GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 10372/1
Permit Holder:	Regional Power Corporation trading as Horizon Power
Duration of Permit:	From 10 January 2025 to 10 January 2035

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 installation of electrical infrastructure.

2. Land on which clearing is to be done

Hearson Cove Road Reserve (PIN 1350353), Burrup
Lot 24 on Deposited Plan 241372, Burrup
Lot 156 on Deposited Plan 215598 (Reserve 39776), Burrup
Lot 366 on Deposited Plan 215500, Burrup
Lot 464 on Deposited Plan 194584 (Reserve 49120), Burrup
Lot 501 on Deposited Plan 401915 (Reserve 41636), Burrup
Lot 538 on Deposited Plan 221364, Burrup
Lot 540 on Deposited Plan 221364 (Reserve 42311), Burrup
Lot 550 on Deposited Plan 406755 (Reserve 52836), Burrup
Lot 551 on Deposited Plan 406755, Burrup
Lot 552 on Deposited Plan 406755 (Reserve 52836), Burrup
Lot 554 on Deposited Plan 406755, Burrup
Lot 555 on Deposited Plan 406755, Burrup
Lot 558 on Deposited Plan 406755, Burrup
Lot 559 on Deposited Plan 406755, Burrup
Lot 640 on Deposited Plan 29300, Burrup
Lot 641 on Deposited Plan 29300, Burrup
Lot 644 on Deposited Plan 28840, Burrup
Lot 645 on Deposited Plan 28840, Burrup
Lot 669 on Deposited Plan 32484, Burrup

Lot 678 on Deposited Plan 32810, Burrup

Lot 701 on Deposited Plan 411760, Burrup

Lot 3013 on Deposited Plan 42282 (Reserve 49121), Burrup

3. Clearing authorised

The permit holder must not clear more than 14.4 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 to 4 of Schedule 1.

4. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 10 January 2030.

PART II – MANAGEMENT CONDITIONS

5. 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:

(a) avoid the *clearing* of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared; and

(c) reduce the impact of *clearing* on any environmental value.

6. 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.

7. Clearing not authorised – avoidance areas

(a) Prior to undertaking any *clearing* authorised under this permit, the permit holder must demarcate the areas cross hatched red in Figure 1 to 4 of Schedule 1.

(b) The permit holder must ensure that no *clearing* of native vegetation occurs within the areas cross-hatched red in Figure 1 to 4 of Schedule 1, unless approved by the *CEO*.

8. Fauna management – mudflat habitat

The permit holder must not clear more than 1.5 hectares of *native vegetation* within the areas cross-hatched orange in Figure 5 of Schedule 1.

9. Vegetation management – watercourse and drainage line surface flow

(a) The permit holder must not clear more than 2.5 hectares of *riparian vegetation* within the areas cross-hatched yellow in Figure 1 to 4 of Schedule 1.

(b) Where a *watercourse* or *drainage line* is to be impacted by authorised *clearing*, the permit holder must ensure surface flow is maintained or is reinstated downstream into existing natural *drainage lines*.

10. Demarcation of the clearing area

Prior to undertaking any *clearing* authorised under this permit, the permit holder must demarcate the *clearing* area to avoid inadvertent removal of adjacent *native vegetation*.

11. Vegetation management – Burrup rock pile PEC

(a) Prior to undertaking any *clearing* authorised under this permit within the areas cross-hatched yellow on Figure 1 to 4 of Schedule 1, the permit holder must engage a *botanist* to conduct a survey of the areas to be cleared for occurrences of the 'Burrup Peninsula rock pile communities' state listed Priority Ecological Community (Burrup rock pile PEC).

(b) Where the Burrup rock pile PEC is identified under condition 11(a), the permit holder must not cause or allow *clearing* of more than 0.5 hectares total of the identified Burrup rock pile PEC within the areas cross-hatched yellow on Figure 1 to 4 of Schedule 1.

(c) Where the Burrup rock pile PEC is identified under condition 11(a), the permit holder must not cause or allow:

(i) *clearing* within 10 metres of the identified Burrup rock pile PEC; or

(ii) *clearing* of the identified Burrup rock pile PEC,

except where the *clearing* occurs in accordance with condition 11(b) or is approved by the *CEO*.

(d) Where an occurrence of the Burrup rock pile PEC is identified under condition 11(a) of this permit, the permit holder must include the following in a report submitted to the *CEO* within three months of undertaking any *clearing* authorised under this permit:

(i) the location and extent of the Burrup rock pile PEC occurrence recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(ii) the location and extent of the Burrup rock pile PEC cleared in accordance with 11(b) recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(iii) the name of the *botanist* that undertook clearance surveys under condition 11(a) of this permit; and

(iv) the methodology used to survey the permit area.

12. Fauna management – western pebble-mound mouse

(a) Within seven (7) days of undertaking any *clearing* authorised under this permit within the area cross-hatched yellow in Figure 1 to 4 of Schedule 1, the permit holder must engage a *fauna specialist* to undertake a pre-clearance survey of the areas to be cleared for the western pebble-mound mouse (*Pseudomys chapmani*), including the identification and inspection of mounds.

(b) Where evidence of mounds are identified under condition 12(a) of this permit, the permit holder shall:

(i) engage a *fauna specialist* to flag the location of the mounds; and

(ii) not clear within 50 metres of the flagged mounds.

(c) Where western pebble-mound mouse mounds are identified under condition 12(a) of this permit, the permit holder must include the following in a report submitted to the *CEO* within three months of undertaking any *clearing* authorised under this permit:

(i) the location of any western pebble-mound mouse mounds identified, using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(ii) the name of the *fauna specialist* that undertook clearance surveys under condition 12(a) of this permit; and

(iii) the methodology used to survey the permit area.

13. Fauna management – northern quoll

(a) Prior to undertaking any *clearing* authorised under this permit, the permit holder must engage a *fauna specialist* to inspect the 'minor drainage line' and 'rocky hills with exposed boulder piles' habitat types, as described in the 'Hybrid Renewable Power Plant: Fauna Survey' (dated January 2020) within the combined areas cross-hatched yellow in Figures 1-4 of Schedule 1, to identify *northern quoll denning habitat*.

(b) Where *northern quoll denning habitat* is identified under condition 13(a) of this permit, the permit holder must engage a *fauna specialist* to make a determination of whether the *northern quoll denning habitat* is *occupied*.

(c) Where *northern quoll denning habitat* is determined not to be *occupied* in accordance with condition 13(b), the *northern quoll denning habitat* must only be cleared immediately after the inspection.

(d) Where *northern quoll denning habitat* is determined to be *occupied* in accordance with condition 13(b), and *clearing* of the *northern quoll denning habitat* cannot be avoided, the *northern quoll denning habitat* must not be cleared until:

(i) the northern quoll individual(s) has moved on from that area to adjoining suitable habitat, or

(ii) the northern quoll individual(s) has been removed by a *fauna specialist*.

(e) Any northern quoll individual(s) removed in accordance with condition 13(d)(ii) must be relocated by a *fauna specialist* to an area of suitable habitat, in accordance with a section 40 authorisation under the *Biodiversity Conservation Act 2016*.

(f) Where *northern quoll denning habitat* cannot be retained in accordance with condition 13(d), the permit holder must provide notification to the *CEO* within three months of *clearing* the *northern quoll denning habitat*.

(g) Where northern quoll individual(s) are identified under condition 13(b), the permit holder must within 14 calendar days provide the following records to the *CEO*:

(i) the number of individuals identified;

(ii) the date each individual was identified;

(iii) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(iv) the number of individuals removed and relocated;

(v) the relevant qualifications of the *fauna specialist* undertaking removal and relocation;

(vi) the date each individual was removed;

(vii) the method of removal;

(viii) the date each individual was relocated;

(ix) the location where each individual was relocated to, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and

(x) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

14. Other fauna management – fauna spotter

(a) The permit holder must:

(i) engage a fauna spotter to traverse the area cross-hatched yellow on Figure 1 to 4 of Schedule 1 ahead of *clearing* machinery immediately prior to, and for the duration of, *clearing* activities; and

(ii) conduct *clearing* activities in a slow, progressive manner in one direction, towards adjacent native vegetation, to allow fauna to move into adjacent native vegetation ahead of the *clearing* activity.

(b) *Clearing* activities must cease in any area where native fauna individual(s) are identified under condition 14(a) until native fauna individual(s) have moved on from that area to adjoining vegetation.

(c) Where *conservation significant fauna* individual(s) are identified under condition 14(a) of this permit, the permit holder must include the following in a report submitted to the *CEO* within three months of undertaking any *clearing* authorised under this permit:

(i) the species of each *conservation significant fauna* individual(s) identified;

(ii) the number of individuals identified;

(iii) the date each individual was identified;

(iv) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(v) the relevant qualifications of the fauna spotter undertaking identification, under condition 14(b); and

(vi) details pertaining to the circumstances of any death of, or injury sustained by, a *conservation significant fauna* individual.

15. Revegetation and rehabilitation – *temporary works*

The permit holder must:

(a) Retain the vegetative material and topsoil removed by *clearing* authorised under this permit and stockpile the vegetative material and topsoil in an area that has already been cleared.

(b) At an *optimal time* and no later than six (6) months following *clearing* authorised under this permit, *revegetate* and *rehabilitate* the area(s) that are no longer required for the purpose for which they were cleared under this permit (*temporary works*) by:

(i) re-shaping the surface of the land so that it is consistent with the surrounding five (5) metres of uncleared land;

(ii) ripping the ground on the contour to remove soil compaction; and

(iii) laying the vegetative material and topsoil retained under condition 15(a) on the cleared area(s).

(c) Within 24 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 15(a) of this permit:

(i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and

(ii) engage an *environmental specialist* to make a determination as to whether the composition, structure and density determined under condition 15(c)(i) of this permit will, without further revegetation, result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area.

(d) If the determination made by the *environmental specialist* under condition 15(c)(ii) is that the species composition, structure, and density determined under condition 15(c)(i) will not, without further revegetation, result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, the permit holder must *revegetate* the area by deliberately *planting local provenance* propagating material and/or *direct seeding* of *local provenance* seeds that will result in a similar species composition, structure, and density of *native vegetation* to pre-clearing vegetation types in that area.

(e) Where additional *planting* or *direct seeding* of *native vegetation* is undertaken in accordance with condition 15(d), the permit holder must repeat the activities required by condition 15(c) and 15(d) within 24 months of undertaking the additional *planting* or *direct seeding* of *local provenance native vegetation*.

(f) Where a determination is made by an *environmental specialist* under condition 15(c)(ii) that the composition, structure and density within areas *revegetated* and *rehabilitated* will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, that determination shall be submitted to the *CEO* within three months of the determination being made by the *environmental specialist*.

(g) Where a notice is received from the *CEO:*

(i) stating that the *CEO* disagrees with the determination submitted under condition 15(f); and

(ii) specifying the required further *planting* of *local provenance* propagating material and/or *direct seeding* of *local provenance* seeds that in the *CEO*'s reasonable opinion are necessary to ensure that the *native vegetation* will result in a similar species composition, structure and density to that of pre-*clearing* vegetation types in that area;

(iii) the permit holder must carry out the further *planting* and/or *direct seeding* specified in the notice, during the next *optimal time* occurring after receiving the notice from the *CEO*.

PART III - RECORD KEEPING AND REPORTING

16. 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	(a) the species composition, structure, and density of the cleared area; (b) the location where the *clearing* occurred, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was *cleared*; (d) the direction in which clearing was undertaken; (e) the size of the area cleared (in hectares); (f) actions taken to avoid, minimise, and reduce the impacts and extent of *clearing* in accordance with condition 5; (g) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with condition 6; (h) actions taken in accordance with condition 7; (i) actions taken in accordance with condition 8; and (j) actions taken in accordance with condition 10;
2.	In relation to vegetation management pursuant to condition 9	(a) the size of the area cleared (in hectares) in accordance with condition 9(a); (b) the location where *clearing* occurred in accordance with condition 9(a), recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) actions taken to maintain or reinstate surface flow of any watercourse or drainage line impacted by the *clearing*, in accordance with condition 9(b).
3.	In relation to vegetation management pursuant to condition 11	(a) actions taken in accordance with condition 1113; and (b) a copy of the *botanist*'s report.

No.	Relevant matter	Specifications
4.	In relation to western pebble-mound mouse management pursuant to condition 12	(a) actions taken to flag and avoid buffers to western pebble-mound mouse mounds in accordance with condition 12(b); and (b) a copy of the *fauna specialist's* report in accordance with condition 12(c).
5.	In relation to northern quoll management pursuant to condition 13	(a) actions taken to avoid impacts to northern quoll in accordance with condition 13; and (b) a copy of the *fauna specialist*'s report in accordance with condition 13(g).
6.	In relation to other fauna management pursuant to condition 14	(a) actions taken to avoid impacts to other fauna in accordance with condition 14; and (b) a copy of the fauna spotter's report in accordance with condition 14(c).
7.	In relation to *revegetation* and *rehabilitation* pursuant to condition 15	(a) actions taken in accordance with condition 15 to *revegetate* and *rehabilitate* temporarily cleared areas; (b) the size of the area(s) *revegetated* and *rehabilitated*; (c) the date(s) on which the *revegetation* and *rehabilitation* was undertaken; and (d) the boundaries of the area(s) *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings.

17. Reporting

(a) The permit holder must provide to the *CEO*, on or before 30 June of each calendar year, a written report containing:

(i) the records required to be kept under condition 16; and

(ii) records of activities done by the permit holder under this permit between 1 January and 31 December of the preceding calendar year.

(b) If no *clearing* authorised under this permit has been undertaken, a written report confirming that no *clearing* under this permit has been undertaken, must be provided to the *CEO* on or before 30 June of each calendar year.

(c) The permit holder must provide to the *CEO*, no later than 90 calendar days prior to the expiry date of the permit, a written report of records required under condition 16, where these records have not already been provided under condition 17(a).

DEFINITIONS

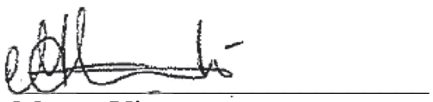
In this permit, the terms in Table 2 have the meanings defined.

Table 2: Definitions

Term	Definition
botanist	means a person who holds a tertiary qualification specialising in environmental science or equivalent and has a minimum of two (2) years' work experience in Western Australian flora identification and undertaking flora surveys native to the bioregion being inspected or surveyed, or who is approved by the *CEO* as a suitable environmental specialist for the bioregion, and who holds a valid flora licence issued under the *Biodiversity Conservation Act 2016*.
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*.
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 the EP Act.
conservation significant fauna	means those fauna taxa listed as threatened or specially protected species under the *Biodiversity Conservation Act 2016* (WA) or as priority fauna classes 1, 2, 3, or 4 in the Department of Biodiversity, Conservation and Attractions *Threatened and Priority Fauna List for Western Australia* (as amended from time to time) and/or listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999*.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
direct seeding	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.
drainage line	means a natural depression that carries surface water runoff.
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent and has a minimum of 2 years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the *CEO* as a suitable environmental specialist.
EP Act	*Environmental Protection Act 1986* (WA)
fauna specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the *CEO* as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*.
fill	means material used to increase the ground level, or to fill a depression.
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared.
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.
northern quoll	Means rocky outcrops, tree hollows, hollow logs, termite mounds, and

Term	Definition
denning habitat	goanna burrows (Hill & Ward, 2010), which provide suitable denning habitat for northern quoll.
northern quoll habitat	means the 'minor drainage line' and 'rocky hills with exposed boulder piles' habitat types, as described in the 'Hybrid Renewable Power Plant: Fauna Survey', dated January 2020.
occupied	means currently occupied, or where uncertainty exists, potentially occupied, by the northern quoll (*Dasyurus hallucatus*).
optimal time	means the period from November to December for undertaking direct seeding and no planting without irrigation for undertaking planting.
planting	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.
rehabilitate	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
revegetate	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
riparian vegetation	has the meaning given to it in Regulation 3 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.
temporary works	means access tracks, spoil areas, side tracks, site offices, storage areas, laydown areas, extraction sites, camps, project surveys, pre-construction activities, and similar works associated with a project activity that are temporary in nature.
watercourse	has the meaning given under section 3 of the *Rights in Water and Irrigation Act 1914.*
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS



Meenu Vitarana
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

18 December 2024

Schedule 1

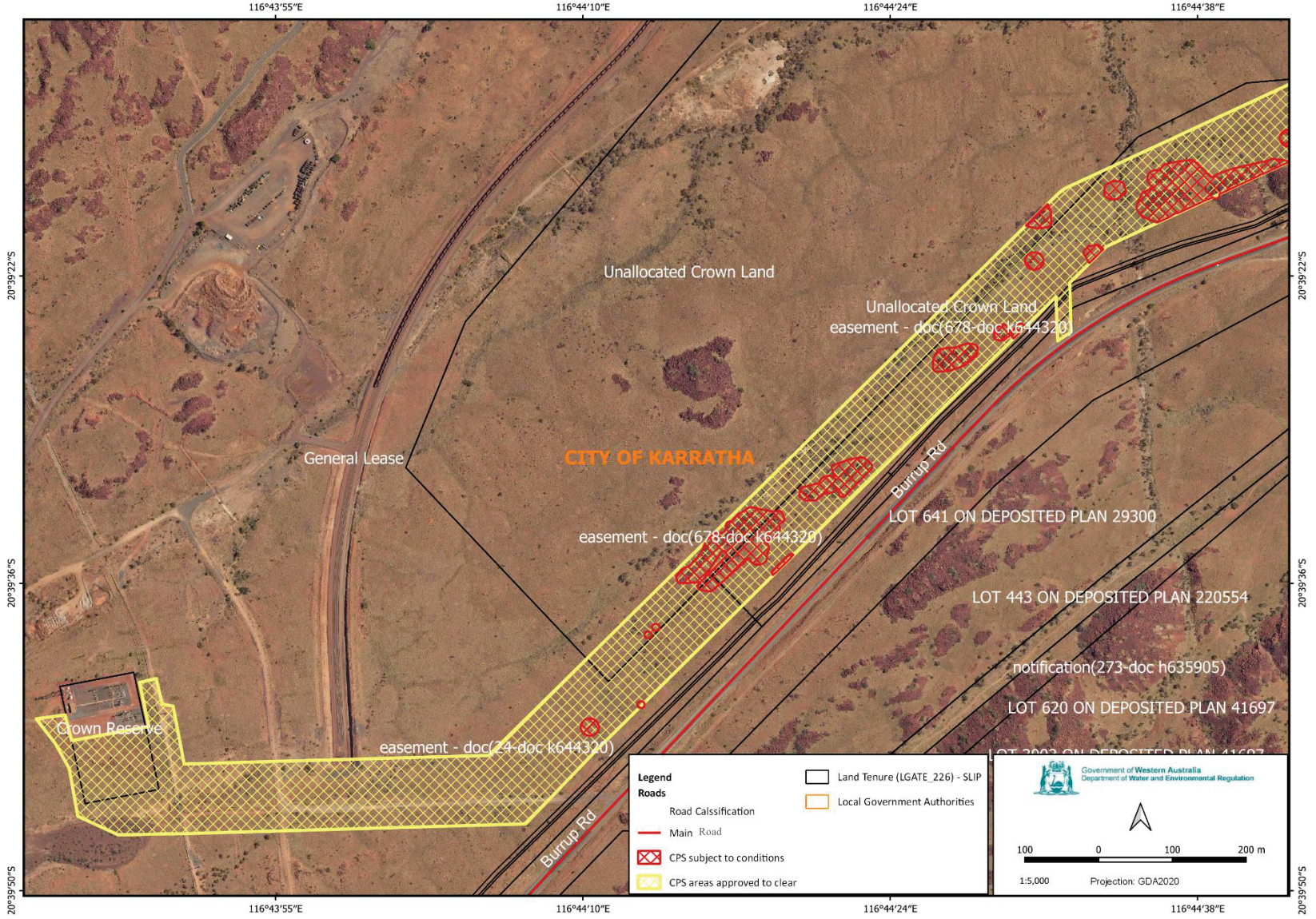


Figure 1: Map of the boundary of the area within which clearing may occur (cross-hatched yellow) and within which clearing is not authorised (cross-hatched red)

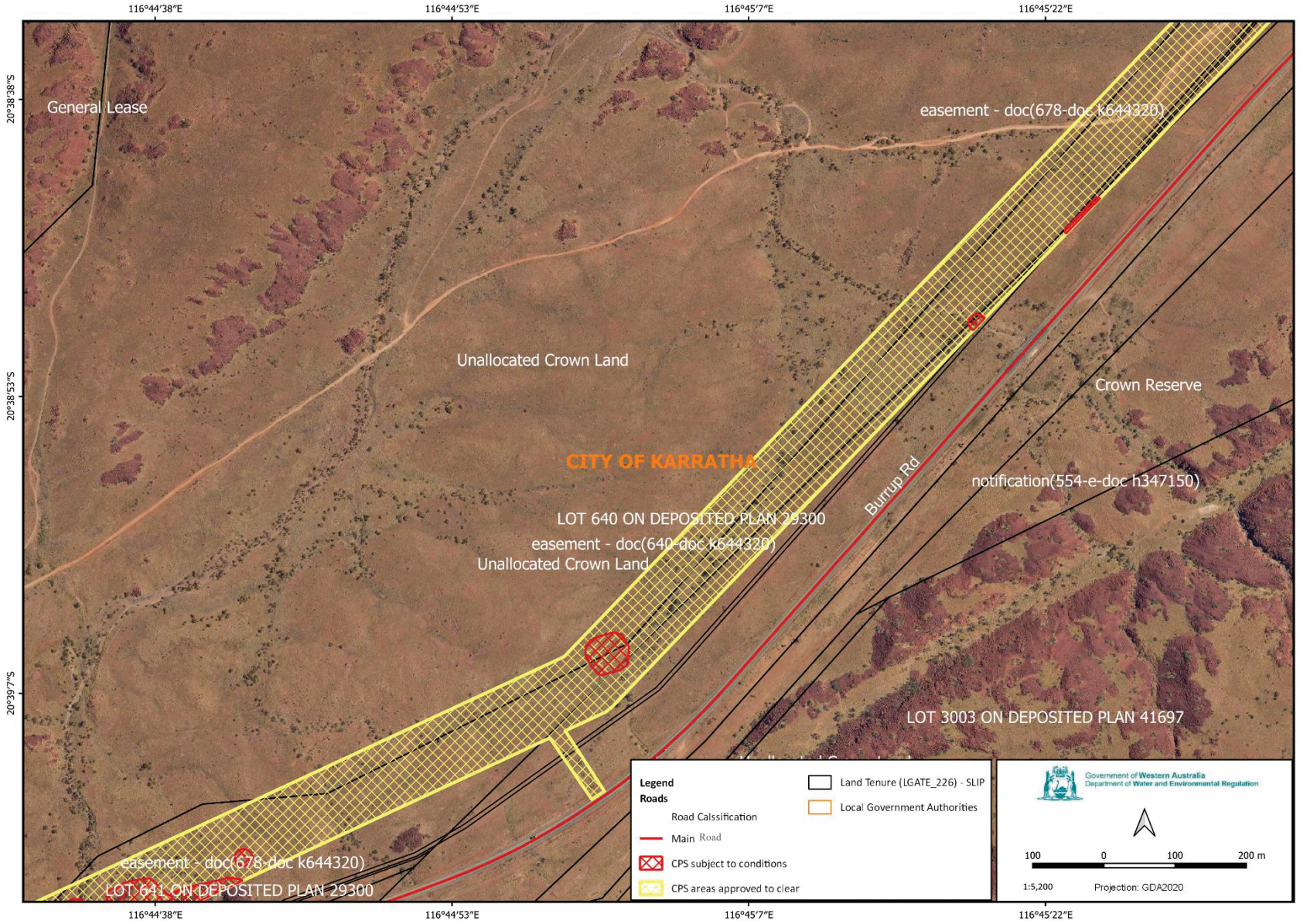


Figure 2: Map of the boundary of the area within which clearing may occur (cross-hatched yellow) and within which clearing is not authorised (cross-hatched red)

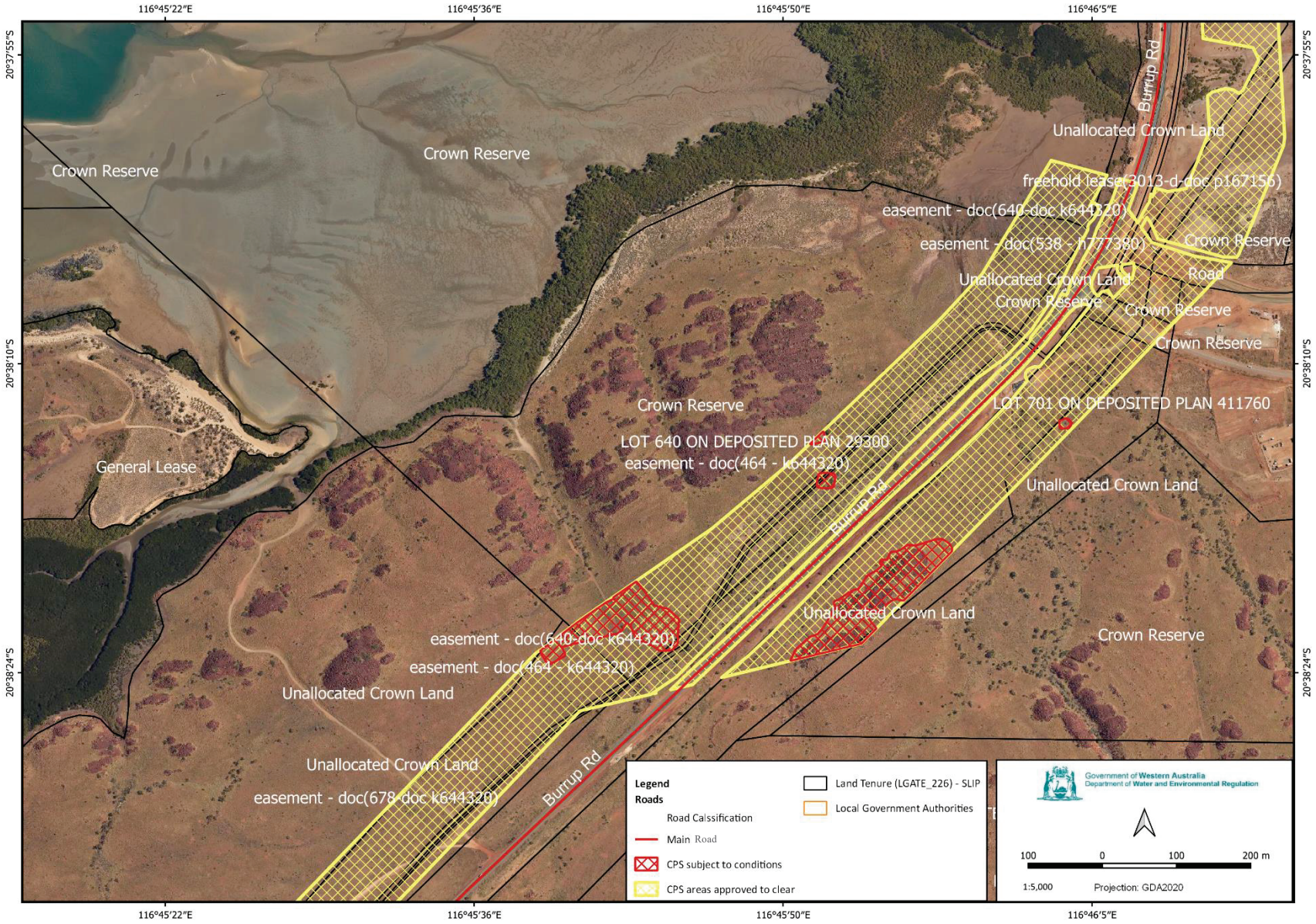


Figure 3: Map of the boundary of the area within which clearing may occur (cross-hatched yellow) and within which clearing is not authorised (cross-hatched red)

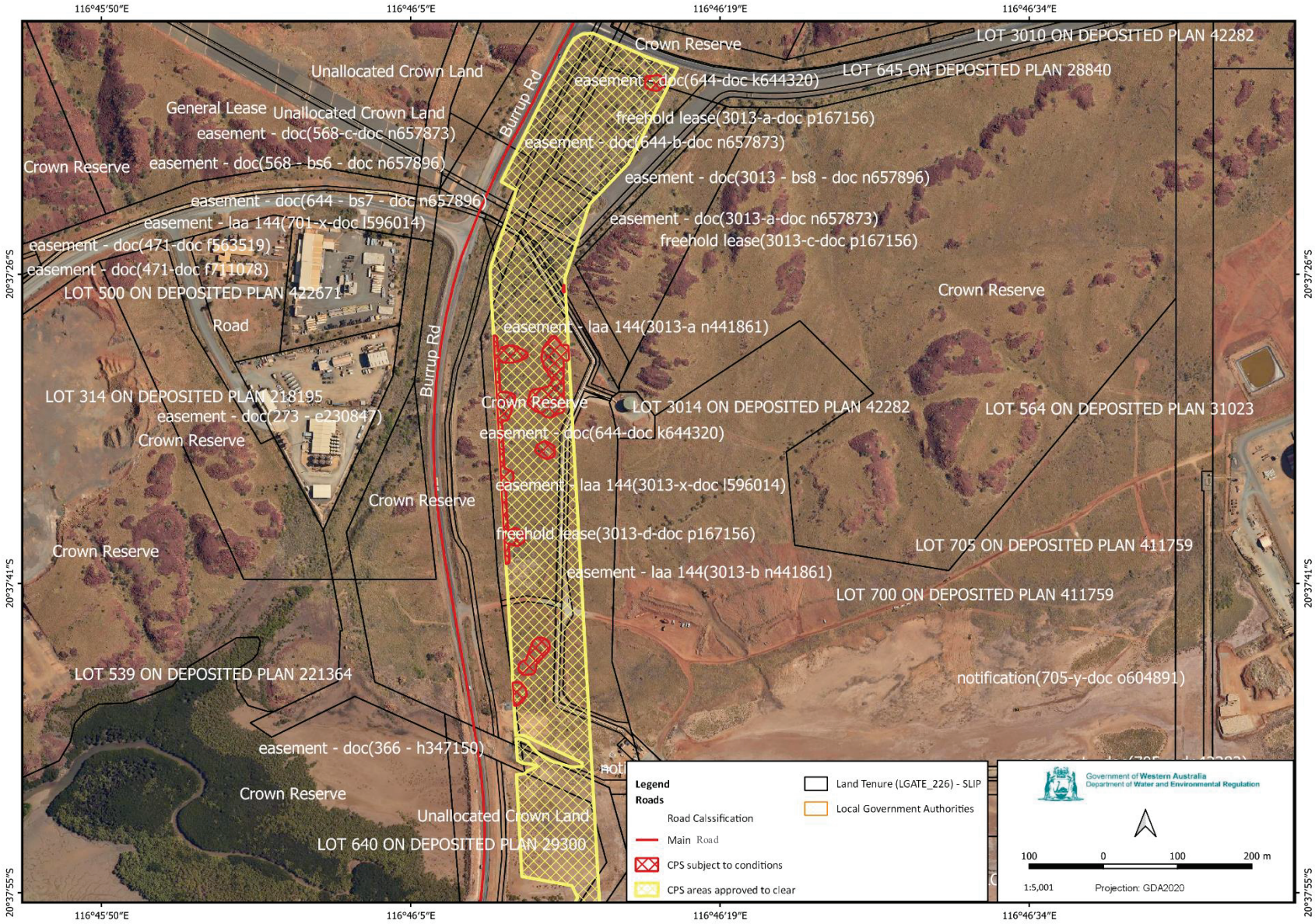


Figure 4: Map of the boundary of the area within which clearing may occur (cross-hatched yellow) and within which clearing is not authorised (cross-hatched red)

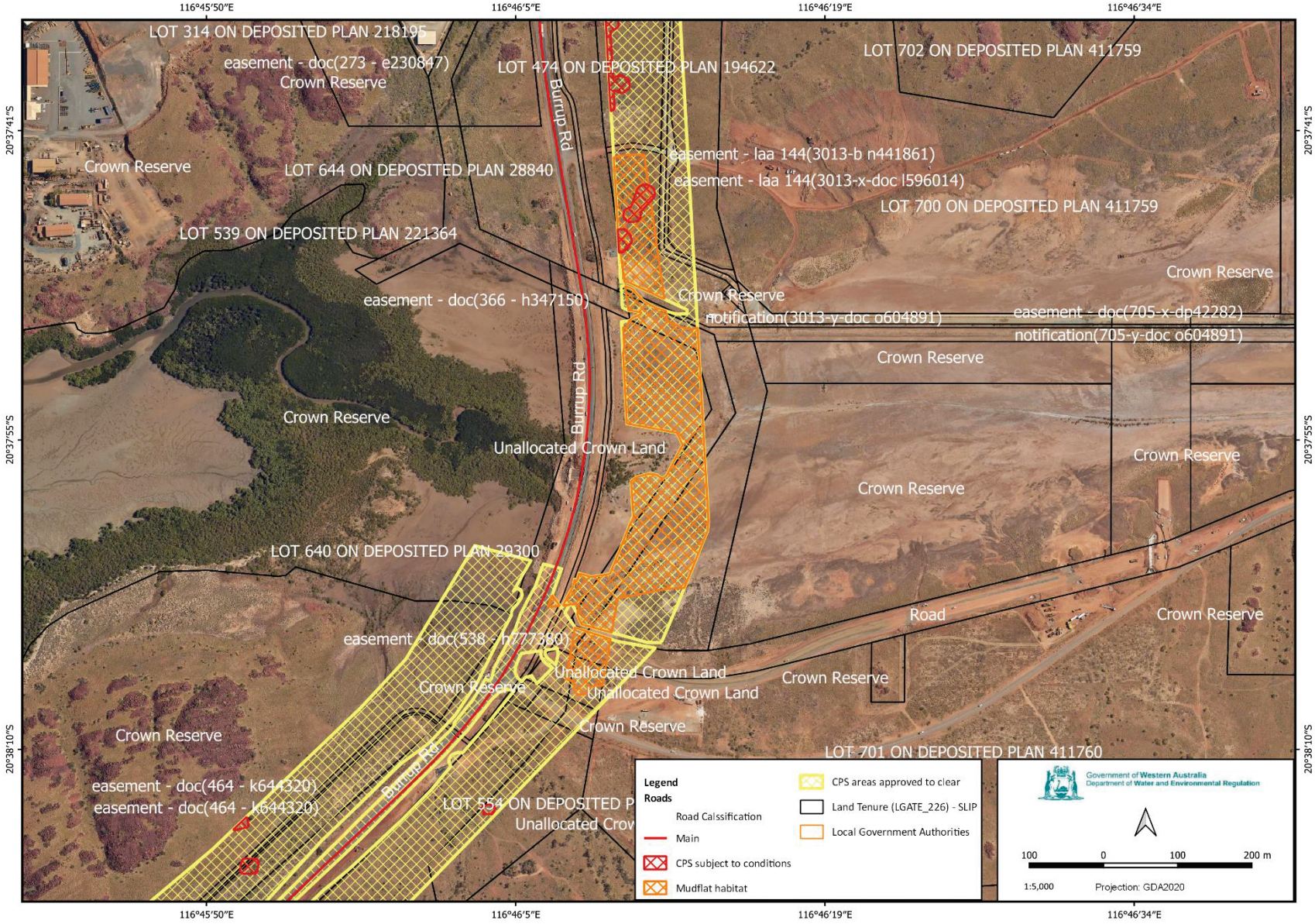


Figure 5: Map of the boundary of the mudflat habitat areas (cross-hatched orange) subject to condition 8.

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10372/1
Permit type:	Purpose permit
Applicant name:	Regional Power Corporation trading as Horizon Power (Horizon Power)
Application received:	11 October 2023
Application area:	14.4 hectares of native vegetation
Purpose of clearing:	Installation of electrical infrastructure
Method of clearing:	Mechanical
Property:	Hearson Cove Road Reserve (PIN 1350353) Lot 24 on Deposited Plan 241372 Lot 156 on Deposited Plan 215598 (R39776) Lot 366 on Deposited Plan 215500 Lot 464 on Deposited Plan 194584 (R49120) Lot 501 on Deposited Plan 401915 (R41636) Lot 538 on Deposited Plan 221364 Lot 540 on Deposited Plan 221364 (R42311) Lot 550 on Deposited Plan 406755 (R52836) Lot 551 on Deposited Plan 406755 Lot 552 on Deposited Plan 406755 (R52836) Lot 554 on Deposited Plan 406755 Lot 555 on Deposited Plan 406755 Lot 558 on Deposited Plan 406755 Lot 559 on Deposited Plan 406755 Lot 640 on Deposited Plan 29300 Lot 641 on Deposited Plan 29300 Lot 644 on Deposited Plan 28840 Lot 645 on Deposited Plan 28840 Lot 669 on Deposited Plan 32484 Lot 678 on Deposited Plan 32810 Lot 701 on Deposited Plan 411760 Lot 3013 on Deposited Plan 42282 (R49121)
Location (LGA area/s):	Karratha
Localities (suburb/s):	Burrup

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a linear contiguous area (see Figure 1, Section 1.5) and will require the clearing of up to 14.4 hectares of native vegetation within an 83.63-hectare footprint, with a mix of temporary and permanent clearing.

Permanent clearing activities may include:

- approximately 7 km long 132 kV overhead transmission line,
- approximately 40 poles and cleared pole access pads (40 m x 20 m), and associated pole stays along the transmission line route,

- cleared, unsealed access track along the transmission line route required for maintenance during operations,
- Burrup substation (inclusive of 33 kV and 132 kV switchgear, large scale battery, transformers, fencing and ancillary equipment),
- Dampier substation expansion (inclusive of 132 kV switchgear, fencing and ancillary equipment); and
- associated electrical infrastructure.

Temporary clearing activities may include:

- additional areas required to construct the transmission line,
- cleared access track (4 m wide) for the purpose of stringing the transmission line, and
- 50 m x 40 m winch sites as required.

1.3. Decision on application

Decision:	Granted
Decision date:	18 December 2024
Decision area:	14.4 hectares of native vegetation, 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 no submissions were received.

In making this decision, the Delegated Officer had regard for:

- the site characteristics (see Appendix B),
- relevant datasets (see Appendix J.1),
- the findings of biological surveys (GHD, 2019; Vicki Long, 2019; GHD 2020a; GHD, 2020b and GHD, 2022) (see Appendix E, Appendix F, Appendix G, Appendix H and Appendix I),
- the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), and
- relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The Delegated Officer also took into consideration that the purpose of the proposed clearing is to support the construction of the Burrup Common User Transmission Infrastructure (the Project) which will provide opportunities for tenants on the Burrup Peninsula to access the higher efficiency generation portfolio. This includes proposed renewable energy resources available on the North-West Interconnected System (NWIS) which will support the transition towards State and Commonwealth emission reduction targets.

The assessment identified that the proposed clearing will result in:

- the loss of 1.5 ha of native vegetation that is significant as habitat for migratory bird species and functions as an ecological linkage,
- the loss of up to 14.4 ha of native vegetation that is significant as habitat for the northern quoll (*Dasyurus hallucatus*),
- the loss of up to 14.4 ha of native vegetation that is suitable habitat for the western pebble-mound mouse (*Pseudomys chapmani*),
- the loss of up to 14.4 ha of native vegetation that is significant habitat for the northern coastal free-tailed bat (*Ozimops cobourgianus*),
- the loss of up to 14.4 ha of suitable habitat for the ghost bat (*Macroderma gigas*),
- the loss of up to 14.4 ha of suitable habitat for the Pilbara olive python (*Liasis olivaceus barroni*),
- the loss of 14 individuals of Priority 3 flora species *Teminialia supranitifolia*,
- the loss of six (6) individuals of Priority 4 flora species *Rhynchosia bungarensis,*
- potential loss of up to 0.5 hectares of the 'Burrup Peninsula Rock Pile Community' Priority 1 ecological community (PEC), and indirect impacts to other occurrences of the PEC,
- the potential introduction and spread of weeds into to Murujuga National Park which could impact on environmental values within the park, and
- the loss of up to four (4) hectares of riparian vegetation growing in association with several small watercourses (2.5 ha) and through mud flat habitat (1.5 ha).

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 proposed clearing can be minimised and managed to unlikely

lead to an unacceptable risk to environmental values through permit conditioning and offsets imposed under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). The applicant has suitably demonstrated avoidance and minimisation measures.

Based on the provisions outlined in the Government of Western Australia's Environmental Offsets Policy (2011) and Environmental Offsets Guidelines (2014), the Delegated Officer determined that, in this instance, the offset provided through the applicant's approval under the EPBC Act counterbalances the impacts to northern quoll and Pilbara olive python to the extent that the proposal can proceed without a formal offset conditioned on a clearing permit under the EP Act (see Section 4).

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,
- no clearing within the mapped avoidance areas unless approved by the CEO,
- no clearing of more than 1.5 ha of the mud flat habitat type,
- clear no more than 2.5 ha of riparian vegetation and where a watercourse or drainage line will be impacted, where surface water flow must be maintained or reinstated,
- demarcate the areas to be cleared prior to commencing clearing activities,
- pre-clearance surveys for the Burrup peninsula rock pile community, with no more than 0.5 hectares total permitted to be cleared,
- pre-clearance surveys for the western pebble-mound mouse and northern quoll,
- the presence of a fauna spotter on site during clearing activities,
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity, and
- revegetation and rehabilitation of areas that are temporarily cleared within six (6) months of clearing to ensure habitat is not permanently lost.

1.5. Site map(s)

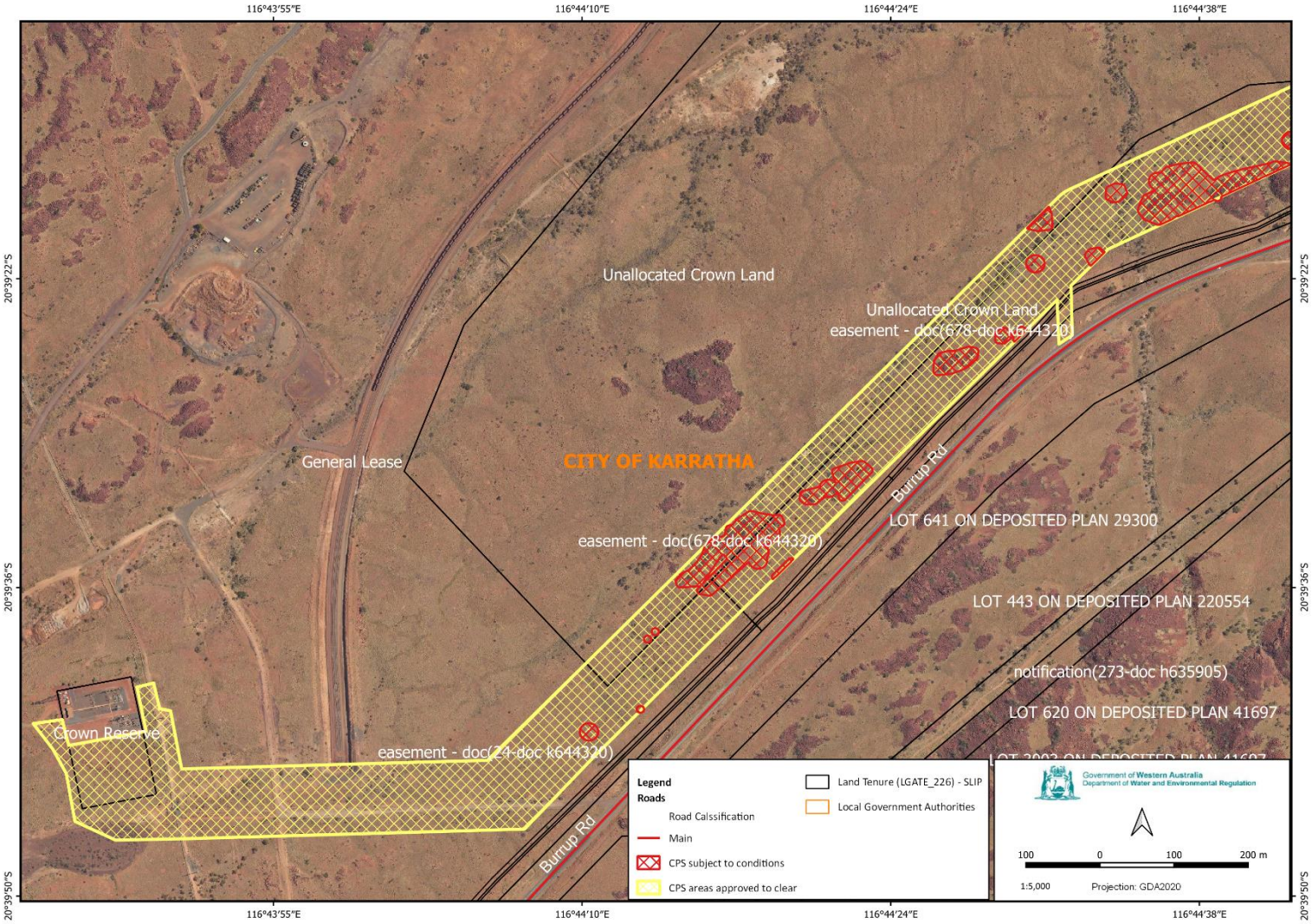


Figure 1.1. Map of the application area.

The area crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit. The areas cross-hatched red indicates areas within which clearing activities must not be undertaken.

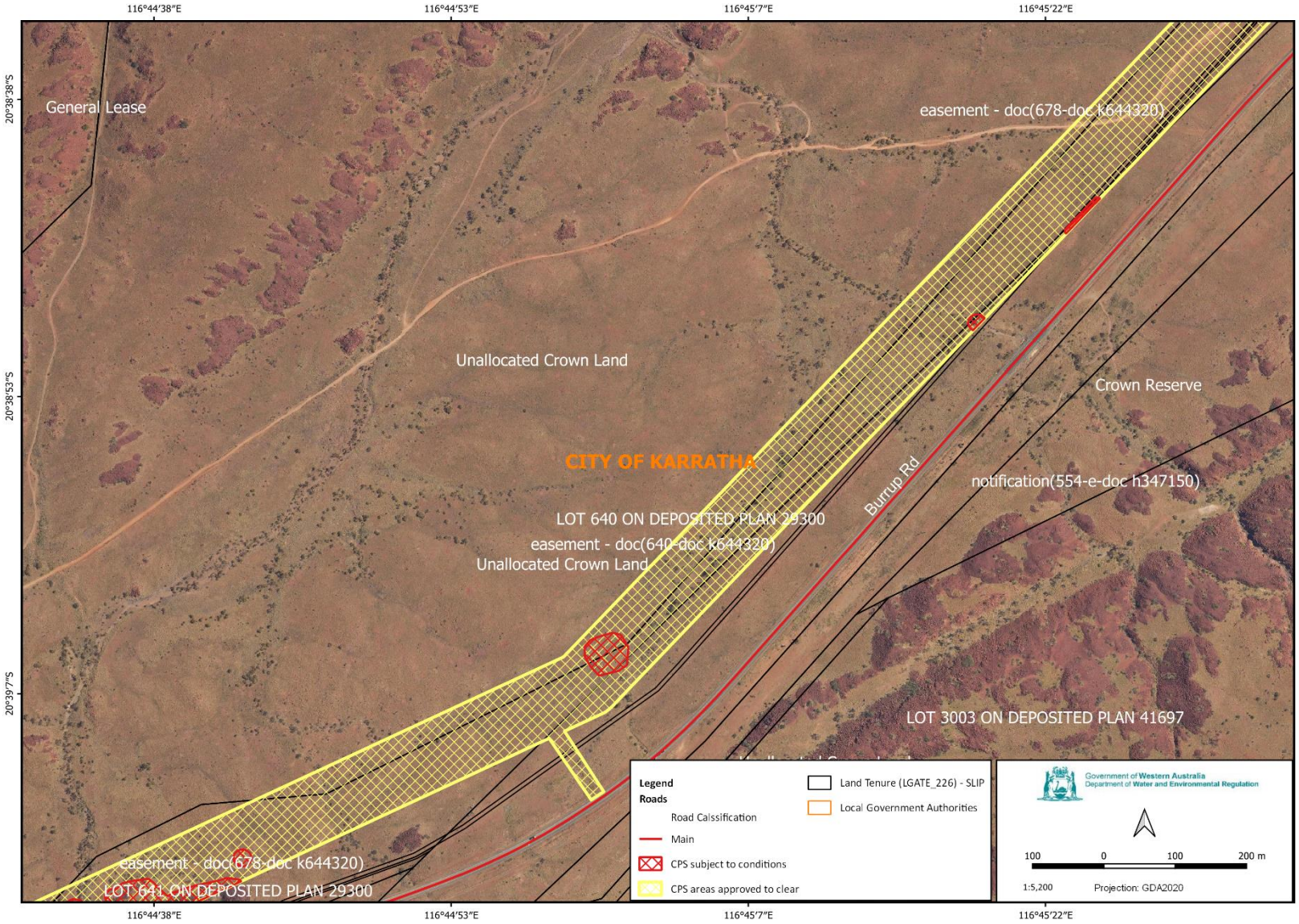


Figure 1.2. Map of the application area.

The area crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit. The areas cross-hatched red indicates areas within which clearing activities must not be undertaken.

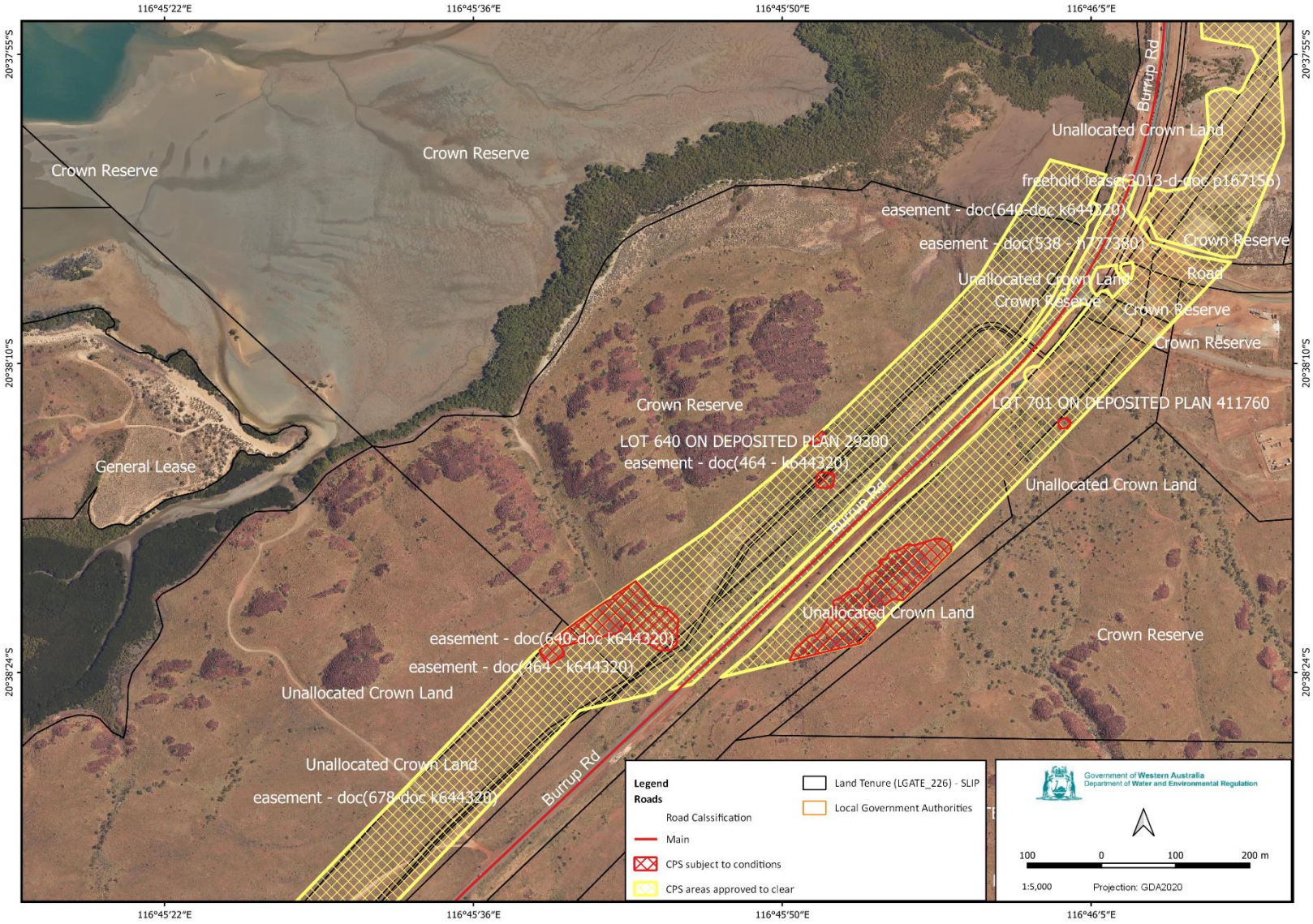


Figure 1.3. Map of the application area.

The area crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit. The areas cross-hatched red indicates areas within which clearing activities must not be undertaken.

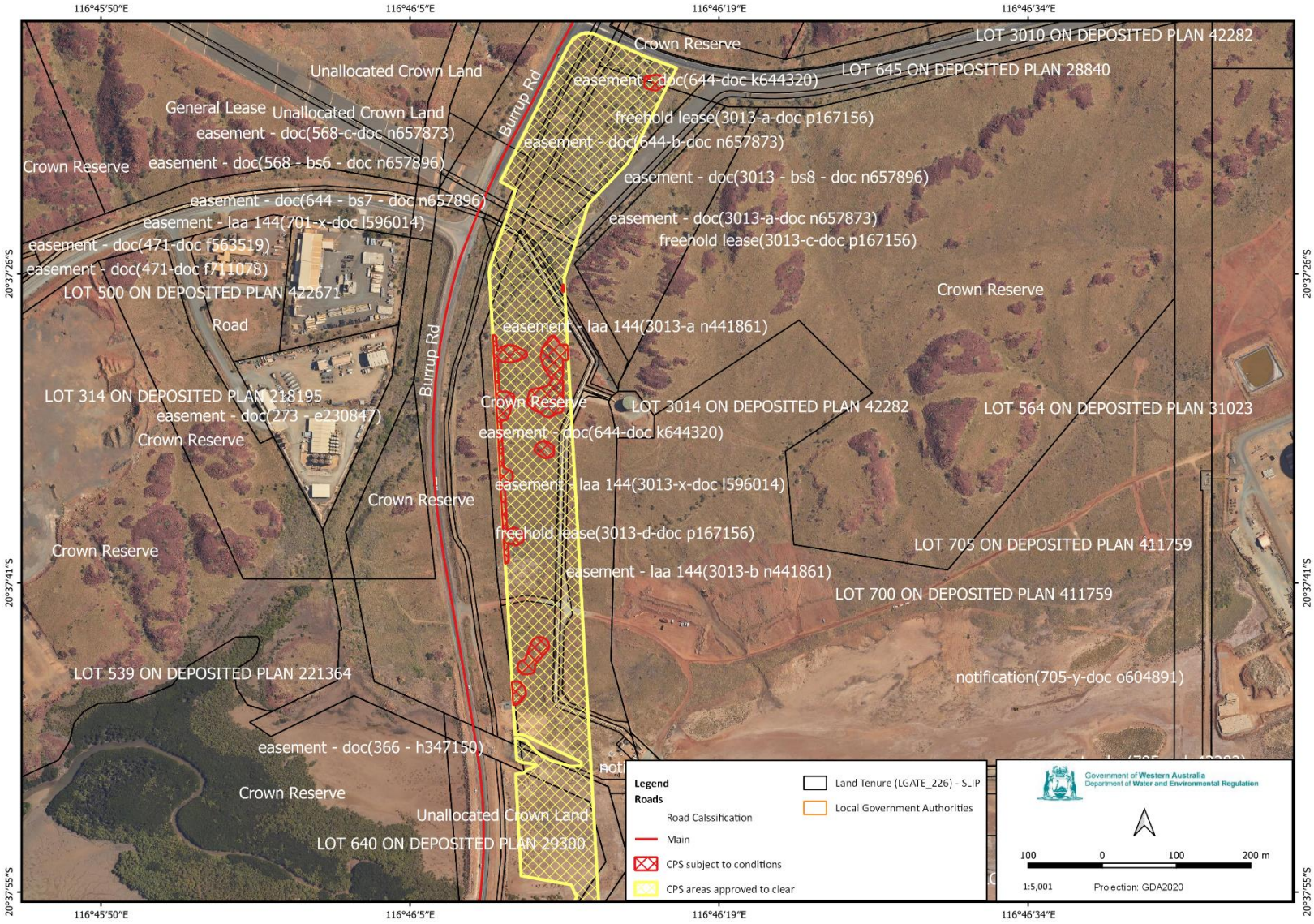


Figure 1.4. Map of the application area

The area crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit. The areas cross-hatched red indicates areas within which clearing activities must not be undertaken.

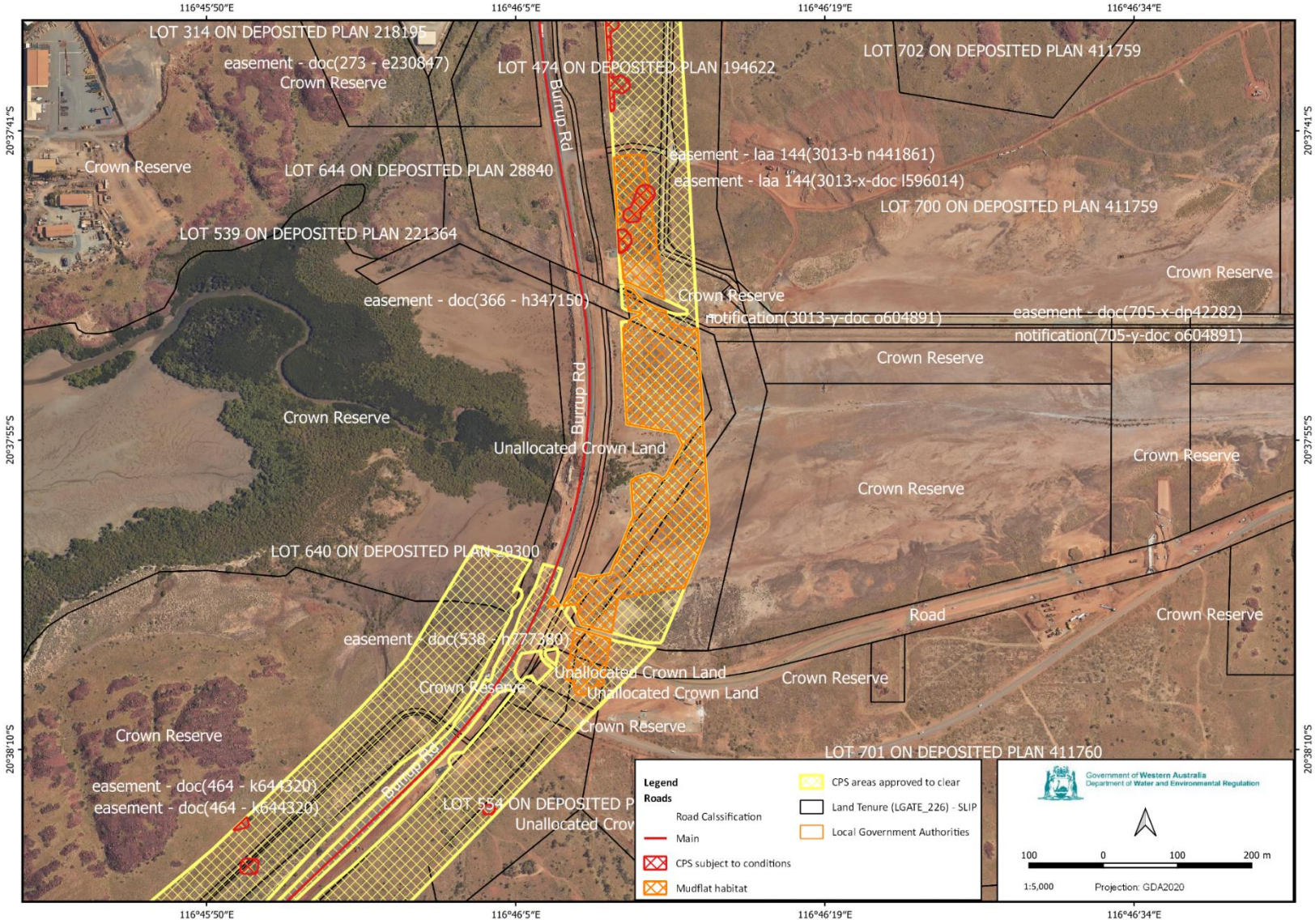


Figure 1.5. Map of the application area.

The area crosshatched yellow indicates the areas authorised to be cleared under the granted clearing permit. The areas cross-hatched red indicates areas within which clearing activities must not be undertaken. The area cross-hatched in orange indicates the area within which conditions apply.

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)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)

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)
- *Environmental Offsets Guidelines* (August 2014)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Avoidance

The applicant advised that the site was selected based on a report which recommended that development south of Burrup Road should be avoided and in consultation with the Murujuga Aboriginal Corporation (MAC) which determined that the proposed clearing area was the preferred option due to the presence of existing infrastructure and ability to easily avoid Aboriginal Heritage Sites in the area (Horizon Power, 2023b).

Evidence (Horizon Power, 2023b) was submitted by the applicant where the Project has been designed to reduce the impact on environmental values as much as possible with consideration of the alignment selection and design refinement process to avoid impacts on flora, fauna, and vegetation. Pole placement and span was designed to avoid impacts to vegetation such as PECs and flora. Pole placement will avoid drainage lines, where possible, minimising impacts to riparian vegetation.

The applicant identified several areas that contained significant environmental values and developed avoidance areas totalling 5.37 hectares (Horizon Power, 2023b). The avoidance areas include significant vegetation and PEC's, as well as known Aboriginal cultural heritage places. The applicant has proposed to demarcate the avoidance areas during construction (when works are nearby) and maintaining a minimum five metre buffer between avoidance areas and work areas to avoid inadvertent impacts. The applicant will also be conducting additional pre-clearance surveys to determine whether all areas of the PEC have been identified or mis-identified to ensure the community is avoided as far as practicable, this may also result in a revision of the avoidance areas. The final design of the Project will avoid these avoidance areas to minimise impacts to environmental values as much as possible.

The applicant further advised that existing cleared areas will be used preferentially where practicable with ongoing refining of the design of the project to reduce impacts to environmental values (Horizon Power, 2023b). The construction of access tracks within the tidal inlet between Hearson Cove and King Bay, will be avoided as far as practicable, to minimise impacts to vegetation and flora within this area.

During the assessment, additional areas of the 'Burrup Peninsula Rock Pile Communities' PEC were identified and subsequently incorporated into the avoidance areas increasing the total area from 5.37 hectares to six (6) hectares.

Mitigation

Where clearing is required, the following mitigation measures will be implemented (Horizon Power, 2023b):

- all clearing of a temporary nature will be rehabilitated upon completion of construction,

- pole placement will avoid drainage lines, where possible, minimising impacts to riparian and mudflat vegetation,
- the construction of access tracks within the tidal inlet between Hearson Cove and King Bay, will be avoided as far as practicable, to minimise impacts to vegetation, flora and fauna habitat within this area.
- pole locations will utilise disturbed areas associated with the Burrup Peninsula Road and Hearson Cove Road Improvements project, reducing the amount of new clearing required for access tracks.
- dust, noise, and vibration management measures will be implemented during construction; and
- implementation of the management measures in the CEMP to minimise risks to vegetation and flora, and to provide monitoring during construction.

The applicant also advised that approximately 2.90 hectares of the proposed clearing will be temporary and will be revegetated and rehabilitated following the completion of required activities (Horizon Power, 2023b).

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.

Offsets were initially considered for significant residual impacts to the northern quoll and Pilbara olive python; however, it was determined that the options available under Part V of the EP Act were not appropriate. It was determined that in this instance, the significant residual impacts to the northern quoll and Pilbara Olive Python can be counterbalanced through the provision of an offset under Horizon Power's approval under the EPBC Act. The nature and suitability of the offset provided is summarised in Section 4.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B) 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 C) identified that the impacts of the proposed clearing present a risk to biological values (fauna, flora and vegetation), significant remnant vegetation and conservation areas, 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 (ecological community and flora) - Clearing Principle (a)

Assessment

Noting the finding of biological surveys for the application area (GHD, 2019; Vicki Long, 2019; GHD, 2020a & GHD, 2022), the site characteristics, and the habitat preferences of the conservation significant flora surveys recorded in the local area (50-kilometre radius), the application contains habitat for the following flora species:

- *Teminialia supranitifolia* (P3),
- *Vigna triodiophila* (P3), and
- *Rhynchosia bungarensis* (P4)

The flora and vegetation surveys identified all three of these species within the proposed clearing area (GHD, 2019; Vicki Long, 2019; GHD, 2020a & GHD, 2022).

The 85.54 hectare clearing footprint consists of 74.98 hectares of native vegetation that is represented within 10 broad vegetation types (GHD, 2019; Vicki Long, 2019; GHD, 2020a & GHD, 2022):

- *Acacia bivenosa* tall shrubland over tussock and/or hummock grassland,
- *Brachychiton acuminatus* low woodland over open shrubland over hummock and tussock grassland,
- **Cenchrus ciliaris* open grassland over *Trianthema turgidifolia* and *Neobassia astrocarpa* open chenopod shrubland on disturbed edges of saline flats,
- *Corymbia hamersleyana* open woodland over open shrubland over hummock grassland,
- *Dichrostachys spicata*, *Acacia inaequilatera*, tall shrubland over open low mixed shrubland over hummock grassland. Scattered *Eucalyptus victrix* and *Terminalia circumalata*,
- *Eucalyptus victrix* low woodland over open shrubland over hummock or tussock grassland,
- *Grevillea pyramidalis* tall shrubland over hummock grassland,
- *Tecticornia* ssp low open shrubland on saline flats,
- *Terminalia circumalata* low open woodland over mixed *Dichrostachys spicata* open shrubland over open hummock grassland and open sedgeland, and
- *Terminalia supranitifolia* low open woodland over *Ipomoea costata*, *Acacia coriacea* shrubland over hummock grass.

In addition to the above, the flora and vegetation surveys also identified the 'Burrup Peninsula rock pile community' Priority 1 ecological community (PEC) throughout the proposed clearing area (GHD, 2019; Vicki Long, 2019; GHD, 2020a & GHD, 2022).

Priority flora

Rhynchosia bungarensis (P4)
Rhynchosia bungarensis is known to inhabit pebbly, shingly coarse sand amongst boulders and banks of flow lines in the mouth of gully walls (Florabase, 1998-). The biological surveys identified a total of 134 individuals of *R. bungarensis* in the broader survey area, six of which are located within the proposed clearing area.

Advice provided by the Department of Biodiversity, Conservation and Attractions (DBCA) (2023), noted that the large number of individuals identified during the surveys, in addition to the large number of records in the local area suggests that the species is likely more widespread than what is indicated by the DBCA databases and the loss of six individuals is not likely to be significant.

The species has also been recorded in different vegetation types spread across the clearing footprint (GHD, 2020a) (See Appendix G) which suggests that *R. bungarensis* is not a restricted species and therefore the proposed clearing is not likely to impact on significant habitat for the species.

Terminalia supranitifolia (P3)
T. supranitifolia is a spreading, tangled shrub or tree which is found in sandy areas among basalt rocks (Florabase, 1998-). This species is important due to the lack of large trees on the Burrup Peninsula to provide foraging, nesting and refuge habitat from high temperatures that occur around the deposits of rock piles (DBCA, 2023b).

According to the results of flora and vegetation surveys (GHD, 2019; Vicki Long, 2019; GHD, 2020a & GHD, 2022), there are 37 individuals of *T. supranitifolia* within the application area. The proposed clearing may result in the loss of up to 14 of the 37 individuals, which DBCA notes would represent a significant impact locally due to their value as habitat for fauna but is not expected to be a significant impact to the species which has been recorded frequently in the local area (DBCA, 2023b).

Vigna triodiophila (P3)
Vigna triodiophila is a fine-stemmed prostrate or scrambling vine which is endemic to basalt rockpile habitats in shallow, red-brown or brown, clayey sand or loam (Florabase, 1998-). The biological surveys recorded five individuals of this species within the proposed clearing area and was noted ass being uncommon, only being recorded within three locations (GDA, 2020a).

Advice from DBCA (2023b) notes that any loss of *V. triodiophila* would be considered significant since they are relatively uncommon. All records of *V. triodiophila* were associated with the 'Burrup Peninsula rock pile communities' PEC, located within the applicant's avoidance areas, meaning the proposed clearing will not result in the loss of any individuals of this species.

While no individuals of *V. triodiophila* are proposed to be cleared, the proposed clearing may result in the introduction and spread of weeds into the avoidance areas, impacting their habitat values.

Burrup Peninsula Rock Pile Community (P1)
The Burrup Peninsula Rock Pile Community (Burrup rock pile) PEC is characterised by pockets of vegetation on rock piles, rock pockets and outcrops of Gidley granophyre (DBCA, 2023a). This community is restricted to the Burrup Peninsula and Dampier Archipelago Islands with major threats including clearing, altered fire regimes, emissions and weeds (DBCA, 2023a). The desktop assessment did not identify this community within the proposed clearing area; however, the flora and vegetation surveys recorded the PEC scattered throughout the application (GHD, 2019; Vicki Long, 2019; GHD, 2020a & GHD, 2022).

The Burrup rock pile PEC is a significant habitat for several fauna species in the local area who use the PEC for refuge including many of the species discussed in Section 3.2.2 below. Maintaining the PEC is important given the ongoing development pressures in the region which has resulted in the loss of some occurrences. Retaining the majority of the PEC will minimise the cumulative impacts of the of the proposal by ensuring that fauna are able to find suitable habitat without having to travel across roads or into developed areas.

The Burrup rock pile PEC is noted to be particularly sensitive to weed invasion from species such as *Cenchrus ciliaris* (buffel grass), *Passiflora foetida* (stinking passionflower) and *Aerva javanica* (kapok) (DBCA, 2023b). None of the flora and vegetation surveys identified these weeds within the application area (GHD, 2019; Vicki Long, 2019; GHD,

2020a & GHD, 2022), however, machinery and personnel present during clearing activities may spread these weeds into the area if they have not properly followed hygiene management actions.

The applicant has committed to avoid clearing of any additional PEC identified during the pre-clearance surveys as far as practicable, however, will be approved to clear up to 0.5 hectares of the PEC as a contingency (in total across the approved clearing footprint), if other significant constraints (such as Aboriginal Heritage sites) prevent alternative routes from being considered. The permit conditions will not allow the applicant to clear PEC contained within avoidance areas, unless pre-clearance surveys identify that some avoidance areas mapped as the PEC are not representative of this community, in which case the applicant will be required to obtain approval from the CEO to clear within the mapped avoidance area.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of up to six (6) individuals of *Rhynchosia bungarensis,* 14 individuals of *T. supranitifolia* and may potentially impact to 0.5 ha of the Burrup Peninsula rock pile community PEC, have indirect impacts to the PEC, and may potentially impact individuals of *Vigna triodiophila* recorded within the PEC.

For the reasons set out above, it is considered that the indirect impacts of the proposed clearing on priority flora and priority ecological communities can be managed by taking steps to minimise the risk of the introduction and spread of weeds.

To mitigate potential impacts to the Burrup rock pile community, the proposed avoidance areas will be included in the conditions of the permit and the applicant will be required to demarcate the area proposed to be cleared to mitigate the risk of inadvertent clearing of native vegetation. Additionally, pre-clearance surveys within the approved clearing area to identify and avoid any further occurrences of the PEC will be required.

Given that not all the proposed clearing will be permanent, any areas that are temporarily cleared will be rehabilitated to ensure that all habitat is not permanently lost.

Conditions

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

- weed hygiene management measures,
- no clearing within mapped avoidance areas,
- demarcation of the vegetation to be cleared prior to the commencement of activities,
- pre-clearance surveys for the ‘Burrup Peninsula rock pile communities’ PEC and no clearing of more than 0.5 hectares of the PEC, and
- rehabilitating areas that are no longer required for the purpose for which they were cleared.

3.2.2. Biological values (fauna) - Clearing Principles (a) and (b)

Assessment

The preliminary assessment identified 7338 records across 72 species of conservation significant fauna in the local area composed of 48 birds, one fish, 15 mammals and 10 reptiles.

Two fauna surveys have been conducted which indicate that the proposed clearing area consists of five broad habitat types (GHD, 2019 & GHD, 2020b):

- hummock grassland on rocky plain,
- hummock grassland on low rocky hills,
- rocky hills with exposed boulder piles,
- minor drainage lines (fauna corridor), and
- mudflat with tidal inundation, mangroves and supportive scattered samphire.

The full habitat descriptions and maps are available in Appendix E and Appendix H.

Based on the results of the fauna surveys (GHD, 2019 & GHD, 2020b) and preliminary assessment, the proposed clearing was identified as containing suitable habitat for the following species:

- ghost bat (*Macroderma gigas*) (VU)
- northern coastal free-tailed bat (*Ozimops cobourgianus*) (P1)
- northern quoll (*Dasyurus hallucatus*) (EN)
- Pilbara olive python (*Liasis olivaceus barroni*) (VU)
- western pebble-mound mouse (*Pseudomys chapmani*) (P4)

The 'mudflat with tidal inundation, mangroves and supportive scattered Samphire' habitat is also known to be a significant habitat for several species of migratory bird.

Northern quoll (EN)
The northern quoll (*Dasyurus hallucatus*) was formerly widespread in the northern areas of Australia; however, its range has decreased significantly over the last century (Hill & Ward, 2010). According to available databases, there are 519 records of the northern quoll in the local area, the nearest being 0.07 km from the proposed clearing. No individuals of northern quoll were recorded during the fauna surveys, however, significant habitat for the species was identified within the proposed clearing area (GHD, 2019 & GHD, 2020b).

The current distribution of the species is discontinuous across northern Australia, largely persisting in high rainfall and/or rocky areas (Hill & Ward, 2010). In the Pilbara, habitat critical to the survival of the northern quoll includes, but is not limited to, rocky habitats such as ranges, escarpments, mesas, gorges, breakaways, boulder fields, major drainage lines or treed creek lines, along with structurally diverse woodland or forest areas containing large diameter trees, termite mounds or hollow logs (DBCA, 2023b).

The northern quoll was previously believed to be extinct on the Burrup Peninsula and so the population is considered sensitive with any disturbance to suitable habitat likely to be significant (DBCA, 2023b). The majority of significant habitat for the northern quoll in the application area is associated with the 'Burrup Peninsula rock pile communities' PEC which has been included within the applicant's avoidance areas, however, the 'minor drainage line' and 'rocky hills with exposed boulder piles' habitats are also noted as containing suitable denning habitat for the species (GHD, 2020b).

Western pebble-mound mouse (P4)
The western pebble-mound mouse (*Pseudomys champani*) is typically found within spinifex grasslands on gravelly areas where is constructs above ground mounds out of pebbles accompanied with underground burrows that can extend for metres and be up to 30-40cm deep (DBCA, n.d.). According to available datasets, there are 18 records of the western pebble-mound mouse in the local area, many of which are historical.

No individuals of the western pebble mound mouse were identified during fauna surveys; however, one inactive mound was recorded within the proposed clearing area (GHD, 2020b). Advice received from DBCA noted that the western pebble-mound mouse has seen significant decline in coastal areas and efforts should be made to avoid suitable habitat (DBCA, 2023b). Therefore, the proposed clearing may have a significant impact on the availability of suitable habitat for the western pebble-mound mouse in the local area.

North coastal free-tailed bat (P1)
The North coastal free-tailed bat (NCFTB) (*Ozimops cobourgianus*) is found across Northern Australia and are considered to have a large area of occupancy, although are not generally common where they are found (Reardon et al., 2017). According to available databases, this species has been recorded in the local area 19 times, the nearest being 3.91 km from the proposed clearing. This species was recorded during one of the fauna surveys through acoustic sampling (GHD, 2020b).

In Western Australia, NCFTB are predominantly distributed across coastal mangrove fringes, with the species known to roost within the hollows of *Avicennia marina* (White Mangrove) (Reardon et al., 2017). The NCFTB is an insectivore and mainly forages in Eucalyptus or Melaleuca woodlands and other coastal habitats (Reardon et al., 2017). The Applicant has committed to avoid impacting this habitat as far as practicable (Horizon Power, 2023); however, the mudflat habitat is still considered to be significant for the species, particularly as an ecological linkage and any impact to this area could be considered significant given the habitat type is relatively uncommon on the Burrup Peninsula (DBCA, 2023b).

Ghost bat (VU)
The ghost bat (*Macroderma gigas*) is found in across northern Australia with their current distribution contained within discontinuous colonies in the Pilbara, Kimberley, Northern Territory and Queensland (TSSC, 2016). According to available databases there are eight records of the ghost bat in the local area, the nearest being 4.65 km from the proposed clearing. No individuals of the ghost bat were recorded during the fauna surveys (GHD, 2019 & GHD, 2020b).

Ghost bats can be found in a variety of habitats from arid areas to rainforests and tropical savannas (TSSC, 2016). Roosting habitat for the species is described as rock crevices, caves and old mines and foraging habitat generally requires areas with trees that have high vantage points (TSSC, 2016). Based on the surveyed habitat types (GHD, 2019 & GHD, 2020b), no breeding habitat is present within the proposed clearing area, however, the ghost bat may

use the area for foraging. Noting that the ghost bat can be found in various habitats and no individuals were identified during the surveys, the proposed clearing is not likely to have a significant impact on foraging habitat for the species.

Pilbara olive python (VU)
The Pilbara olive python (*Liasis olivaceus barroni*) is only found within the ranges of the Pilbara in Western Australia including the Burrup Peninsula (DEWHA, 2008). According to available databases, this species has been recorded 35 times in the local area, the nearest being 0.05 km from the proposed clearing. No individuals were recorded during any of the fauna surveys (GHD, 2019 & GHD, 2020b), however, advice from DBCA notes that the species has been recorded in the area (DBCA, 2023b).

The Pilbara olive python prefers areas of deep gorges and water holes, however, has been known to be quite mobile during the warmer months preferring to be within rocky outcrops and near water (DEWHA, 2008). Furthermore, the Conservation Advice for the Pilbara olive python specifically notes that the loss of habitat due to mining and gas developments was a major threat to the species, particularly on the Burrup Peninsula (DEWHA, 2008). DBCA notes that within the Burrup Peninsula, the species has been found in rocky habitats and near drainage lines, like that recorded within the proposed clearing area (DBCA, 2023b).

It is considered that the proposed clearing may result in the loss of significant habitat for the Pilbara olive python or may result in the direct harm of individuals that may be in the area during clearing activities.

Migratory birds
Based on the preliminary assessment, survey results and advice received from DBCA, the proposed clearing contains suitable habitat for the following migratory bird species:

- bar-tailed godwit (*Limosa lapponica*)
- bridled tern (*Onychoprion anaethetus*)
- Caspian tern (*Hydroprogne caspia*)
- common greenshank (*Tringa nebularia*)
- common sandpiper (*Actitis hypoleucos*)
- crested tern (*Thalasseus bergii*)
- curlew sandpiper (*Calidris ferruginea*) (CR)
- eastern curlew (*Numenius madagascariensis*) (CR)
- fairy tern (*Sternula nereis nereis*) (VU)
- great knot (*Calidris tenuirostris*) (CR)
- greater sand plover (*Charadrius leschenaultii*) (VU)
- gull-billed tern (*Gelochelidon nilotica*)
- lesser sand plover (*Charadrius mongolus*) (EN)
- northern Siberian bar-tailed godwit (*Limosa lapponica menzbieri*)
- oriental plover (*Charadrius veredus*)
- oriental pratincole (*Glareola maldivarum*)
- red knot (*Calidris canutus*) (EN)
- whimbrel (*Numenius phaeopus*)
- wood sandpiper (*Tringa glareola*)

The mudflat habitat described in the fauna surveys (GHD, 2019 & GHD, 2020b) is an important habitat for migratory birds in the region primarily as a flyway and ecological linkage between King Bay and Hearson's Cove (DBCA, 2023b). Advice received from DBCA (2023b) notes that the proposed clearing may impact the habitats function as an ecological linkage between King Bay and Hearson's Cove.

The proposed clearing is not expected to have a significant impact on the availability of mud flat habitat for migratory birds, however, may result in the introduction and spread of weeds and alter the surface hydrology which may impact on the quality of adjacent habitat and its value as an ecological linkage.

Conclusion
Based on the above assessment, the proposed clearing will result in the loss of significant habitat for conservation significant fauna and may result in the harm or death of fauna individuals that may be in the area.

For the reasons set out above, it is considered that the impacts of the proposed clearing on the northern quoll and western pebble-mound mouse can be managed through conducting pre-clearance surveys prior to commencing clearing activities. The implementation of avoidance areas will also mean significant northern quoll denning habitat will be retained. Given the restricted nature of the mudflat habitat and its significance to migratory birds, limiting the amount of clearing that can occur within this area will minimise impacts.

Furthermore, having a fauna spotter present during clearing activities should mitigate and minimise the risk of any fauna individuals from being harmed in addition to conditions to conduct slow, directional clearing methods. As discussed under Section 3.1. some of the clearing will be temporary and so rehabilitating these areas when they are no longer required will also mean that some of the fauna habitat is not permanently lost.

To minimise impacts to significant fauna habitat, avoidance areas have been implemented to prevent the clearing of significant northern quoll habitat and the western pebble-mound mouse mounds and a limit on the amount of vegetation to be cleared within the mudflat habitat and riparian habitats has been imposed to minimise the impact of the clearing on migratory birds who use the area. These will further be managed by ensuring the clearing areas are demarcated to prevent accidental clearing.

Significant residual impacts to the northern quoll and Pilbara olive python have been offset through a monetary contribution to the Pilbara Environmental Offsets Fund (PEOF) under the EPBC Act approval for the project and therefore, an additional offset under the EP Act was determined to not be required. See Section 4 Suitability of offsets for more information.

Conditions

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

- no clearing within mapped avoidance areas unless approved by the CEO,
- no clearing of more than 1.5 hectares of mudflat habitat,
- no clearing of more than 2.5 hectares of riparian vegetation growing within a watercourse or drainage line,
- demarcation of the area to be cleared,
- pre-clearance survey for the western pebble-mound mouse and avoidance of any identified mounds,
- pre-clearance survey for the northern quoll where no clearing can occur within the area until individuals move by themselves or are relocated by a fauna specialist,
- the presence of a fauna spotter to traverse the area ahead of clearing machinery and be present during clearing activities,
- conduct clearing in a slow, progressive manner towards adjacent vegetation, and
- rehabilitating areas that are no longer required for the purpose for which they were cleared.

3.2.3. Significant remnant vegetation and conservation areas (National Park) - Clearing Principle (h)

Assessment

The proposed clearing is mapped adjacent to Murujuga National Park. Murujuga National Park is known for its petroglyphs and diverse landscape which provides habitat for several fauna species (DBCA, 2024). The Murujuga Rock Art Strategy was developed to monitor and manage potential impacts to these petroglyphs due to the presence of industry within the Burrup Peninsula (DWER, 2019a).

The proposed clearing activities are not likely to impact on the petroglyphs since they are not likely to produce the emissions of concern outlined in the Murujuga Rock Art Strategy (DWER, 2019a); however, may impact on the native vegetation within the National Park through the introduction of and spread of weeds.

Conclusion

For the reasons set out above, it is considered that the impacts of the proposed clearing on Murujuga National Park can be managed by taking steps to minimise the risk of the introduction and spread of weeds.

Conditions

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

- Weed hygiene management actions

3.2.4. Land and water resources (watercourses and coastal flats) - Clearing Principles (f), (i), (j)

Assessment

The proposed clearing is mapped within several small watercourses and through a mud flat habitat that is subject to inundation. The proposed clearing will be generally narrow and linear in size, however, may still impact on the surface hydrology of nearby watercourses including (DWER, 2023a):

- mobilisation of rocks and debris into the waterway, which can impinge its flows resulting in an altered flood regime,
- potential for erosion, and sediment transport resulting in turbidity and sedimentation further downstream, and
- contamination from spills from any refuelling, servicing of equipment or other activities.

The mudflat habitat is known to be important for several migratory bird species as a flyway and linkage between King Bay and Hearson's Cove as discussed in Section 3.2.2. The proposed clearing activities will traverse through the middle of the mud flat which may alter the natural surface water regimes of the area.

The department's North West Planning branch (DWER, 2023a) advised the impacts to the mudflat habitat and other watercourses could be significant given the cumulative impacts of ongoing development pressures in the Burrup Peninsula which may alter natural flows and contaminate water. It was recommended that where possible avoidance of riparian vegetation and impacting on watercourses is preferable and recommended that if clearing cannot be avoided then actions should be taken to either maintain or restore natural surface water flows.

Conclusion

For the reasons set out above, it is considered that the impacts of the proposed clearing on the watercourses and mud flat habitat can be managed by limiting the extent that riparian habitats that can be cleared and ensuring that natural surface water flows are either maintained or reinstated following clearing activities.

The applicant also has prepared mitigation and management actions related to spills in their construction environmental management plan (CEMP) (Horizon Power, 2023).

Conditions

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

- no clearing of more than 1.5 hectares of native vegetation within the mudflat habitat,
- no clearing of more than 2.5 hectares of riparian vegetation growing within a watercourse or drainage line, and
- where a watercourse or drainage line is to be impacted by authorised clearing, the permit holder must ensure surface flow is maintained or is reinstated downstream into existing natural drainage lines.

3.3. Relevant planning instruments and other matters

In accordance with section 51O(4) of the EP Act, in considering a clearing matter the Delegated Officer shall have regard to any development approval, planning instrument, or other matter, that they consider relevant. The planning instruments and other matters considered relevant by the Delegated Officer in determining to grant Clearing Permit CPS 10372/1 are outlined below.

Referral under Part IV of the EP Act

On 11 November 2022, the Applicant referred the Burrup Common User Transmission Infrastructure project to the Western Australian Environmental Protection Authority (EPA) under section 38(1) of the EP Act. On 9 August 2023, the EPA determined not to assessment proposal advising that impacts from clearing and construction on flora, vegetation and terrestrial fauna can be regulated under Part V Division 2 of the EP Act (EPA, 2023).

Referral under the EPBC Act

The proposed clearing was referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) on 11 November 2022 (2022/09407) with an invitation for public comments on 6 March 2023.

The DCCEEW determined the proposal to be a Controlled Action on 3 April 2023. That is, an action that will have or likely have a significant impact on one or more protected matters and therefore requires assessment and approval under the EPBC Act.

Horizon Power received an approval under the EPBC Act on 13 November 2024 which included the following conditions (DCCEEW, 2024):

- the amount of habitat for each protected species that the applicant is allowed to clear,
- the development of an environmental management plan and Aboriginal Cultural Heritage management plan, and
- the provision of an offset in the form of monetary contributions to the Pilbara Environmental Offsets Fund.

Planning Instruments

The City of Karratha (the City) advised DWER that local government approvals are not required, and that the proposed clearing is consistent with the Shire's Local Planning Scheme. The City did not have any objections to the proposed clearing (City of Karratha, 2023).

Contaminated Sites

The northern section of the proposed clearing area is mapped as a potential contaminated site and requiring investigation. Advice Received from the Department's Contaminated Sites team advised that this was due to potential surface water contamination from a nearby ammonium nitrate processing facility (DWER, 2023b).

The mud flat habitat was identified as being at risk from further disturbance associated with the transmission line and advised that an appropriate management plan should be developed addressing the following:

- Avoid and/or minimise ground disturbance within the mud flats,
- Any excavation spoil that occurs from unavoidable disturbance should be disposed of at a landfill, and
- Obstruction of natural drainage flow pathways should be avoided.

The applicant has included contingencies within their construction environmental management plan in the event they encounter contaminated soil (Horizon Power, 2023).

Aboriginal Heritage

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

4 Suitability of offsets

Through the detailed assessment outlined in Section 3.2 above, the Delegated Officer has determined that the following significant residual impacts remain after the application of the avoidance and mitigation measures summarised in Section 3.1:

- The loss of 14.4 ha of suitable habitat for the northern quoll, and
- The loss of 14.4 ha of suitable habitat for the Pilbara olive python

Offsets can be difficult to acquire in the Pilbara due to the presence of complex tenure issues working on Crown Land that overlaps mining, pastoral and Native Title interests (DWER, 2019b). As such, the Delegated Officer initially considered a monetary contribution to the Part V offset fund, however, was not considered to be a feasible option as the funds would not likely be sufficient to allow for the creation of a meaningful offset alone in the region.

Currently, the department has a Memorandum of Understanding that allows monetary offsets under the EPBC Act within the Region to be managed through the Pilbara Environmental Offsets Fund (PEOF). Part of the conditions for the applicant's approval under the EPBC Act includes a monetary contribution to PEOF composed of (DCCEEW, 2024):

- A minimum of $3,306 AUD (excluding GST) per hectare of northern quoll critical habitat and Pilbara Olive Python critical habitat, and
- A minimum of $1,653 AUD (excluding GST) per hectare of Australian fairy tern supporting habitat.

Under the EPBC Act approval, the applicant can clear up to 14.4 hectares of northern quoll and Pilbara olive python habitat and up to 1.5 hectares of fairy tern habitat which amounts to a total of approximately $48,763.50 if the full contribution is required to be made.

Noting contributions to PEOF for assessments under Part V Division II of the EP Act has not been established yet, and other offsets options in the Pilbara region are difficult to acquire, the Delegated Officer considered that the offset required under the EPBC Act is sufficient to counterbalance the impacts from this proposal and an offset is not required as a condition of the clearing permit CPS 10372/1. Noting the PEOF enables multiple payments to be combined for larger strategic environmental offsets (DWER, 2019b), the Delegated Officer considered the offset imposed under the EPBC Act aligns with Principle 6 of the *WA environmental Offsets Policy 2011,* environmental offsets will be focussed on longer term strategic outcomes.

While impacts to the Australian fairy tern have been offset under the EPBC approval, the Delegated Officer did not consider impacts to this species to result in a significant residual impact, noting the clearing of the mud flat habitat that provide suitable habitat for Australian fairy tern and other migratory birds is not likely to significantly impact on the availability of mud flat habitat in the area. Impacts to mud flat habitat type are further discussed under section 3.2.2 above.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
Copy of the EPBC Act Approval (2022/09407)	See Section 3.3. Planning and other relevant matters and Section 4 Suitability of offsets.

Appendix B. Site characteristics

B.1. 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 C.

<table>
<tr><th>Characteristic</th><th>Details</th></tr>
<tr><td>Local context</td><td>The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. It is in Burrup and located approximately two kilometres east of Dampier.

Spatial data indicates the local area (50-kilometre radius from the centre of the area proposed to be cleared) retains approximately 87.33 per cent of the original native vegetation cover.</td></tr>
<tr><td>Ecological linkage</td><td>The application area is not within a formally mapped ecological linkage. The ‘Mudflat with tidal inundation, mangroves and supportive scattered Samphire’ habitat (GHD, 2019 & GHD, 2020b) can be considered an informal ecological linkage for migratory birds.</td></tr>
<tr><td>Conservation areas</td><td>The application area does not intersect a mapped conservation area. The closest mapped conservation area is Murujuga National Park approximately 100 metres southeast of the application area.</td></tr>
<tr><td>Vegetation description</td><td>The flora and vegetation surveys indicate the vegetation within the proposed clearing area consists of 10 broad vegetation types (GDH, 2022; GHD, 2020; GHD, 2019; Vicki Long, 2019):
<table>
<tr><th>Vegetation type</th><th>Area (ha)</th><th>% footprint</th></tr>
<tr><td>Acacia bivenosa tall shrubland over tussock and/or hummock grassland.</td><td>6.17</td><td>7.38</td></tr>
<tr><td>Brachychiton acuminatus low woodland over open shrubland over hummock and tussock grassland</td><td>2.34</td><td>2.80</td></tr>
<tr><td>*Cenchrus ciliaris open grassland over Trianthema turgidifolia and Neobassia astrocarpa open chenopod shrubland on disturbed edges of saline flats</td><td>1.68</td><td>2.01</td></tr>
<tr><td>Corymbia hamersleyana open woodland over open shrubland over hummock grassland</td><td>3.23</td><td>3.86</td></tr>
<tr><td>Dichrostachys spicata, Acacia inaequilatera, tall shrubland over open low mixed shrubland over hummock grassland. Scattered Eucalyptus victrix and Terminalia circumalata</td><td>1.85</td><td>2.21</td></tr>
<tr><td>Eucalyptus victrix low woodland over open shrubland over hummock or tussock grassland.</td><td>6.36</td><td>7.60</td></tr>
<tr><td>Grevillea pyramidalis tall shrubland over hummock grassland.</td><td>49.04</td><td>58.64</td></tr>
<tr><td>Tecticornia ssp low open shrubland on saline flats</td><td>6.21</td><td>7.43</td></tr>
<tr><td>Terminalia circumalata low open woodland over mixed Dichrostachys spicata open shrubland over open hummock grassland and open sedgeland</td><td>0.31</td><td>0.37</td></tr>
<tr><td>Terminalia supranitifolia low open woodland over Ipomoea costata, Acacia coriacea shrubland over hummock grass</td><td>2.68</td><td>3.21</td></tr>
</table>
The full survey descriptions and maps are available in Appendix E, F, G, H and I.

This is broadly consistent with the mapped vegetation type:
• Beard Vegetation Association 117, described as hummock grassland, Triodia spp. Grass-steppe; soft spinifex.

The mapped vegetation type retains approximately 94 per cent of the original extent (Government of Western Australia, 2019).</td></tr>
</table>

Characteristic	Details
Vegetation condition	The vegetation surveys (GDH, 2022; GHD, 2020; GHD, 2019; Vicki Long, 2019) indicate the vegetation in the proposed clearing areas ranges from Completely Degraded to Excellent (Trudgen, 1991) condition. The full Trudgen (1991) condition rating scale is provided in Appendix D. Representative photos are available in Appendix E, F, G, H and I.
Climate and landform	The application area is located in Burrup, in the Pilbara region of Western Australia where it experiences a semi-arid climate. Temperatures are warm to hot all year and rainfall is generally low, mostly falling in the late summer months due to the influence of tropical cyclones and monsoon. The mean maximum temperature is 32.5 degrees Celsius, and the average annual rainfall is 288.0 mm. Landform of the proposed clearing area ranges from granitic hills and bare coastal mudflats.
Soil description	There are two mapped soil types within the application area listed as: • 286Gr: Rugged granitic hills supporting shrubby hard and soft spinifex grasslands. • 286Li: Bare coastal mudflats (unvegetated), samphire flats, sandy islands, coastal dunes and beaches, supporting samphire low shrublands, sparse acacia shrublands and mangrove forests.
Land degradation risk	The mapped soils are not highly susceptible to land degradation risks.
Waterbodies	The desktop assessment and aerial imagery indicated that several non-perennial minor watercourses intersect the proposed clearing area. Additionally, a portion of the proposed clearing area intersects with a mud flat.
Hydrogeography	The application area is mapped within the Pilbara Surface Water Area and Pilbara Groundwater Area Proclaimed under the RIWI Act.
Flora	According to available datasets, there are 129 records across 23 species of conservation significant flora within the local area (50-kilometre radius), none of which are listed as threatened. Three of these species were recorded within one kilometre of the application area: • *Rhynchosia bungarensis* (P4), • *Terminalia supranitifolia* (P3), and • *Vigna triodiophila* (P3) All three of these species were identified within the clearing footprint during flora and vegetation surveys (GHD, 2020a).
Ecological communities	The flora and vegetation surveys identified that portions of the proposed clearing area are mapped within the 'Burrup Peninsula rock pile communities' PEC which is listed as Priority 1 by DBCA.
Fauna	According to available databases, there are 7338 records across 72 species of conservation fauna in the local area (50-kilometre radius), composed of 48 birds, one fish, 15 mammals and 10 reptiles. Nine species were recorded within one kilometre of the proposed clearing, namely: • bar-tailed godwit (*Limosa lapponica*) (MI), • common sandpiper (*Actitis hypoleucos*) (MI), • common greenshank (*Tringa nebularia*) (MI), • greater sand plover (*Charadrius leschenaultii*) (VU), • grey-tailed tattler (*Tringa brevipes*) (MI & P4), • northern quoll (*Dasyurus hallucatus*) (EN) • Pilbara olive python (*Liasis olivaceus barroni*) (VU), • ruddy turnstone (*Arenaria interpres*) (MI), and • whimbrel (*Numenius phaeopus*) (MI) The fauna survey identified evidence of three conservation significant fauna species within the proposed clearing area (GHD, 2020a): • north-western free-tail bat (*Ozimops cobourgianus*) (P1) • whimbrel (*Numenius phaeopus*) (MI), and • western pebble-mound mouse (*Pseudomys chapmani*) (P4)

B.2. Flora analysis table

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

Species name	Conservation status	Suitable habitat features ? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Rhynchosia bungarensis	P4	Y	Y	Y	0.39	31	Y
Terminalia supranitifolia	P3	Y	Y	Y	0.27	41	Y
Vigna triodiophila	P3	Y	Y	Y	0.39	10	Y

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

B.3. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Actitis hypoleucos (common sandpiper)	MI	Y	Y	0.04	109	Y
Calidris canutus (red knot)	EN	Y	Y	6.17	15	Y
Calidris ferruginea (curlew sandpiper)	CR	Y	Y	2.85	35	Y
Calidris tenuirostris (great knot)	CR	Y	Y	2.85	40	Y
Charadrius leschenaultii (greater sand plover, large sand plover)	VU	Y	Y	0.04	101	Y
Charadrius mongolus (lesser sand plover)	EN	Y	Y	2.82	40	Y
Charadrius veredus (oriental plover)	MI	Y	Y	6.17	7	Y
Dasyurus hallucatus (northern quoll)	EN	Y	Y	0.07	519	Y
Gelochelidon nilotica (gull-billed tern)	MI	Y	Y	3.18	28	Y
Glareola maldivarum (oriental pratincole)	MI	Y	Y	9.61	16	Y
Hydroprogne caspia (Caspian tern)	MI	Y	Y	1.20	328	Y
Liasis olivaceus barroni (Pilbara olive python)	VU	Y	Y	0.05	35	Y
Limosa lapponica (bar-tailed godwit)	MI	Y	Y	0.04	151	Y
Macroderma gigas (ghost bat)	VU	Y	Y	4.65	8	Y
Numenius madagascariensis (eastern curlew)	CR	Y	Y	2.85	99	Y
Numenius phaeopus (whimbrel)	MI	Y	Y	0.04	169	Y
Onychoprion anaethetus (bridled tern)	MI	Y	Y	10.86	95	Y
Ozimops cobourgianus (northern coastal free-tailed bat)	P1	Y	Y	3.91	19	Y
Pseudomys chapmani (western pebble-mound mouse, ngadji)	P4	Y	Y	1.35	18	Y
Sternula nereis nereis (fairy tern)	VU	Y	Y	13.06	62	Y
Thalasseus bergii (crested tern)	MI	Y	Y	2.57	131	Y
Tringa glareola (wood sandpiper)	MI	Y	Y	6.17	36	Y
Tringa nebularia (common greenshank)	MI	Y	Y	0.04	148	Y

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

B.4. Ecological community analysis table

Community name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Burrup Peninsula rock pile communities	Priority 1	Y	Y	Y	0	60	Y

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

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The area proposed to be cleared contains locally significant flora, fauna, habitats, assemblages of plants. The flora and vegetation surveys identified the 'Burrup Peninsula rock pile communities (P1) PEC' within the application area (GHD, 2019; Vicki Long, 2019; GHD, 2020a & GHD, 2022).	At variance	Yes *Refer to Section 3.2.1 and 3.2.2, above.*
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared contains suitable habitat for conservation significant fauna. Particularly, there is suitable habitat for the northern quoll, western pebble-mound mouse, north coastal free-tailed bat, ghost bat and Pilbara olive python. The mudflat habitat is also suitable for migratory bird species, particularly as an ecological linkage between King Bay and Hearson's Cove.	At variance	Yes *Refer to Section 3.2.2, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The area proposed to be cleared is unlikely to contain habitat for threatened flora species listed under the BC Act. According to available databases, no threatened flora species have been recorded within the local area and the flora and vegetation surveys (GHD, 2019; Vicki Long, 2019; GHD, 2020a & GHD, 2022) did not identify threatened flora in the application area.	Not likely to be at variance	No
Principle (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."* Assessment: According to available databases, there are no TECs recorded within the local area (50 km radius) and the flora and vegetation surveys did not identify species indicating a TEC in the application area (GHD, 2019; Vicki Long, 2019; GHD, 2020a & GHD, 2022).	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (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."* Assessment: The extent 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.	Not at variance	No
Principle (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."* Assessment: The proposed clearing is approximately 0.1 km from Murujuga National Park and may have indirect impacts on the natural values within the park.	Not likely to be at variance	Yes *Refer to Section 3.2.3, above.*
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment Several non-perennial minor watercourses intersect the proposed clearing area. Additionally, a portion of the proposed clearing area intersects a coastal mudflat habitat (GHD, 2020b). Therefore, the proposed clearing contains vegetation growing in, or in association with a watercourse and wetland.	At variance	Yes *Refer to Section 3.2.4, above.*
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment The mapped soils are not susceptible to land degradation risks. The proposed clearing is not likely to have an appreciable impact on land degradation.	Not likely to be at variance	No
Principle (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."* Assessment: Given that the proposed clearing intersects watercourses, the areas permanently cleared may impact on surface water hydrology, particularly within the mud flat areas.	May be at variance	Yes *Refer to Section 3.2.4, above.*
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: While the proposed clearing area intersects watercourses and the mud flat, the mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding. The proposed clearing is unlikely to contribute to waterlogging.	Not likely to be at variance	Yes *Refer to Section 3.2.4, above.*

Appendix D. 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 E. Biological survey information excerpts (GHD, 2019)

Note: This survey only overlaps a small portion of the application area (Figure x)

Figure 2. Map of the portion of the survey area (shaded blue) Which overlaps the proposed clearing area (hatched green).

Vegetation type code	Vegetation type description	Sample locations and extent (ha)	Photograph
VT_4	*Grevillea pyramidalis* subsp. *pyramidalis*, *Hakea lorea* subsp. *lorea*, *Acacia inaequilatera* and *Ehretia saligna* var. *saligna* open shrubland over *Solanum lasiophyllum*, *Diplopeltis eriocarpa* and *Solanum lasiophyllum* scattered shrubs over *Triodia epactia* sparse hummock grassland on flat rocky sandy loam plains near rock piles. Associated species include *Indigofera monophylla*, *Triumfetta propinqua*, *Acacia orthocarpa*, *Trichodesma zeylanicum* var. *zeylanicum* and *Acacia ampliceps*.	KAR_09, KAR_14, KAR_23 Area: 9.01 ha	

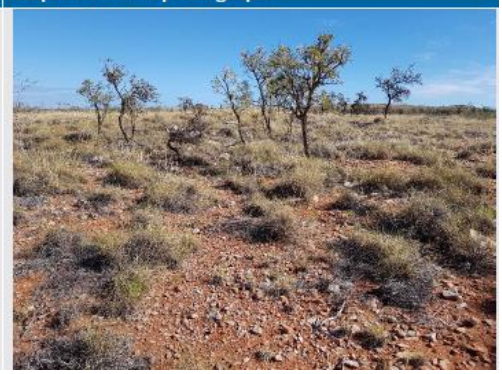
Fauna habitat	Representative photograph
Rocky plains and low rises This habitat type is associated with stony/rocky plains and low undulating rises and consists of scattered shrubs of *Acacia*, *Grevillea*, *Hakea* and *Senna* species over a *Triodia* hummock grassland. The hummock grasslands provides refuge for reptiles (such as snakes, skinks, goannas and dragons) and small mammals and ground dwelling birds. The open shrublands provide refuge and a food source for native birds. Rocky outcrops contain small crevices which provide refuge for reptile species and small mammals. The majority of the habitat was well connected with some minor clearing as a result of access tracks and existing powerlines. This habitat type aligns with VT_1, VT_2, VT_3, VT_4	

Figure 3. Descriptions of the vegetation type and habitat types identified within the proposed clearing area.

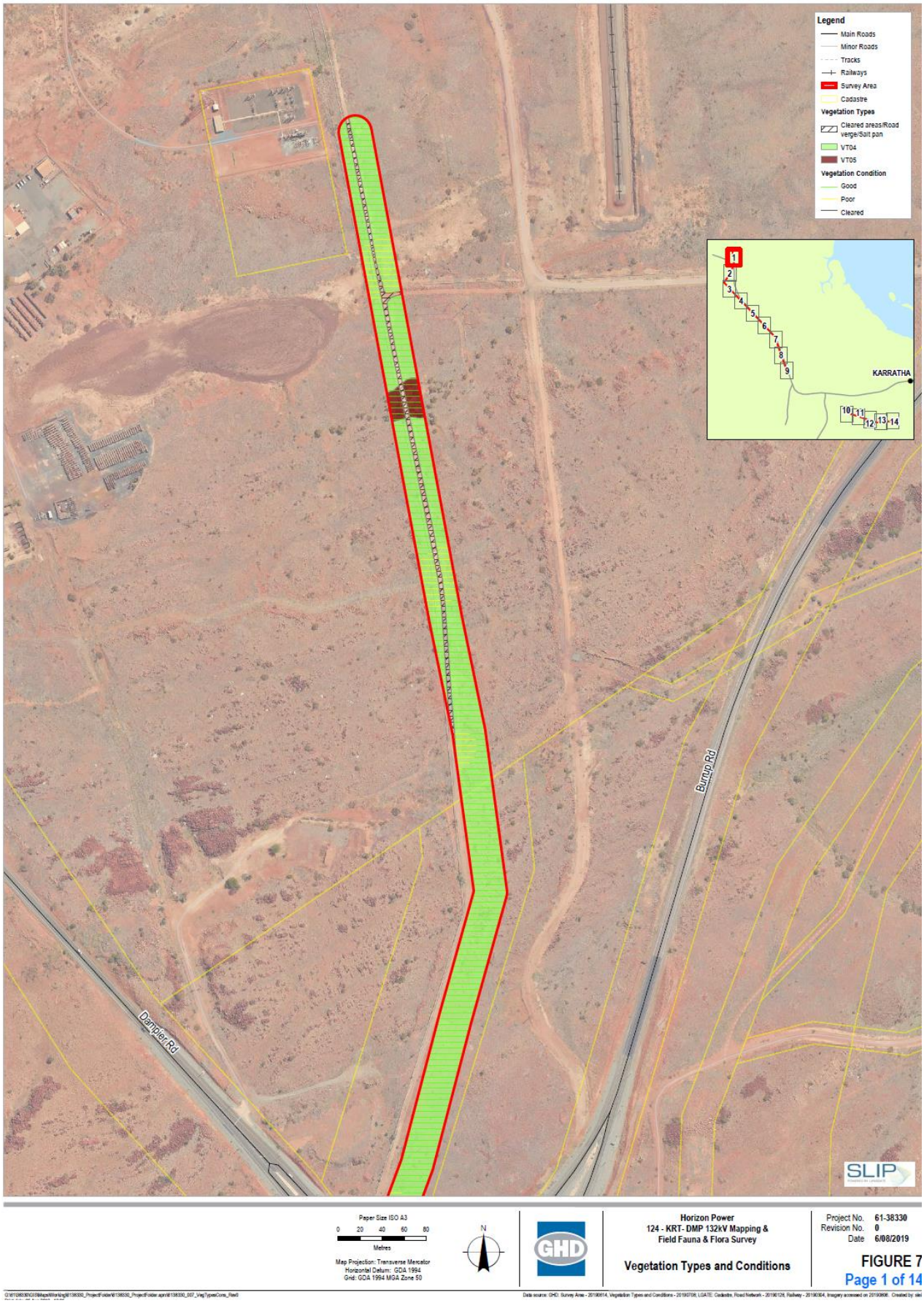


Figure 4. Mapped vegetation type and condition (Trudgen, 1991) within the survey area. The portion overlapping the proposed clearing is in the very northern portion of the map.

Appendix F. Biological survey information excerpts (Vicki Long, 2019)

Vegetation Map No.	Vegetation Type code and Description	Sites	Vegetation Condition	Extent of Vegetation Type (ha)	Representative Photograph
Acacia bivenosa tall shrubland over tussock and/or hummock grassland.					
1	**AbCc** *Acacia bivenosa* tall open to shrubland over **Cenchrus ciliaris* tussock grassland, sometimes closed tussock grassland, with patchy *Triodia angusta*. Occurs on previously disturbed areas on valley floor or low undulating hill slopes, often with stony and/or imported fill.	11 16b 15	Degraded	6.8	
2	**AbTe** *Acacia bivenosa* with occasional *Dichrostachys spicata, Acacia ancistrocarpa* open tall shrubland over mixed *Triodia epactia/T. angusta* hummock and **Cenchrus ciliaris* tussock grassland. Occurs on previously disturbed areas on valley floor or low undulating hill slopes, often with stony and/or imported fill and also on red sands	13 36	Poor	6.8	
4	**AblmTe** *Acacia bivenosa, Acacia pyrifolia* subsp *morrisonii*, *Grevillea pyramidalis* open shrubland over *Indigofera monophylla, Corchorus walcottii* open low shrubland over *Triodia epactia* hummock grassland with patchy **Cenchrus ciliaris* tussock grassland. Occurs on undulating low hill slopes with stony mantle over red silts.	20a 20b	Good	3.6	
Brachychiton acuminatus mixed low woodland over scattered *Triodia epactia* hummock and *Cymbopogon ambiguous/ *Cenchrus ciliaris* tussock grasses.					
17	**BaDslc** *Brachychiton acuminatus* mixed low woodland with *Dichrostachys spicata* over, *Ipomoea costata, Acacia coriacea, Terminalia supranitifolia* open shrubland over scattered *Triodia epactia / Cymbopogon ambiguus/ *Cenchrus ciliaris* grasses. Occasional *Ficus brachypoda* trees. Occurs on large areas of scree and rockpiles, along rocky gullies and on small outcropping rockpiles on hill slopes. Usually a PEC on areas of large rockpile and scree but not on smaller outcropping rocks.	2 4	Good to Very Good	4.4	 

Vegetation Map No.	Vegetation Type code and Description	Sites	Vegetation Condition	Extent of Vegetation Type (ha)	Representative Photograph
Corymbia hamersleyana open to low woodland over mixed shrubland over *Triodia epactia / T. angusta* hummock grassland					
15	**ChAbTe** *Corymbia hamersleyana* open to low woodland over *Acacia bivenosa / Acacia coriacea / Dichrostachys spicata* tall shrubland, sometimes *Adriana tomentosa / Stemodia grossa* low shrubland over open *Triodia epactia / T. angusta* hummock and sometimes **Cenchrus ciliaris* tussock grassland. Occurs on outer perimeters of drainage lines, on lower stony areas, in broad valley floor, on lower slopes over moderate to dense stony mantle and red-brown silts or on plain with red-brown medium grained sands.	9b 37 22	Poor to Very Good	4.8	
16	**ChImTe** *Corymbia hamersleyana* open to low woodland over *Indigofera monophylla* open low shrubland over *Triodia epactia* hummock grassland. Occurs on broad valley floor with dense stony mantle over deeper red-brown silts.	10	Excellent	1.6	
Dichrostachys spicata, Acacia inaequilatera, tall shrubland over open low mixed shrubland over *Triodia epactia / T. angusta* hummock grassland.					
11	**DsAiTe** *Dichrostachys spicata, Acacia inaequilatera, Acacia coriacea* tall shrubland over *Scaevola spinescens, Alectryon oleifolius* open low mixed shrubland over *Triodia epactia / T. angusta* hummock grassland. There can be scattered *Eucalyptus victrix* and *Terminalia circumalata*. Occurs along broader shallow drainage lines with moderate cover of stones and over red-brown alluvial silts.	23a 23b 25	Very good	2.5	
Eucalyptus victrix low woodland over mixed shrubland over *Triodia angusta / T. epactia* hummock grassland.					
13	**EvAcTa** *Eucalyptus victrix* open low woodland over *Acacia coriacea, Dichrostachys spicata* open shrubland over *Triodia angusta* hummock and **Cenchrus ciliaris* tussock grassland sometimes patchy. Can have dense *Adriana tomentosa*. Occurs along stony broad shallow drainage lines with grey brown stones and rocks over brown grey alluvial silts.	12a 12b 21a	Good	0.5	
					

	tomentosa. Occurs along stony broad shallow drainage lines with grey brown stones and rocks over brown grey alluvial silts.				
Grevillea pyramidalis tall shrubland over *Triodia epactia / T. angusta* hummock grassland.					
7	**GpTeBaTs** *Grevillea pyramidalis* scattered to open tall shrubland, sometimes with scattered *Hakea lorea* subsp *lorea*, *Ipomoea costata*, *Acacia inaequilatera* over *Triodia epactia* hummock grassland, sometimes patchy *T. angusta*. There can be open low *Indigofera monophylla* shrubland. There are scattered *Brachychiton acuminatus*, *Terminalia supranitifolia*, *Dichrostachys spicata* on small rock outcrops. Occurs on low undulating rises, lower hill slopes and higher plateaux with dense stone and boulder mantle over skeletal red silts.	1, 3 18a(i) 18a (ii) 29 32	Excellent	29.2	
8	**GpCc** *Grevillea pyramidalis* (regenetrating) scattered to open tall shrubland over **Cenchrus ciliaris* tussock and *Triodia epactia* hummock grassland Occurs on low undulating rises and lower hill slopes usually in close proximity to a previous disturbed corridor.	18b	Poor	1.5	
Terminalia circumalata low open woodland over mixed *Dichrostachys spicata* open shrubland over *Triodia epactia / T. angusta* open hummock grassland and *Cyperus vaginatus* open sedgeland.					
12	**TcDsTe/Ta** *Terminalia circumalata* low woodland with occasional *Eucalyptus victrix*, *Brachychiton acuminatus*, over *Dichrostachys spicata*, *Acacia coriacea*, *Ipomoea costata*, *Flueggea virosa* mixed open shrubland over *Triodia epactia / T. angusta* open hummock grassland and *Cyperus vaginatus* open sedgeland. Occurs along rocky drainage lines, in narrow valley floors between rockpiles and in rock pockets on rock piles and on rockpile ridge.	5a 5b 8 21b	Very Good	2.4	
					

Terminalia supranitifolia low open woodland over *Ipomoea costata, Acacia coriacea* shrubland over scattered to open *Triodia epactia* hummock grass.					
19	**TslcTe** *Terminalia supranitifolia* low open woodland over *Ipomoea costata, Acacia coriacea, Dichrostachys spicata, Grevillea pyramidalis* mixed shrubland over scattered to open *Triodia epactia* hummock grass sometimes *Themeda triandra*. Scattered *Brachychiton acuminatus* Occurs on and around the base of large rockpiles, scree slopes and on small outcropping rockpiles on higher and lower hill slopes.	27a 28 30	Very Good to Excellent	4.7	
Tecticornia ssp low open shrubland					
23	**Tspp** *Tecticornia halocnemoides* subsp *tenuis, T. pruinosa, T. indica* subsp *leiostachya*, with *Muellerolimon salicorniaceum* open low shrubland with patchy *Avicennia marina* trees. Occurs on edges of saline inlet on grey-brown saline silty loams.	14	Excellent	6.3	

Figure 5. Vegetation types recorded within the proposed clearing area.

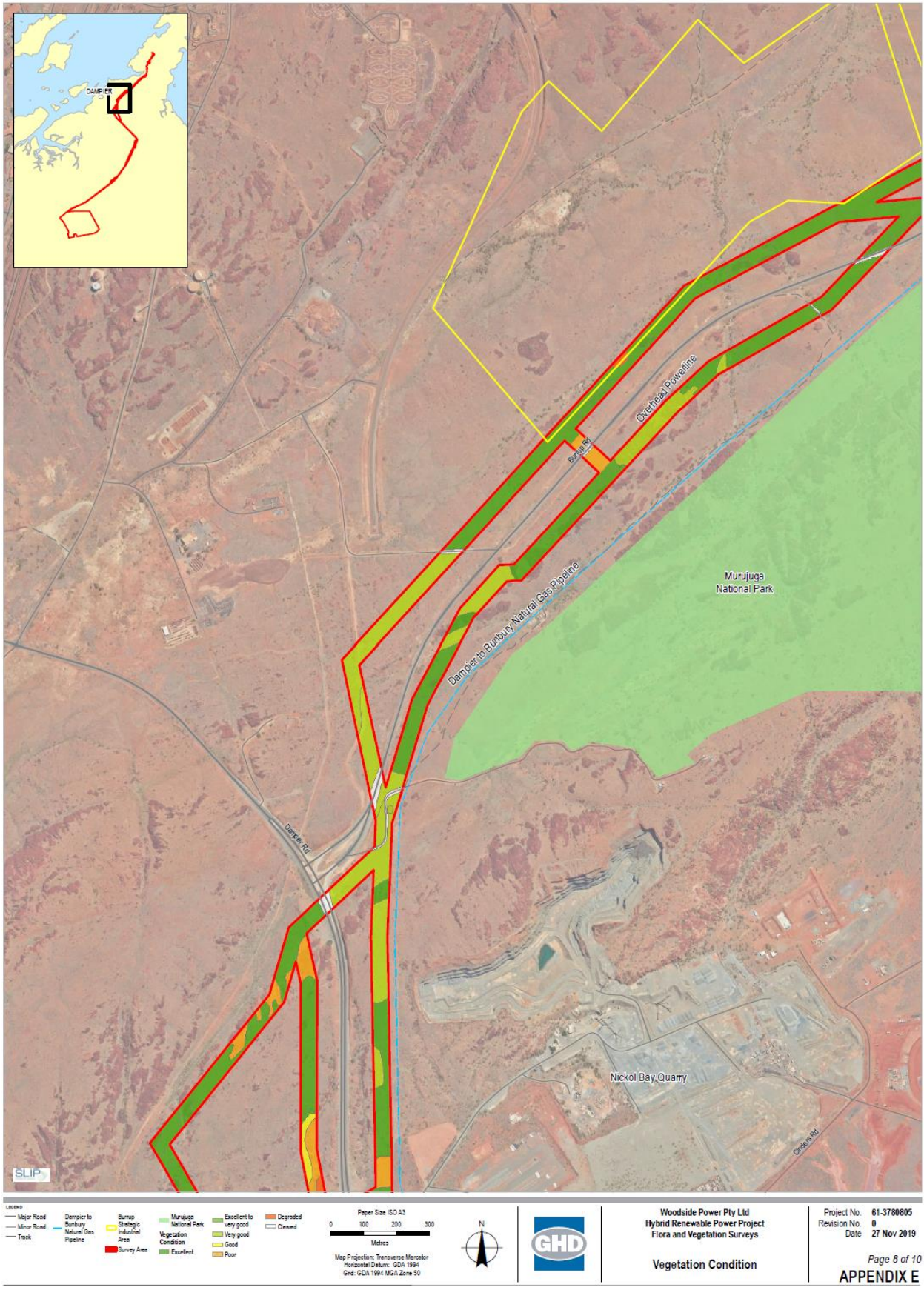


Figure 6. Mapped vegetation condition (Trudgen, 1991) recorded in the southern portion of the proposed clearing area (North-eastern section of the map).

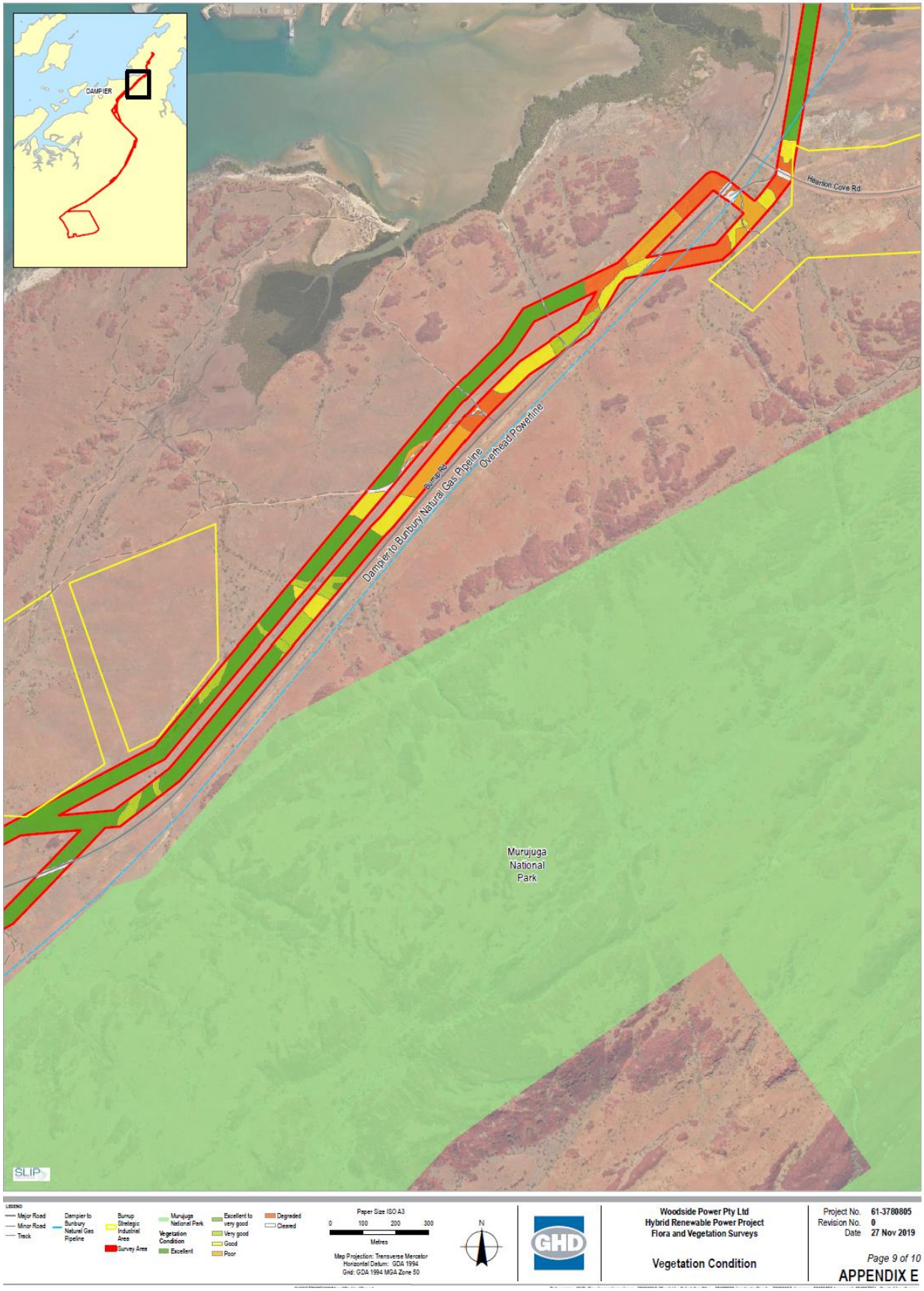


Figure 7. Vegetation condition (Trudgen, 1991) recorded in the central section of the proposed clearing area.

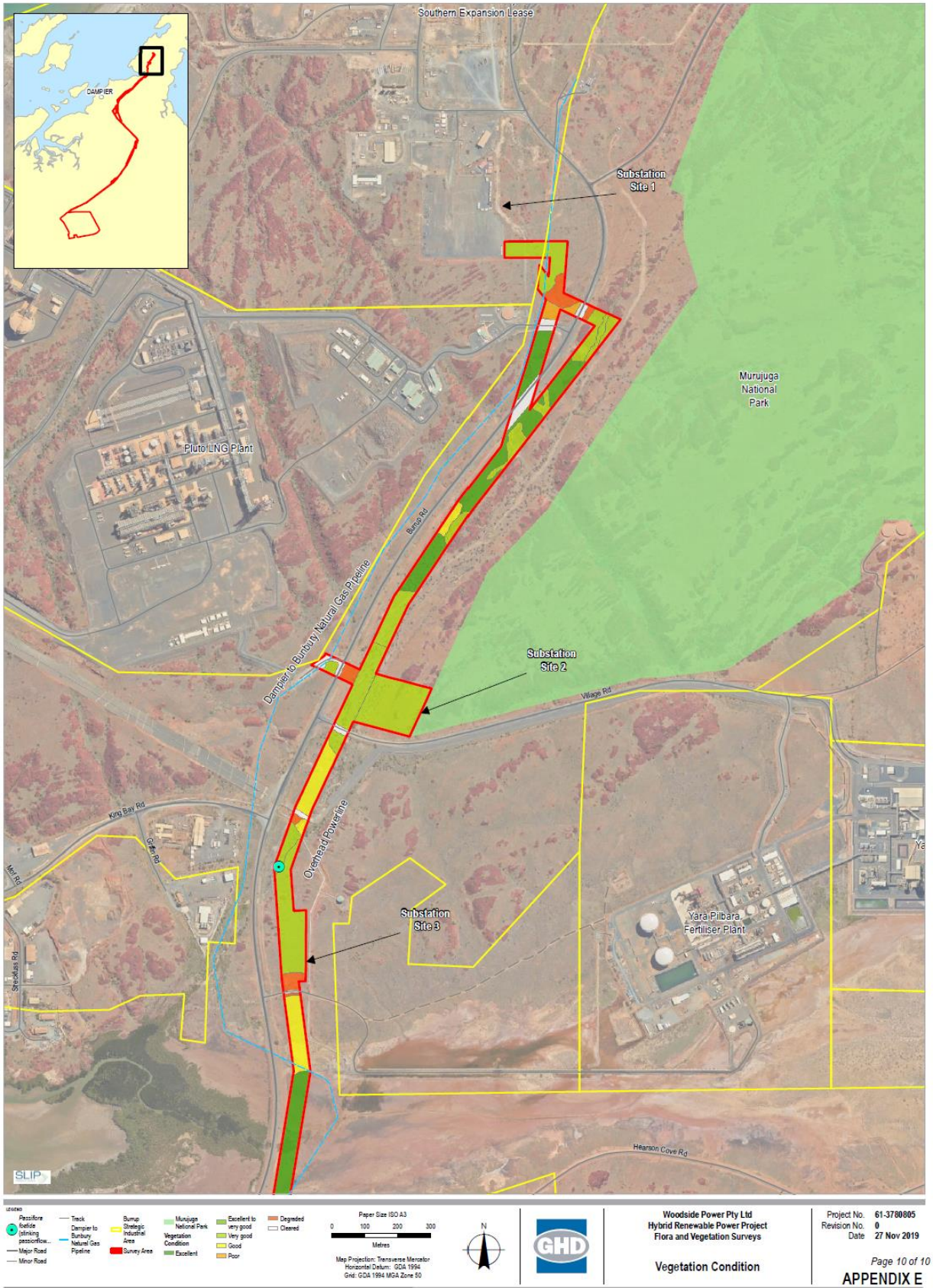


Figure 8. Vegetation types mapped in the northern section of the proposed clearing area (ends at the intersection of Village Rd).

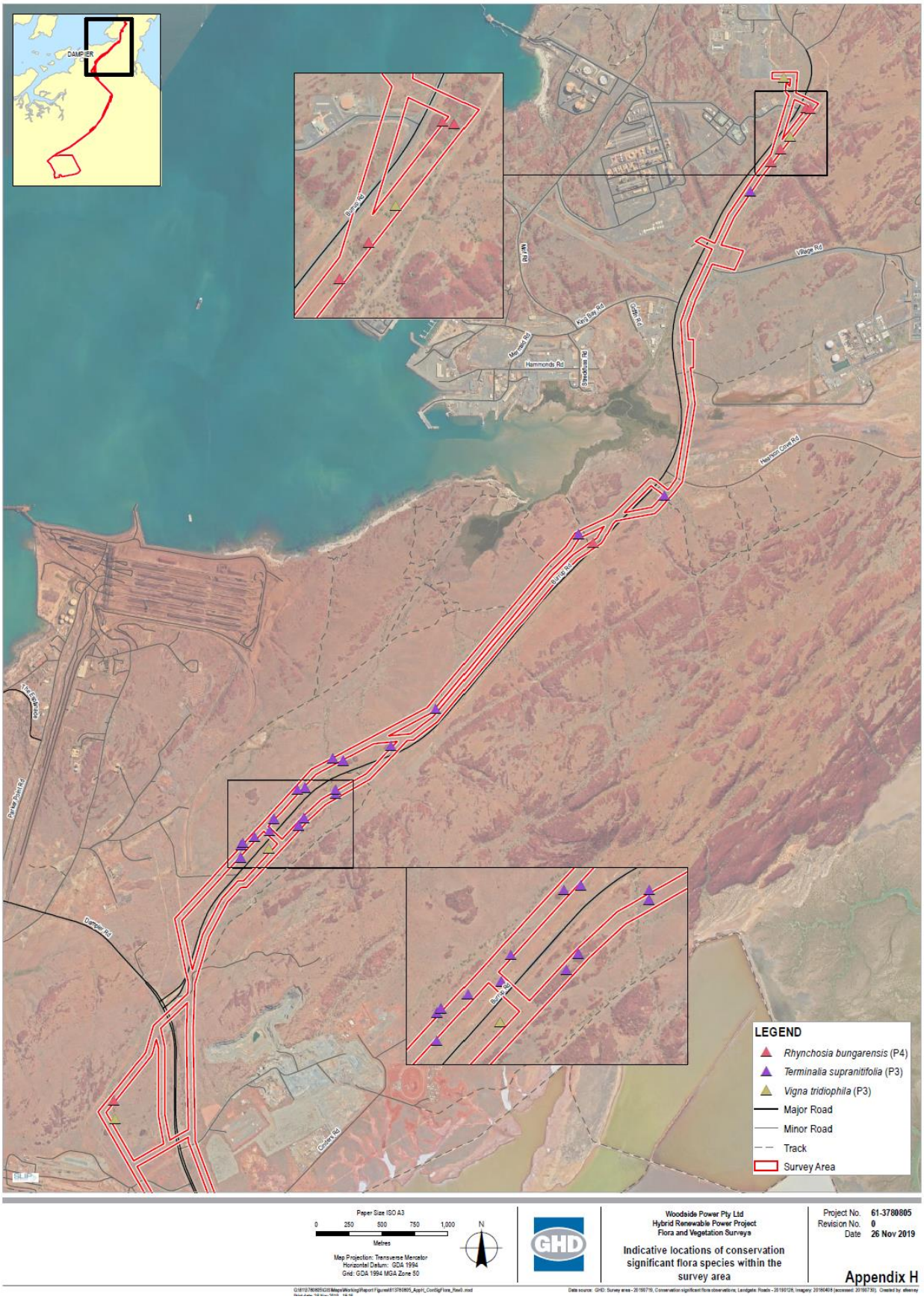


Figure 9. Map of conservation significant flora recorded during the survey within or in proximity to the proposed clearing.

Appendix G. Biological survey information excerpts (GHD, 2020a)

Vegetation type code	Vegetation type description	Sample locations	Extent (ha)	Extrapolated extent (ha)	Total extent (ha)	Photograph
VT01	*Brachychiton acuminatus* scattered low trees over *Grevillea pyramidalis* subsp. *pyramidalis*, *Terminalia supranitifolia* (P3) and *Flueggea virosa* subsp. *melanthesoides* scattered shrubs over *Triodia epactia* open hummock grassland over *Cymbopogon ambiguus* and **Cenchrus ciliaris* open tussock grassland and *Tinospora smilacina* and *Ipomoea costata* open vineland on rock piles. Associated species includes *Evolvulus alsinoides*, *Gomphrena cunninghamii*, *Triumfetta clementii* and *Abutilon lepidum*. Conservation listed species; *Rhynchosia bungarensis* (P4) and *Vigna triodiophila* (P3). Represents Priority 1 PEC Burrup Peninsula rock pile communities.	HPKAR_02, HPKAR_09, HPKAR_10	4.67	-	-	
VT02	*Corymbia hamersleyiana* open woodland over *Acacia bivenosa*, *Grevillea pyramidalis* subsp. *pyramidalis* and *Hakea lorea* subsp. *lorea* scattered shrubs over *Triodia epactia* open hummock grassland with **Cenchrus ciliaris* scattered grasss over over *Hybanthus aurantiacus*, *Cleome viscosa* and *Trichodesma zeylanicum* var. *zeylanicum* open forbland on brown sandy loam on elevated rocky plain. Associated species include *Chrysopogon fallax*, *Bonamia erecta*, *Euphorbia tamnesis* subsp. *eremophila* and *Sida fibulifera*.	HPKAR_01	2.74	-	-	

VT03	*Eucalyptus victrix* open woodland over *Terminalia circumalata* low open woodland over *Triodia wiseana* open hummock grassland with **Cenchrus ciliaris* and *Eriachne benthamii* scattered tussock grasslands over *Hybanthus aurantiacus, Indigofera trita* and *Gossypium australe* scattered herbs on rocky sandy loam on minor drainage lines. Associated species include *Cyperus vaginatus, Rhynchosia minima* and *Boerhavia coccinea.*	HPKAR_03, HPKAR_07, HPKAR_08, HPKAR_12, HPKAR_38	14.10	0.15	14.25	
VT04	*Tecticornia ?indica* subsp. *leiostachya* and *Tecticornia ?pterygosperma* low chenopod shrubland with scattered *Avicennia marina* on saline flats with tidal inundation.	HPKAR_04	7.07	1.36	8.43	
VT05	**Cenchrus ciliaris* open grassland over *Trianthema turgidifolia* and *Neobassia astrocarpa* open chenopod shrubland on disturbed edges of saline flats.	HPKAR_05, HPKAR_06	7.12	-	-	
VT06	*Grevillea pyramidalis* subsp. *pyramidalis* and **Vachellia farnesiana* scattered shrubs over *Ipomoea costata, Indigofera monophylla* and *Scaevola spinescens* open shrubland over *Triodia epactia* open hummock grassland over *Cleome viscosa, Rhynchosia minima* and *Hybanthus aurantiacus* scattered herbs on red/brown sandy loam on rocky slopes with frequent basalt outcropping. Associated species include *Abutilon lepidum, Gomphrena cunninghamii, Streptoglossa decurrens* and *Indigofera monophylla*	HPKAR_11, HPKAR_37	112.16	2.89	115.05	

Figure 10. Vegetation types recorded within the proposed clearing area.

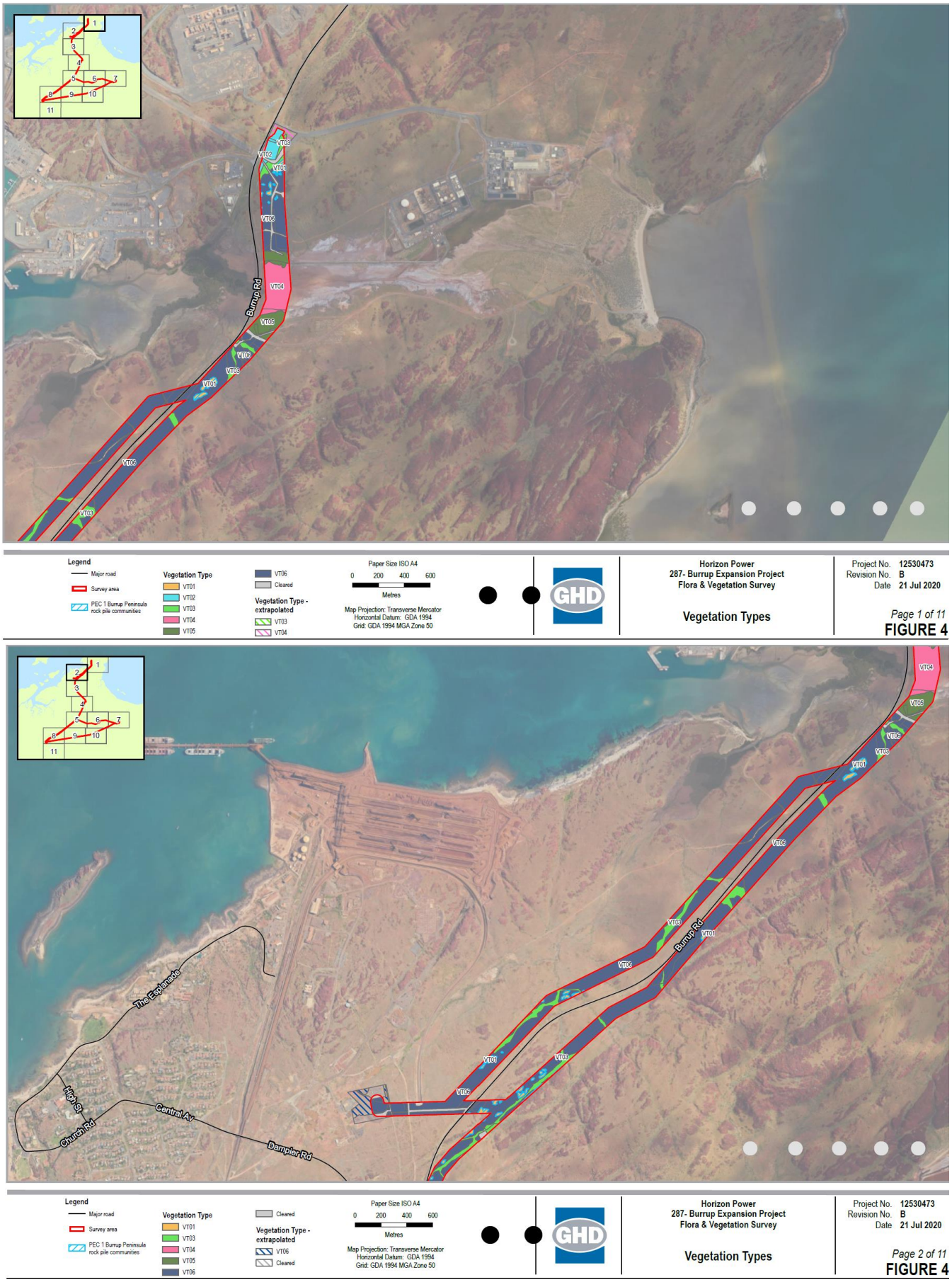
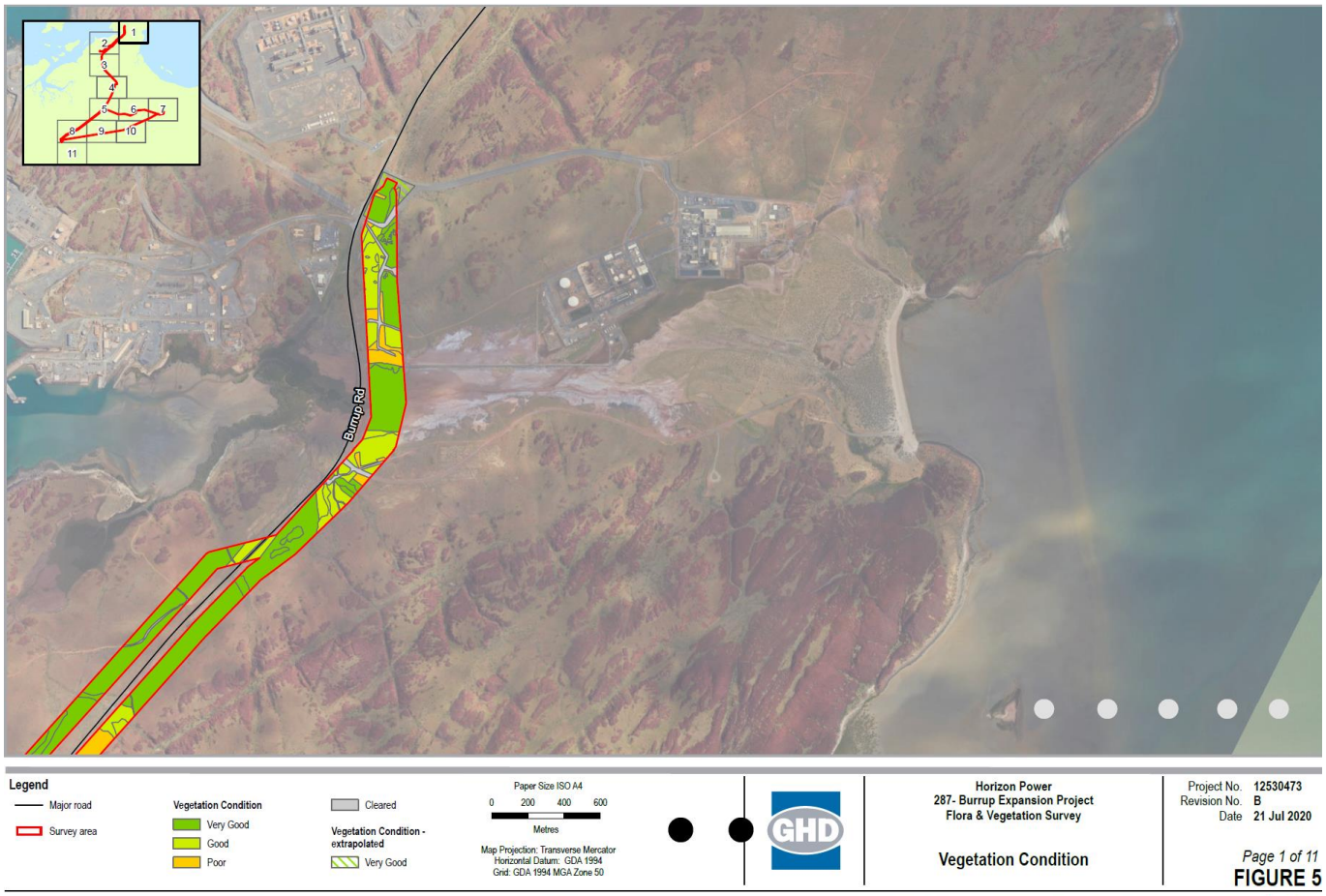


Figure 11. Maps of the vegetation types recorded in the remainder of the proposed clearing area including the 'Burrup Peninsula rock pile communities' PEC (light blue areas).



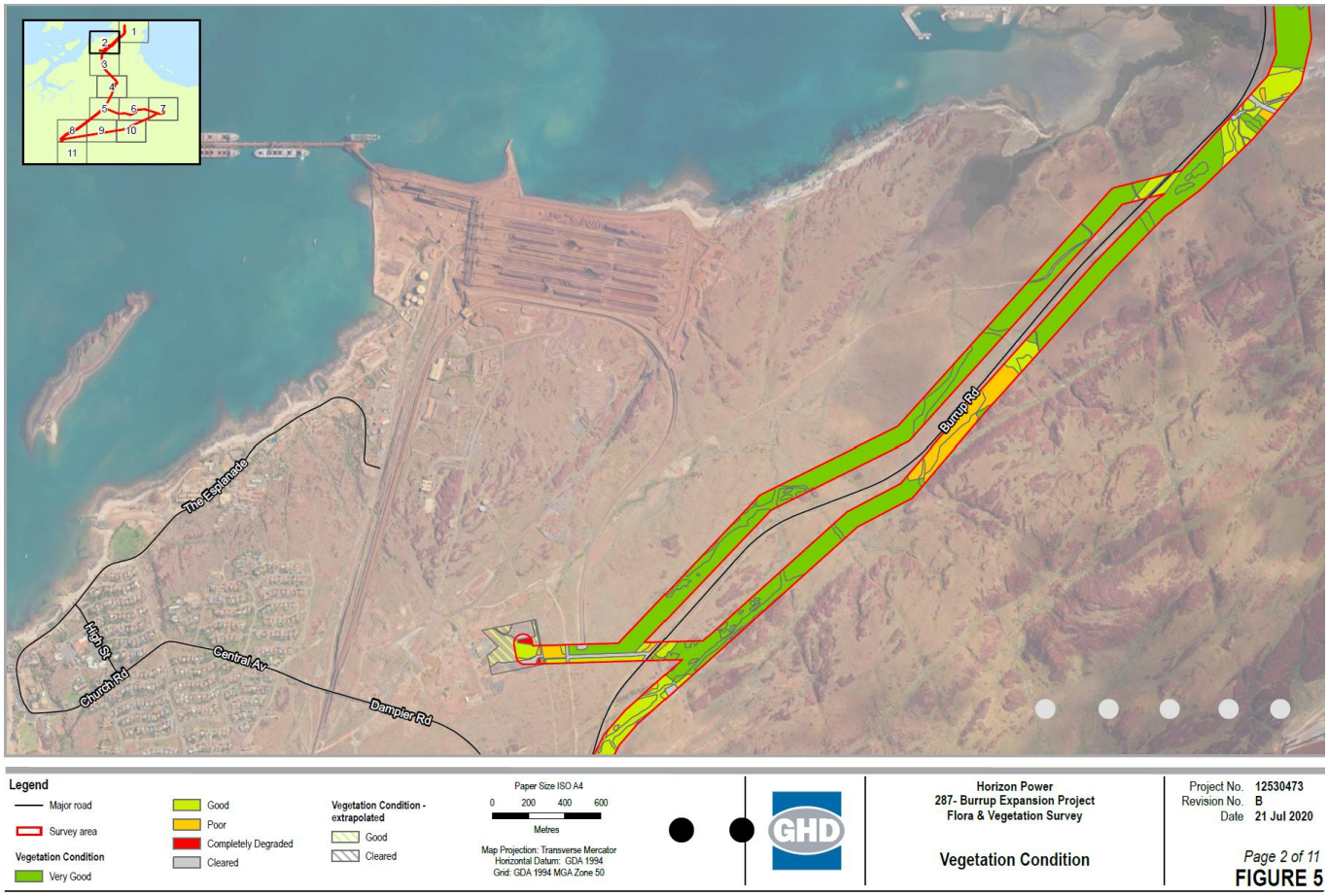


Figure 12. Mapped vegetation condition (Trudgen, 1991) within the proposed clearing area.

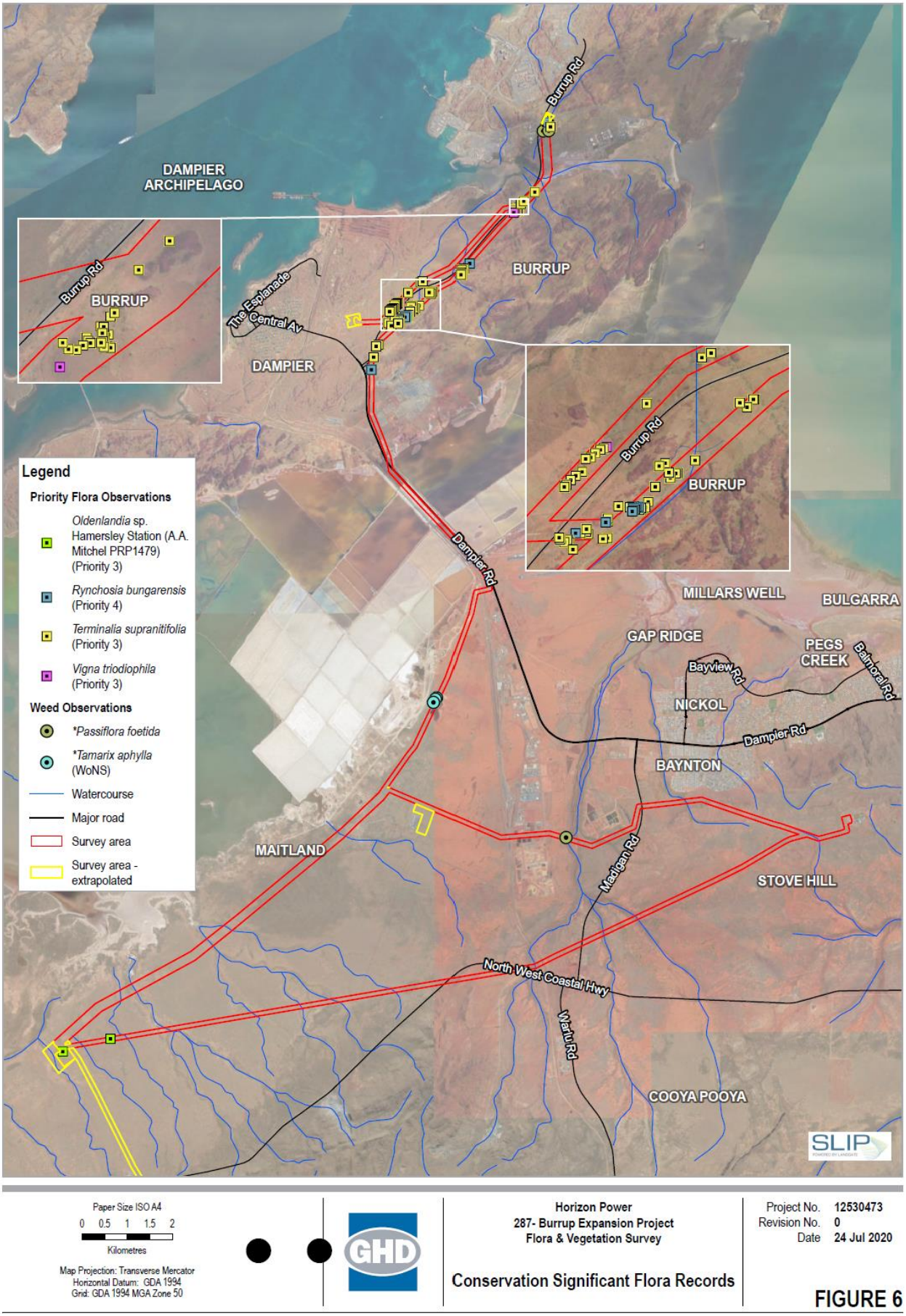


Figure 13. Conservation significant flora recorded within the proposed clearing area and surrounding area.

Appendix H. Biological survey information excerpts (GHD, 2020b)

Habitat	Image
Mudflat with tidal inundation, Mangroves and supportive scattered Samphire. A small portion of tidal mudflats occur in western part of the survey area on the Burrup Peninsular. Vegetation is minimal except where the mudflats fringe mangroves and samphire. Vegetation was generally sparse and scattered however in areas clustered to form low samphire shrublands. Areas were inundated with water during high tides and retracts to several small pools and a minor drainage line during the low period. Crabs and burrow were recorded on mudflat and generally restricted to those areas regularly influenced by tidal surge. Few areas of debris build up was present however dead branched and some logs were present around the mangrove stand. Scattered large rocks and shell were recorded. The samphire habitat was considered suitable for the Arlie Island Skink however no specimens were recorded during the survey despite four assessments undertaken (walking transects) looking for active skinks. It is likely that the area of available habitat is too small for the skink to persist. No fire evidence was recorded in this area. This habitat type recorded species associated with marine environment included Terns and the Whimbrel (*Numenius phaeopus*). Additionally mangrove specialist birds were recorded including the Yellow White-eye (*Zosterops luteus*) and Dusky Gerygone (*Gerygone tenebrosa*). **Habitat value for fauna species of conservation significance** Four conservation significant species were recorded in this habitat type and include Whimbrel (*Numenius phaeopus*), Gull-billed Tern (*Gelochelidon nilotica*), Caspian Tern (*Hydroprogne caspia*), and Crested Tern (*Thalasseus bergii*). The terns appeared to be following the water courses looking for food while the Whimbrel was recorded on the mudflat foraging. All birds when disturbed fly west into Hearson's Cove. The habitat within the survey area is likely linking habitats from King Bay to Hearsons' Cove. Other migratory species may also utilise the habitat opportunistically and include the Common Sandpiper (*Actitis hypoleucos*), Bridled Tern (*Onychoprion anaethetus)*, Common Greenshank (*Tringa nebularia)* and Wood Sandpiper (*Tringa glareola*). A bat detector at this location recorded the North-western Free-tail Bat (*Mormopterus (Ozimops) cobourgianus*), the record was a probably assessment of this species due to the overlap in call frequencies among species in the region. However due to the habitats present it is highly probable that the calls were of the North-western Free-tailed Bat, particularly that the species is known from the area also. The Peregrine Falcon (*Falco peregrinus*) may also utilise the area for foraging only. **High value** Foraging habitat for migratory birds, North-western Free-tailed Bat and Peregrine Falcon	 
Rocky Hills with exposed boulder piles Rocky hills occur in the Burrup portion of the survey area. This habitat type is mostly dominated by a Triodia hummock grassland however does support tussock grasses and scattered Acacia shrubs. However the boulder rock piles are typically devoid of ground cover. The crests of hills contain extensive rock outcropping or boulder piles and support scattered *Ficus platypoda* and *Brachychiton sp.*. The Ficus, Brachychiton and Acacia provided litter and scattered woody debris, however the boulder piles provide extensive cover via crevices, small caves and cavities. No evidence of recent fire was recorded in the survey area. Evidence of old fire scars were present and determined based on the age of the vegetation. The rocky habitats are known to support a range of saxicoline (rock inhabiting) fauna species including Rothchild's Rock Wallaby (*Petrogale rothchildi*) and Woolley's Pseudantechinus (*Pseudantechinus woolleyae*). **Habitat value for fauna species of conservation significance** A large area of habitat that joins to or is part of a contiguous remnant environment extending beyond the survey area on the Burrup Peninsular. This habitat provides resources for the Northern Quoll (*Dasyurus hallucatus*) and Pilbara Olive Python (*Lialis olivaceus barroni*) and potential hunting and foraging opportunities for the Peregrine Falcon. No large cliffs were present in the survey area for Peregrine Falcon to utilise for breeding however looked to be present outside of the survey area particularly along the coastal cliffs and larger boulder piles surrounding the survey area. Northern Quoll and Pilbara Olive Python would utilise the boulder piles for denning/shelter and feeding and would be considered core habitat (DotE 2016 and Tutt et al 2002) for these species. The Western Pebble-mound Mouse would have utilised this habitat but the species appears to be now extinct on the Burrup Peninsular. **High value** Core habitat for Northern Quoll and Pilbara Olive Python, foraging habitat for the Peregrine Falcon	 

Minor Drainage lines This habitat type is limited to the linear drainage systems which flow randomly amongst the rocky hills or on the plains. They primarily consist of a thin, linear corridor of denser vegetation which drain into the intertidal mudflats and coastline. This habitat type is mostly dominated by Eucalypt Woodland (on the Burrup Peninsular) and *Acacia* species on the plain. Understorey includes Triodia hummock grassland and Buffel Grass (*Cenchrus spp.*) and mixed small shrub species. Litter, woody debris and logs were present along drainage line edges or were water flow created build up. No recent fire scaring was present in the survey area but historical evidence was obvious via the age of vegetation present. This habitat, particularly on the plain provides a habitat corridor from the coastal tidal zone to the rocky hills in the east in a predominantly open plain over the cracking clays. The taller, mature Eucalypt trees provide roosting and breeding opportunities for a range of fauna via tall canopy or hollows large trees provide. The Black-shouldered Kite was recorded breeding within a Eucalypt and a number of fauna species favouring riparian vegetation were also recorded including White-plumed Honeyeater (*Lichenostomus penicillatus*), Bush Stone Curlew (*Burhinus grallarius*), Budgerigar (*Melopsittacus undulatus*), Red Kangaroo (*Macropus rufus*) and Long-snouted Water Dragon (*Gowidon longirostris*). **Habitat value for fauna species of conservation significance** Patchy and typically linear in the landscape but part of a larger area of contiguous remnant vegetation extending beyond the survey area. This habitat was present within the entire survey area and provides potential hunting and foraging opportunities for the Peregrine Falcon. Northern Quoll and Pilbara Olive Python have also been recorded in drainage lines particularly in association to rocky hills on the Burrup Peninsular. Minor drainage lines on the plain would not be suitable. On the plain the Northern Short-tailed Mouse (*Leggadina lakedowniensis*) and Lined Crevice Skink (*Notoscincus butleri*) would utilise this habitat on the plain. **High value** Linear corridor of habitat utilised by Northern Quoll, Pilbara Olive Python and Peregrine Falcon (in rocky environments) and Northern Short-tailed Mouse and Lined Crevice Skink on the plain. A fauna corridor for all other species on the plain.	  
Hummock Grassland on Rocky Plain This habitat type occurs across the survey area on the Burrup Peninsular and plain often associated with slight undulation where there is association to low hills or rocky substrates. This habitat type is mostly dominated by a Triodia hummock grassland with heavy loam stony soils. The vegetation is a mosaic of shrubs however is dominated by Acacia, Hakea and Grevillia over hummock grasses. Litter, woody debris and branches were present in areas where shrubs were present. No logs or hollows were observed due to the vegetation structure present. No recent fire scaring was present in the survey area but historical evidence was obvious via the age of vegetation present. The grasslands provide good foraging and breeding opportunities for small native ground mammals, ground dwelling birds and reptiles. Several ground dwelling birds, small skinks and dragons were observed active during the survey (Little Button-quail (*Turnix velox*), Brown Songlark (*Cincloramphus cruralis*), Spinifexbird (*Eremiornis carteri*)) and several raptor species were observed foraging over the grasslands (Black-shouldered Kite (*Elanus axilaris*), Spotted Harrier (*Circus assimilis*), Australian Kestrel (*Falco cenchroides*)). **Habitat value for fauna species of conservation significance** Part of a larger area of contiguous remnant vegetation extending beyond the survey area. This habitat provides potential hunting and foraging opportunities for the Peregrine Falcon. Where sand incursion and in association with drainage lines is present within this habitat the Northern Short-tailed Mouse and Lined Crevice Skink maybe present. **Moderate to High value** Habitat that typically supports high diversity of small vertebrate fauna and provides foraging habitat to Peregrine Falcon. The Northern Short-tailed Mouse and Lined Crevice Skink may also utilise this habitat.	 
Hummock Grassland on Low Rocky Hills Low rocky hills occur in limited extent on the Burrup portion of the survey area, often adjacent to rocky hills with exposed boulder piles. This habitat type is mostly dominated by a Triodia hummock grassland however does support tussock grasses and scattered Acacia shrubs. The crests of the low hills contain rocky substrates but lacks the extensive boulder piles in the surrounding taller hills. Limited litter and woody debris is present and no logs, branches or hollows are available. Typically this habitat is very open with a heavy rocky substrate, providing limited hiding ability for fauna. Few fauna species were recorded in this habitat however the sun loving Ringtail Dragon (*Ctenophorus caudicinctus caudicinctus*) and Rock Ctenotus (*Ctenotus saxatilis*) were observed. **Habitat value for fauna species of conservation significance** This habitat would support foraging and the disbursal of the Northern Quoll and Pilbara Olive Python particularly in area close to or in between boulder piles and minor drainage lines. This environment may provide foraging habitat for the Peregrine Falcon. The Western Pebble-mound Mouse would have utilised this habitat but the species appears to be now extinct on the Burrup Peninsular. **Moderate to High value** Supportive habitat for species foraging and disbursal particularly the Northern Quoll and Pilbara Olive Python.	

Figure 14. Descriptions of fauna habitats recorded within the proposed clearing area.

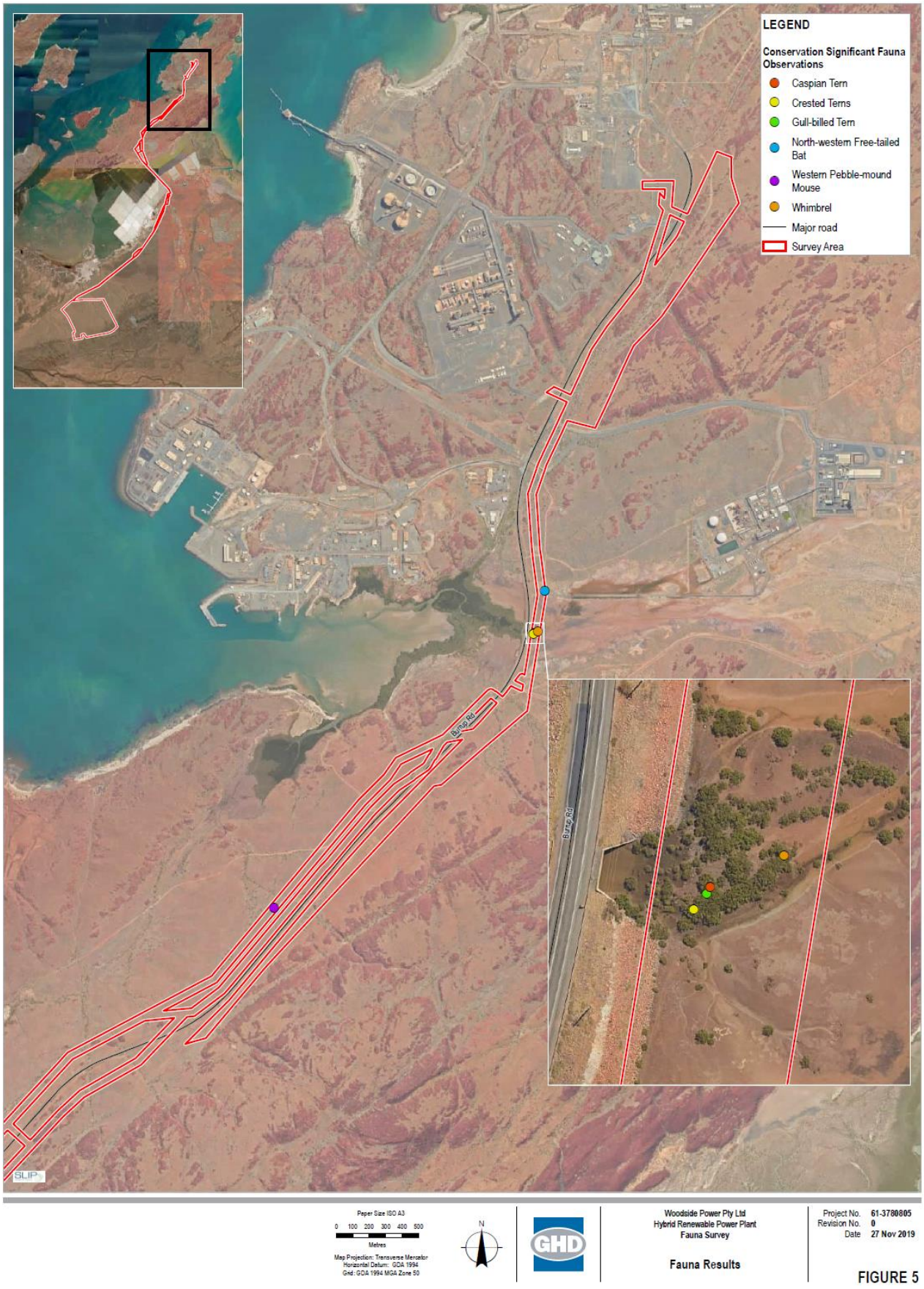


Figure 15. Map of conservation significant fauna recorded within the proposed clearing area.

Appendix I. Biological survey information excerpts (GHD, 2022)

GHD (2020) vegetation type code	Vegetation type description	Total extent (ha)
VT02	*Corymbia hamersleyiana* open woodland over *Acacia bivenosa, Grevillea pyramidalis* subsp. *pyramidalis* and *Hakea lorea* subsp. *lorea* scattered shrubs over *Triodia epactia* open hummock grassland with **Cenchrus ciliaris* scattered grasss over over *Hybanthus aurantiacus, Cleome viscosa* and *Trichodesma zeylanicum* var. *zeylanicum* open forbland on brown sandy loam on elevated rocky plain.	0.10
VT04	*Tecticornia ?indica* subsp. *leiostachya* and *Tecticornia ?pterygosperma* low chenopod shrubland with scattered *Avicennia marina* on saline flats with tidal inundation.	0.32
VT05	**Cenchrus ciliaris* open grassland over *Trianthema turgidifolia* and *Neobassia astrocarpa* open chenopod shrubland on disturbed edges of saline flats.	0.41
VT06	*Grevillea pyramidalis* subsp. *pyramidalis* and **Vachellia farnesiana* scattered shrubs over *Ipomoea costata, Indigofera monophylla* and *Scaevola spinescens* open shrubland over *Triodia epactia* open hummock grassland over *Cleome viscosa, Rhynchosia minima* and *Hybanthus aurantiacus* scattered herbs on red/brown sandy loam on rocky slopes with frequent basalt outcropping. Associated species include *Abutilon lepidum, Gomphrena cunninghamii, Streptoglossa decurrens* and *Indigofera monophylla*	10.44
Total native vegetation		**11.27**
Cleared areas		2.40
Total		**13.67**

Fauna habitat	Total extent (ha)
Rocky Hills with exposed boulder piles This habitat type is mostly dominated by a *Triodia* hummock grassland, however, does support tussock grasses and scattered *Acacia* shrubs. However, the boulder rock piles are typically devoid of ground cover. The crests of hills contain extensive rock outcropping or boulder piles and support scattered *Ficus platypoda* and *Brachychiton sp.* The *Ficus, Brachychiton* and *Acacia* provided litter and scattered woody debris, however the boulder piles provide extensive cover via crevices, small caves and cavities. No evidence of recent fire was recorded in the survey area. Evidence of old fire scars were present and determined based on the age of the vegetation.	10.44
Hummock Grassland on Rocky Plain This habitat type is often associated with slight undulation where there is association to low hills or rocky substrates. This habitat type is mostly dominated by a *Triodia* hummock grassland with heavy loam stony soils. The vegetation is a mosaic of shrubs however is dominated by *Acacia, Hakea* and *Grevillia* over hummock grasses. Litter, woody debris and branches were present in areas where shrubs were present. No logs or hollows were observed due to the vegetation structure present. No recent fire scaring was present in the survey area but historical evidence was obvious via the age of vegetation present.	0.10
Mudflat with tidal inundation, Mangroves and supportive scattered Samphire Vegetation within this habitat type is minimal except where the mudflats fringe mangroves and samphire. Vegetation was generally sparse and scattered, however, in areas clustered to form low samphire shrublands. Areas were inundated with water during high tides and retracts to several small pools and a minor drainage line during the low period.	0.73
Total fauna habitat	**11.27**
Cleared areas	2.40
Total	**13.67**

Figure 16. Vegetation descriptions and habitat types recorded in additional survey area.

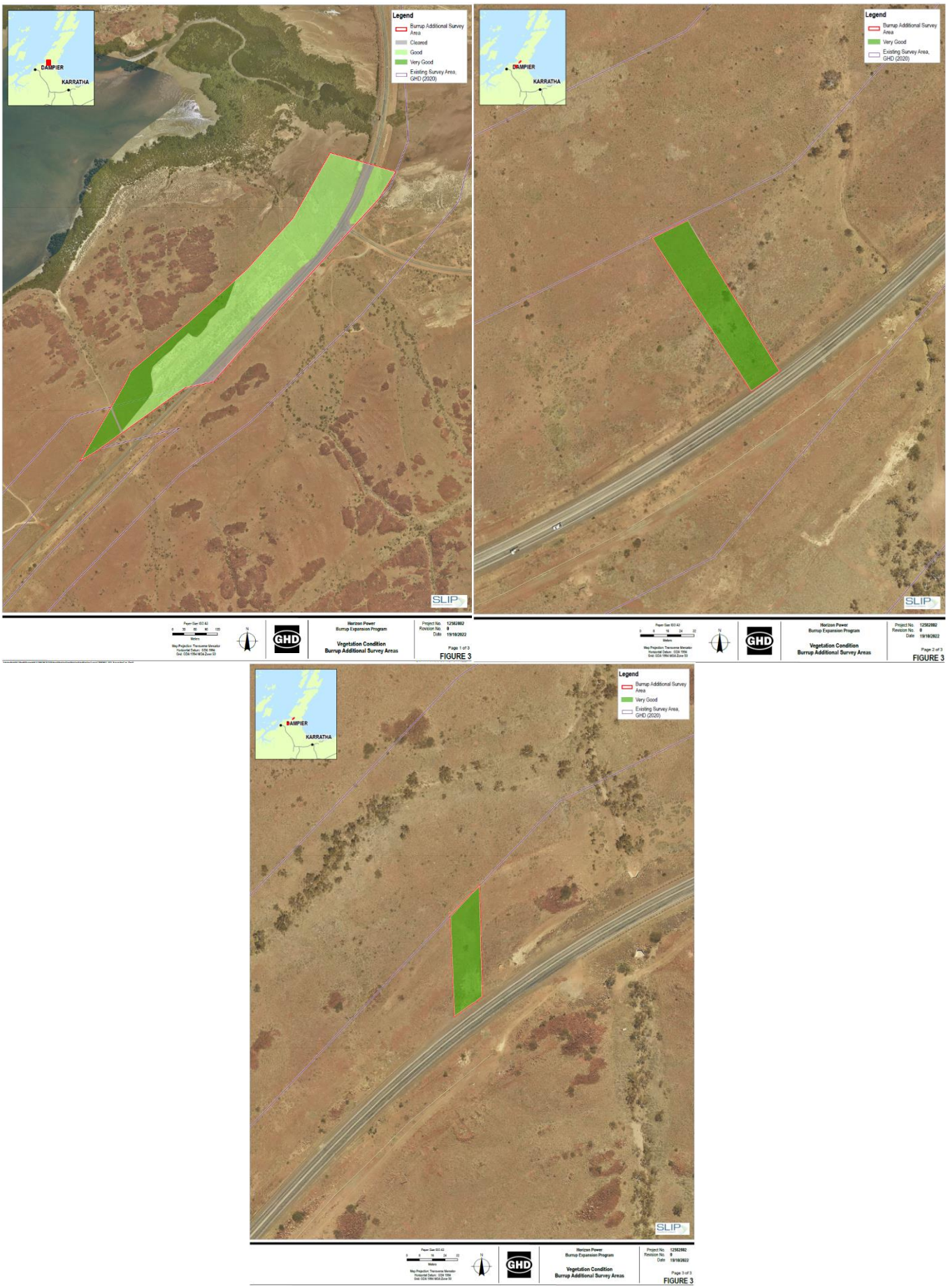


Figure 17. Maps of the vegetation condition (Trudgen, 1991) within the additional survey area.

Appendix J. Sources of information

J.1. GIS databases

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

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

Restricted GIS Databases used:

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

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