



## CLEARING PERMIT

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

<b>Purpose Permit number:</b>	CPS 9325/1
<b>Permit Holder:</b>	Shire of Ngaanyatjarraku
<b>Duration of Permit:</b>	From 19 November 2021 to 19 November 2026

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 road construction.

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

Lot 9 on Plan 91722 (Crown reserve 17614), Warburton

#### **3. Clearing authorised**

The permit holder must not clear more than 3.92 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

### **PART II – MANAGEMENT CONDITIONS**

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

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

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

## 5. Weed management

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

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

## PART III - RECORD KEEPING AND REPORTING

### 6. 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	<ol style="list-style-type: none"><li>(a) the species composition, structure, and density of the cleared area;</li><li>(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;</li><li>(c) the date that the area was cleared;</li><li>(d) the size of the area cleared (in hectares);</li><li>(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 4; and</li><li>(f) actions taken to minimise the risk of the introduction and spread of weeds in accordance with condition 5.</li></ol>

### 7. Reporting

The permit holder must provide to the *CEO* the records required under condition 6 of this permit when requested by the *CEO*.

## DEFINITIONS

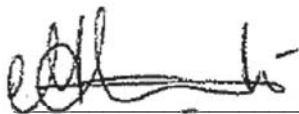
In this permit, the terms in Table have the meanings defined.

**Table 2: Definitions**

Term	Definition
<i>CEO</i>	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
<i>clearing</i>	has the meaning given under section 3(1) of the EP Act.
<i>condition</i>	a condition to which this clearing permit is subject under section 51H of the EP Act.
<i>department</i>	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
<i>EP Act</i>	<i>Environmental Protection Act 1986</i> (WA)
<i>fill</i>	means material used to increase the ground level, or to fill a depression
<i>mulch</i>	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation
<i>native vegetation</i>	has the meaning given under section 3(1) and section 51A of the EP Act.
<i>weeds</i>	means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; 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.

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## END OF CONDITIONS



Meenu Vitarana  
A/MANAGER  
NATIVE VEGETATION REGULATION

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

27 October 2021

# Schedule 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).

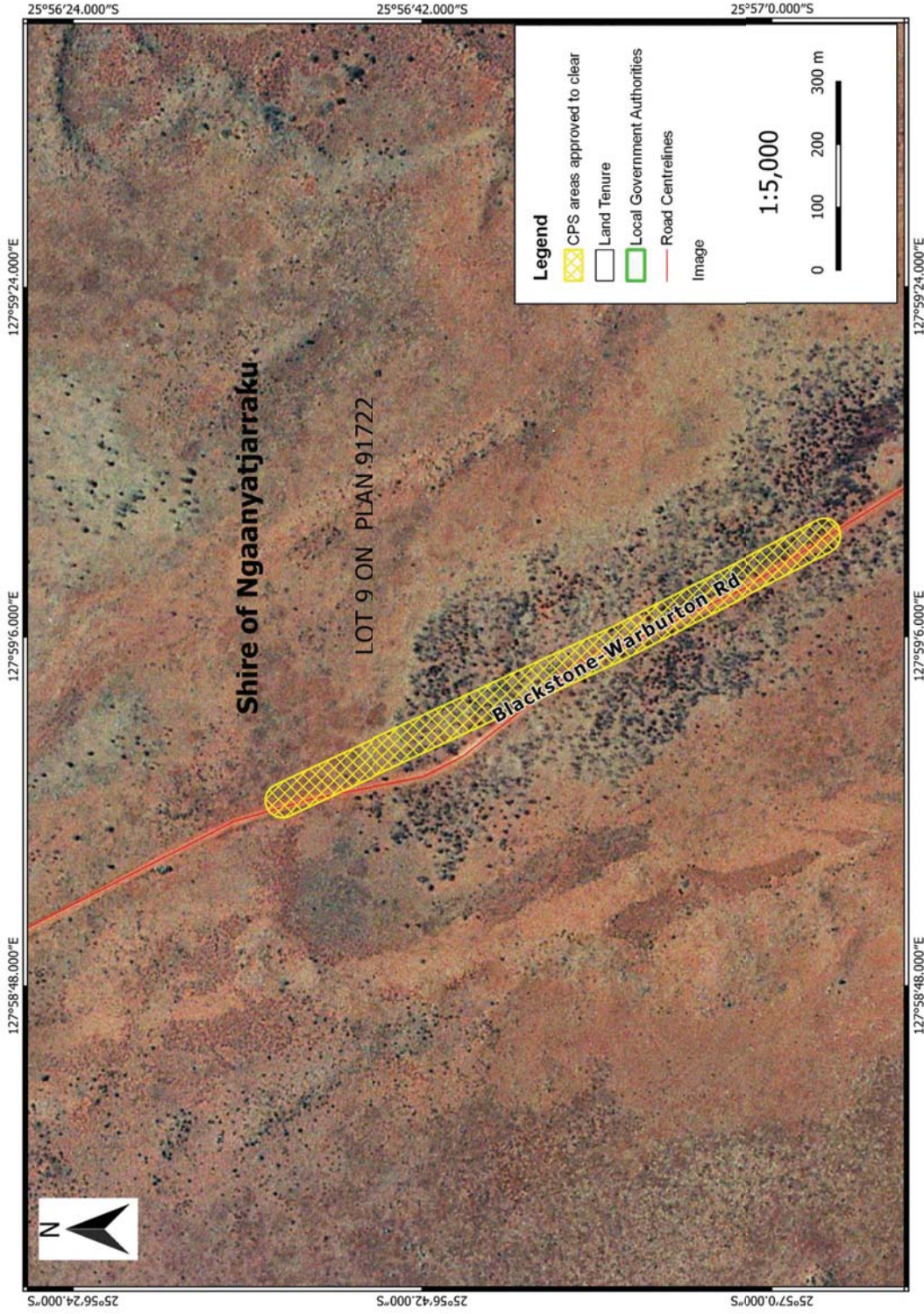


Figure 1: Clearing may occur within the area cross-hatched yellow



# Clearing Permit Decision Report

## 1 Application details and outcome

### 1.1. Permit application details

<b>Permit number:</b>	CPS 9325/1
<b>Permit type:</b>	Purpose permit
<b>Applicant name:</b>	Shire of Ngaanyatjarraku
<b>Application received:</b>	16 June 2021
<b>Application area:</b>	3.92 hectares of native vegetation
<b>Purpose of clearing:</b>	Realignment of Papulankutja Road (Blackstone alignment)
<b>Method of clearing:</b>	Mechanical
<b>Property:</b>	Lot 9 on Plan 91722, Warburton (Crown Reserve 17614)
<b>Location (LGA area/s):</b>	Shire of Ngaanyatjarraku
<b>Localities (suburb/s):</b>	Warburton

### 1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single one-kilometre-long, approximately 50-metre-wide linear corridor adjacent to the existing Papulankutja Road (Blackstone alignment), between the communities of Jameson and Blackstone (see Figure 1, Section 1.5). An approximately 600 metre section of road will be moved a maximum of 60 metres east (Cawthorn, 2021), to straighten out the curve. Clearing is also required to improve the line of sight for road users (GHD, 2021).

The application was revised during the assessment process, reducing the amount of clearing by 20 per cent, from 4.9 to 3.92 hectares to avoid and minimise the clearing impacts (see Section 3.1 for further details).

### 1.3. Decision on application

<b>Decision:</b>	Granted
<b>Decision date:</b>	27 October 2021
<b>Decision area:</b>	4.9 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. However, where relevant, matters raised in a submission made in relation to a nearby clearing permit application (CPS 9300/1) were considered (see Section 3.1).

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), the findings of a flora and vegetation survey (see D), relevant datasets (see Appendix E.1), relevant planning instruments and any other matters considered relevant

to the assessment (see Section 3). The Delegated Officer also took into consideration the purpose of the clearing is to improve road safety.

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 is unlikely to have long-term adverse impacts on environmental values. The applicant has suitably demonstrated avoidance and minimisation measures.

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

- Avoid and minimise to reduce the impacts and extent of clearing and
- take hygiene steps to minimise the risk of the introduction and spread of weeds.

## 1.5. Site map

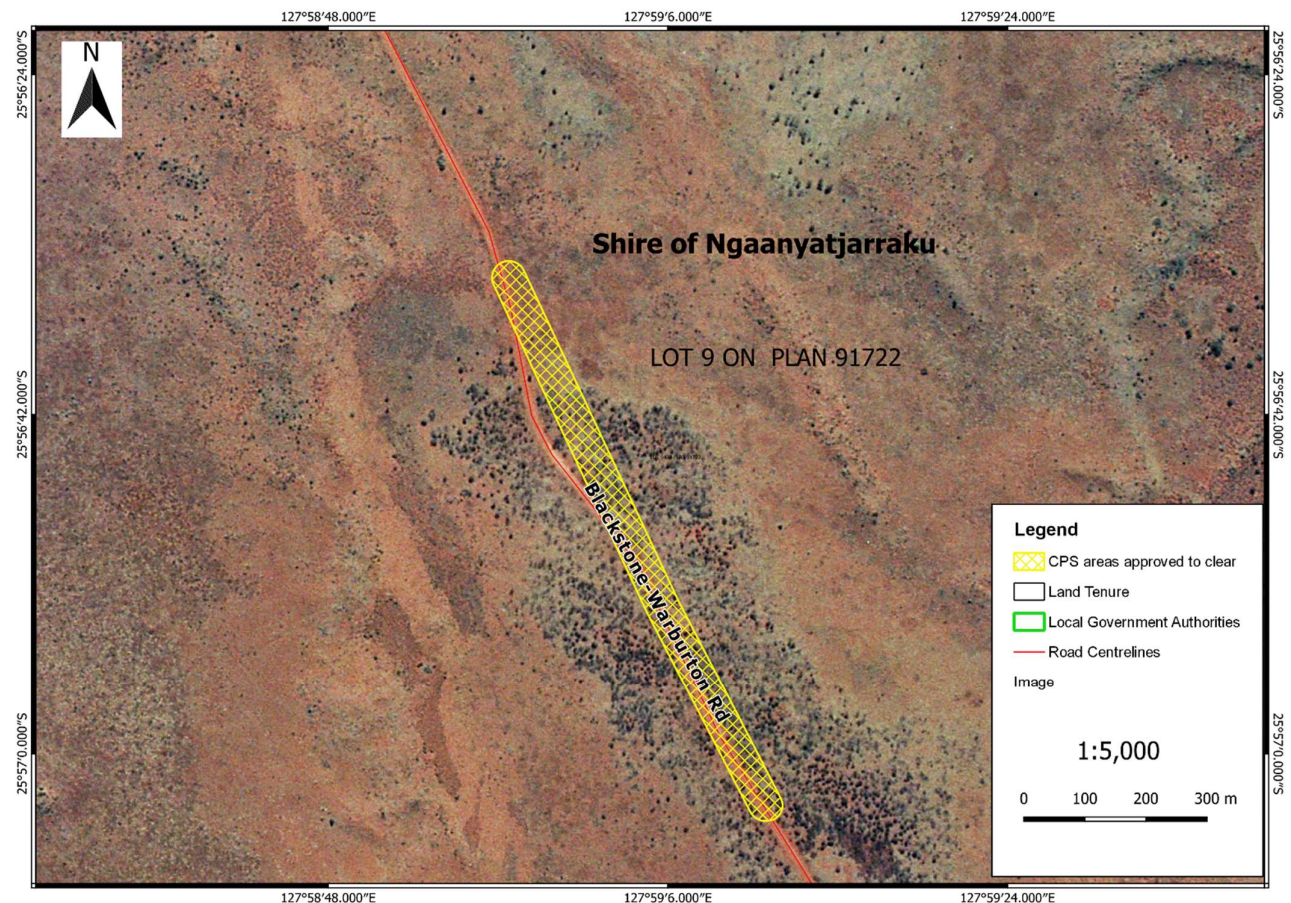


Figure 1. Map of the application area

The area cross-hatched yellow indicates the area authorised to be cleared under the granted clearing permit.

## 2 Legislative context

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

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

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

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which inform this assessment are:

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

### **3 Detailed assessment of application**

#### **3.1. Avoidance and mitigation measures**

The applicant advised it originally sought to clear 4.9 hectares, equating to a clearing width of approximately 50 metres, because it requires significant flexibility in the amount of clearing it is authorised to do. The applicant advised it has no ratepayers and does not have the discretionary funding to do all the design, geological work that a normal Council may be able to assist them in applying for less clearing (Shire of Ngaanyatjarraku, 2021). The applicant advised that the Shire has only ever cleared the absolute minimum required to assure road safety, as the community would not be happy with the Shire undertaking unnecessarily clearing (Shire of Ngaanyatjarraku, 2021).

The remoteness of the works also mean that the applicant cannot pause works to seek an amendment to a clearing permit if it is required once construction commences. Therefore, the Shire of Ngaanyatjarraku routinely seeks clearing permits for significantly greater clearing than it conducts. Reports for previous road construction clearing permits that adopted the same approach to flexibility demonstrate the applicant's ability to approach responsibly and in such a way as to not clear excessively. Examples include:

- CPS 8343/1: a 26-metre-wide corridor was cleared within the approved 100-metre-wide clearing footprint and that one third of the approved area (10.9 hectare of the approved 32.66 hectares) was cleared.
- CPS 8571/2: a 25-metre-wide corridor was cleared within the approved 50-metre-wide clearing footprint and that two thirds of the approved area (13.5 hectares of the approved 22 hectares) was cleared.

However, considering a submission was received from a member of the public objecting to allowing a 50-metre-wide for a nearby clearing permit, due to concerns over excessive clearing, the applicant reduced the amount of clearing it applied for by 20 per cent.

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

#### **3.2. Assessment of impacts on environmental values**

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) 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 B) identified the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with standard avoid and minimise, and hygiene management conditions.

#### **3.3. Relevant planning instruments and other matters**

No Aboriginal sites of significance have been mapped within the application area and a heritage survey found the road realignment works are unlikely to damage or interfere with any areas of significance (Cawthorn, 2021).

Ngaanyatjarra Land Council (NgLC) is the landholder of reserves and leases held for the "Use and Benefit of Aboriginal Inhabitants" overlapping the Ngaanyatjarra Lands native title determination (Ngaanyatjarra Council, 2021). A letter of support provided with the application states, "As the landholder over the works area, NgLC supports the Shire of Ngaanyatjarraku undertaking the proposed road works for the use and benefit of the Ngaanyatjarra people" (Ngaanyatjarra Council, 2021).

**End**

## Appendix A. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is in the extensive land use zone of Western Australia, approximately 145 kilometres east-northeast of Warburton, in the Central Ranges IBRA bioregion.</p> <p>Aerial imagery indicates the local area (50-kilometre radius from the centre of the area proposed to be cleared) retains approximately 99 per cent of the original native vegetation cover.</p>
Ecological linkage	There are no ecological linkages mapped within this bioregion.
Conservation areas	<p>The nearest conservation area is the Gibson Desert Nature Reserve (R 34606), located 80 km north-west of Warburton: more than 200 km from the area proposed to be cleared.</p> <p>The area proposed to be cleared is within the Ranges of the Western Desert area on the federal Register of the National Estate (which was closed in 2007) for Indigenous values of National Estate significance.</p>
Vegetation description	<p>Vegetation survey supplied by the applicant (GHD, 2021) reported the vegetation proposed to be cleared is dominated by mulga woodlands over tussock/hummock grasslands on open sandy/loamy plains and cleared areas.</p> <p>The vegetation type is described as:</p> <ul style="list-style-type: none"> <li>• <i>Acacia</i> (Mulga) Woodland (VT01): <i>A. aneura</i>, <i>Acacia sericophylla</i> and <i>A. minyura</i> low woodland to low open woodland/shrublands over <i>Eremophila latrobei</i> subsp. <i>filiformis</i> scattered shrubs over <i>Triodia</i> spp., <i>Aristida holathera</i> Domin var. <i>holathera</i>, and <i>Eriachne</i> spp. open hummock/tussock grassland over <i>Ptilotus xerophilus</i>, <i>Sida</i> spp. and <i>Brunonia australis</i> sparse forbland.</li> </ul> <p>There are some small patches of <i>Cenchrus ciliaris</i> (buffel grass) present along the edges of the existing road (GHD, 2021).</p> <p>Representative photos are available in 0.</p> <p>Vegetation within the area proposed to be cleared is consistent with the mapped vegetation type, Beard vegetation association 19:</p> <ul style="list-style-type: none"> <li>• Low woodland; mulga between sandridges (Shepherd, 2001).</li> </ul> <p>The mapped vegetation type retains approximately 99% (Beard 19) of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	<p>1.36 ha of the application area is already cleared as it contains the existing gravel road (GHD, 2021). The remainder was assessed as displaying minimal evidence of any human interaction outside those areas directly cleared for access roads/vehicle tracks (GHD, 2021) and was reported to be in Very Good (Trudgen, 1991) condition:</p> <p>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.</p> <p>The full Trudgen (1991) condition rating scale is provided in Appendix CC. Representative photos are available in 0.</p>



Characteristic	Details
Climate and landform	The flora and vegetation survey provided by the applicant reported the soils within the area proposed to be cleared as “Sandy-loam plain / hardpan / stony plain” (GHD, 2021). Photographs in the survey indicate the area proposed to be cleared is flat. The area has high evaporation/ evapotranspiration rates and low annual rainfall (GHD, 2021).
Soil description	Very broad scale mapping indicates the area proposed to be cleared is within soils described as “extensive plains with numerous dunes which are often short and of irregular shape and orientation (18My112)” according to the Arid interior of WA based on Atlas of Australian Soils (Northcote et al, 1960).
Land degradation risk	Not mapped
Waterbodies	No significant surface water features or watercourses occur within or in the vicinity of the survey areas (GHD, 2021). There are no vegetation types within the survey areas which are considered representative of riparian vegetation (GHD, 2021).
Hydrogeography	The area proposed to be is within the East Murchison Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> . According to the survey report, “The area is partly underlain by hard fractured rocks; groundwater is difficult to locate, and naturally-occurring nitrate can affect quality. Some groundwater supplies occur in thin, calcrete drainages where shallow groundwater occurs in interconnected cavities.” (GHD, 2021).  Surface water in the region is severely limited by a combination of high evaporation/ evapotranspiration rates and low annual rainfall. Where rainfall is sufficient, runoff in the area generally drains as sheet flow (GHD, 2021).
Flora	There are records of 14 priority flora and no threatened flora within the local area. The GHD (2021) survey found no habitat for threatened or priority flora within the survey areas.
Ecological communities	There are no mapped threatened (TEC) or priority (PEC) ecological communities within 100 km of the area proposed to be cleared. The GHD (2021) survey found no TEC or PEC within the survey areas and reported it to be unlikely that any of the vegetation communities present are restricted only to the survey areas.
Fauna	There are records of 7 extant fauna of conservation significance within the local area: bilby VU; black footed rock wallaby EN; MacDonnell Range black footed rock wallaby VU; great desert skink VU; malleefowl VU (historical record); brush-tailed mulgara P4; striated grasswren (sandplain) P4.  T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

## Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> “Native vegetation should not be cleared if it comprises a high level of biodiversity.”</p> <p><u>Assessment:</u> The vegetation types within the area proposed to be cleared appear to be well represented in adjacent areas and are unlikely to represent significant vegetation on a local or regional scale or are necessary for the continued existence of any threatened or priority flora (GHD, 2021).</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (b):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment:</u> Considering the size, shape and proximity to existing disturbance (the existing road), the proposed clearing is unlikely to contain significant habitat for native fauna.</p>	Not likely to be at variance	No
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u> The flora and vegetation survey (GHD, 2021) did not record flora species listed under the BC Act nor habitat for them.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared does not contain species that can indicate a threatened ecological community (GHD, 2021).</p>	Not likely to be at variance	No
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> The extent of the mapped vegetation type is consistent with the national objectives and targets for biodiversity conservation in Australia. The area proposed to be cleared is very small in relation to the surrounding area and is not significant as a remnant of native vegetation.</p>	Not at variance	No
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u> Given the distance to the nearest conservation area, the proposed clearing will not have an impact on the environmental values of any conservation areas.</p>	Not at variance	No
<b>Environmental value: land and water resources</b>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u> Given no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u> Noting the size and location of the application area, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u> Given no water courses, wetlands or Public Drinking Water Sources Areas are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (j):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."</p> <p><b>Assessment:</b> The surveyed 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.</p> <p>Given no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to contribute to waterlogging.</p>	Not likely to be at variance	No

**Appendix C. 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 D. Biological survey information excerpts

**Table 4.1 Description of vegetation types recorded within the survey area**

Broad Vegetation Type	Vegetation Association	Landform/ substrate	Location within survey areas and sample points (quadrat/releve)	Representative photograph
Acacia (Mulga) Woodland (VT01)	<i>A. aneura</i> , <i>Acacia sericophylla</i> and <i>A. minyura</i> low woodland to low open woodland/shrublands over <i>Eremophila latrobei</i> subsp. <i>filiformis</i> scattered shrubs over <i>Triodia</i> spp., <i>Aristida holathera</i> Domin var. <i>holathera</i> , and <i>Eriachne</i> spp. open hummock/tussock grassland over <i>Ptilotus xerophilus</i> , <i>Sida</i> spp. and <i>Brunonia australis</i> sparse forbland.	Sandy-loam plain / hardpan / stony plain	Warburton alignment: Q1, Q3, Q9  Blackstone alignment: Q23  Gravel Pits (Mulga Park Rd No.1): Q13	

## Appendix E. Sources of information

### E.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- 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
- Wheatbelt Wetlands Stage 1 (DBCA-021)

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)

## E.2. References

Cawthorn, M. (2021). Heritage clearance for the Shire of Ngaanyatjaraku. Report produced for Ngaanyatjarra Council Aboriginal Corporation. DWER Ref: A2018459

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: [https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2\\_assessment\\_native\\_veg.pdf](https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf).

Department of Primary Industries and Regional Development (DPIRD) (2019). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development*. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (accessed 30 June 2020).

Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: <https://dwer.wa.gov.au/sites/default/files/Procedure Native vegetation clearing permits v1.PDF>.

Environmental Protection Authority (EPA) (2016). *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*. Available from: [http://www.epa.wa.gov.au/sites/default/files/Policies\\_and\\_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey\\_Dec13.pdf](http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf).

GHD (2021) *Shire of Ngaanyatjaraku Warburton Flora and Vegetation Survey*, May 2021. DWER Ref: A2012202

Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>

Ngaanyatjarra Council Aboriginal Corporation (2021). *Letter of support for clearing permit application*. 18 May 2021. DWER Ref: A2018461

Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68) *Atlas of Australian Soils*, Sheets 1 to 10, with explanatory data. CSIRO and Melbourne University Press: Melbourne.

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) *Native Vegetation in Western Australia, Extent, Type and Status*. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

Shire of Ngaanyatjaraku (2021) *Clearing permit application CPS 9325/1 and supporting information*, received 16 June 2020 (DWER Ref: A2014536, A2032358).

Submission (2021) *Public submission in relation to clearing permit application CPS 9300/1*, received 5 July 2021 (DWER Ref: DWERDT474263).

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.