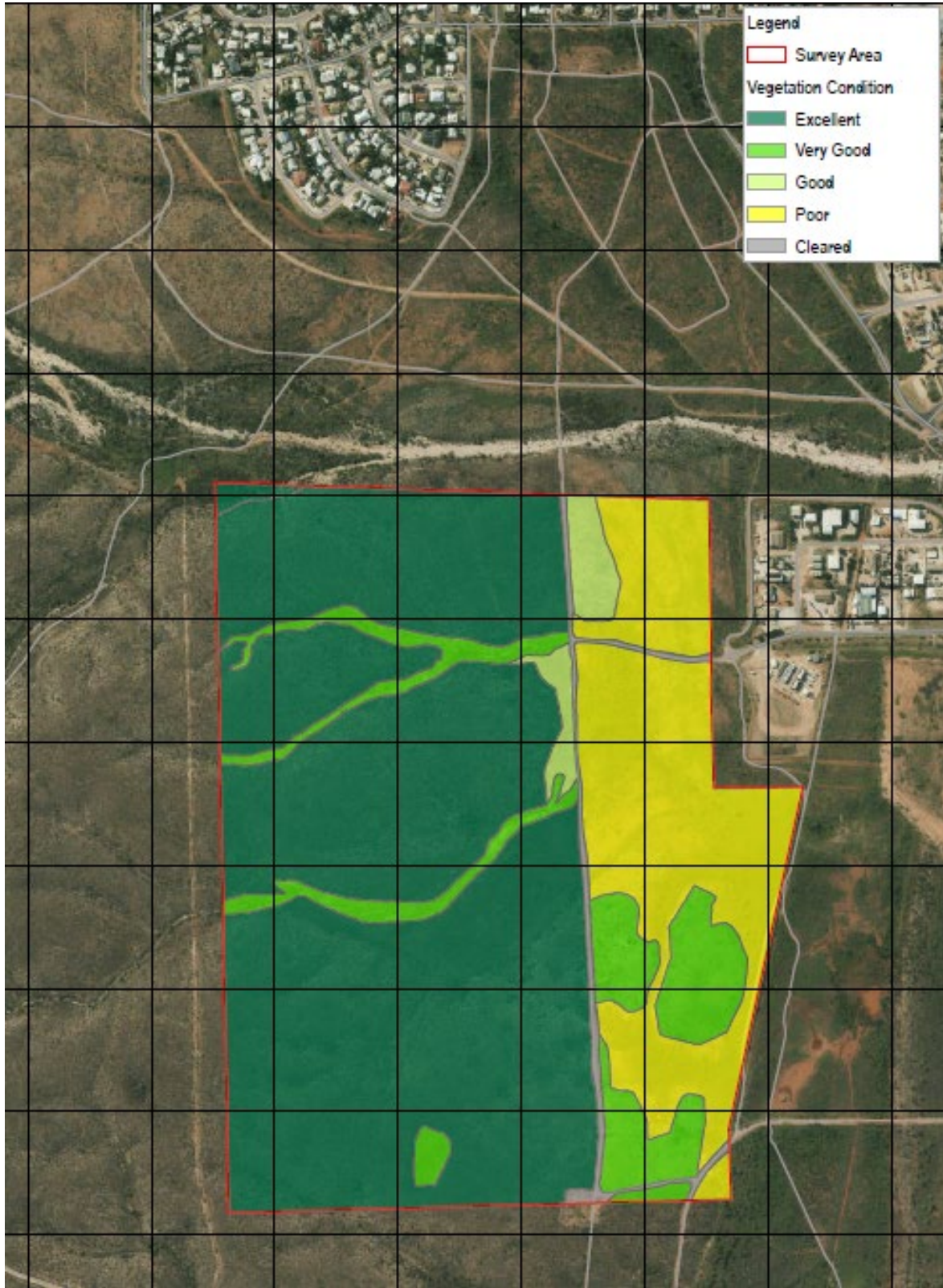


Figure F.2. Map on vegetation condition in the application area

VT01



VT02



VT03



Figure F.3. Representative photos of vegetation types within the application area (GHD, 2022)

Results on the karst feature survey within in the application area (Invertebrate Solutions, 2023a) are shown below.

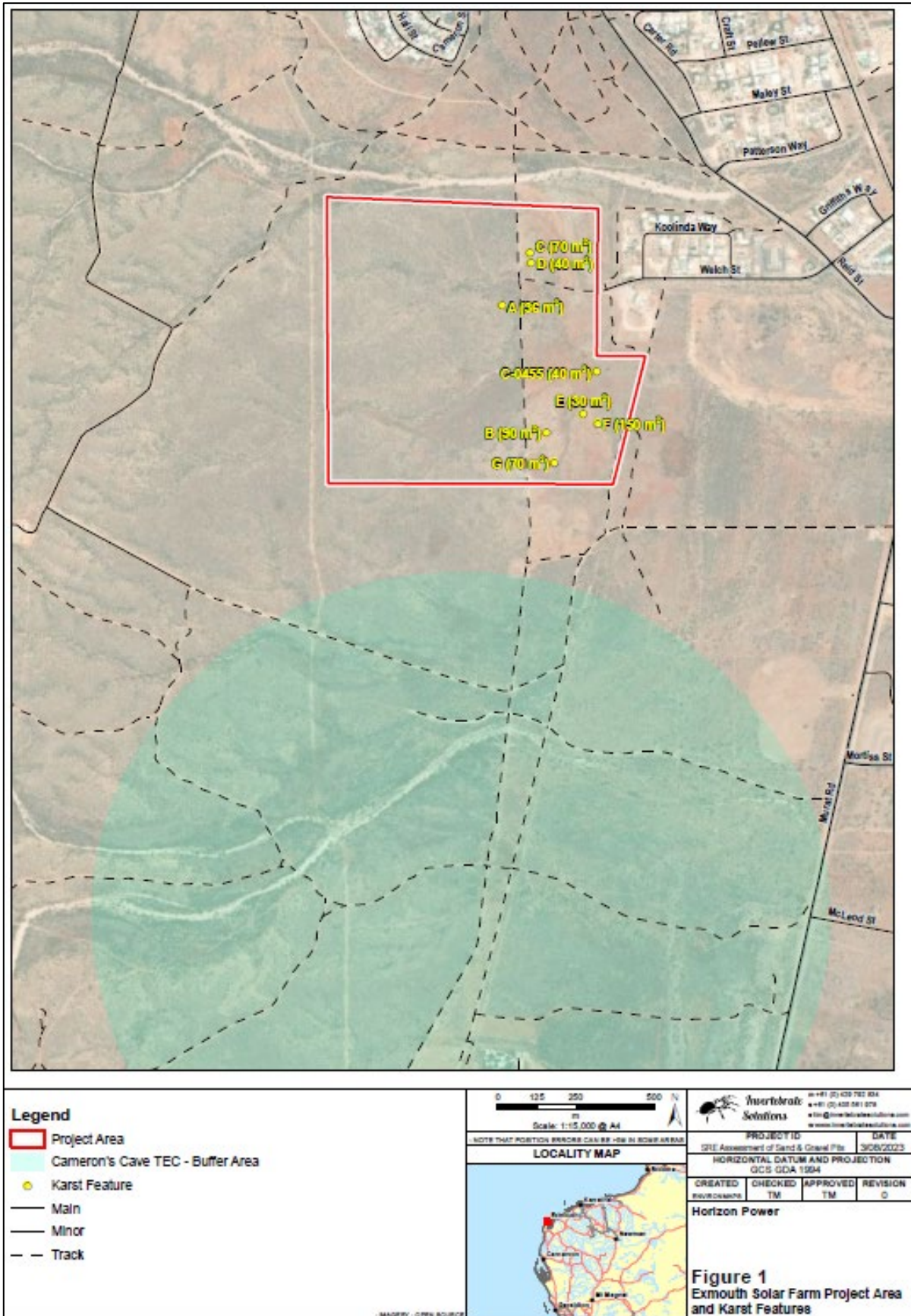


Figure F.3. Location of karst features identified in the application area.

## Karst Assessment

The site inspection by Invertebrate Solutions located one previously known karst feature, Cave C-455 and seven additional karst features (Figure 1). The majority of the newly identified features are thin limestone conglomerate caprock with a maximum depth of 0.6 – 0.9 m with some undercutting of the edges. These superficial karst features are of limited conservation significance. One rockhole was located (Feature B). Feature B is solutionally developed and may contain water after rain events and would therefore be used by fauna in the local area intermittently. The largest caprock exposure (Feature F) exhibited extensive undercutting and contained a small cave of approximately 25 m<sup>2</sup> that is used by local fauna as a refuge with remains of Euros (*Macropus robustus erubescens*) and snail shells present. Images of each karst feature are shown in Table 2.

Table 1 Karst features and caves located within the Project area.

Feature	Location	Description
C-455	S21.94859 E114.12376	A solution tube with maximum explored depth of 4 m. Continues however too tight for further exploration. A shallow creek bed adjacent on the north side of C-455 delivers water into the entrance during extreme rainfall events. Area of 40 m <sup>2</sup> .
Feature A	S21.94669 E114.12104	Broken/collapsed caprock area spanning 36 m <sup>2</sup> . Maximum depth of 0.8 m. Some limited undercutting of edges.
Feature B	S21.95033 E114.12232	Solutionally developed rockhole. Possibly contains water after rainfall events. Area of 90 m <sup>2</sup>
Feature C	S21.94518 E114.12185	Broken/collapsed caprock area spanning 70 m <sup>2</sup> . Maximum depth of 0.9 m. Some limited undercutting of edges.
Feature D	S21.94546 E114.12189	Broken/collapsed caprock area spanning 40 m <sup>2</sup> . Maximum depth of 0.8 m. Some limited undercutting of edges.
Feature E	S21.94978 E114.12338	Broken/collapsed caprock area spanning 30 m <sup>2</sup> . Maximum depth of 0.6 m. Some limited undercutting of edges.
Feature F	S21.95007 E114.12379	Broken/collapsed caprock area spanning 150 m <sup>2</sup> . Maximum depth of 1.0 m. Extensive undercutting. A cave. Cave floor area is 25 m <sup>2</sup> . Contains remains of euro, snail shells. Several entrances.
Feature G	S21.95119 E114.12255	Broken/collapsed caprock area spanning 70 m <sup>2</sup> . Maximum depth of 0.6 m. Some limited undercutting of edges.



Figure F.4. Photos of karst features identified within the application area



Results on the regional survey on Western pebble-mound mouse (GHD, 2024b) are shown below.

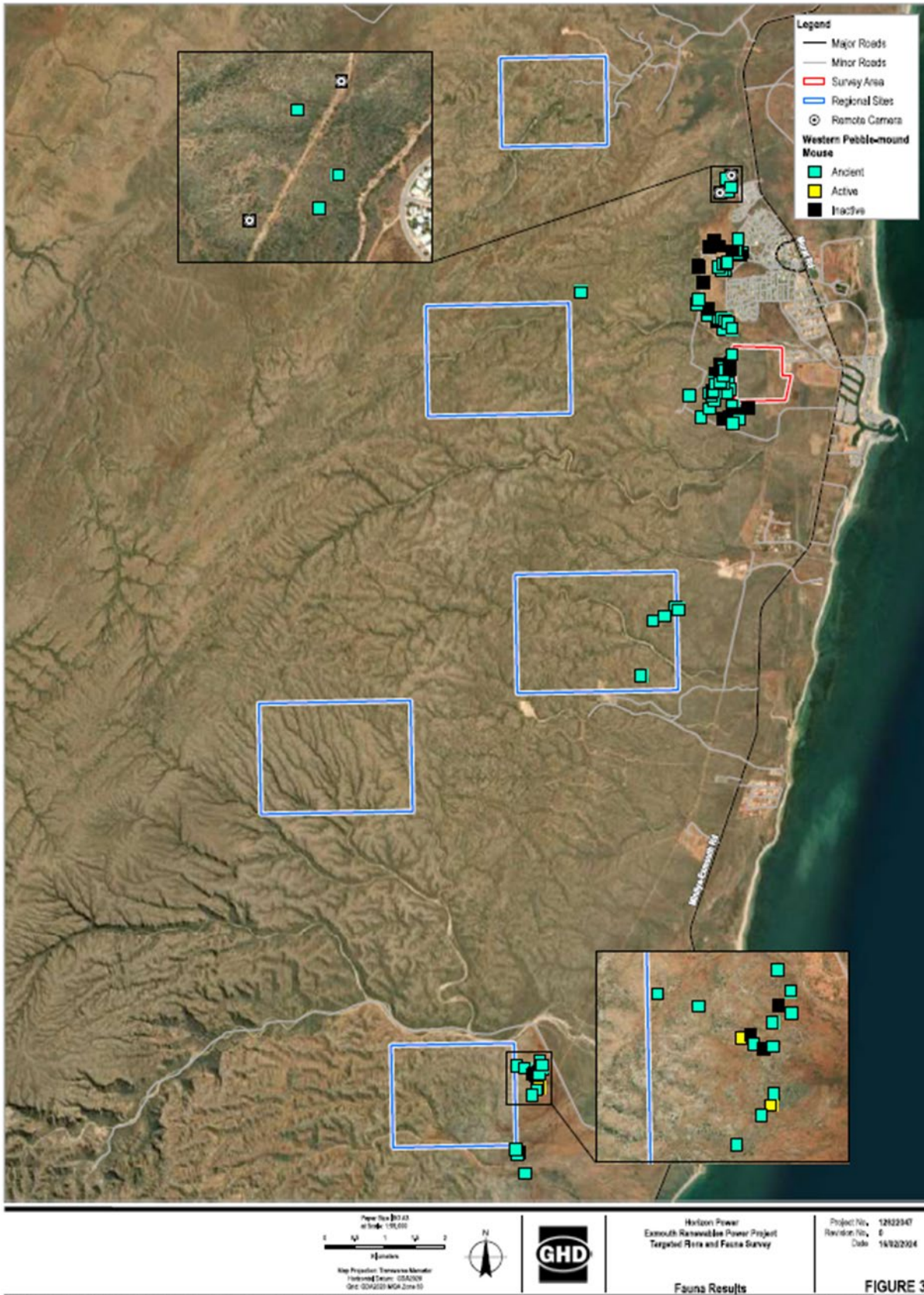


Figure F.5. Mounds of Western pebble-mound mouse identified in the surrounding area (GHD, 2024b)

## Appendix G. Sources of information

### G.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Remnant Vegetation, All Areas
- Soil Landscape Mapping – Best Available

Restricted GIS Databases used:

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

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