GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 9174/1
Permit Holder:	Public Transport Authority of Western Australia
Duration of Permit:	From 5 June 2021 to 5 June 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 trenching and installation of underground utility cable.

2. Land on which clearing is to be done

Lot 500 on Deposited Plan 74500
Lot 163 on Diagram 93066
Unallocated Crown Land (PIN 11910482)
Unnamed Road Reserve (PIN 1061368,

3. Clearing authorised

The permit holder must not clear more than 0.1 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:

(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.

5. Weed and dieback 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* and *dieback*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(b) ensure that no known dieback or 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	(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 4; and (f) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 5.

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
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.
dieback	means the effect of *Phytophthora* species on native vegetation.
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.
EP Act	*Environmental Protection Act 1986* (WA)
fill	means material used to increase the ground level, or to fill a depression.
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.
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

Ryan Mincham
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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

13 May 2021

Schedule 1

The boundary of the area authorised to be cleared is shown in the map below

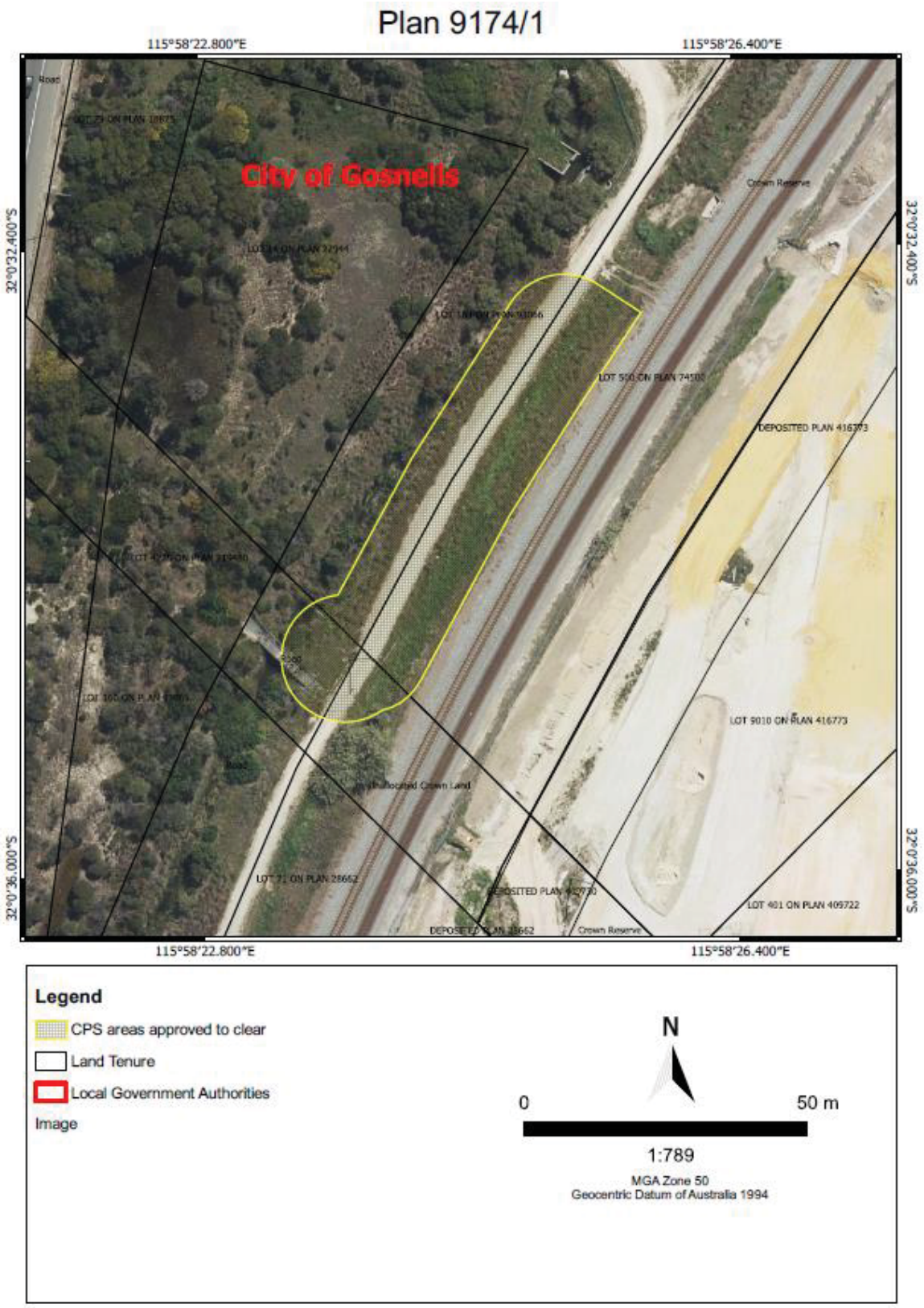

Figure 1: Map of the boundary of the area within which clearing may occur

Plan 9174/1

Legend

- CPS areas approved to clear
- Land Tenure
- Local Government Authorities
- Image

N

0 — 50 m

1:789

MGA Zone 50
Geocentric Datum of Australia 1994

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 9174/1
Permit type:	Purpose permit
Applicant name:	Public Transport Authority of Western Australia
Application received:	6 January 2021
Application area:	0.1 hectares of native vegetation
Purpose of clearing:	Trenching and installation of underground utility cable
Method of clearing:	Mechanical
Property:	Lot 500 on Deposited Plan 74500, Lot 163 on Diagram 93066, Unallocated Crown Land (PIN 11910482), Unnamed road reserve (PIN 1061368)
Location (LGA area/s):	City of Gosnells
Localities (suburb/s):	Beckenham

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area (see Figure 1, Section 1.5). The area proposed to be cleared is an approximately 90-metre strip on both sides of a cleared track between a drain and a railway line. The area of vegetation proposed for clearing is 0.1 hectares within a 0.18 hectare footprint.

1.3. Decision on application

Decision:	Granted
Decision date:	13 May 2021
Decision area:	0.1 hectares

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 undertaking their assessment and in accordance with section 51O of the EP Act, the Delegated Officer has given consideration to the site characteristics (see Appendix A), the Clearing Principles in Schedule 5 of the EP Act (see Appendix B), the supporting information supplied by the applicant (GHD, 2020), relevant planning instruments, and any other pertinent matters they deemed relevant to the assessment (see Sections 3 and 4), as well as relevant datasets available at the time of the assessment (see Appendix E).

The assessment has identified that the proposed clearing will result in the following:

- The potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values. This risk is increased given that the vegetation type within the application area is predominantly *Hyparrhenia hirta* (weed) closed grassland.

Whilst the proposed clearing may impact upon a small number of native species such as some *Melaleuca* species, *Acacia saligna*, young *Eucalyptus rudis* and *Calothamnus rupestris*, due to the small scale of clearing, Completely Degraded vegetation condition and the lack of disruption to any ecological linkages, the vegetation is not considered to represent significant habitat for any conservation significant flora or fauna species.

After consideration of the available information, the Delegated Officer has determined that with appropriate management conditions, the proposed clearing is not likely to lead to an unacceptable risk to the environment. The Delegated Officer has decided to grant a clearing permit subject to conditions to:

- Take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback.
- Avoid and minimise clearing of native vegetation where possible.

1.5. Site map

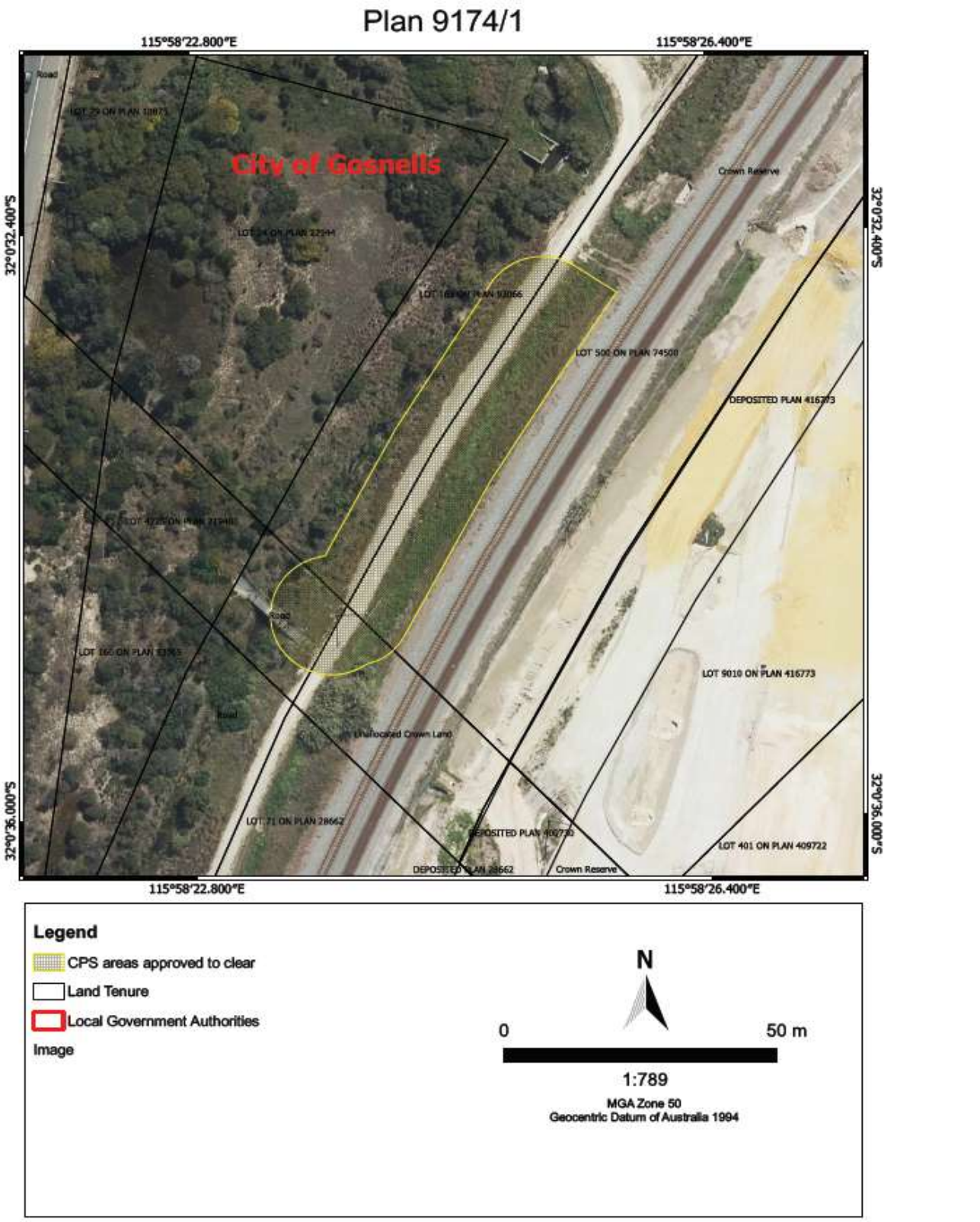

Figure 1: The area cross-hatched yellow indicates the area authorised to be cleared under the granted clearing permit.

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)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Planning and Development Act 2005* (WA) (P&D Act)

The key guidance documents which inform this assessment are:

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

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

To minimise the need for clearing, the applicant advised that clearing will be limited to utility excavation works and restricted to areas adjacent to and within existing access tracks to avoid clearing of vegetation where possible. No clearing will occur within the watercourse, or on the western side of the watercourse.

The Delegated Officer was satisfied that the applicant has made reasonable efforts 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.

On 19 August 2020, a field survey was conducted by GHD Pty Ltd (GHD) over the application area as well as the surrounding areas (GHD, 2020). The purpose of the survey was to establish the flora and fauna values within the survey area which encompasses the entirety of the application area. Native flora species such as *Melaleuca* species, *Acacia saligna*, *Eucalyptus rudis* and *Calothamnus rupestris*, were recorded within the broader survey area however these species are not strongly represented within the application area which is in a Completely Degraded condition. Given the relatively small area proposed for clearing, the Completely Degraded vegetation condition and the lack of disruption to any ecological linkages, it is considered that the vegetation within the application area does not represent significant habitat for any conservation significant fauna or fauna species.

The assessment against the clearing principles (see Appendix B) identified that the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with standard avoid and minimise and hygiene conditions.

Assessment:

According to available databases, the application area is adjacent to Woodlupine Brook, which is a non-perennial creek that has been modified into a drainage channel that reports to the Canning River. Review of the representative photos of the vegetation within the application area (GHD, 2020) noted that the vegetation present is not typical of riparian vegetation and is in a Completely Degraded condition. Given the extent of the proposed clearing (0.1

hectares) and the fact that no clearing will occur within the watercourse, it is not likely that clearing will have a significant impact upon riparian vegetation or the environmental values of the watercourse.

The vegetation proposed for clearing does not represent suitable habitat for black cockatoos as no potential roosting, foraging or breeding trees were identified within, or immediately adjacent to the application area (GHD, 2020).

With regard to weeds and dieback, management measures (as conditioned on the clearing permit) will minimise the risk of weeds and dieback being spread to nearby areas of native vegetation.

Conclusion

Based on the above assessment, the proposed clearing is not likely to result in significant impacts to environmental values.

Conditions

No flora and fauna management conditions are required. Standard weed and dieback, as well as avoidance and mitigation conditions will be imposed on the permit.

3.3. Relevant planning instruments and other matters

The City of Gosnells did not present any objections to the proposed clearing.

There are no Aboriginal Heritage Sites within or adjacent to 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.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is a 0.1 hectare parcel of native vegetation located on both sides of an existing track in the intensive land use zone of Western Australia. The proposed clearing area does not contribute to a significant ecological linkage and will not fragment the vegetation fringing the watercourse (drain). No clearing will occur within, or on the western side of the drainage line. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 20.6 per cent of the original native vegetation cover.
Ecological linkage	A mapped roadside ecological linkage is located 740 metres north-east of the application area.
Conservation areas	The closest conservation area is the Kenwick Wetlands (Class A) located 1.17 kilometres south-west of the application area (Figure 2).
Vegetation description	Photographs supplied by the applicant and a vegetation survey (GHD, 2020) indicate the vegetation within the proposed clearing area consists of *Hyparrhenia* closed grassland (weed species) Closed Grassland. Some species of native vegetation such as *Melaleuca* species, *Acacia saligna*, young *Eucalyptus rudis* and *Calothamnus rupestris* are present within the application area. Representative photos and vegetation mapping are available in Appendix D. This vegetation description is inconsistent with the Guilford Complex mapped vegetation type, which is described as a mixture of open forest to tall open forest of *Corymbia calophylla* (Marri) - *Eucalyptus wandoo* (Wandoo) - *Eucalyptus marginata* (Jarrah) and woodland of *Eucalyptus wandoo* (Wandoo) (with rare occurrences of *Eucalyptus lane-poolei* (Salmon White Gum)). Minor components include *Eucalyptus rudis* (Flooded Gum) - *Melaleuca rhaphiophylla* (Swamp Paperbark). The mapped vegetation type retains approximately 5.09 per cent of the original extent (Government of Western Australia, 2019).
Vegetation condition	Photographs supplied by the applicant and a vegetation survey (GHD, 2020) indicate the vegetation within the proposed clearing area is in Completely Degraded condition (Keighery, 1994), described as: • 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. The full Keighery (1994) condition rating scale is provided in Appendix C. A representative photo and vegetation type map are available in Appendix D.
Climate and landform	Rainfall: 900 millilitres per annum Evapotranspiration: 800 millilitres per annum Geology: Alluvial, shoreline, and eolian deposits.
Soil description	The soil is mapped as EnvGeol Sc Phase (213Pj_Sc). Described as: • Clayey Sand - silty in part, pale grey to brown, medium to coarse-grained, poorly sorted, subangular to rounded, frequent heavy minerals, rare feldspar, of alluvial origin

Characteristic	Details
Land degradation risk	The mapped soil within the application area has the following relevant land degradation risks: • H2: 70% of the map unit has a high susceptibility of subsurface acidification • H2: >70% of the map unit has a moderate to very high to risk of waterlogging • M1: 10-30% of the map unit has a high to extreme hazard of wind erosion • M1: 10-30% of the map unit has a moderate or high hazard of salinity • M1: 10-30% of the map unit has a high to extreme hazard of phosphorus export risk All other mapped land degradation risks are low.
Waterbodies	The application area is adjacent to a non-perennial watercourse (Woodlupine Brook) which has been highly modified into a drainage channel. This watercourse reports to the Canning River approximately 3.6 kilometres downstream. The majority of the application area is within an area mapped as a Multiple Use Wetland.
Hydrogeography	The application area is not mapped within any proclaimed Surface Water or Groundwater Area.
Flora	There are 110 flora records in the local area. The closest recorded conservation significant flora species *Schoenus pennisetis* (P3) is 0.99 kilometre from the application area and is the only record of conservation significant flora within one kilometre of the application area. A total of 15 conservation significant flora species have been recorded within the local area on the same soil type as that found within the application area. This includes five Threatened, one Priority 1, one Priority 2, three Priority 3 and five Priority 4 species.
Ecological communities	A total of 15 threatened or priority ecological communities have been mapped within the local area. Survey information provided by the applicant (GBH, 2020) indicates that the vegetation present does not represent any of these ecological communities.
Fauna	A total of 52 fauna species of conservation significance are recorded within the local area. The nearest species to the application area is a forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) recorded 50 metres away. A known black cockatoo roost site is located 0.49 kilometres away, with the closest recorded black cockatoo breeding tree located 11.7 kilometres away.

A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	17.98
Vegetation complex					
Guilford Complex	90,513.13	4,607.91	5.09	287.49	0.32
Local area					
10km radius	31,621.9	6,507.5	20.6	-	-

*Government of Western Australia (2019a)

A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E), and biological survey information (Appendix D), 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)	Are surveys adequate to identify? [Y, N, N/A]
Andersonia gracilis (WAHERB)	T	N	N	Y	1.56	Y
Eremophila glabra subsp. chlorella (WAHERB)	T	N	N	Y	1.30	Y
Grevillea thelemanniana (WAHERB)	T	N	N	Y	0.99	Y
Ptilotus pyramidatus (WAHERB)	T	N	N	Y	1.86	Y
Lepidosperma rostratum (TPFL)	T	N	N	Y	1.93	Y
Calandrinia uncinella (WAHERB)	P1	N	N	Y	1.46	Y
Calectasia grandiflora (WA HERB)	P2	N	N	Y	1.44	Y
Amanita wadjukiorum (WAHERB)	P3	N	N	Y	1.07	Y
Schoenus capillifolius (WAHERB)	P3	N	N	Y	1.46	Y
Amanita wadjukiorum (WAHERB)	P3	N	N	Y	1.07	Y
Aponogeton hexatepalus (TPFL)	P4	N	N	Y	2.38	Y
Drosera occidentalis (TPFL)	P4	N	N	Y	1.56	Y
Hydrocotyle lemnoides (TPFL)	P4	N	N	Y	1.47	Y
Ornduffia submerse (TPFL)	P4	N	N	Y	2.34	Y
Verticordia lindleyi subsp. lindleyi (TPFL)	P4	N	N	Y	1.61	Y

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

A.4. 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)	Are surveys adequate to identify? [Y, N, N/A]
Baudin's cockatoo	EN	N	N	4.75	Y
Carnaby's cockatoo	EN	N	N	0.55	Y
Forest red-tailed cockatoo	VU	N	N	0.06	Y
black-striped snake, black-striped burrowing snake	P3	Y	Y	2.7	Y
Quenda, southwestern brown bandicoot	P4	N	N	1.3	Y
Chuditch, western quoll	VU	N	N	1.35	Y
numbat, walpurti	EN	N	N	2.67	Y
South-western brush-tailed phascogale, wambenger	CD	N	N	2.85	Y

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

A.5. 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)	Are surveys adequate to identify? [Y, N, N/A]
Herb rich saline shrublands in clay pans (floristic community type 7 as originally described in Gibson et al. (1994))	VU State	N	N	Y	0.19	Y
Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	P3 State, EN Comm	N	N	Y	0.22	Y
Banksia attenuata woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. (1994))	EN both State and Com	N	N	N	1.1	Y
Banksia attenuata and/or *Eucalyptus marginata* woodlands of the eastern side of the Swan Coastal Plain (floristic community type 20b as originally described in Gibson et al. (1994))	EN both State and Com	N	N	N	5.2	Y
Central Northern Darling Scarp Granite Shrubland Community (P4 – State)	P4 State	N	N	N	5.1	Y
Corymbia calophylla - *Eucalyptus marginata* woodlands on sandy clay soils of the southern Swan Coastal Plain (floristic community type 3b as originally described in Gibson et al.	VU State	N	N	N	3.6	Y
Corymbia calophylla - *Kingia australis* woodlands on heavy soils, Swan Coastal Plain (floristic community type 3a as originally described in Gibson et al. (1994))	CR State, EN Comm	N	N	N	2.1	Y
Corymbia calophylla - *Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain (floristic community type 3c as originally described in in Gibson et al. (1994))	CR State, En Comm	N	N	N	4.5	Y
Herb rich saline shrublands in clay pans (floristic community type 7 as originally described in Gibson et al. (1994))	VU State, EN Comm	N	N	N	1.8	Y
Low lying *Banksia attenuata* woodlands or shrublands	P3 State, EN Comm	N	N	N	9.2	Y
Shrublands and woodlands of the eastern side of the Swan Coastal Plain (floristic community type 20c as originally described in in Gibson et al. (1994))	CR State, EN Comm	N	N	N	3.6	Y
Shrublands and woodlands on Muchea Limestone of the Swan Coastal Plain	EN State, EN Comm	N	N	N	1.0	Y
Shrublands on dry clay flats (floristic community type 10a as originally described in Gibson et al. (1994))	EN State, CR Comm	N	N	N		Y
Southern wet shrublands, Swan Coastal Plain (floristic community type 2 as originally described in Gibson et al. (1994))	EN State	N	N	N	3.0	Y
Subtropical and Temperate Coastal Saltmarsh	P3 State, VU Comm	N	N	N	6.4	Y

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

A.6. Land degradation risk table

Risk categories	*Land Unit 1*
Subsurface Acidification	H2: 70% of the map unit has a high susceptibility
Water logging	H2: >70% of the map unit has a moderate to very high to risk
Wind erosion	M1: 10-30% of the map unit has a high to extreme hazard
Salinity	M1: 10-30% of the map unit has a moderate or high hazard or is presently saline
Phosphorus export risk	M1: 10-30% of the map unit has a high to extreme hazard
Water erosion	L1: <3% of the map unit has a high to extreme hazard
Flood risk	L1: <3% of the map unit has a moderate to high hazard

Appendix B. 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 vegetation within the application area is in a Completely Degraded condition (GHD, 2020). The area proposed to be cleared does not contain locally or regionally significant flora, fauna, habitats or assemblages of plants. No conservation significant ecological communities are mapped or recorded within the application area. No black cockatoo foraging, roosting or breeding habitat trees were recorded within the application area (GHD, 2020).	Not likely to be at variance	No
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 does not contain foraging, roosting, or breeding habitat trees for black cockatoo's (GHD, 2020). Given that the area of vegetation proposed for clearing is small, in a Completely Degraded condition and adjacent to vegetation in better condition, it is not considered necessary for the maintenance of a significant habitat for fauna.	Not likely to be at variance	No
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: Given the Completely Degraded condition of the vegetation within the area which is dominated by weed species and given that no threatened flora species were recorded during the site survey (GHD, 2020), the area proposed to be cleared is unlikely to contain vegetation necessary for the continued existence of threatened flora species listed under the BC Act.	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:	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
The area proposed to be cleared does not contain vegetation representative of a threatened ecological community listed under the BC Act. A field survey also determined that the vegetation present within and surrounding the application area is in a Completely Degraded condition and does not represent a conservation significant ecological community (GHD, 2020).		
Environmental value: significant remnant vegetation and conservation areas		
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 local area retains approximately 20.6 per cent of the original native vegetation cover. The National Objectives and Targets for Biodiversity Conservation 2001-2005 include a target to have clearing controls in place that prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750 (Commonwealth of Australia 2001). In the Perth Metropolitan and Bunbury regions, the Environmental Protection Authority (EPA) has a modified objective to retain at least 10 per cent of the pre-clearing extent of vegetation complexes for defined constrained areas (intensely developed) (EPA, 2008). Based on the above and with consideration to the limited environmental values, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.	Not likely to be 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 closest conservation area is Kenwick Wetlands (Class A), which is located 1.17 kilometres from the application area. There is no topographic connectivity between the application area and Kenwick Wetlands. Although the drain does report to the Canning River (3.5 kilometres away from the application area), given the relatively small area proposed for clearing (0.1 hectares) and that no clearing is to occur within the watercourse, the proposed clearing is not likely to have any significant impact up on any conservation area.	Not likely to be at variance	No
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: Given that the application is adjacent to a modified watercourse (Woodlupine Brook), the proposed clearing is considered at variance to this principle. It is noted that no vegetation within the watercourse is proposed to be cleared.	At variance	No
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 highly susceptible to subsurface acidification and waterlogging and moderately susceptible to wind erosion, phosphorus export and salinity. Noting the small extent of the application area (0.1 hectares), the intended land use and the condition of the vegetation, the proposed clearing is not likely to cause an appreciable impact on land degradation.	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
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: A highly modified watercourse (Woodlupine Brook) fringes the western portion of the application area. Given the small area proposed for clearing (0.1 hectares), the moderate to low risk of soil erosion and the Completely Degraded condition of the vegetation, the clearing is unlikely to cause deterioration in the quality of surface or groundwater.	Not likely to be at variance	No
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: The mapped soil within the application area has a very low risk of flooding and water erosion. Although there is a high risk of waterlogging, the topographic contours in the surrounding area, relatively small area (0.1 hectares) and nearby drain do not indicate the proposed clearing is likely to contribute to an increased incidence or intensity of flooding.	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 Keighery (1994)

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. Photograph of the vegetation within the clearing area and vegetation type map (GHD, 2020)

Hyparrhenia hirta **(weed) closed grassland over scattered introduced herbs.**

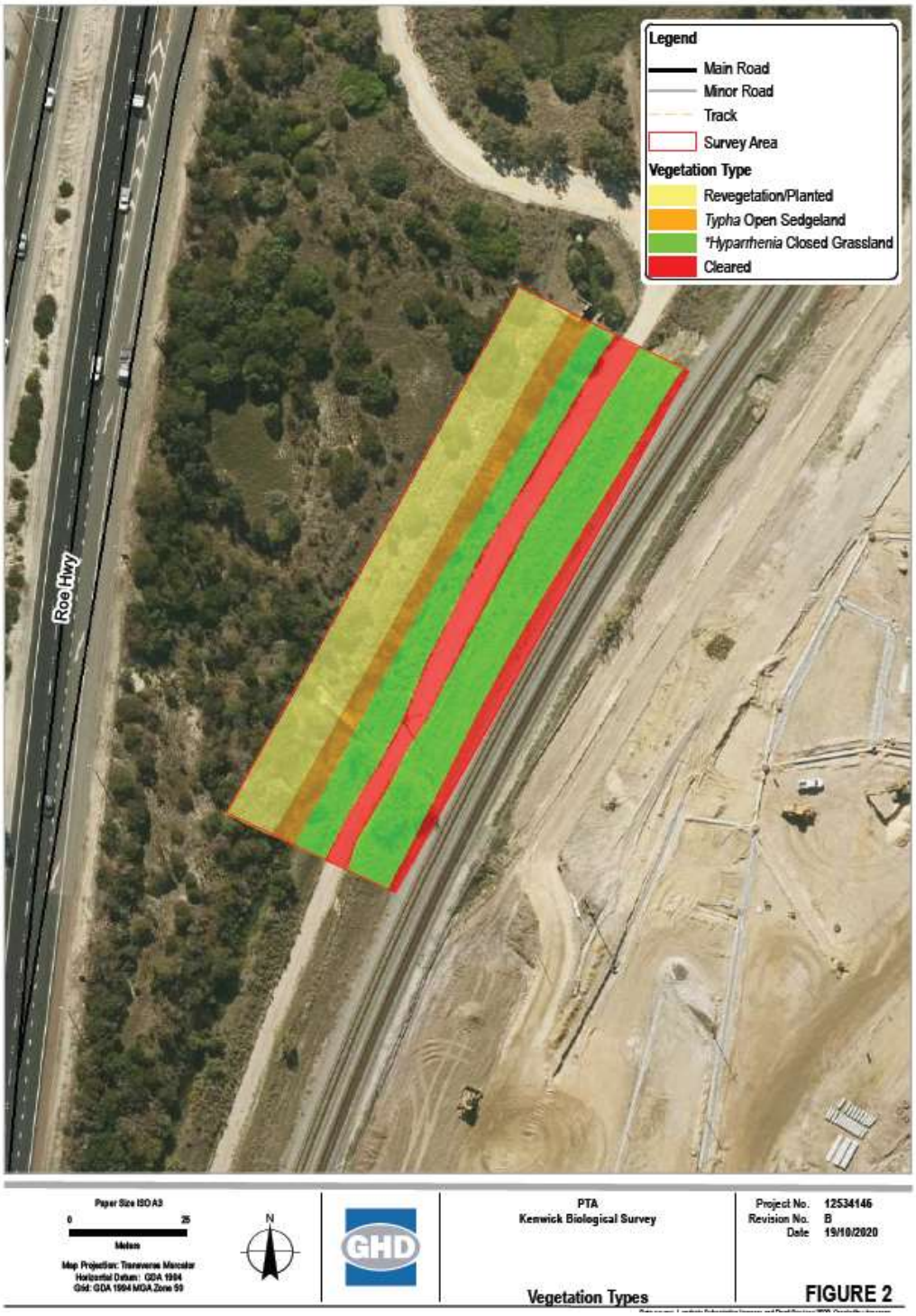

Figure 2: Shows the vegetation type *Hyparrhenia hirta* (weed) closed grassland in green. Clearing will be restricted to this vegetation type on the eastern side of the drain.

Appendix E. Sources of information

E.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)
- 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
- 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)

E.2. References

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