GOVERNMENT OF WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 10736/1
Permit Holder:	Public Transport Authority of Western Australia
Duration of Permit:	17 April 2025 to 17 April 2035

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

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of undertaking train signalling system upgrades.

2. Land on which clearing is to be done

Railway reserve (PIN 11525945), Byford

3. Clearing authorised

The permit holder must not clear more than 0.008 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.

6. Fauna management – directional clearing

The permit holder must:

(a) conduct *clearing* authorised under this permit in one direction, towards adjacent *native vegetation*; and

(b) allow reasonable time for fauna present within the area being cleared under this permit to move into adjacent *native vegetation* ahead of the *clearing* activity.

7. Offset – rehabilitation requirements

(a) Within 12 months of commencing *clearing* authorised under this permit, and no later than 17 April 2029, the permit holder must submit a Project Rehabilitation Plan to the *CEO* for approval, for the *rehabilitation* of 0.13 hectares in the cross-hatched red in Figure 2 of Schedule 2, being Lot 5567 on Deposited Plan 400401 (Crown Reserve 17490), Byford, in accordance with the *revegetation guideline*.

(b) The Project Rehabilitation Plan must be prepared by an *environmental specialist*.

(c) The Project Rehabilitation Plan must include the following:

(i) the location of the proposed *rehabilitation* area, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

(ii) *weed* control actions;

(iii) *direct seeding* or *planting* of *local provenance*, which must be associated with *SCP3a* and Carnaby's cockatoo (*Zanda latirostris*) foraging habitat, at an *optimal time*;

(iv) a *vegetation establishment period*;

(v) *rehabilitation* success completion criteria based on appropriate *reference sites*, including but not limited to target weed cover, vegetation condition and density;

(vi) *remedial actions* to be undertaken if completion criteria are not met;

(vii) details of ongoing maintenance and monitoring of the area to be *rehabilitated* for a minimum of five (5) years;

(viii) timeframes for completion of activities; and

(ix) management commitments that will be achieved.

(d) If the *CEO* decides not to approve the Project Rehabilitation Plan, the permit holder must revise and resubmit the Project Rehabilitation Plan for the *CEO's* approval within one (1) month of that decision.

(e) Where the *CEO* decides not to approve a resubmitted Project Rehabilitation Plan, the permit holder is required to continue to revise and resubmit Project Rehabilitation Plan(s) at the *CEOs* request, until such time that the *CEO* approves the Project Rehabilitation Plan.

(f) The permit holder must obtain the approval of the *CEO* prior to implementing the Project Rehabilitation Plan.

(g) The permit holder must implement the approved Project Rehabilitation Plan within 12 months of the date of approval by the *CEO*.

(h) If, prior to submitting the Project Rehabilitation Plan required under *condition* 7(a), it becomes realised by the permit holder that the area cross-hatched red in Figure 2 of Schedule 2 is no longer available for *rehabilitation*, the permit holder must, within 12 months of commencing *clearing* under this permit and no later than 17 April 2029:

(i) submit a Project Rehabilitation Plan to the *CEO* for approval, which identifies an alternative 0.13-hectare offset area for *rehabilitation* with the *required environmental values*, in accordance with the *revegetation guideline*; and

(ii) ensure the Project Rehabilitation Plan required under *condition* 7(h)(i) is prepared by an *environmental specialist*, and includes those specifications required by *conditions* 7(c)(i)-(ix).

(i) Where the permit holder is required to submit a Project Rehabilitation Plan under *condition* 7(h), the permit holder must undertake the actions required by *conditions* 7(d)-(g).

8. Demarcation of the clearing area

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

PART III - RECORD KEEPING AND REPORTING

9. Records that must be kept

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

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	(a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with *condition* 4; (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with *condition* 5; (g) actions taken in accordance with *condition* 6; and (h) actions taken in accordance with *condition* 8.
2.	In relation to the *rehabilitation* of	(a) a description of the *rehabilitation* activities

No.	Relevant matter	Specifications
	areas pursuant to *condition* 7	undertaken; (b) the size of the area *rehabilitated*; (c) the date/s which *rehabilitation* was undertaken; (d) the boundaries of the area *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; and (e) any other actions taken in accordance with *condition* 7.

10. Reporting

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

(i) the records required to be kept under *condition* 9; and

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

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

(c) The permit holder must provide to the *CEO*, no later than 90 days prior to the expiry date of the permit, a written report of records required under *condition* 9, where these records have not already been provided under *condition* 10(a).

DEFINITIONS

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

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*.
clearing	has the meaning given under section 3(1) of the EP Act.
condition/s	a condition to which this clearing permit is subject under s.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.
direct seeding	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of two (2) years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who

Term	Definition
	is approved by the *CEO* as a suitable environmental specialist.
environmental values	means the following environmental values: • Vegetation representative of the '*Corymbia calophylla – Kingia australis* woodlands on heavy soils of the Swan Coastal Plain' threatened ecological community • Vegetation providing suitable foraging habitat for Carnaby's cockatoo • Vegetation occurring within, or contributing towards the values of, a Bush Forever site.
fill	means material used to increase the ground level, or to fill a depression.
EP Act	*Environmental Protection Act 1986* (WA)
local provenance	means native vegetation seeds and propagating material from natural sources within 50 km and the same IBRA subregion of the area cleared.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
optimal time	means the period from April-July for taking *planting* and *direct seeding*.
planting	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.
reference sites	means nearby sites used to provide baseline data for a rehabilitation project. Measurements from fixed reference points or plots where biodiversity components are measured are used to set measurable completion criteria. The *reference sites* must contain: • vegetation representative of the '*Corymbia calophylla – Kingia australis* woodlands on heavy soils of the Swan Coastal Plain' threatened ecological community • suitable foraging habitat for Carnaby's cockatoo; and • vegetation in excellent (Keighery, 1994) or better condition.
rehabilitate/ rehabilitated/ rehabilitation	means actively managing an area containing native vegetation to improve the ecological function of that area.
remedial action/s	means any activity that is required to ensure successful reestablishment of vegetation to its pre-clearing composition, structure and density, and may include a combination of soil treatments and revegetation.
revegetation guideline	the document '*A Guide to Preparing Revegetation Plans for Clearing Permits*' (Department of Water and Environmental Regulation, 2018)
SCP3a	means the '*Corymbia calophylla - Kingia australis* woodlands on heavy soils of the Swan Coastal Plain' threatened ecological community.
site preparation	means management of existing site topsoil and preparation of the finished soil surface, for example by ripping or tilling the soil surface and respreading site topsoil and chipped native vegetation.
vegetation	means a period of at least two summers after the *rehabilitation* during

Term	Definition
establishment period	which time replacement and infill *rehabilitation* works may be required for areas in which *rehabilitation* has been unsuccessful and involves regular inspections of *rehabilitation* sites to monitor success.
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

Ray Carvalho
A/MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

25 March 2025

Schedule 1

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

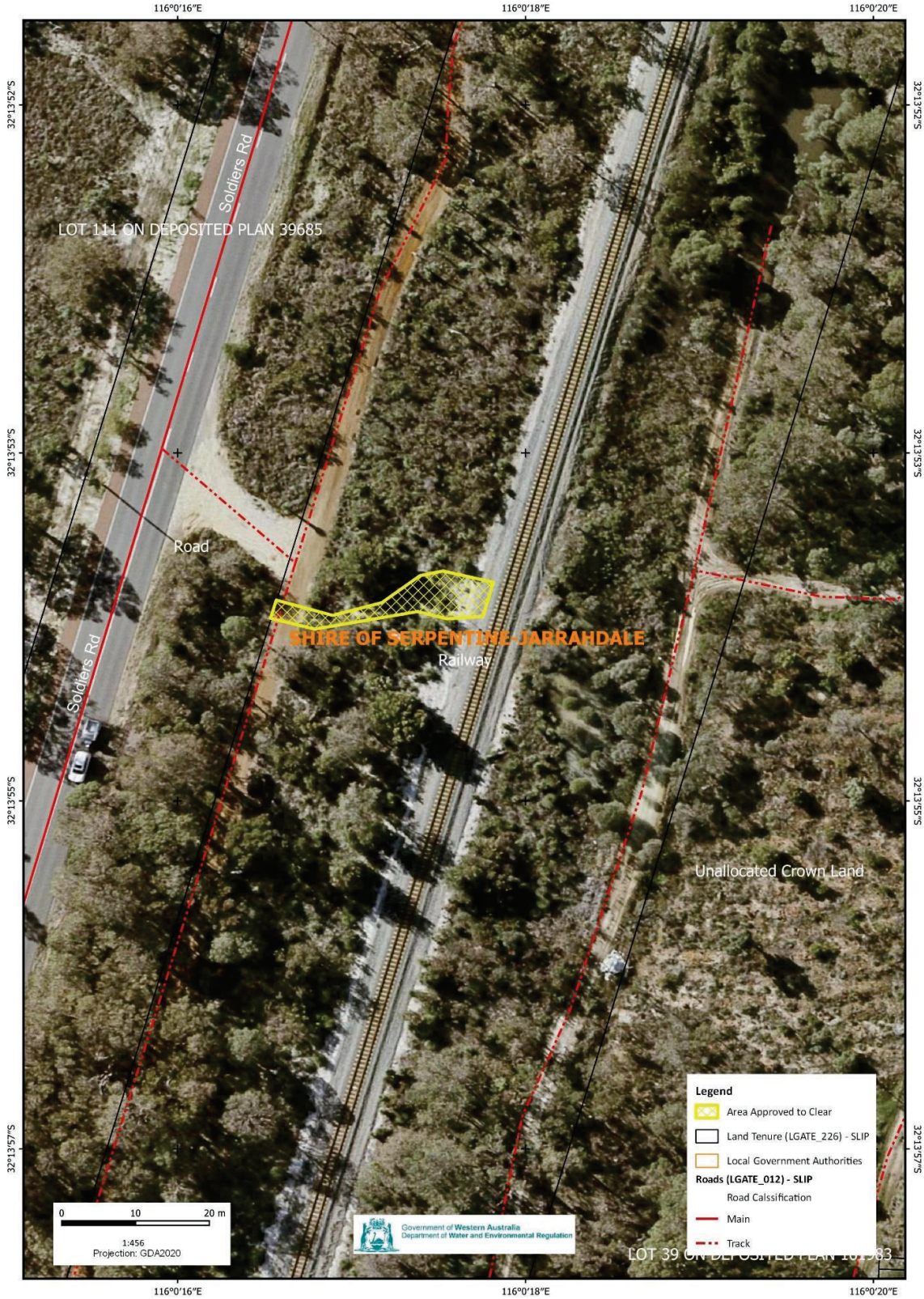

Figure 1: The area cross-hatched yellow indicates the area authorised to be cleared under this clearing permit.

Schedule 2

The boundary of the offset *rehabilitation* area, subject to *condition* 7, is shown in the map below (Figure 2).

Figure 2: The area cross-hatched red indicates the offset area subject to *condition* 7.

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 10736/1
Permit type:	Purpose permit
Applicant name:	Public Transport Authority of Western Australia (PTA)
Application received:	28 August 2024
Application area:	0.008 hectares of native vegetation
Purpose of clearing:	Train signalling upgrade
Method of clearing:	Mechanical
Property:	Rail Reserve (PIN 11525945), Byford
Location (LGA area/s):	Shire of Serpentine-Jarrahdale

1.2. Description of application

The applicant is proposing to clear 0.008 hectares of native vegetation within the Armadale rail reserve for a signalling upgrade south of the new Byford Station. The upgrade involves the installation of around one kilometre of above ground Main Cable Route (MCR). The applicant has advised that the upgrade is necessary to ensure the existing Australind Line service can run in parallel with the new assets associated with the Byford Rail Extension currently under construction (AECOM, 2024).

1.3. Decision on application

Decision:	Granted
Decision date:	25 March 2025
Decision area:	0.008 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

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

- the site characteristics (see Appendix A);
- relevant datasets (see Appendix D);
- the findings of biological surveys;
- the clearing principles set out in Schedule 5 of the EP Act (see Appendix B);
- relevant planning instruments and other relevant matters (see Section 3); and
- the purpose of the project to deliver the minimum required scope to ensure that the Australind train services can resume in parallel with the electrified passenger network being delivered by the Byford Rail Extension Project.

The assessment identified that the proposed clearing would result in the following environmental impacts:

- the loss of 0.008 hectares of native vegetation that:
    - is representative of the *Corymbia calophylla* - *Kingia australis* woodlands on heavy soils of the Swan Coastal Plain (SCP3a) threatened ecological community (TEC)
    - provides significant foraging habitat for Carnaby's cockatoo (*Zanda latirostris*)
    - includes native vegetation growing within Bush Forever site 350 'Byford to Serpentine Rail/Road Reserves and Adjacent Bushland'
- the potential introduction and spread of weeds and dieback into nearby native vegetation which comprises SCP3a, conservation category wetlands and high value fauna habitat
- a risk of injury to fauna through clearing operations.

After considering the available information, and the applicant's avoidance, minimisation, and mitigation measures (see Section 3.1), the Delegated Officer determined that impacts to adjacent vegetation from weed and dieback spread, and fauna through machinery strike, can be appropriately managed through conditions on the clearing permit.

The Delegated Officer determined that impacts to SCP3a, Bush Forever site 350 and Carnaby's cockatoo foraging habitat remained significant after the application of the mitigation hierarchy, and that these impacts constitute significant residual impacts.

Having considered the environmental impacts outlined above, the necessity for clearing, the applicant's implementation of the mitigation hierarchy, and planning and other matters, the Delegated Officer determined that on balance it was appropriate to grant a clearing permit subject to conditions. These conditions will require management measures, and an adequate environmental offset to counterbalance the above significant residual impacts, as outlined below.

The applicant has provided an adequate environmental offset, consistent with the WA Environmental Offsets Policy (2011) and WA Environmental Offsets Guidelines (2014), to counterbalance the abovementioned significant residual impacts. The offset involves the applicant funding the rehabilitation of 0.13 hectares of native vegetation that is representative of SCP3a, is within Bush Forever Site 321, and contains foraging habitat for Carnaby's cockatoo. The offset will aim to improve the quality of these environmental values, in accordance with a specific project revegetation plan. The offset site, as shown in Figure 2, is within 500 metres of the application area, within Brickwood Reserve (see Section 4 for detailed offset information).

The Delegated Officer therefore decided to grant a clearing permit subject to conditions requiring the applicant to:

- implement an environmental offset, as outlined above
- undertake avoid and minimise measures to reduce the impacts and extent of clearing
- undertake hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity
- demarcate the application area to avoid the inadvertent clearing of adjacent high quality native vegetation.

1.5. Site map

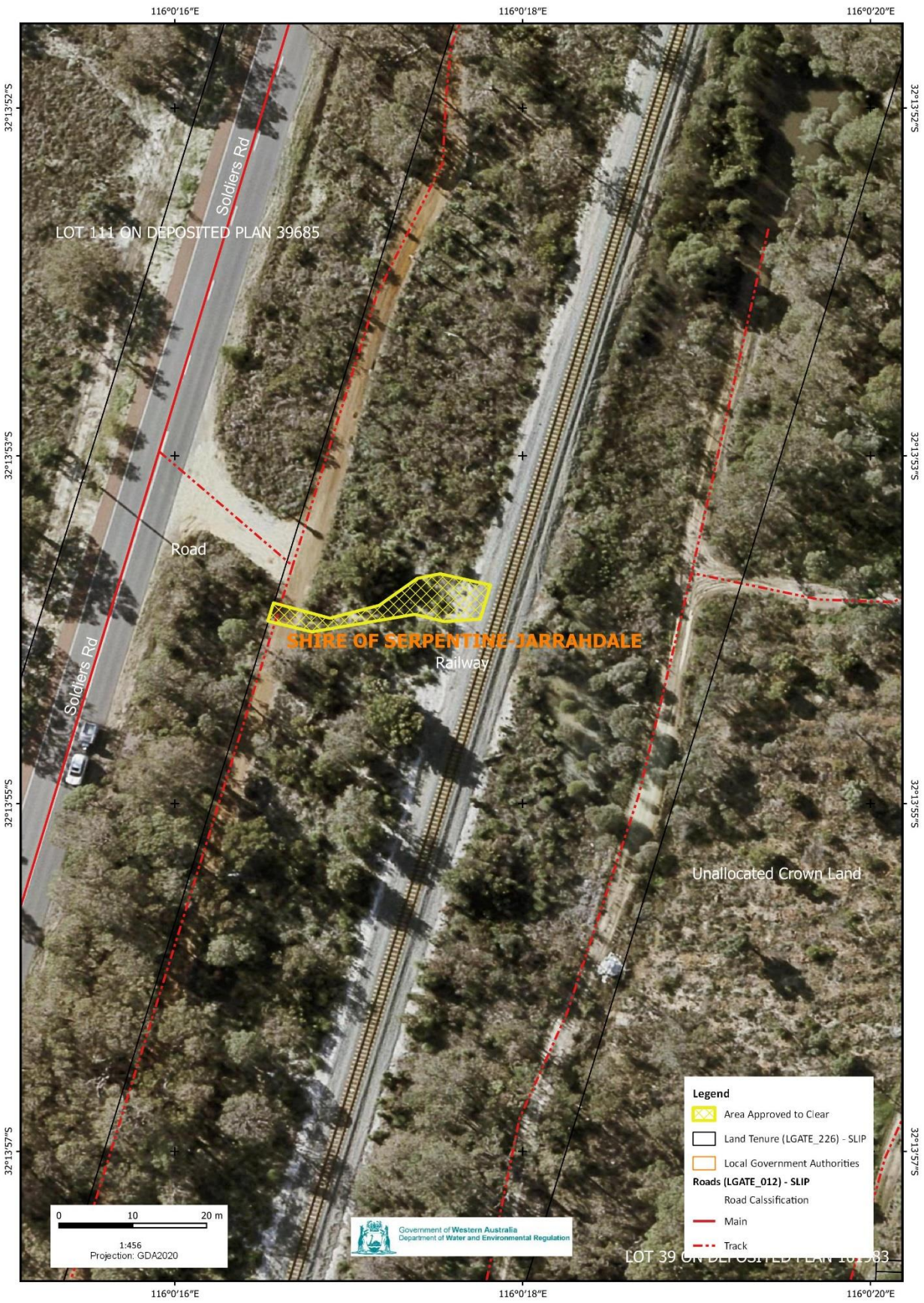

Figure 1 - Map of the application area

The area cross-hatched yellow indicates the area authorised to clear 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)

Relevant policies considered during the assessment include:

- *WA Environmental Offsets Policy* (2011)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *WA Environmental Offsets Guidelines* (August 2014)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020).

3 Detailed assessment of application

3.1. Avoidance, minimisation and mitigation measures

The applicant notes it has made numerous concessions to its main cable route (MCR) standards and preferences. The applicant notes that the original design for the project included a traditional Buried Pit style Pipe MCR, which would have required a five metre wide corridor over eight kilometres south of the new Byford Station, requiring around 3.89 hectares of clearing (AECOM, 2024).

After comissioning biological surveys of the application area, which identified the occurrence of SCP3a and black cockatoo habitat, the applicant made changes to the project design to opt for a novel above ground MCR solution, to be installed adjacent to the running line. This approach has substantially reduced the required clearing to 0.008 hectares of native vegetation (AECOM, 2024).

The applicant notes that in addition to the MCR, the original scope of works included several under bored crossings with buried pit transitions, trackside signalling equipment rooms, radio mast sites and access ways for construction crews, which are now no longer required for clearing (AECOM, 2024).

The applicant notes that significant changes to the construction methodology have also been agreed upon, with construction works to be completed using hi-rail machines, ensuring there is no vegetation being cleared for access/egress reasons (AECOM, 2024).

The applicant notes the above measures have avoided the proposed clearing of around 4 hectares of of SCP3a and black cockatoo habitat, whilst also avoiding the requirement to clear any major trees (AECOM, 2024).

The applicant notes that the revised design has resulted in several concessions to the project's outcome, including a reduced separation distance of the MCR from the running line and potential risks of damage to the MCR or theft of copper cabling within the MCR (AECOM, 2024).

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid, minimise and mitigate the potential impacts of the proposed clearing on environmental values. After consideration of these measures, the Delegated Officer determined that it was appropriate to consider an environmental offset to counterbalance the small remaining impact to SCP3a, black cockatoo habitat and Bush Forever site 350.

The applicant has proposed to rehabilitate 0.13 hectares of vegetation within the nearby Brickwood Reserve (and Bush Forever Site 321) that is representative of SCP3a and provides black cockatoo foraging habitat. In accordance with the WA Environmental Offsets Policy (2011) and WA Environmental Offsets Guidelines (2014), the significant

residual impacts are deemed to have been addressed through the conditioning of the above environmental offset on the clearing permit. The nature and suitability of the offset is provided in Section 4.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer had regard for the site characteristics (see Appendix B), biological survey findings, 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 conservation listed fauna, ecological communities and conservation areas. 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 – threatened ecological communities – Principles (a) and (d)

Assessment

Background

The applicant commissioned two flora surveys over a larger area encompassing the application area. These surveys include:

- A detailed flora and fauna assessment (undertaken in November 2019) (AECOM, 2020); and
- A detailed flora and vegetation assessment (undertaken in September and October 2021) (Focus Vision Consulting (FVC), 2022).

The Delegated Officer considered the consistency of these surveys with the EPA Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016). The Delegated Officer determined that the combined surveys were appropriate to identify the presence of conservation listed flora and threatened and priority ecological communities known from the local area, within the broader survey footprint.

The FVC assessment identified that the application area comprises *Corymbia calophylla* (marri) open woodland over *Hakea trifurcata*, *Kingia australis* and *Xanthorrhoea preissii* shrubland and sparse sedgeland (for full descriptions see Appendix A). The vegetation within the application area is in a very good (Keighery, 1994) condition.

SCP3a – direct impacts

According to available databases, the proposed clearing is mapped within the following threatened ecological community; *Corymbia calophylla* - *Kingia australis* woodlands on heavy soils of the Swan Coastal Plain (SCP3a). This community is listed as Critically Endangered under the BC Act and Endangered under the EPBC Act.

The FVC survey undertook floristic analysis of quadrat data to determine whether the vegetation types recorded were characteristic of any threatened or priority ecological communities (sections 4.4.2 and 5.2.2 of the FVC survey detail this analysis) (FVC, 2022). The floristic analysis determined that the vegetation type recorded within the application area is representative of SCP3a (FVC, 2022).

Noting the above, the proposed clearing will result in the loss of 0.008 hectares of SCP3a.

The Approved Conservation advice for SCP3a specifies that no condition thresholds have been applied to this community and hence all areas meeting its description are areas critical to its survival (Department of the Environment, 2017). Key threats to the conservation status of this community include clearing, weed invasion, the introduction of dieback and hydrology changes (Department of the Environment, 2017).

According to available datasets, around 192.6 hectares of SCP3a is currently mapped across the Swan Coastal Plain, of which around 100 hectares has some form of protection, with 27 hectares in DBCA estate. The proposed clearing therefore represents the loss of around 0.004% of the known occurrence of SCP3a.

The proposed clearing of 0.008 hectares of this community is a significant residual impact. This is noting that the application area comprises vegetation that meets the description of critical habitat for SCP3a, and that SCP3a is

highly restricted in spatial extent with very few patches remaining given development related cumulative impacts on the Swan Coastal Plain.

The impact to SCP3a from this application is not at a level that would warrant a decision to allow no further clearing of this value for this application. This is noting the extent of proposed clearing within the rail reserve, its linearity, and the extent of proposed impact to this communities' known occurrence. Therefore, given the applicant's implementation of the mitigation hierarchy, the Delegated Officer determined that it was appropriate to consider an environmental offset to counterbalance the proposed impact to SCP3a in this instance.

The applicant has proposed a rehabilitation offset to counterbalance the impact to SCP3a. This offset involves funding the rehabilitation of 0.13 hectares of native vegetation that is representative of SCP3a, to improve the quality of this portion of the TECs occurrence (see Section 4). The offset would provide an environmental outcome consistent with the Approved Conservation Advice (Department of the Environment, 2017) for this community.

SCP3a – indirect impacts

The application area forms a small portion of a much larger area mapped as SCP3a within the surrounding rail reserve. The proposed clearing will not result in the isolation of any patches of SCP3a, nor will it significantly fragment the larger SCP3a occurrence at this location. This is noting the width of the linear application area ranges from 2 to 7 metres and will not leave a large gap between the SCP3a occurrence north and south.

The proposed clearing and end land use will not intercept groundwater and noting the nature (no trees proposed for clearing) and linearity of proposed clearing, the risk of impact to natural hydrology is minimal.

The proposed clearing will increase the risk of weeds and dieback spreading into adjacent native vegetation. The applicant has advised that while there are no declared weed species within the application area, weed management protocols will be implemented to control any weed species within the proposed clearing areas during construction (PTA, 2024). The applicant further notes that appropriate hygiene protocols will be implemented to ensure the risk of spreading dieback is carefully managed and minimised (PTA, 2024).

Other

The applicant has applied for a section 45 Authorisation under the BC Act to modify the occurrence of SCP3a. The Department of Biodiversity, Conservation and Attractions has advised that a decision on that application will be made once a decision has been made on the clearing permit application.

Conclusion

The proposed clearing will result in the loss of 0.008 hectares of native vegetation that is representative of SCP3a. This impact constitutes a significant residual impact that requires counterbalancing by an environmental offset (detailed under Section 4). The Delegated Officer considered the extent of impact and the applicant's adherence to the mitigation hierarchy in determining that an environmental offset was suitable to counterbalance the above impact.

The proposed clearing may also increase the risk of weeds and dieback spreading into adjacent area comprising SCP3a. Appropriate management measures will be required as a condition of the clearing permit (as detailed below) to address this potential impact. These measures, together with those proposed by the applicant, are considered appropriate to manage this risk.

Conditions

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

- implement an environmental offset (see Section 4)
- undertake avoid and minimise actions to reduce the impacts and extent of clearing
- undertake specific hygiene measures to minimise the risk of the introduction and spread of weeds and dieback
- demarcate the application area prior to clearing to avoid inadvertent impacts to adjacent areas of SCP3a.

3.2.2. Biological values – Conservation listed fauna - Principle (b)

Assessment

Background

The applicant has previously commissioned a flora and fauna assessment of the entire Byford Extension Project area (AECOM, 2020) which encompasses the application area. The applicant also previously commissioned a basic fauna and black cockatoo assessment (Natural Area Management Services (Natural Area), 2024) just beyond the southern boundary of the application area, which provides context for the presence of nearby fauna values.

The AECOM fauna assessment identified the application area as largely 'shrubland', described as higher quality mixed native shrubland, mixed with degraded areas with abundant bare ground and high weed cover (AECOM, 2020).

The detailed flora survey identified that the application area comprises *Corymbia calophylla* (marri) open woodland over *Hakea trifurcata*, *Kingia australis* and *Xanthorrhoea preissii* shrubland and sparse sedgeland (for full descriptions see Appendix A), in a very good (Keighery, 1994) condition (FVC, 2022). While the application area is mapped as marri open woodland, it does not include any trees and is limited to the midstorey and understorey species described above, which were relatively sparse (AECOM, 2024).

The assessment identified that the below fauna species have the potential to occur within the application area based on the proximity to known records, recorded vegetation and fauna habitat type, and site characteristics of the application area:

- forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) (Vulnerable; BC Act & EPBC Act)
- Baudin's cockatoo (*Zanda baudinii*) (Endangered; BC Act & EPBC Act)
- Carnaby's cockatoo (*Zanda latirostris*) (Endangered; BC Act & EPBC Act) (collectively known as 'black cockatoos' when considered with the other cockatoo species noted above)
- chuditch (*Dasyurus geoffroii*) (Vulnerable; BC Act & EPBC Act)
- quenda (*Isoodon fusciventer*) (Priority 4; DBCA listed).

No conservation listed fauna species were recorded within the application area (AECOM, 2020; AECOM, 2024). Carnaby's cockatoo was recorded flying over vegetation adjacent to the application area (AECOM, 2020). The next closest conservation significant fauna observed was a quenda, around 100 metres east of the application area (AECOM, 2020).

Black cockatoos

The entire application area (0.008 hectares) provides preferred foraging habitat for Carnaby's cockatoo, noting the presence of *Hakea trifurcata*, *Kingia australis* and *Xanthorrhoea preissii* open shrubland. These mid and understorey species are not typically considered a primary foraging resource for forest red-tailed black cockatoo or Baudin's cockatoo, and the proposed clearing is therefore not likely to impact on significant habitat for these species.

The Commonwealth referral guideline for black cockatoos (DAWE, 2022), specifies that habitat critical for the recovery of black cockatoos includes foraging habitat (including remnant patches of vegetation), night roosting habitat and nesting trees for breeding. The importance of foraging habitat for Carnaby's cockatoo increases when it occurs within foraging distance of nesting sites (around 12 km) as it supports breeding effort (EPA 2019). Food resources within the range of roost sites are also important to sustain populations of black cockatoos (EPA 2019).

There are two known Carnaby's cockatoo nesting sites within 12 kilometres of the application area, and nine known black cockatoo roost sites within 6 kilometres of the application area. This indicates the foraging habitat present within the application area may support breeding effort and roosting birds. While foraging evidence was not recorded within the application area, it was identified within vegetation contiguous with the application area (AECOM, 2020).

With consideration of the above, the vegetation within the application area is considered significant as a foraging resource for Carnaby's cockatoo. This is noting the presence of primary foraging habitat for Carnaby's cockatoo

within the application area, the proximity to known roost sites and nesting sites, previous evidence of foraging nearby the application area, and the cumulative loss of black cockatoo foraging habitat on the Swan Coastal Plain.

The proposed clearing therefore constitutes a significant residual impact to Carnaby's cockatoo foraging habitat. Noting the extent of the proposed impact, and the applicant's adherence to the mitigation hierarchy, the Delegated Officer determined that it was appropriate to consider an environmental offset to counterbalance this impact. The applicant has proposed to fund the rehabilitation of 0.13 hectares of native vegetation that provides Carnaby's cockatoo foraging habitat, to increase the foraging value of this area of native vegetation (see offset details under Section 4).

Noting a lack of trees within the application area, it does not provide roosting or breeding habitat for black cockatoos.

Other fauna (chuditch and quenda)

While the vegetation within the application area may be transiently traversed by these species moving through the landscape, it is not likely to provide significant habitat for these species, or any other fauna species, noting an absence of trees, dense vegetation, and hollow horizontal logs, within the application area (AECOM, 2020; AECOM, 2024).

Fauna linkage values

The application area forms part of a formally mapped Perth Regional Ecological Linkage (No. 65), as mapped by the WA Local Government Association's biodiversity project (Del Marco et al., 2004).

While the vegetation within the application area contributes to north-south linkage values within the railway reserve, the proposed clearing will not completely sever the linkage or result in a gap of more than seven metres (varies between 2 and 7 metres) between the vegetation occurring north and south of the application area. Therefore, the proposed clearing is not likely to impact on the ability of fauna to disperse through the landscape.

The proposed clearing will increase the risk of weeds and dieback spreading into adjacent areas of fauna habitat. Adherence to specific hygiene protocols would assist to manage this risk.

Fauna strike

The proposed clearing has the potential to increase the risk of injury to any fauna using the application area at the time of clearing via machinery strike. Fauna management measures that require slow, one directional, progressive clearing would assist in minimising this risk.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of 0.008 hectares of significant habitat for Carnaby's cockatoo. This impact constitutes a significant residual impact that requires counterbalancing by an environmental offset, as conditioned on the clearing permit (detailed under Section 4). The Delegated Officer considered the extent of impact and the applicants adherence to the mitigation hierarchy in determining that an environmental offset was suitable to counterbalance the above impact.

The proposed clearing will also increase the risk of fauna strike to any fauna using the application area at the time of clearing.

Conditions

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

- provide an environmental offset (as detailed in Section 4 below)
- undertake avoid and minimise measures to reduce the impacts and extent of clearing
- undertake hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

3.2.3. Conservation areas - Principle (h)

Bush Forever

The entire application area (0.008 hectares) occurs within Bush Forever site 350, known as the 'Byford to Serpentine Rail/Road Reserves and Adjacent Bushland'.

During the assessment of this application, advice was sought from the Department of Planning, Lands and Heritage (DPLH) on the impacts to this Bush Forever site. DPLH (2024) recommended that, to ensure the integrity of Bush Forever Area 350 is not compromised, and in accordance with State Planning Policy (SPP) 2.8 5.1.1 (ii) and 5.1.2.3 (c):

- the development including construction, access, and ongoing maintenance, shall not result in any further disturbance or clearing of Bush Forever Area 350; and
- an offset package be prepared for and approved by DWER prior to clearing, in accordance with the WA Environmental Offsets Policy (2011) and Appendix 4 of SPP 2.8 for any clearing within Bush Forever Area 350.

Appendix 4 of SPP 2.8 specifies that clearing of high-value vegetation within Bush Forever Sites should be offset with a net outcome of at least 2 times the calculated habitat loss in hectares, to ensure there will be an environmental gain for the proposed clearing.

Given the application area comprises significant foraging habitat for Carnaby's cockatoo and is representative of SCP3a, it is considered 'high-value' vegetation. Therefore, it has been estimated that the offset required to counterbalance impacts to Bush Forever Site 350 from the proposed clearing is 0.016 hectares (2 x 0.008 hectares).

Noting that the proposed offset is to rehabilitate 0.13 hectares of native vegetation (roughly 16 times larger than the application area) within Bush Forever site 321 (part of Brickwood Reserve), which includes suitable foraging habitat for Carnaby's cockatoo and vegetation representative of SCP3a, the proposed offset is considered adequate to counterbalance the impact to Bush Forever.

Conservation Category Wetland

The application area is around 15 metres from a mapped Conservation management category wetland (CCW) (palusplain) (UFI 14506) as identified within the Geomorphic Wetlands of the Swan Coastal Plain database (managed by DBCA). CCW's are the highest priority wetlands for protection and conservation as they support a high level of ecological functions and attributes (Water and Rivers Commission, 2001). The minimum recommended buffer for these wetlands is 50 metres, to minimise edge effects associated with habitat modification (WAPC, 2005).

While the application area is within the recommended buffer of the CCW, it comprises a small linear area of relatively sparse native understorey and midstorey vegetation. Noting this, the proposed clearing is not likely to impact on the hydrological regime of this wetland area, with consideration also for the existing disturbed areas adjacent to and within this wetland from the railway and associated maintenance access tracks.

The proposed clearing may however increase the risk of weeds and dieback spread into adjacent areas of native vegetation, including within the CCW and adjacent areas of Bush Forever site 350 and SCP3a, through the movement of machinery to and from the site.

The applicant has advised that while there are no declared weed species within the application area, weed management protocols will be implemented to control any weed species within the proposed clearing areas during construction (PTA, 2024). The applicant further notes that although a low risk, appropriate hygiene protocols will be implemented to ensure the risk of spreading dieback is carefully managed and minimised (PTA, 2024).

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of 0.008 hectares of high-value vegetation within Bush Forever site 350. This impact constitutes a significant residual impact that requires counterbalancing by an environmental offset, as conditioned on the clearing permit (detailed under Section 4).

The proposed clearing will also increase the risk of weeds and dieback spreading into adjacent portions of the Bush Forever site and within the CCW. The applicant has proposed management measures to minimise this risk, as outlined above.

Conditions

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

- provide an environmental offset (as detailed in Section 4 below)
- undertake avoid and minimise measures to reduce the impacts and extent of clearing
- undertake hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity
- demarcate the application area prior to clearing to avoid inadvertent impacts to adjacent areas of SCP3a.

3.3 Relevant planning instruments and other matters

The Department of Planning, Lands and Heritage was invited to provide comment on the proposed clearing and advised that (DPLH, 2024):

- the application area is within the reservation of Railways under the Metropolitan Region Scheme
- under State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region (SPP 2.8), the application area has the implementation category of Government Lands or Public Infrastructure in Bush Forever Areas
- it could be considered that the proposal meets the wider economic needs of the community through provision of safe and effective railway technology and upgrades, consistent with the intent of Section 5.1.2.3 of SPP 2.8,
- the above consideration assumes that all reasonable alternatives and steps have been undertaken to avoid clearing and the necessity of the reposition is demonstrated in the first instance (SPP 2.8 section 5.1.1 and 6)
- to ensure the integrity of Bush Forever Area 350 is not compromised, and in accordance with SPP 2.8 5.1.1 (ii) and 5.1.2.3 (c), Land Use Planning Policy recommends:
    - The development including construction, access, and ongoing maintenance, shall not result in any further disturbance or clearing of Bush Forever Area 350.
    - An offset package be approved by DWER prior to clearing, in accordance with the WA Environmental Offsets Policy (2011) and Appendix 4 of SPP 2.8 for any clearing within Bush Forever Area 350.

As discussed under Sections 3.2.3 and 4, the applicant has proposed an offset to counterbalance the impact to Bush Forever Site 350.

The application area does not intersect any registered Aboriginal Heritage Sites. The closest Aboriginal Heritage Site is located 1.3 kilometres from the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

The Shire of Serpentine-Jarrahdale (Shire) provided comment on the proposed offset and advised that the Shire supports the applicants access within Brickwood Reserve for the purpose of implementing the 0.13-hectare rehabilitation offset for this clearing permit application, subject to the following conditions (Shire of Serpentine-Jarrahdale, 2025):

- Shire officers being contacted by the applicant prior to works commencing, to review the scope of the rehabilitation offset works
- the proposed Funding Agreement being approved by Council
- the Friends of Brickwood Reserve being consulted with prior to any rehabilitation offset works commencing.

4 Environmental offset

Significant residual impacts

Through the detailed assessment outlined in Section 3.2 above, the Delegated Officer has determined that the following significant residual impacts remain after the application of the avoidance, minimisation and mitigation measures (see Section 3.1); the loss of 0.008 hectares of native vegetation that:

- comprises part of a larger patch of the SCP3a threatened ecological community
- provides significant foraging habitat for Carnaby's cockatoo
- forms part of Bush Forever site 350.

The applicant has proposed an environmental offset to address the above impacts, as detailed below. The Delegated Officer determined in this instance that it was appropriate to consider an offset to counterbalance the significant residual impacts noting the extent of these impacts, and the applicants demonstrated efforts to avoid, minimise and mitigate the environmental impacts of the proposed clearing, in accordance with the WA Environmental Offsets Guidelines (2014).

Proposed offset

The applicant has proposed to fund rehabilitation actions within a 0.13-hectare portion of Lot 5567 on Deposited Plan 400401, Byford (the offset area – see Figure 2), to increase the quality of an occurrence of SCP3a and black cockatoo foraging habitat. The offset area is around 570 metres from the application area.

Lot 5567 on Deposited Plan 400401 is within Brickwood Reserve (zoned 'Recreation') managed by the Shire of Serpentine-Jarrahdale (the Shire). It is also within Bush Forever site 321 known as 'Brickwood Reserve and Adjacent Bushland, Byford'. The applicant has received in-principle approval from the Shire (during a Council meeting in July 2024) to fund the Shire to undertake targeted rehabilitation actions within the offset area. The formal agreement, which sets out the funding arrangements to achieve the rehabilitation, amongst other matters, will be subject to a Memorandum of Understanding between the Shire and the applicant, which is close to being finalised.

The applicants offset proposal specifies that an Offset Management Plan will be developed for the offset area, which will set out weed control, dieback prevention and tubestock planting actions subject to target completion criteria (native vegetation cover, weed cover, plant density, species richness and tubestock survival) and monitoring (AECOM, 2024a). The applicant initially proposed to rehabilitate a 0.1-hectare portion of Brickwood Reserve for this proposal, as outlined within the offset proposal (AECOM, 2024a), however subject to ongoing discussions with DWER regarding offset adequacy, the applicant agreed to increase the rehabilitation area to 0.13 hectares (PTA, 2025).

The applicant notes that the rehabilitation actions associated with the offset will be informed by Curtin University research on the restoration of SCP3a, which is also being funded by the applicant as part of its conditional offset requirements under Ministerial Statement (MS) 1183 for the Byford Rail Extension Project.

Offset site values and rehabilitation potential

A biological survey of the offset area has been undertaken to identify its environmental values. This survey identified that the offset area is mapped as *Corymbia calophylla* woodland over *Xanthorrhoea preissii* and *Kingia australis* open to sparse shrubland over *Mesomelaena tetragona* sedgeland (FVC, 2022a).

The offset area occurs within Bush Forever site 321, is considered an occurrence of SCP3a and contains significant foraging habitat for black cockatoos (FVC, 2022a).

The offset area ranges from degraded to very good – excellent condition (Keighery, 1994; FVC, 2022a). FVC undertook weed mapping of Brickwood Reserve to identify those areas most in need of rehabilitation (FVC, 2022a). The survey identified that the offset area has an overall weed coverage of 6 to 75% and includes occurrences of priority weeds *Eragrostis curvula* and *Ehrharta calycina*. The offset area therefore provides opportunities for improvement through targeted rehabilitation actions.

Offset adequacy

In assessing whether the proposed offset is adequately proportionate to the significance of the environmental values being impacted, DWER has considered the above information, and undertaken calculations using the WA Environmental Offsets Calculator. The justifications for the values used in the offset calculations are provided online at the following link Index of /permit/10736.

In determining offset adequacy, the Delegated Officer also considered that the offset area has been identified in the Shire of Serpentine-Jarrahdale's 'Briggs Park and Brickwood Reserve Management Plan, 2016-2026' which sets out management zones for the reserve and identifies the offset area as largely a 'High Conservation Zone' and 'Vegetation Management Zone'. These management zones both provide for the long-term conservation of the offset area.

The Delegated Officer also considered that the Approved Conservation Advice for SCP3a sets out outcomes that SCP3a related offset proposal should aim achieve. These include restoring patches of SCP3a to improve their condition, particularly to ensure that any offset sites add additional value to the remaining extent of this community (Department of the Environment, 2017). The environmental outcome of the proposed offset is therefore consistent with the Approved Conservation Advice for SCP3a.

In accordance with the WA Environmental Offsets Calculator, Environmental Offsets Metric, WA Environmental Offsets Policy (2011) and WA Environmental Offsets Guidelines (2014), the Delegated Officer considers that the proposed offset is adequate to counterbalance the significant residual impacts of the proposed clearing.

Other

A larger separate portion of Brickwood Reserve is required to be rehabilitated by the applicant under MS 1183 for the Byford Rail Extension Project. The proposed 0.13 hectares of rehabilitation proposed as part of this clearing permit application is additional to that area proposed for rehabilitation under MS 1183.

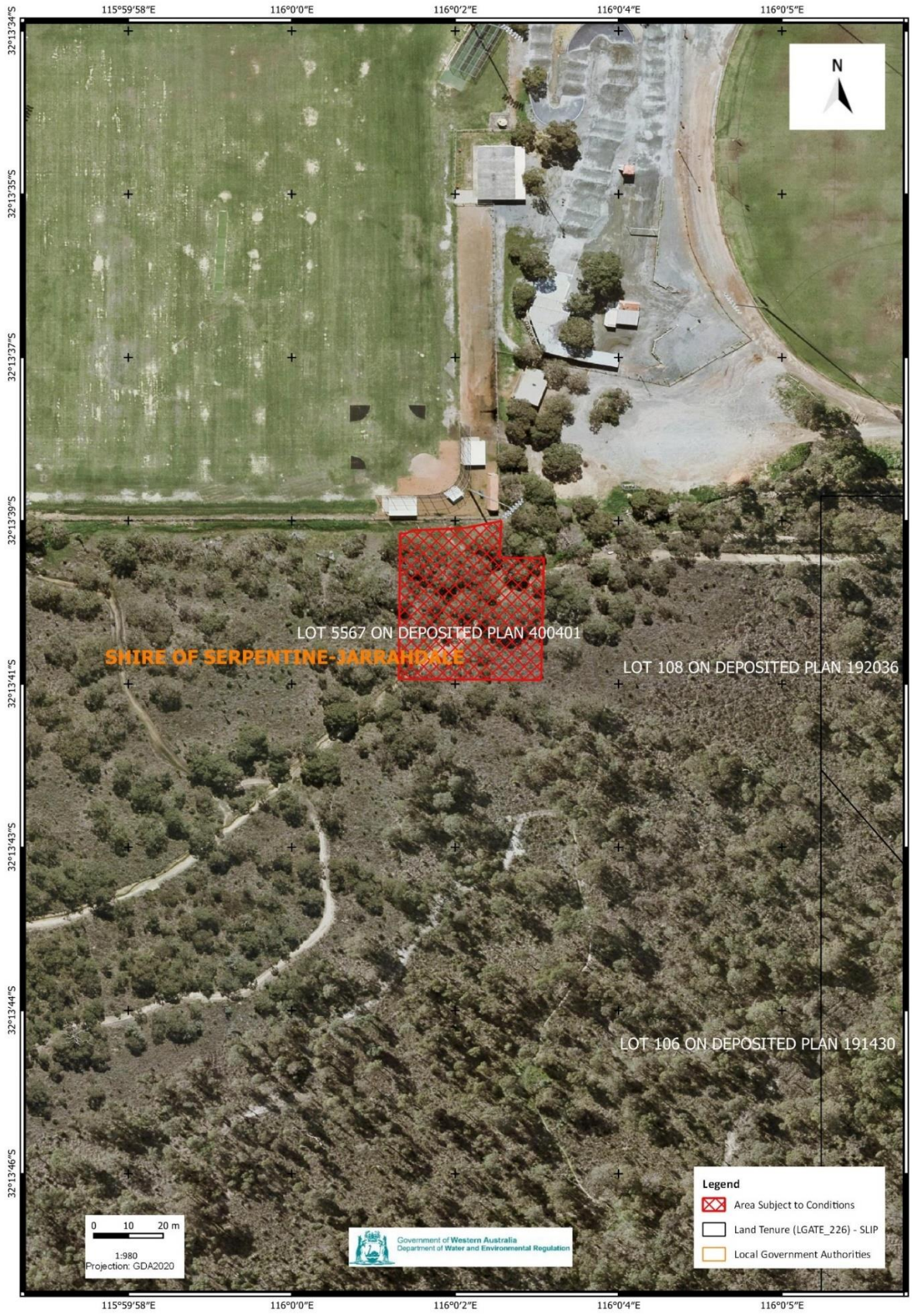

Figure 2 – Map of the proposed offset area

The area cross-hatched red indicates the proposed offset (rehabilitation) area.

End

Appendix A. Site characteristics

A.1 Site characteristics

Characteristic	Details
Local context	The application area is within the Swan Coastal Plain Bioregion and within the Perth Subregion, just west of the Darling Scarp and Jarrah Forest Bioregion. The area west has been subject to extensive historical clearing for urban development. The application area forms part of a linear tract of native vegetation that exists between the Armadale Railway and Soldiers Road. The local area (10-kilometre radius) surrounding the application area retains around 37.7% native vegetation cover.
Ecological linkage	The application area forms part of a formally mapped Perth Regional Ecological Linkage (No. 65), as mapped by the WA Local Government Association's biodiversity project (Del Marco et al., 2004).
Conservation areas	The closest DBCA managed conservation area to the application area is Cardup Nature Reserve, located 1.5 kilometres southwest of the application area. The application area is within Bush Forever site 350, known as the 'Byford to Serpentine Rail/Road Reserves and Adjacent Bushland'.
Vegetation description	The biological survey indicates that the vegetation within the application area consists of (FVC, 2022): • *Corymbia calophylla* low open woodland over *Hakea trifurcata*, *Kingia australis* and *Xanthorrhoea preissii* tall open shrubland, over *Cyathochaeta avenacea* and *Mesomelaena tetragona* sparse sedgeland. The recorded vegetation type is broadly consistent with the broad scale mapped vegetation type (Heddle et al., 1980): • Forrestfield Complex - vegetation ranges from open forest of *Corymbia calophylla* (Marri) - *Eucalyptus wandoo* (Wandoo) - *Eucalyptus marginata* (Jarrah) to open forest of *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) - *Allocasuarina fraseriana* (Sheoak) - Banksia species. Fringing woodland of *Eucalyptus rudis* (Flooded Gum) in the gullies that dissect this landform.
Vegetation condition	The biological survey indicates that the vegetation within the application area is in a very good (Keighery, 1994) condition (FVC, 2022): A description of each this vegetation condition type is provided in Appendix C.
Climate and landform	The broader area surrounding the application area experiences a warm Mediterranean climate, characterised by hot, dry summers and cool to mild wet winters. The average annual long-term rainfall recorded at the closest weather station to the application area is 811.5 millimetres. The application area lies on a relatively flat landform.
Soil description	The soils within the application area are mapped as the Forrestfield Complex, described as undulating foot slopes of the Darling and Whicher Scarps comprising duplex sandy gravels, pale deep sands and grey deep sandy duplexes.
Waterbodies / watercourses	There are no watercourses within the application area. The closest watercourse is a minor non-perennial watercourse mapped 285 west of the application area. The closest wetland to the application area is a conservation category wetland - Palusplain UFI 14506, which occurs around 15 metres north of the application area.

Characteristic	Details
Conservation listed flora	There are 39 conservation listed flora taxa known from the local area. No threatened or priority flora have been previously recorded within or nearby the application area. The closest conservation listed flora to the application area is *Drosera occidentalis* (P4) located 155 metres north west. *Johnsonia pubescens* subsp. *cygnorum* (P2) was recorded during the FVC (2022) survey of the broader area encompassing the application area, around 160 metres south of the application area (FVC 2022). Those fauna species most likely to occur within the application area are listed below under Section A.4.
Ecological communities	The application area is mapped as the *Corymbia calophylla - Kingia australis* woodlands on heavy soils of the Swan Coastal Plain (SCP3a) threatened ecological community. Floristic analysis indicates that the application area forms part of a larger area of SCP3a (FVC, 2022).
Conservation listed fauna	A total of 29 conservation listed fauna species have been recorded in the local area. The closest record to the application area is the quenda, recorded around 100 metres from the application area. Those fauna species most likely to occur within the application area are listed below under Section A.3. Regarding black cockatoos, there are two Carnaby's cockatoo and eight forest red-tailed black cockatoo breeding sites recorded within 12 kilometres of the application area. There are nine black cockatoo roost sites within a six-kilometre radius.

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	1,501,222	578,913	38.6	222,917	14.9
Vegetation association within Wheatbelt Bioregion**					
Forrestfield Complex	22,813	2,803	12.2	461	1.7
Local area (calculation - delete if not required)					
10km radius	32,743	12,375	37.7	-	-

*Government of Western Australia (2019)

**Government of Western Australia (2019a)

A.3 Fauna analysis

With consideration of the fauna habitat within the application area, relevant datasets, and biological survey information, impacts to the following conservation listed fauna required consideration.

Species name	Conservation status	Suitable habitat? [Y/N]	Are surveys adequate to identify? [Y, N, N/A]	Did surveys identify within the application area? [Y, N, N/A]
Baudin's cockatoo (*Zanda baudinii*)	EN; BC Act & EPBC Act	Y – secondary foraging	Y	N

Carnaby's cockatoo (*Zanda latirostris*)	EN; BC Act & EPBC Act	Y – primary foraging	Y	N
chuditch (*Dasyurus geoffroii*)	VU; BC Act, EN EPBC Act	Y	Y	N
forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*)	VU; BC Act & EPBC Act	Y – secondary foraging	Y	N
quenda (*Isoodon fusciventer*)	Priority 4	Y	Y	N

A.4 Flora analysis

With consideration of the site characteristics, relevant datasets, and biological survey information, impacts to the following conservation significant flora required consideration.

Species name	Conservation status	Suitable habitat? [Y/N]	Are surveys adequate to identify? [Y, N, N/A]	Did surveys identify within or nearby application area? [Y, N, N/A]
Acacia lasiocarpa var. *bracteolata* long peduncle variant	Priority (P) 1 (DBCA listed)	Y	Y	N
Amanita carneiphylla	P3	Y	Y	N
Babingtonia urbana	P3	Y	Y	N
Diuris purdiei	Endangered (BC Act; EPBC Act)	Y	Y	N
Drosera occidentalis	P4	Y	Y	N
Jacksonia gracillima	P3	Y	Y	N
Johnsonia pubescens subsp. *cygnorum*	P2	Y	Y	N
Morelotia australiensis	Vulnerable (BC Act; EPBC Act)	Y	Y	N
Synaphea sp. Pinjarra Plain (A.S. George 17182)	Critically endangered (BC Act; EPBC Act)	Y	Y	N
Synaphea sp. Serpentine (G.R. Brand 103)	Critically endangered (BC Act; EPBC Act)	Y	Y	N
Verticordia lindleyi subsp. lindleyi	P4	Y	Y	N

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:	At variance	Yes *Refer to Section 3.2.1, above.*

Assessment against the clearing principles	Variance level	Is further consideration required?
The application area includes vegetation in a very good (Keighery, 1994) condition representative of SCP3a (FVC, 2022). The application area also provides preferred foraging habitat for black cockatoos (FVC, 2022). No threatened or priority flora were identified during appropriately timed targeted flora surveys, and no such flora were identified within or adjacent to the application area (FVC, 2022). It is considered unlikely that conservation listed flora occur within the application area.		
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: Primary foraging habitat for Carnaby's cockatoo was identified within the application area (AECOM, 2020).	At variance	Yes *Refer to Section 3.2.2, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: Appropriately timed flora surveys of the application area did not identify any BC Act or EPBC Act listed flora species (FVC, 2022; AECOM, 2020). The application area is therefore unlikely to contain or be necessary for the continued existence of threatened flora.	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: The application area is mapped as, and considered representative of the SCP3a threatened ecological community.	At variance	Yes *Refer to Section 3.2.2, above.*
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 national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30% of that present prior to the year 1750, below which species loss appears to accelerate exponentially at an ecosystem level. However, the Environmental Protection Authority (EPA) recognises the Perth Metropolitan Region to be a constrained area, within which a minimum 10% representation threshold for ecological communities is recommended (EPA, 2008). The remnant vegetation cover in the local area (37.7%), and remaining extent of the vegetation type mapped over the application area (12.2%) are over the 10% threshold. Therefore, while the application area is a significant remnant within an extensively cleared landscape, this impact does not constitute a significant residual impact. The value of the application area as a part of a TEC and significant foraging habitat for black cockatoos is realised under the assessment against clearing principles (a), (b) and (d), where an environmental offset has been required to counterbalance the impact to these values (see Section 4).	At variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
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 application area (0.008 hectares) occurs within Bush Forever site 350, known as the 'Byford to Serpentine Rail/Road Reserves and Adjacent Bushland'. The application area is around 15 metres from a Conservation Category Wetland.	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: The application area does not intersect any known watercourses or wetlands. The closest wetland or watercourse to the application area is a Conservation Category Wetland (CCW) (Palusplain, UFI 14506), mapped 15 metres north. The application area forms part of a larger patch of SCP3a. This TEC occurs on heavy soils and is associated with wetland environments. Impacts to SCP3a and the nearby CCW have been assessed under Sections 3.2.1 and 3.2.3, respectively.	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 proposed clearing of 0.008 hectares of native vegetation which excludes large trees, and is bordered by native vegetation north and south, is not likely to result in appreciable land degradation.	Not likely to be at variance	No
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: The application area is on relatively flat topography and does not intersect any surface water sources. The nearest watercourse is a minor non-perennial watercourse 285 metres away, separated from the application area by a major road. The proposed clearing is therefore unlikely to impact on the quality of surface water, or impact on the hydrological regime of the surrounding wetlands (see assessment against Principle (f) above). Groundwater salinity within the application area is mapped at between 500 and 1000 milligrams per litre total dissolved solids (low) and the proposed minimal clearing is not likely to result in a perceptible rise in the watertable leading to increased groundwater salinity.	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:	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Noting the small area proposed for clearing and relatively flat topography, the proposed clearing is not likely to cause or exacerbate flooding.		

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, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

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. Sources of information

D.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- 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)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- 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 Mapping – Best Available
- Soil Landscape Mapping – Systems
- Swan Coastal Plain Wetlands (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)

D.2. References

AECOM (2020) *Metronet – Byford Extension Part One. Flora and Fauna Assessment* (DWER Reference DWERDT 998262).

AECOM (2024) *Signalling Upgrade – NVCP Supporting Document* (DWER Reference DWERDT998254).

AECOM (2024a) *Offset Proposal. Byford Rail Signalling Upgrade (Byford)* (DWER Reference DWERDT1058074).

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

Del Marco, A., Miles, C., Taylor, R., Clarke, K. and Savage, K. (2004) *Local Government Biodiversity Planning Guidelines for the Perth Metropolitan Region - Edition 1*. Western Australian Local Government Association, West Perth.

Department of Agriculture, Water and the Environment (DAWE) (2022) *Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black-cockatoo*. Department of Agriculture, Water and the Environment, Canberra.

Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth.

Department of Planning Lands and Heritage (DPLH) (2024) *Direct Interest Response to Clearing Permit Application CPS 10736/1* (DWER Reference DWERDT1025352).

Department of Primary Industries and Regional Development (DPIRD) (2019). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development.* Government of Western Australia.

Department of the Environment and Energy (2017). *Approved Conservation Advice for Corymbia calophylla - Kingia australis woodlands on heavy soils of the Swan Coastal Plain*. Canberra: Department of the Environment and Energy. Available - http://www.environment.gov.au/biodiversity/threatened/communities/pubs/17-conservation-advice.pdf

Environmental Protection Authority (EPA) (2016). *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*.

Environmental Protection Authority (EPA) (2019). *EPA Technical Report: Carnaby's Cockatoo in Environmental Impact Assessment in the Perth and Peel Region*. Advice of the Environmental Protection Authority under Section 16(j) of the Environmental Protection Act 1986.

Environmental Protection Authority (EPA) (2020). *Technical Guidance – Terrestrial Fauna Surveys for Environmental Impact Assessment.*

Focused Vision Consulting (FVC) (2022) *Byford depot, Byford. Detailed Flora and Vegetation Assessment. Public Transport Authority, November 2022* (DWER Reference DWERDT998249).

Focused Vision Consulting (FVC) (2022a) *Brickwood Reserve (Lots 5567 and 111 on R17490, Lot 48 on R51101, Lot 106 on R37404 and Lot 108), Byford. Detailed Flora, Vegetation and Weed Assessment. Metronet Byford Rail Extension. Public Transport Authority. October 2022.*

Government of Western Australia (2019) *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, https://catalogue.data.wa.gov.au/dataset/dbca

Government of Western Australia. (2019a) *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

Heddle, E. M., Loneragan, O. W., and Havel, J. J. (1980) *Vegetation Complexes of the Darling System, Western Australia*. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Natural Area Consulting Management Services (Natural Area) (2024). *MCR Environmental Surveys – Abernethy Road to Mundijong Junction* (CH42870) (DWER Reference DWERDT1095458).

Public Transport Authority (PTA) (2024) *Purpose Permit application - Main Cable Route, Signalling Upgrade, Byford* (DWER Reference DWERDT1095460).

Public Transport Authority (PTA) (2025) *Confirming increase in size of offset rehabilitation area to 0.13 hectares* (DWER Reference DWERDT1077268).

Shire of Serpentine-Jarrahdale (2025) Native Vegetation Clearing Permit CPS 10736/1 - Public Transport Authority Access to Brickwood Reserve for Proposed Restoration Offset (DWER Reference DWERDT1077270).

Water and Rivers Commission (2001) *Position Statement: Wetlands*. Water and Rivers Commission, Perth.

Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. https://florabase.dpaw.wa.gov.au/ (Accessed December 2024)

Western Australian Planning Commission (WAPC) (2005) *Guidelines for the Determination of Wetland Buffer Requirements*. Albert Facey House, 469 Wellington Street, Perth Western Australia 6000.