



GOVERNMENT OF
With PaWESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9050/1
File Number: DWERVT6509
Duration of Permit: From 4 January 2021 to 4 January 2023

PERMIT HOLDER

Australia Western Railroad Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 501 on Deposited Plan 60064, Leonora
Lot 502 on Deposited Plan 60064, Leonora

AUTHORISED ACTIVITY

The permit holder must not clear more than 7.67 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. 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.

2. 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.

3. Records that must be kept

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

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> (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 Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1; and (f) actions taken to minimise the risk of the introduction and spread of weeds in accordance with condition 2.

4. Reporting

The permit holder must provide to the *CEO* the records required under condition 3 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
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.

Term	Definition
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – <ul style="list-style-type: none"> (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.

END OF CONDITIONS



MEENU VITARANA
A/MANAGER
NATIVE VEGETATION REGULATION

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

9 December 2020

SCHEDULE 1

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

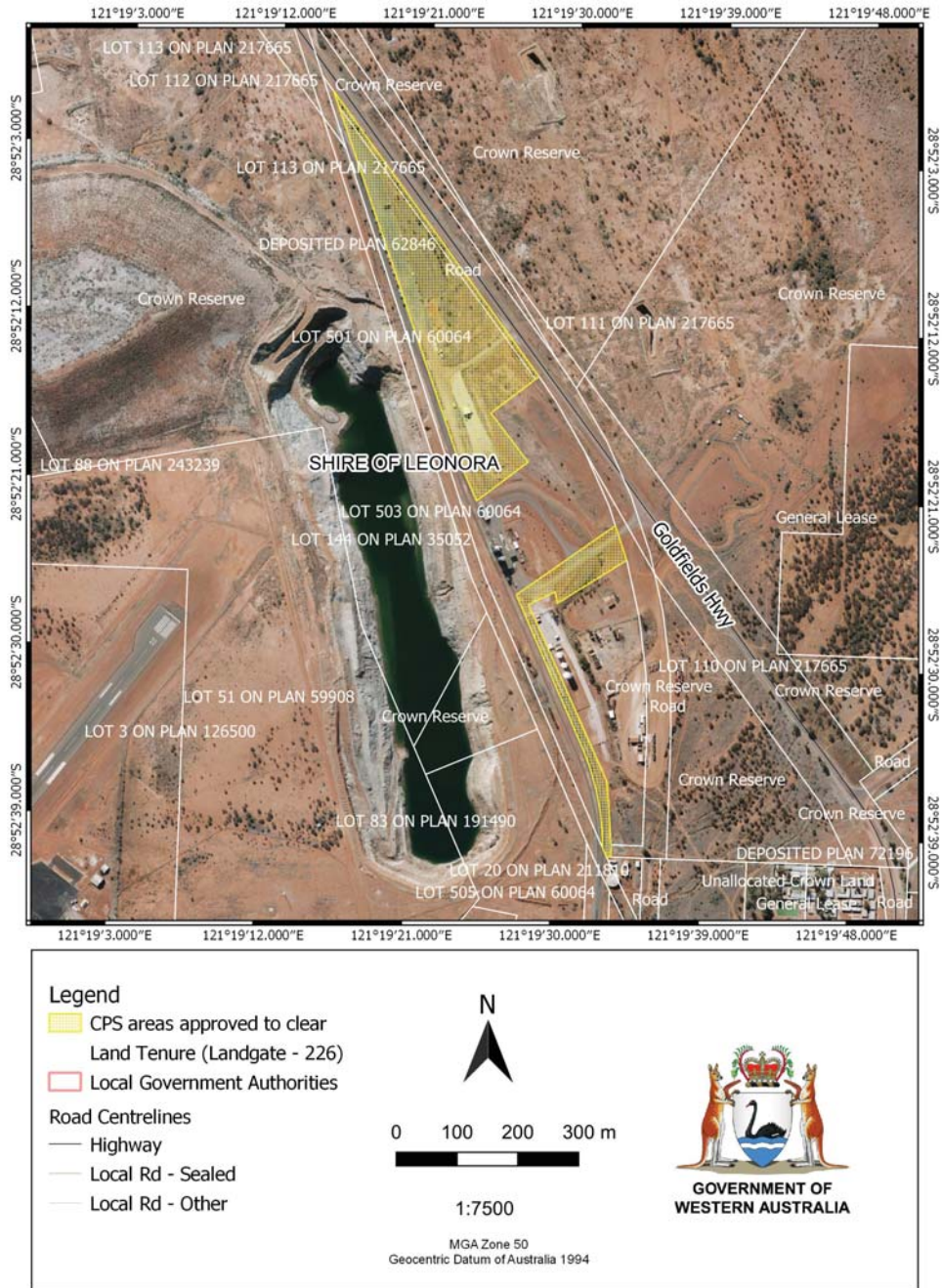


Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1. Application details and outcome

1.1. Permit application details

Permit number:	CPS 9050/1
Permit type:	Area Permit
Applicant name:	Australia Western Railroad Pty Ltd
Application received:	14 September 2020
Application area:	7.67 hectares of native vegetation
Purpose of clearing:	Railway expansion and associated activities
Method of clearing:	Mechanical
Property:	Lot 501 on Deposited Plan 60064 Lot 502 on Deposited Plan 60064
Location (LGA area/s):	Shire of Leonora
Localities (suburb/s):	Leonora

1.2. Description of clearing activities

The vegetation applied to be cleared occurs in sparse patches across an area of approximately 7.67 hectares (see Figure 1, Section 1.5). Much of the application area is dominated by *Cenchrus ciliaris* (buffel grass) and has been subject to previous ground disturbances. The clearing is for the purpose of railway expansion and associated activities (Australia Western Railroad Pty Ltd, 2020).

1.3. Decision on application and key considerations

Decision:	Granted
Decision date:	9 December 2020
Decision area:	7.67 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Water and Environmental Regulation (DWER) on 14 September 2020. DWER advertised the application for public comment and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E.1), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that the proposed clearing may result in the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values. 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 not unlikely to have any long-term adverse impacts on the environmental and that weed and dieback management practices will mitigate any potential impacts to adjacent vegetation.

The Delegated Officer decided to grant a clearing permit subject to conditions to take hygiene steps to minimise the risk of the introduction and spread of weeds.

1.5. Site map

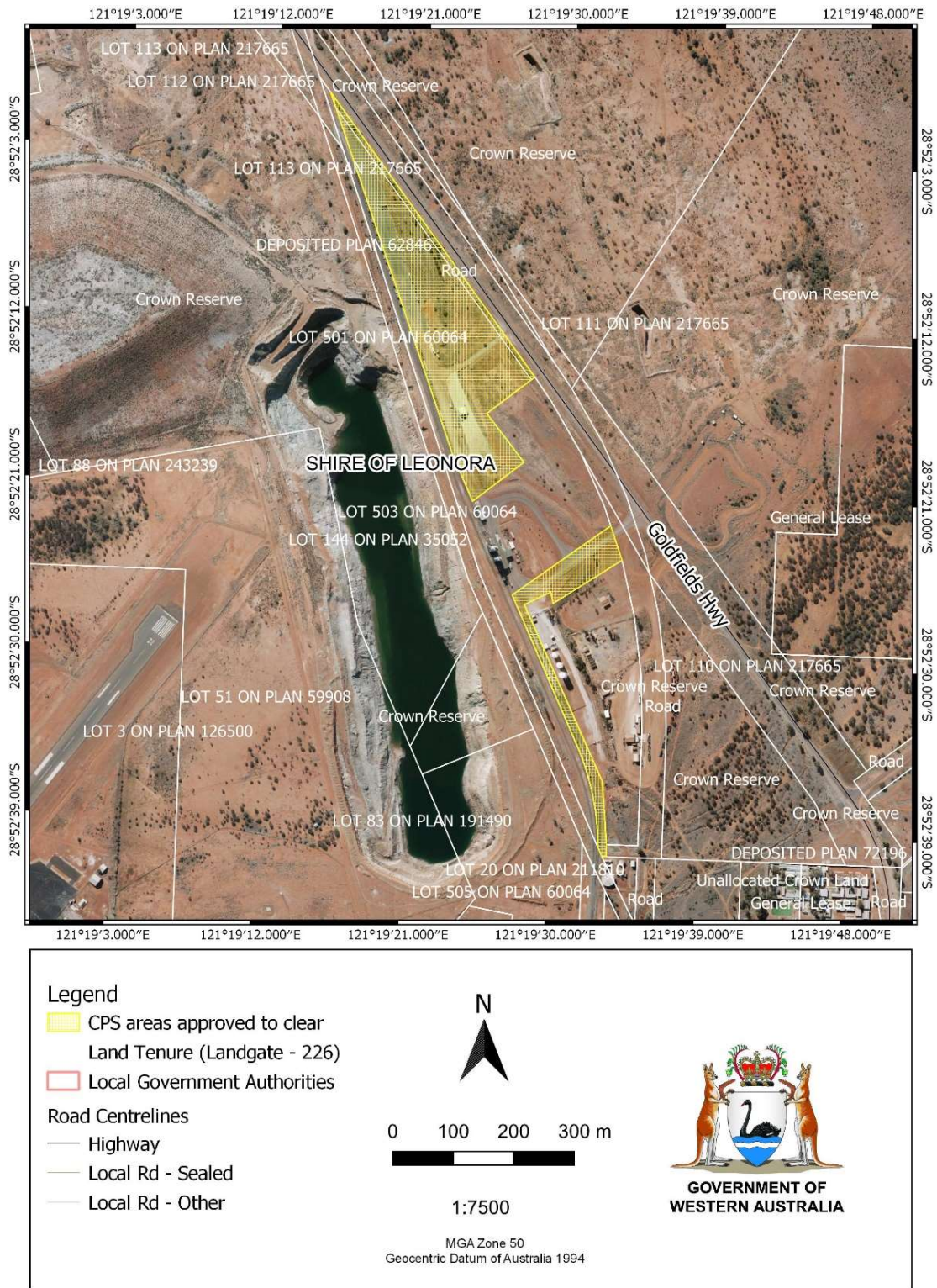


Figure 1. Map of the application area.

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 1.3), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

1. the precautionary principle.
2. the principle of intergenerational equity.
3. 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* (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

Australia Western Railroad Pty Ltd (2020) advised that the existing railway operation are located directly adjacent to the application area and the proposed clearing area is the only option to facilitate the expansion of the railway operation. This adequately demonstrated that all reasonable efforts had been taken to avoid and minimise potential impacts of the clearing on environmental values.

Noting aerial imagery and supporting information provided with the application indicate vegetation appears absent from large portions of the application area, DWER sought further clarification from the applicant about the application area extent. The applicant confirmed to proceed with the area applied and for this area to be assessed in its entirety.

3.2. Assessment of environmental impacts

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 that the impacts of the proposed clearing present a risk to biological values. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (biodiversity) – Clearing Principle (a)

Assessment: The proposed clearing area is part of an expansive tract of native vegetation surrounded by existing mining activities. Much of the application area is dominated by buffel grass and has been subject to previous ground disturbances. No threatened or priority flora taxa or ecological communities were recorded within the application area during the flora and vegetation survey (Western Botanical, 2013; Appendix D). According to available databases, no threatened flora, and two Priority 3 flora taxa have been recorded within the local area (20 kilometre radius). None of these records occur within the application area.

Angianthus prostrates has been recorded approximately 16 kilometres from the application area within different soil and vegetation types to those mapped within the application area (Appendix A). The vegetation within the application area is not likely to comprise significant habitat for this species. *Acacia sp. Marshall Pool (G. Cockerton 3024)* was recorded approximately 0.62 kilometres from the application area in 1970, within similar mapped soil and vegetation types (Appendix A). This species is known to occur within serpentinite ridges and rocky hills in association with basalt (Western Australian Museum, 1998-). Aerial imagery and photographs provided with the application indicate these habitat characteristics are not consistent with those present over the application area. Given habitat preferences, the historical nature of the record, and the degraded vegetation condition, the application area is not likely to comprise significant habitat for this species.

No threatened ecological communities (TECs) endorsed by the Minister for Environment have been recorded within the local area (Appendix A) and none are likely to occur (Appendix B). The nearest mapped conservation significant ecological community is the '*Melita calcrete groundwater assemblage type on Raeside palaeodrainage on Melita (Sons of Gwalia) Station*', a Priority 1 priority ecological community (PEC) mapped approximately 5.7 kilometres from the application area. This community is characterised as unique assemblages of invertebrates identified in groundwater calcretes (DBCA, 2020). Noting this PEC is associated with groundwater environments, the vegetation

within the application is not likely to represent the community and the clearing proposed is not likely to significantly impact the community or its conservation status within the local area.

Noting the above, and the level of disturbance and degraded condition of the vegetation within and surrounding the application area, conservation significant flora and ecological communities are not likely to be impacted by the proposed clearing.

Seven conservation significant fauna have been recorded in the local area, primarily comprising avian migratory species associated with aquatic habitats. Noting the absence of wetlands or watercourses within the application area, the vegetation within the application area is not likely to comprise significant habitat for these taxa. *Falco peregrinus* (peregrine falcon) may be a transient visitor to the application area, however the vegetation within the application area is not likely to comprise significant habitat for this species. Vegetation with similar habitat values is present adjacent and within the local area.

The proposed clearing is not likely to significantly impact conservation significant flora, fauna and communities or significant habitat.

Given the extent of weeds recorded within the application area, the proposed clearing has the potential to increase the spread of weeds into adjacent native vegetation. The implementation weed management strategies during the clearing will mitigate impacts to adjacent vegetation.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is not likely to be significant in relation to this environmental value.

Conditions: Weed management strategies will mitigate impacts from weeds to the adjacent native vegetation.

3.3. Relevant planning instruments and other matters

The application area is zoned as Railway under the Shire of Leonora Town Planning Scheme No. 1 and the proposed clearing is consistent with this purpose. The Shire of Leonora was invited to comment on the application. No comments were received from the Shire of Leonora.

The application area intersects an area classified as 'remediated for restricted use' under the *Contaminated Sites Act 2003*. Advice for the application was sought from the DWER Science and Planning – Contaminated Sites branch. Advice received for the application concluded that the site is suitable for the current commercial/industrial land use but may not be suitable for a more sensitive land use such as residential, primary school, public open space (DWER Contaminated Sites, 2020). DWER Contaminated Sites (2020) did not have any objection to the proposed native vegetation clearing within the application area from a contamination perspective.

The application area is located within the Goldfields Groundwater Area, a proclaimed groundwater area under the *Rights in Water and Irrigation Act 1914* (RIWI Act). The application area is not located within any RIWI Act surface water areas or irrigation districts, *Country Areas Water Supply Act 1947* (CAWS Act) clearing control catchments, or Public Drinking Water Source Areas. The proposed clearing will not obstruct, interfere or destroy the beds or banks of any watercourse and additional permitting by DWER under the RIWI Act will not be required.

Six Aboriginal Sites of Significance are mapped within the application area, including:

- Leonora (Storage Cache) (Place ID 1925; status - stored data / not a site)
- Sorry Business - Yirrkutpuri (East) (Place ID 34422: Status – lodged)
- Papa Kulunypa (Place ID 1285: Status - stored data / not a site)
- Women's Place (Place ID 24133: Status - Registered Site)
- Harbour lights 1 (Place ID 2026: Status - Registered Site)
- WLN01 Creek (Place ID 20014: Status - Registered Site).

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.

The application area intersects clearing permit CPS 5534/1 which was granted to Australia Western Railroad Pty Ltd and expired on 31 May 2018. The CPS 5534/1 boundary primarily aligns with the area under application.

Appendix A – 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 B.

A.1. Site characteristics

Site characteristic	Details
Local context	The proposed clearing area is part of an expansive tract of native vegetation. It is surrounded by existing mining activities, with most of the application area is dominated by <i>Cenchrus ciliaris</i> (buffel grass) and has been subject to previous ground disturbances. The proposed clearing area is part of a large area of vegetation in degraded condition. Spatial data indicates the local area (20 kilometre radius) retains approximately 99 per cent of the original native vegetation cover.
Vegetation description	The flora and vegetation survey conducted on 11 January 2013 (Western Botanical, 2013) identified one vegetation association within the application area described as Scattered Low Mulga Trees B over a mosaic understorey consisting of a Dwarf Shrubland C dominated by Chenopods and Mid Dense Hummock Grass dominated by buffel grass. The full survey descriptions and mapping are available in Appendix D. The vegetation within the application area is mapped as Beard vegetation association 28 (Laverton), described as Mulga <i>Acacia aneura</i> and associated species. The structure of this vegetation association is described as low woodland, open low woodland and sparse woodland (Shepherd et al, 2001).
Vegetation condition	<p>The Western Botanical (2013) survey indicates the vegetation within the proposed clearing area is in Good to Degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> • Good: Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing. • Degraded: Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing. <p>The full Keighery condition rating scale is provided in Appendix C.</p> <p>The basic vegetation structure across the application area has been significantly to severely disturbed and impacted by introduced weed species (Western Botanical, 2013). Seven weed species were recorded across the application area, with large areas dominated by buffel grass (Western Botanical, 2013). This combined with the multiple areas partially cleared for tracks, truck turn-around bays and the existing rail infrastructure means the original vegetation condition within the application area has been severely compromised (Western Botanical, 2013). Further survey descriptions and mapping are available in Appendix D.</p>
Soil description	The application area is mapped within the Gundockerta System, which is summarised as being extensive, gently undulating calcareous stony plains supporting bluebush shrublands (Pringle, 1994).
Land degradation risk	The saline plains (unit 2) and adjacent lower alluvial tracts (unit 5) of the Gundockerta System are susceptible to water erosion where not protected by a stony mantle, particularly in areas where perennial shrub cover is substantially reduced and/or the soil surface is disturbed (DPIRD, 2017).

Site characteristic	Details
Waterbodies	The desktop assessment and aerial imagery indicate that no watercourses or wetlands intersect the application area. A minor, non-perennial watercourse associated with Lake Raeside occurs approximately 100 metres south of the application area.
Conservation areas	No Environmentally Sensitive Areas (ESAs) have been mapped within the 50 kilometres from the application area. An unmanaged reserve (17398) vested in the Department of Planning, Lands and Heritage (DPLH) for the purpose of 'stock routes' is situated approximately 37 metres west from the application area.
Climate and landform	<p>The climate of the Yilgarn Carton within the Murchison bioregion is characterised as arid climate with rainfall predominantly in winter (200 millimetres; McKenzie et al. 2002). The average annual rainfall for the application area is approximately 300 millimetres.</p> <p>The application is situated within the Eastern Murchison of the Murchison bioregion, characterised by internal drainage and extensive areas of elevated red desert sandplains with minimal dune development (McKenzie et al. 2002). Salt lake systems are associated with the occluded paleodrainage system (McKenzie et al. 2002). Broad plains of red-brown soils and breakaway complexes as well as red sandplains are widespread. Vegetation is dominated by mulga woodlands and is often rich in ephemerals, hummock grasslands, saltbush shrublands and Halosarcia shrublands (McKenzie et al. 2002).</p>

A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	% remaining	Current extent in all DBCA managed land (ha)	% current extent in all DBCA managed land (proportion of pre-European extent)
IBRA bioregion*					
Murchison	28,120,587	28,044,823	99.7	2,185,987.96	7.78
Vegetation complex*					
Laverton (vegetation association 28)	224,292	220,584	98.4	-	-
Local area					
20 kilometre radius from application area	129,736	131,137	99.0	-	-

*Government of Western Australia (2019)

A.3. Flora, fauna and ecosystem analysis

With consideration for the site characteristics set out above, relevant datasets (see Appendix E), and biological survey information, the following conservation significant flora and fauna species, and ecological communities may be impacted by the clearing.

Flora species / Ecological community	Conservation status	Distance of closest record to application area (kilometres)	Suitable soil type? (flora, ecological community)	Suitable vegetation type? (flora, ecological community)	Suitable habitat features (fauna)	Are surveys adequate to identify? (Y, N, N/A)
Flora						

Flora species / Ecological community	Conservation status	Distance of closest record to application area (kilometres)	Suitable soil type? (flora, ecological community)	Suitable vegetation type? (flora, ecological community)	Suitable habitat features (fauna)	Are surveys adequate to identify? (Y, N, N/A)
<i>Acacia sp. Marshall Pool</i> (G. Cockerton 3024)	Priority 3	0.62	Yes	Yes	N/A	N
<i>Angianthus prostratus</i>	Priority 3	16.5	No	No	N/A	Y
Ecological Communities						
Melita calcrete groundwater assemblage type on Raeside palaeodrainage on Melita (Sons of Gwalia) Station	Priority 1	5.7	No	No	N/A	NA

Fauna Species	Conservation status	Distance of closest record to application area (kilometres)	Most recent record	Suitable habitat features (fauna)	Are surveys adequate to identify? (Y, N, N/A)
Fauna					
<i>Actitis hypoleucos</i> (common sandpiper)	IA	9.9	2019	No	N/A
<i>Calidris acuminata</i> (sharp-tailed sandpiper)	IA	9.9	1979	No	N/A
<i>Falco peregrinus</i> (peregrine falcon)	OS	1.5	2014	Yes	N/A
<i>Pluvialis fulva</i> (pacific golden plover)	IA	9.9	1979	No	N/A
<i>Thinornis rubricollis</i> (hooded plover, hooded dotterel)	Priority 4	11.4	2001	No	N/A
<i>Tringa glareola</i> (wood sandpiper)	IA	1.6	2015	No	N/A
<i>Tringa nebularia</i> (common greenshank, greenshank)	IA	11.3	2017	No	N/A

OS = Other specially protected species; IA = Specially protected species under International agreement.

Appendix B – Assessment against the Clearing Principles

Assessment against the Clearing Principles	Variance level	Is further consideration required?
Environmental value: biological values		

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<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 within the application area is not likely to contain locally or regionally significant flora, fauna, habitat or assemblages of plants.</p> <p>Two priority flora and one conservation significant ecological community have been recorded within the local area.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1 above.
<p><u>Principle (b):</u> “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.”</p> <p><u>Assessment:</u> The proposed clearing area is unlikely to contain significant habitat for conservation significant fauna.</p> <p>Seven conservation significant fauna taxa have been recorded in the local area and are primarily associated with aquatic habitats. These habitat types are absent from the application area. <i>Falco peregrinus</i> (peregrine falcon) may be a transient visitor to the application area, however the vegetation within the application area is not likely to comprise significant habitat for this species or other conservation significant fauna recorded within the local area.</p>	Not likely to be at variance	No
<p><u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</p> <p><u>Assessment:</u> No threatened flora species are likely to be present within the application area. No threatened flora taxa have been recorded within the local area.</p> <p>The vegetation of the application area is not likely to include threatened flora taxa, nor is it necessary for the continued existence of threatened flora.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> “Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.”</p> <p><u>Assessment:</u> No threatened ecological communities (TECs) endorsed by the Western Australian Minister for Environment have been mapped within 20 kilometres of the application area. The vegetation of the application area is not likely to comprise the whole or a part of, or is necessary for the maintenance of a TEC.</p>	Not likely to be at variance	No
Environmental values: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> “Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</p> <p><u>Assessment:</u> The extent of native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (Commonwealth of Australia 2001).</p> <p>The vegetation mapped within the application and local area retain more than 98 per cent of the original vegetation cover (Appendix A). Vegetation in the application area is not considered to be part of a significant ecological linkage in the local area.</p>	Not likely to be at variance	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<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> An unmanaged reserve vested in the Department of Planning, Lands and Heritage for the purpose of ‘stock routes’ is situated approximately 35 metres west from the application area. The proposed clearing will not have an impact on the environmental values of any nearby conservation areas.</p>	Not likely to be at variance	No
Environmental values: land and water resources		
<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> There are no defined watercourses or wetlands within the application area, or within the immediate vicinity of the application area. A minor, non-perennial watercourse associated with Lake Raeside occurs approximately 100 metres south of the application area. The proposed clearing is unlikely to impact riparian vegetation.</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 extent and location of the proposed clearing, the primarily disturbed and degraded condition of the vegetation within the application area and the absence of mapped watercourses within 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> There are no rivers or surface water areas in the vicinity of the application area. The application area is located within the Goldfields Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i>, and groundwater salinity is mapped at greater than 3,000 to 7,000 milligrams per litre total dissolved salts. The absence of waterbodies, watercourses or drainage lines within the application area, or within the immediate vicinity of the application area, and the shallow depth of clearing required indicates that the proposed clearing is unlikely to cause any deterioration in quality of surface or groundwater.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u> 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. Given one minor, non-perennial watercourse is recorded approximately 100 metres south of the proposed clearing area, and the primarily disturbed and degraded condition of the vegetation within the application area, the clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding, or 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.

Measuring Vegetation Condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very Good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D – Biological survey information excerpts and photographs of the vegetation

1. Biological survey information excerpts Biological survey information excerpts

The applicant commissioned Western Botanical to undertake a level 1 flora and vegetation survey with the application area. The survey was conducted on 11 January 2013 by Western Botanical botanists (Western Botanical, 2013). A total of 59 taxa, representing 19 families and 32 genera were recorded from within the rail yard expansion project site. One vegetation association recorded across the rail yard expansion project area described using Muirs Vegetation classifications as Scattered Low Mulga Trees B over a mosaic understorey consisting of a Dwarf Shrubland C dominated by Chenopods and Mid Dense Hummock Grass dominated by buffel grass (*Cenchrus ciliaris*) (Western Botanical, 2013).

No priority or threatened flora were recorded during the survey (Western Botanical, 2013). No Priority Ecological Communities (PECs) or Threatened Ecological Communities (TECs) were recorded within the application area during the desktop search (Western Botanical, 2013).

Western Botanical (2013) considered the vegetation within the application area to be in Good to Degraded condition based on Keighery (1994). The basic vegetation structure across the project area has been significantly to severely disturbed and impacted by introduced (weed) species and partial clearing for vehicle access (Western Botanical, 2013). Seven introduced flora (weed) species were located during the survey of the project area with nine range extensions (Western Botanical, 2013). *Cenchrus ciliaris* was found wide spread across the project area in large numbers, while the other six weed species were present in small numbers along existing impact zones such as tracks and rail lines (Western Botanical, 2013).

Western Botanical (2013) recommend good hygiene practices are adopted during expansion of the rail yard, to minimise spread of the identified introduced weed species.

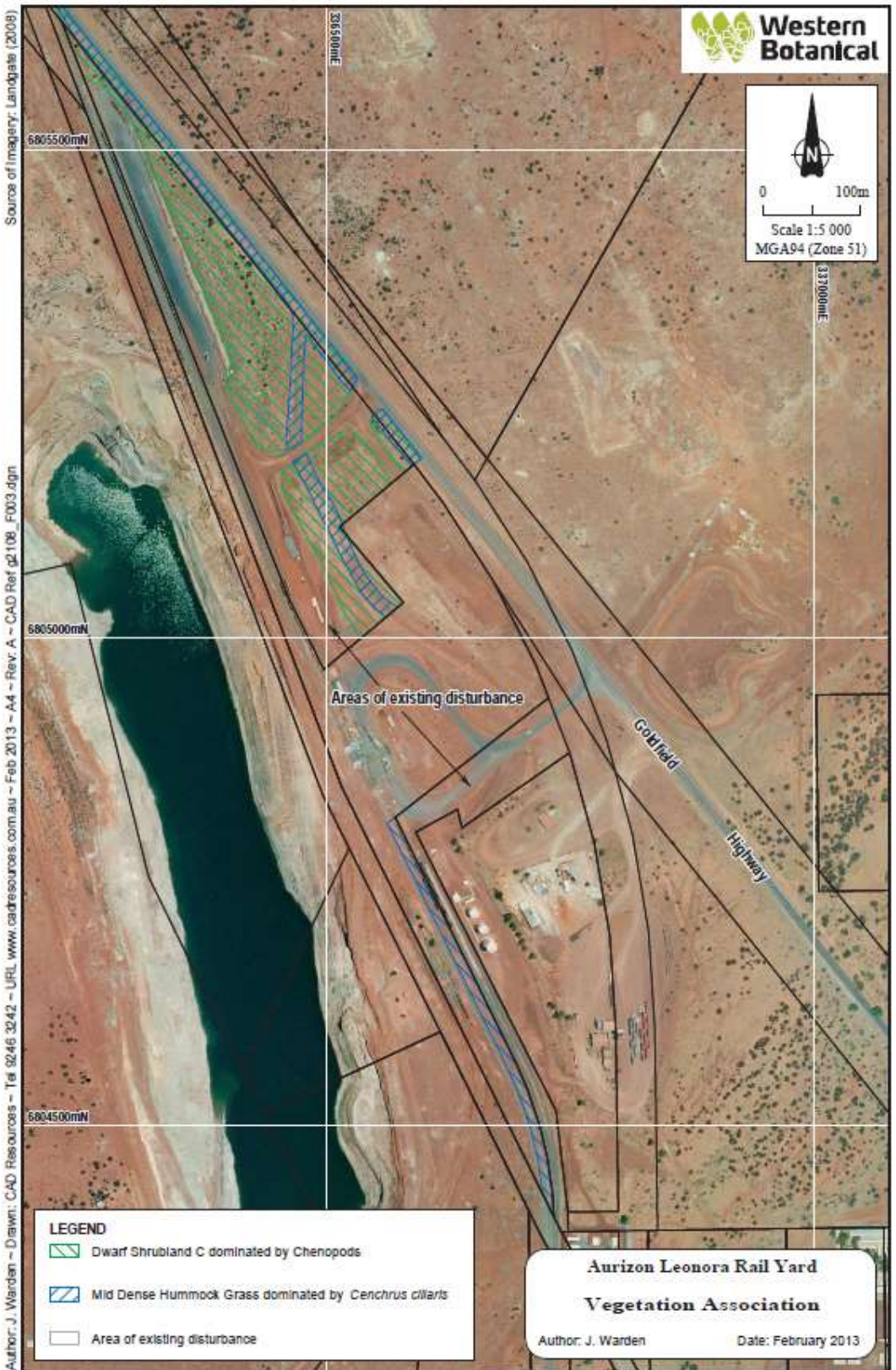


Figure D1. Site map showing the existing areas of disturbance and the Mosaic of Remnant Dwarf Shrubland C dominated by Chenopods and the invasive Mid Dense Hummock Grass dominated by *Cenchrus ciliaris* (Western Botanical, 2013).

2. Representative photographs of vegetation within the application area (Australia Western Railroad Pty Ltd, 2020)



Figure D2. Lot 501 on Deposited Plan 60064 - Southern boundary of the application area (northeast to southwest)



Figure D3. Lot 501 on Deposited Plan 60064 - Eastern perimeter of the application area (south to north)



Figure D4. Lot 501 on Deposited Plan 60064 – South-western perimeter of the application area (west to east)



Figure D5. Lot 501 on Deposited Plan 60064 – North eastern perimeter of the application area (south to north)



Figure D6. Lot 502 on Deposited Plan 60064 - Eastern boundary of the application area (west)



Figure D7. Lot 502 on Deposited Plan 60064 (east to west)



Figure D8. Lot 502 on Deposited Plan 60064 (east to west)



Figure D9. Lot 502 on Deposited Plan 60064 (north to south)

Appendix E – References and databases

1. GIS datasets

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

- Aboriginal Heritage Places (DPLH-001)
- 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)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Regional Parks (DBCA-026)
- Soil and Landscape Mapping – Best Available

Restricted GIS Databases used:

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

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