GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9376/1

File Number: DWERVT8396

Duration of Permit: From 15 July 2022 to 15 July 2024

PERMIT HOLDER

Shire of Toodyay

LAND ON WHICH CLEARING IS TO BE DONE

Telegraph Road Reserve – PIN 11536013, Toodyay

Bindi – Bindi Toodyay Road Reserve - PINs 11720993 and 11536013, Coondle

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.58 hectares of *native vegetation* within the area cross-hatched yellow in Figure 2-4 of Schedule 1.

CONDITIONS

1. Avoid, minimise, and reduce impacts and extent of clearing

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

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

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

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

2. Weed 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.

3. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner towards adjacent *native vegetation* to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

4. Offsets – conservation covenant – Lot 108 on Plan 13653

Within 12 months of clearing commencing under this permit, and no later than 15 July 2023, the permit holder shall provide to the *CEO* a copy of the executed conservation covenant under section 30B of the *Soil and Land Conservation Act 1945* setting aside the area shaded red on attached Schedule 2 for the protection and management of vegetation in perpetuity.

5. Erosion management

The permit holder must commence road construction activities no later than three (3) months after undertaking the authorized clearing activities to reduce the potential for wind erosion.

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 direction of clearing; (e) the date that road construction activities

No.	Relevant matter	Specifications
		commenced; (f) the size of the area cleared (in hectares); (g) the date the Conservation Covenant is secured; (h) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1; and (i) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 2; and

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

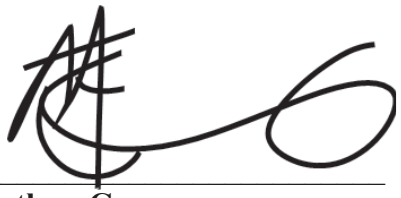
In this permit, the terms in Table 2 have the meanings defined.

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	a condition to which this clearing permit is subject under section 51H of the EP Act.
fauna specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the *CEO* as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*.
fill	means material used to increase the ground level, or to fill a depression.
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)
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*

Term	Definition
	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



Mathew Gannaway

NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

21 June 2022

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1 – 4)

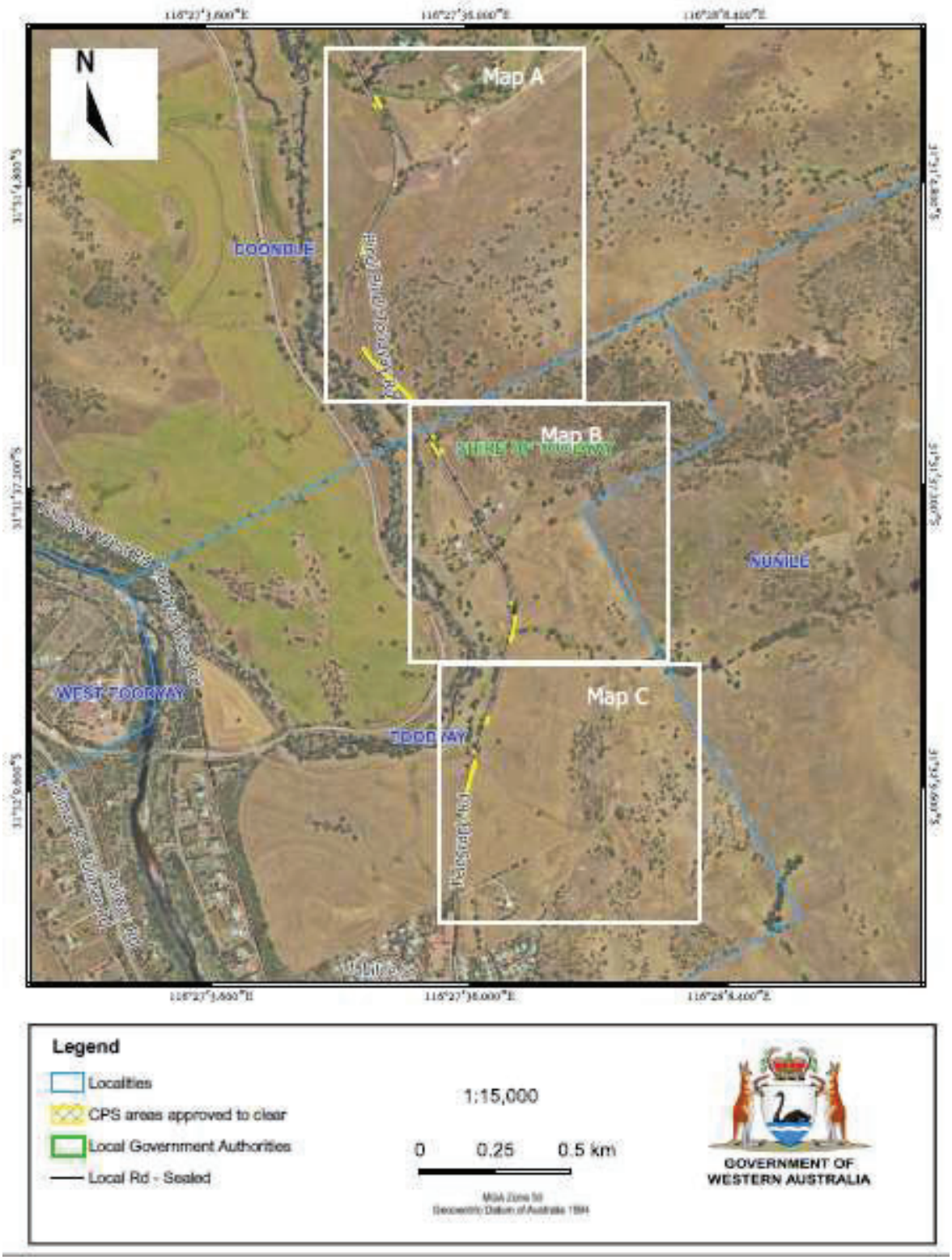


Figure 1: Context map of the clearing area.

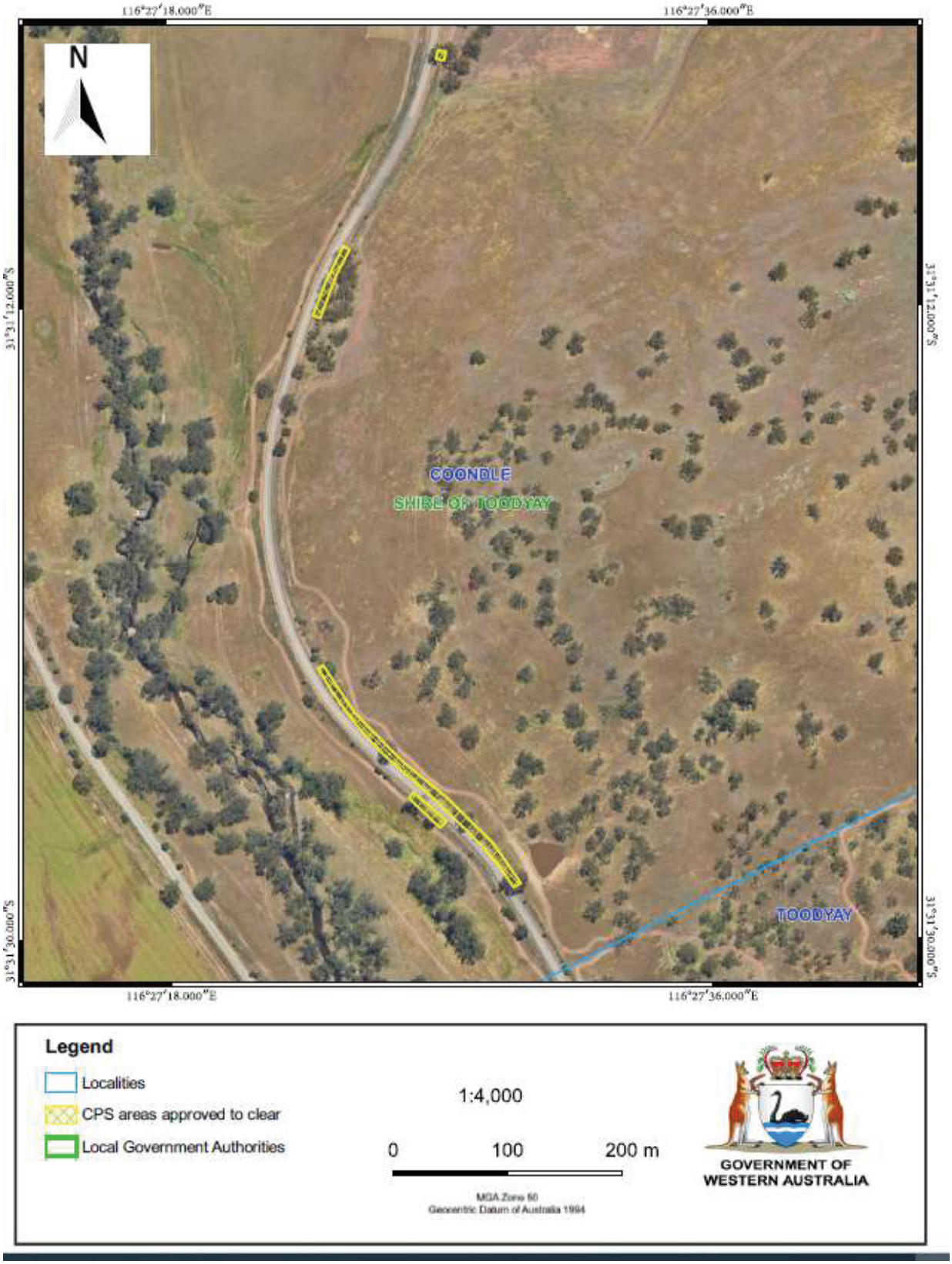


Figure 2. Map A of the boundary of the area within which clearing may occur

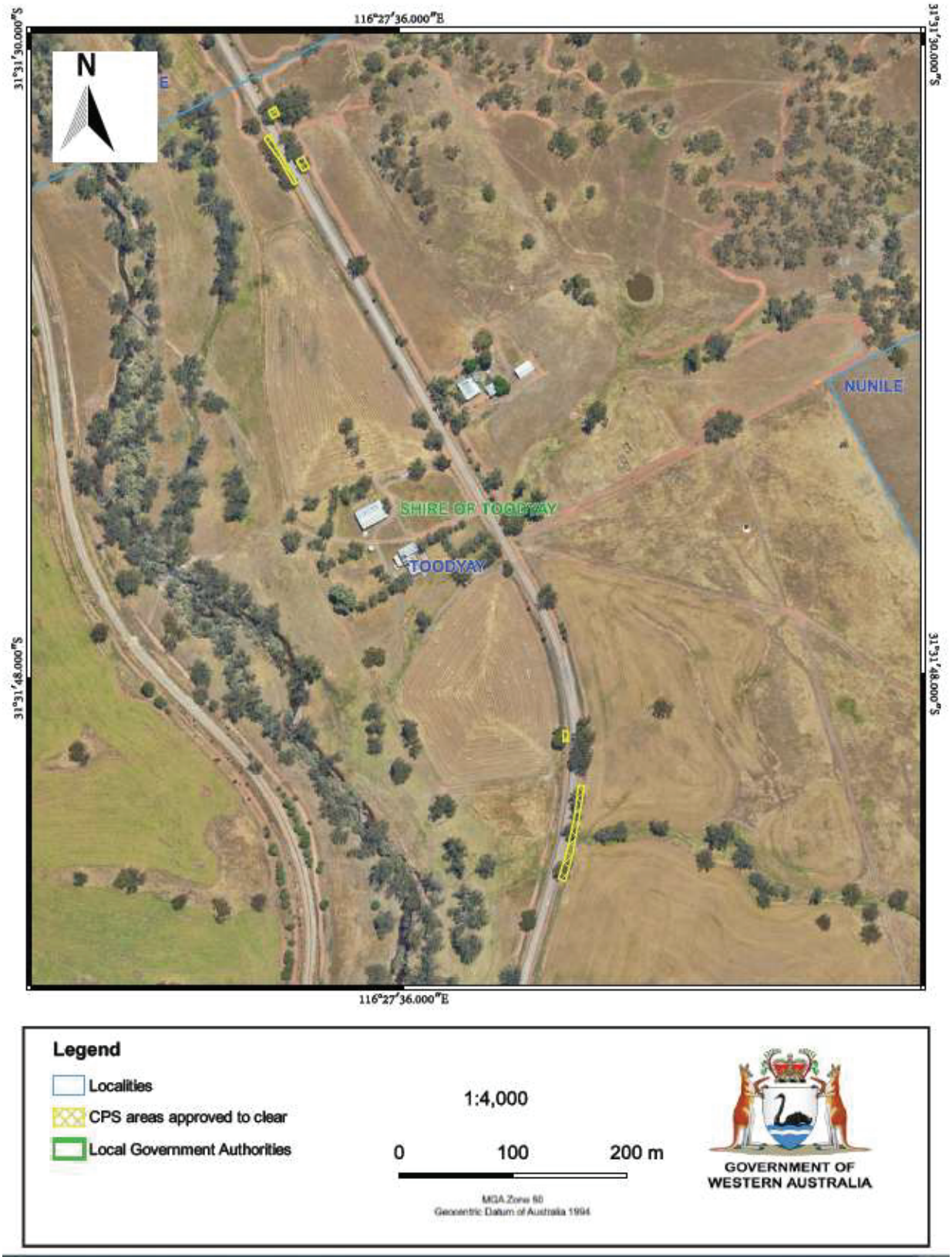


Figure 3. Map B of the boundary of the area within which clearing may occur

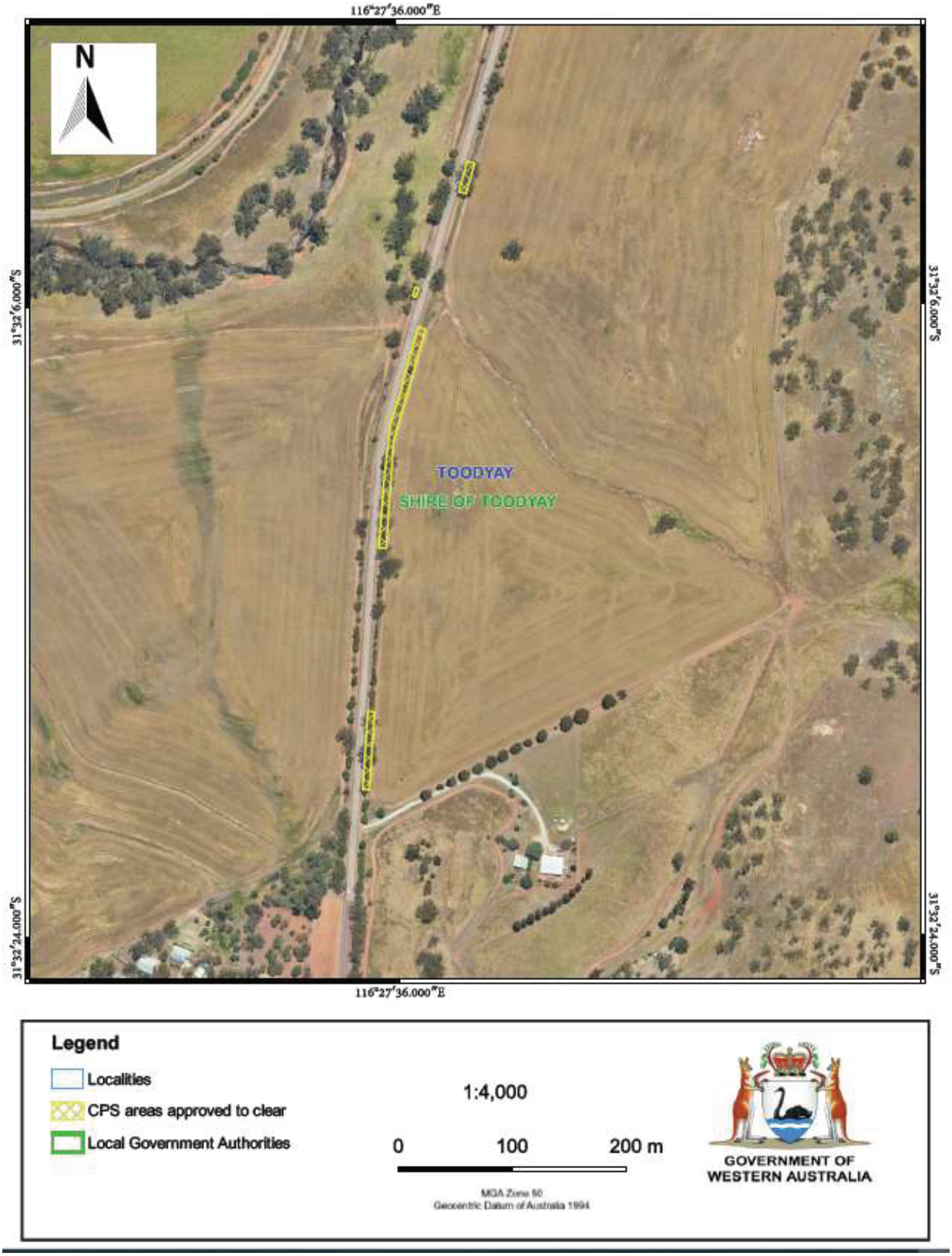


Figure 4. Map C of the boundary of the area within which clearing may occur

SCHEDULE 2.

Map of the offset area.

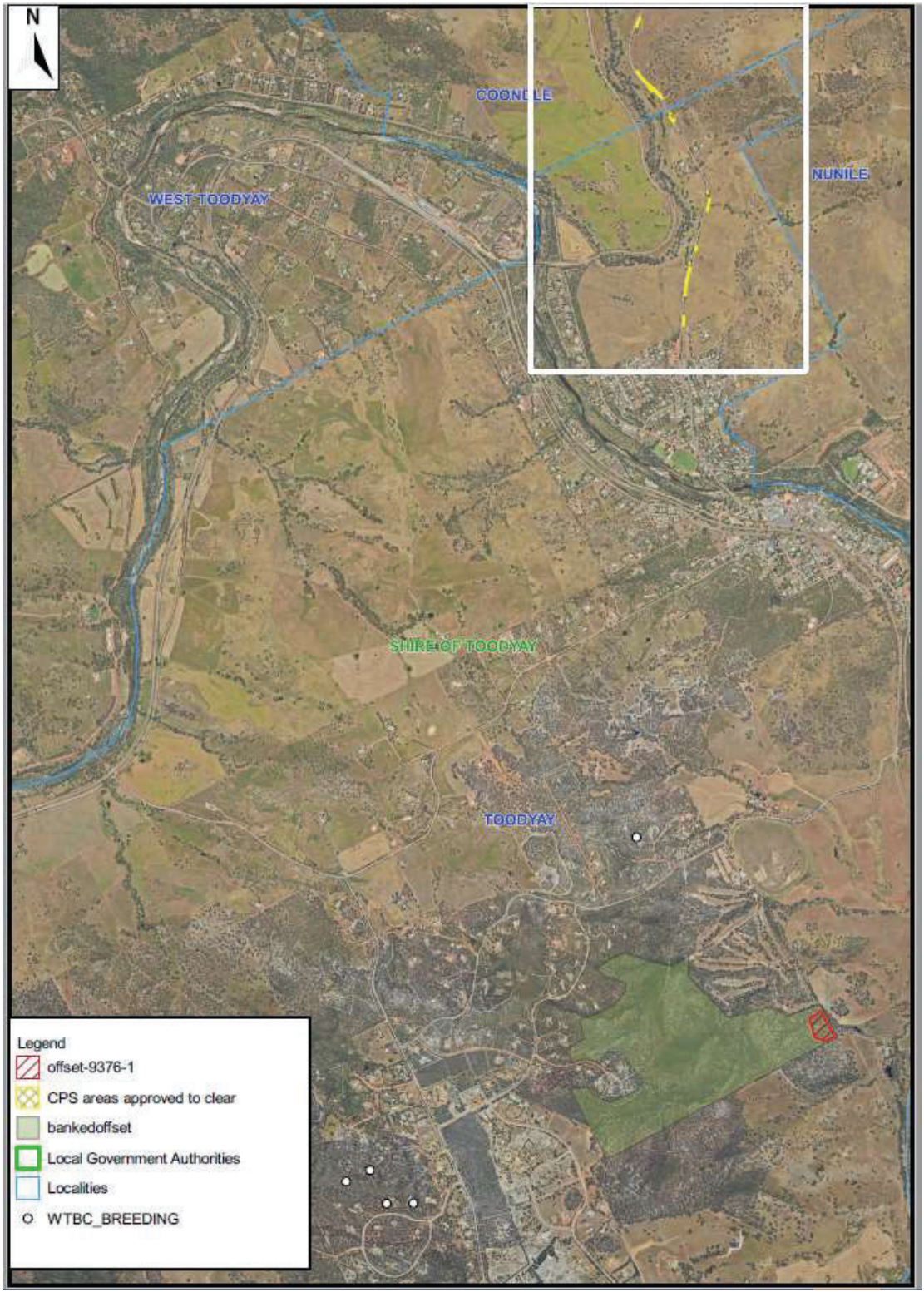


Figure 5. Map of the proposed offset site within the context of the application area.

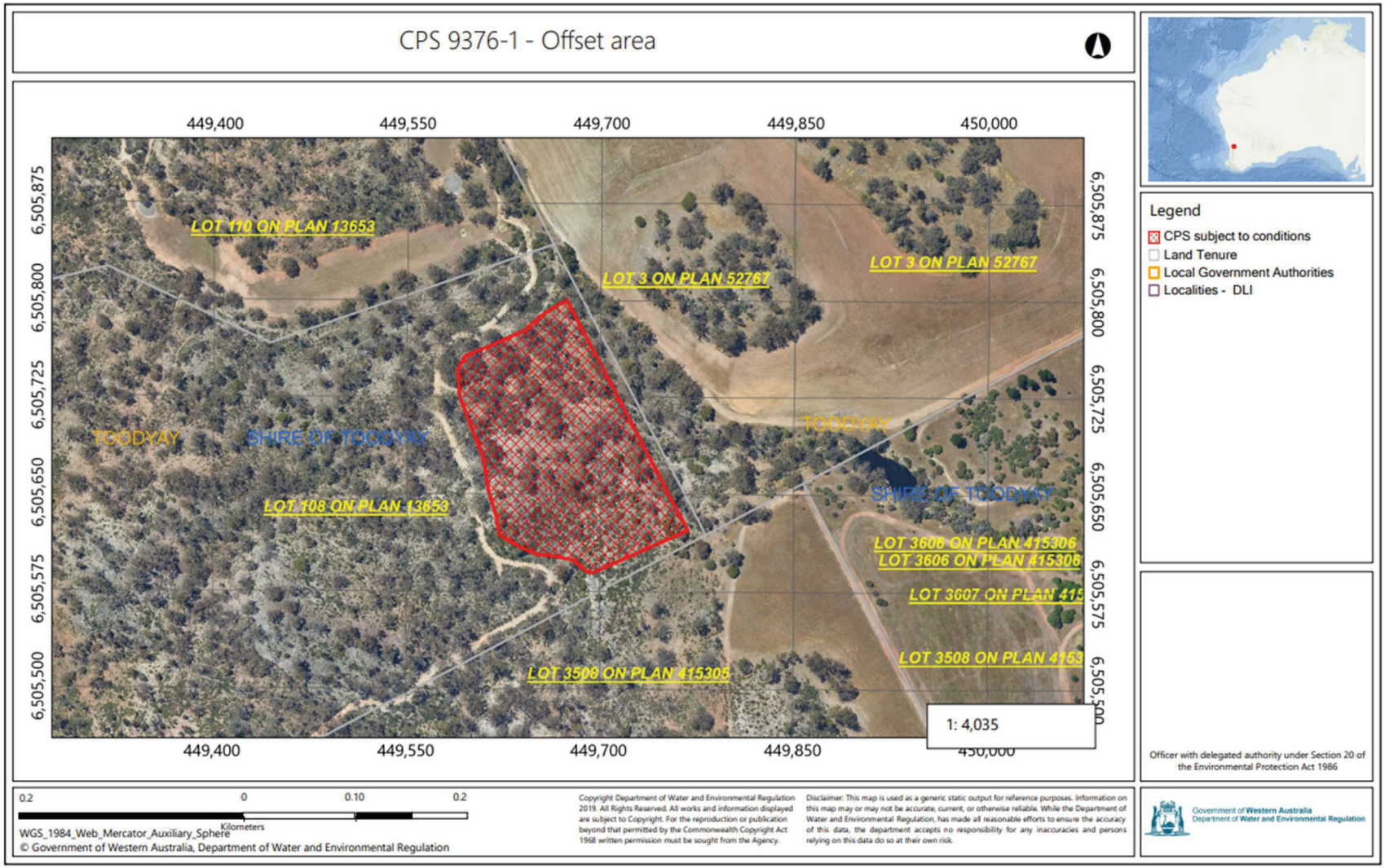


Figure 6. The offset area (crosshatched red) measuring approximately 2.18 ha.

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 9376/1
Permit type:	Area permit
Applicant name:	Shire of Toodyay
Application received:	5 August 2021
Application area:	0.58 hectares
Purpose of clearing:	Road widening and safety
Method of clearing:	Mechanical
Property:	Telegraph Road Reserve – PIN 11536013 Toodyay and Bindi – Bindi Road Reserve - PINs 11720993 and 11536013
Location (LGA area/s):	Shire of Toodyay
Localities (suburb/s):	Toodyay and Coondle

1.2. Description of clearing activities

The application is to clear roadside vegetation distributed on the left and right sides of a three kilometre (km) stretch of road on the Telegraph and Bindi-Bindi Toodyay Road reserves. The road has recorded a significant increase in volume of traffic including heavy haulage vehicles. The stretch of road has recorded a significant number of accidents including three fatalities and has been identified as needing improvement. The proposed clearing is required for the roadworks that includes road widening, shoulder treatments and installation of crash barriers. The roadworks is a part of the State Government program to improve the safety of rural roads (the Blackspot Program).

The proposed clearing will remove 13 *Eucalyptus loxophleba*, 47 *E. rudis* and mixed shrubs of *Acacia acuminata* and *A. microbotrya* from the roadside. The vegetation is in Degraded condition (comprises of trees / shrubs over non-native grass) and is mapped as having a roadside conservation score of between 3 to 5 (low to low-medium conservation value).

1.3. Decision on application

Decision:	Granted
Decision date:	21 June 2022
Decision area:	0.58 hectare of native vegetation as depicted in Section 1.5, below.

1.4. Reasons for decision

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

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix G.1), information provided by the applicant (see Appendix A and F), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3), and the mitigation and avoidance measures proposed by the applicant. The Delegated Officer also took into consideration that the purpose of the clearing is to improve road safety. In particular, the Delegated Officer has considered the following:

- The application area is located within the Avon Wheatbelt region that retains 18.24 percent of native vegetation cover, which is below the National Target of 30 per cent cover. The local area (10 km radius) retains approximately 22.9 percent native vegetation cover. All of the vegetation complexes associated with the vegetation proposed to be cleared retain less than 30 percent of their pre-European extents. Notwithstanding the limited extent of clearing and the Degraded condition (Keighery, 1994) of the vegetation, the proposed clearing will contribute to the cumulative loss of native vegetation in the Region and local area that have been extensively cleared.
- Clearing is unlikely to remove significant habitat for fauna.
- Clearing may introduce and spread weeds and dieback to adjacent remnant vegetation. The potential impacts can be minimised and mitigated through weed and dieback management measures.
- The sandy soils of the area are prone to wind erosion. Clearing may exacerbate the risk. Considering the limited extent of clearing and the temporary nature of the road work; it is considered that the proposed clearing is unlikely to lead to appreciable and long-term land degradation.

After consideration of the available information, as well as the applicant's proposed minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to lead to appreciable land degradation or severance of significant ecological linkages. However, the Delegated Officer is of the view that clearing within the extensively cleared landscape is significant, and residual environmental impacts remain. In accordance with the Western Australian Offsets Policy (2011), the proposed clearing must be offset (see Section 4).

The Delegated Officer considered the quantification of the offset required in accordance with the Western Australian Environmental Offset Calculator and Guide (Appendix E). The Shire of Toodyay will place a Conservation Covenant under the *Soil and Land Conservation Act 1945* over a Shire reserve measuring approximately 123 hectares in size. Approximately 2.18 hectares of the area covered by the covenant is required to offset the current proposed clearing. The remainder of the covenant area within the reserve will be kept as a banked offset for future projects requiring similar offsets.

Given the above, the Delegated Officer is satisfied that the environmental impacts associated with this project have been appropriately avoided, minimised, mitigated and the significant residual impacts offset. The Delegated Officer has therefore decided to grant this clearing permit subject to conditions to:

- securing a Conservation Covenant registered on the Certificate of Title to conserve it in perpetuity within 12 months of the granting of the Permit
- avoid, minimise to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- commencement of road widening works within 6 weeks of clearing

1.5. Site map

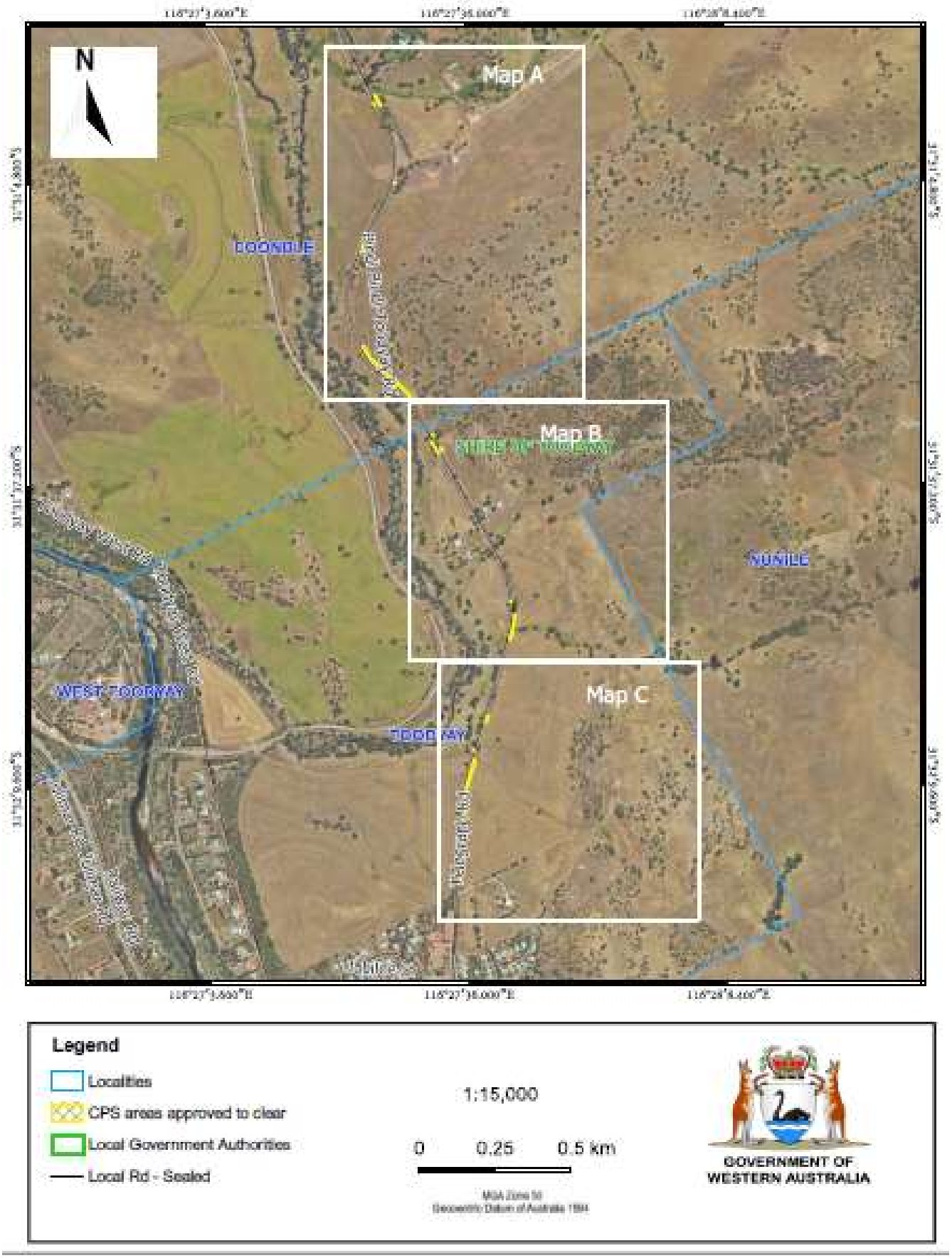


Figure 1. Context map of the clearing area

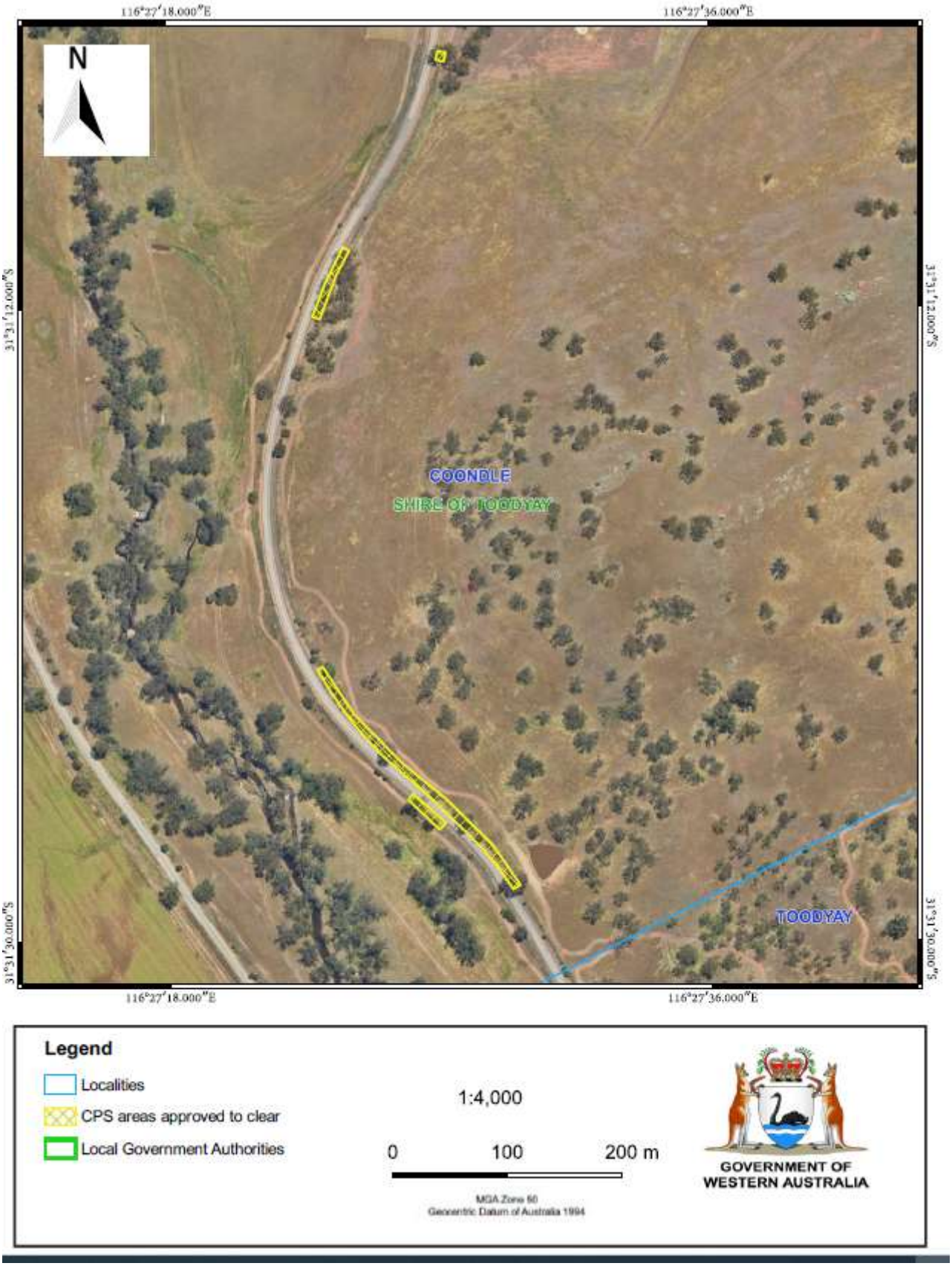


Figure 2 (a). Map A of the application area

The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

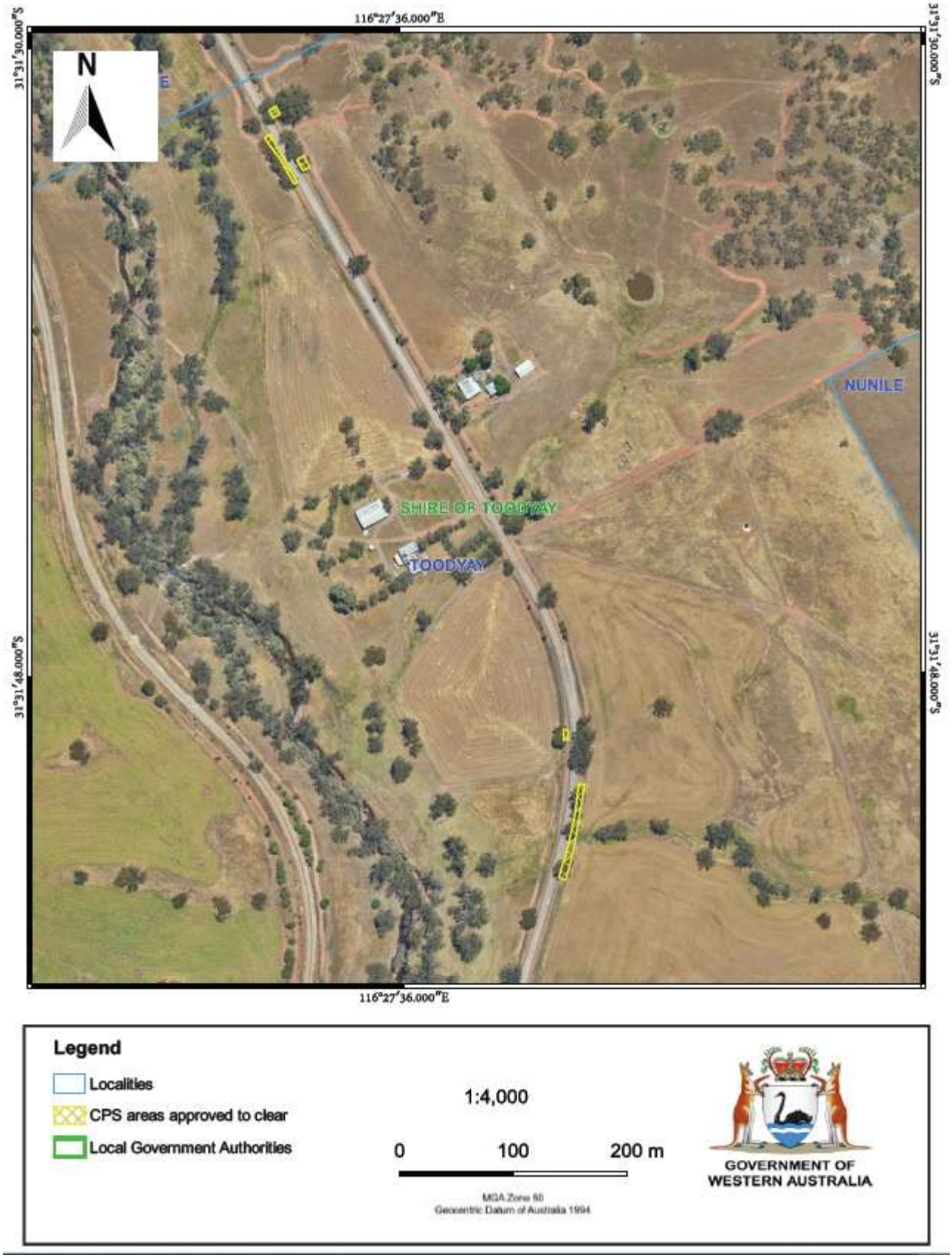


Figure 2 (b). Map B of the application area

The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

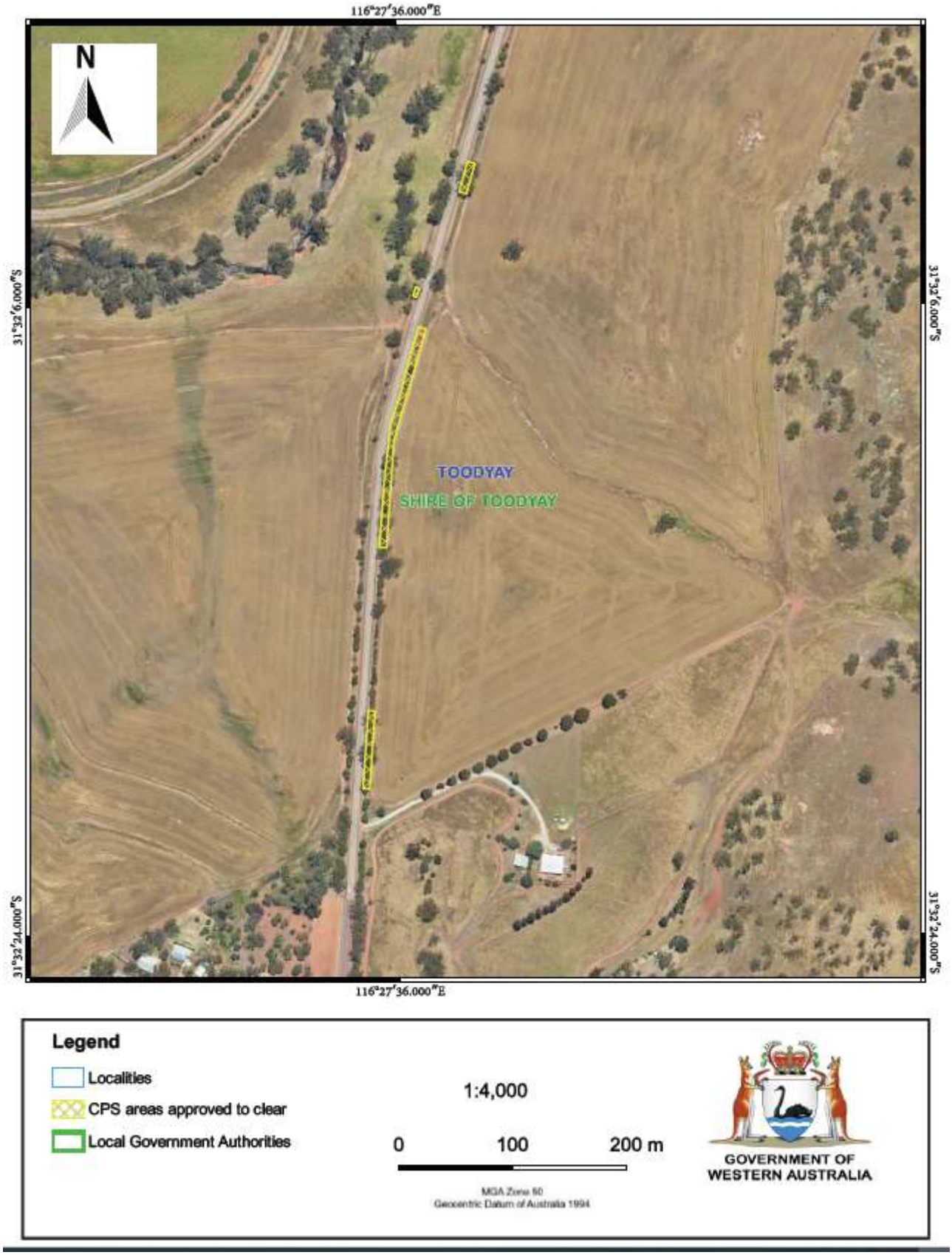


Figure 2 (c). Map C of the application area

The areas crosshatched yellow indicate the areas 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)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- *Environmental Offsets Guidelines* (August 2014)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The Shire provided evidence of efforts to avoid, minimise and mitigate the potential impacts of clearing. The Shire advised that in their effort to reduce, it is important to note that the Bindi Bindi Road reserve and batters are narrow. The Shire advised that any reduction to the width of the proposed road widening and shoulder area of the proposed clearing would severely compromise the benefits of the roadworks and increase the hazardous nature of the road.

The Shire has investigated the feasibility of onsite revegetation along the road but concluded that on-site revegetation was not feasible due to the lack of space for revegetation on the narrow road reserve.

Offsite revegetation was also investigated. A Shire managed reserve measuring 16 hectares in size was considered for offsite revegetation purposes. However, given its Completely Degraded area, the Shire was unsure of revegetation success.

Through a detailed assessment, it has been concluded that significant residual impacts remain after the avoidance, minimisation and mitigation efforts by the Shire, consisting of 0.58 hectares considered a significant remnant of native vegetation in an extensively cleared landscape. In accordance with the Government of Western Australia's *Environmental Offsets Policy* and *Environmental Offsets Guidelines*, this significant residual impact has been addressed through the conditioning of an environmental offset on the permit.

The Shire has proposed a Freehold Lot currently vested with the Shire on Lot 108 on Plan 13653 (21 Hibbertia Place, Toodyay) measuring approximately 123 hectares in size as an offset. It is proposed that an area of approximately 2.18 ha in size within the property is designated as the offset site for the proposed clearing, and the remainder of the property is to be used as a banked offset for future projects requiring similar offsets. The nature and suitability of the offset provided are summarised in Section 4.

The Shire has proposed to place a Conservation Covenant under Section 30B of the *Soil and Land Conservation Act 1945* registered on the Certificate of Title to conserve it in perpetuity. The Shire propose to manage the Lot for Conservation. On 8 February 2022, the Council voted unanimously in favour of placing a Conservation Covenant on Lot 108.

Given the above, the Delegated Officer is satisfied that the environmental impacts associated with the proposed clearing have been appropriately avoided, minimised, mitigated and the significant residual impacts offset.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix C) identified that the impacts of the proposed clearing may present a risk to significant remnant vegetation, fauna movement and / or land and water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Significant remnant vegetation – Flora - Clearing Principles (a), (d) and (e)

Assessment

The roadside vegetation proposed to be cleared comprises of isolated *Eucalyptus* trees with mixed tall shrubs over non-native grass in most of the sites. The vegetation is in Completely Degraded to Degraded condition.

The application area intersects two small patches of remnant vegetation mapped as Eucalypt Woodlands of the Western Australian Wheatbelt (Eucalypt Woodlands). The Eucalypt Woodlands is listed as a Threatened Ecological Community under the EPBC Act (CR), and a Priority 3 Priority Ecological Communities (PEC) by the Department of Biodiversity, Conservation, and Attractions (DBCA). The Eucalypt species occurring over the application area align with the species representative of this community (Appendix B: Table B1).

Patch size and vegetation condition are important determinants in assessing the presence of the Eucalypt Woodlands community (Commonwealth of Australia 2016; DoE 2015). The vegetation condition thresholds to confirm the Eucalypt Woodlands community generally exclude degraded patches such as roadside remnants that are too small and narrow, or where the tree canopy has become discontinuous, and the understorey has lost considerable elements of its native structure and diversity (DoE 2015). The minimum patch width for roadsides should be over five metres based upon the native understorey component (DoE 2015). Given the vegetation condition, locations (on the road verge) and small sizes, the patches do not meet the criteria of the PEC/TEC and are very unlikely to support high flora diversity. Clearing, however, may result in the further reduction of the remnant patches.

Nine conservation significant flora have been recorded within 10 km radius from the application area. None of the recorded flora occurs within the application area. It is acknowledged that records of a couple of the conservation significant flora within the local area share similar habitat features with the area proposed to be cleared. However, noting the completely degraded condition of the vegetation, and the understorey is dominated by invasive weeds, the Delegated Officer determined that conservation significant flora is not likely to occur within the application area.

The application area is situated within the Avon-Wheatbelt Region that has been extensively cleared. The native vegetation extent in the local area (10 km radius) retains only 22.8 percent of the original vegetation extent (Figure 3), whilst the vegetation types representative of the application area retain approximately 25 and 29 percent of their original cover. These figures are below the National Objectives and Targets for Biodiversity and Conservation of native vegetation cover of a minimum 30 percent. Clearing will contribute to the cumulative loss of native vegetation cover in the already extensively cleared landscape.

Given the limited extent of clearing and the Degraded condition of the vegetation proposed to be cleared, it is considered that the impact of clearing could be mitigated through appropriate onsite or offsite revegetation. Acknowledging the impacts of clearing on this environmental value, the Shire had exercised options to conduct an onsite or offsite revegetation program to mitigate the impact. Mitigation efforts, however, is limited by the lack of suitable space along the road. Offsite revegetation of other degraded areas was also considered unsuitable for the purpose. The Shire has agreed to conserve an approximately 2.18 hectare area of vegetation comprising of *E. loxophleba* woodland to offset the impact. The detail of mitigation efforts exercised, and the proposed offset are discussed in Section 3.1 above and Section 4 and Appendix E below.

Noting the presence of weeds in the application area, clearing may facilitate the spread and introduction of weeds and dieback to vegetation fragments nearby. Weed and dieback management and control measures must be exercised during clearing and the roadworks to minimise this impact.

Conclusion

Based on the above assessment, the proposed clearing is impacting a significant remnant of native vegetation within an extensively cleared landscape, and a significant residual impact remains after avoidance and minimisation efforts. An Offset is proposed to counterbalance this residual impact. The Delegated Officer has considered the offset as suitable and appropriate to counterbalance the impact of clearing. Impacts from weed and dieback on the surrounding native vegetation remain.

Conditions:

The following are required as conditions to the permit:

- The applicant is required to place a conservation covenant in perpetuity on a 2.18 ha area of land containing vegetation in Very Good condition to offset the residual impact
- Weed and dieback management measures to minimise impacts to surrounding vegetation.

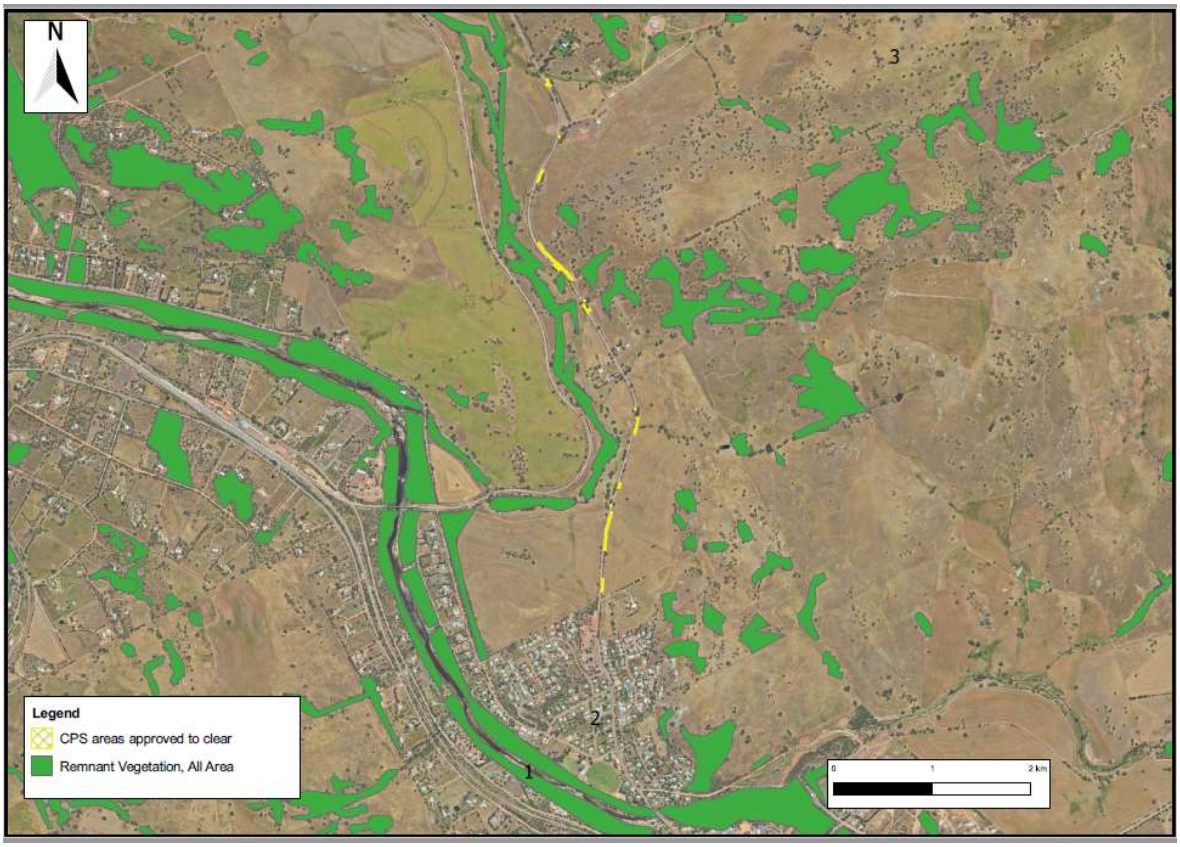


Figure 3. The proposed clearing area is situated in an extensively cleared landscape.

3.2.2. Biological values – Fauna - Clearing Principle (b)

Assessment

Eighteen conservation significant fauna have been recorded from the local area (10 km radius from the application area). The records include historical records and that of invertebrates associated with waterways that are unlikely to occur within the application area or impacted by the clearing (See appendix B4). The P2 and P3 Trapdoor spiders had been recorded from approximately 1.4 km from the application area. However, given their short range of movement, the spiders are unlikely to occur in the application area. Noting the Degraded condition of the road verge vegetation, the lack of canopy connectivity, and absence of native understory vegetation, the vegetation within the application area is unlikely to comprise significant habitat for the small and medium marsupials such as *Dasyurus geoffroii* (chuditch, western quoll) (VU), *Isoodon fusciventer* (quenda, southwestern brown bandicoot), *Macrotis lagotis* (bilby, dalgyte, ninu), *Notamacropus irma* (western brush wallaby), and *Phascogale tapoatafa wambenger* (south-western brush-tailed phascogale).

Of the vertebrates recorded, the bird species are the most likely to occur or utilise the application area. While *Apus pacificus* (Fork-tailed swift) and *Falco peregrinus* (Peregrine falcon) may fly by and utilise the vegetation in the application area in their transit, they are unlikely to inhabit the vegetation proposed to be cleared for extended period of time or rely on the vegetation for breeding. Clearing is unlikely to impact these two migratory birds.

Black cockatoos have been recorded from within 1 km radius of the application area. Black cockatoo habitat can be considered in terms of breeding habitat, night roosting habitat, and foraging habitat. Black cockatoos will generally forage up to 12 kilometres from an active breeding site (DSEWPaC 2012; DPaW 2013). Following breeding, they will flock in search of food, usually within six kilometres of a night roost (DSEWPaC 2012; DPaW 2013) but may range

up to 20 kilometres (Commonwealth of Australia 2017). Black cockatoo night roosts are usually located in the tallest trees of an area, and near both a food supply and surface water (Commonwealth of Australia 2017). Flocks will use different night roosts, often for weeks, or until the local food supply is exhausted. Flocks show some fidelity to night roosts with sites used in most years to access high-quality feeding sites. However, not all-night roosts are used in every year (DPaW 2013). The trees that are proposed to be removed are not of a size that is suitable for Black cockatoo breeding or roosting (Appendix F).

Within the local context, several Black cockatoos have been recorded from the local area. Breeding sites have recorded from within 10 km radius of the application area with the closest one located approximately 4 km southwest of the southernmost application area within a large patch of remnant *E. loxophleba* woodland. The application area is mapped within both Forrest Red Tailed and Carnaby's cockatoo's distribution areas.

The vegetation being removed comprises mainly of *E. rudis* and *E. loxophleba.* The *E. rudis* is not the preferred source of foraging for Black cockatoos, whist *E. loxophleba* can provide foraging habitat to black cockatoos. Food resources within the range of breeding sites and roost sites are important to sustain populations, and foraging resources are therefore viewed in the context of known breeding and night roosting sites, particularly within 12 kilometres of an impact area (Commonwealth of Australia 2017). The Eucalypt woodlands with closed scrub vegetation approximately 4 km south of the application area provide suitable foraging habitat for black cockatoos. Given the availability of more intact vegetation within the range, it is unlikely that the vegetation being removed comprises significant habitat for Black cockatoos. Therefore, removal of the trees from the application area is unlikely to significantly impact foraging habitat for Black cockatoos within the local context.

Notwithstanding the above, within the context of an extensively cleared landscape, the application area is likely to facilitate landscape connectivity and contribute to fauna dispersal, including Black cockatoos if present, between larger isolated bushland fragments. Whilst the clearing does not remove all of the native vegetation within the road reserve, the proposed clearing may cause a decline in the effectiveness of the linkage.

Impact on any fauna individuals that may be present at the time of clearing can be minimised by conducting clearing in slow manner in the direction of adjacent vegetation.

Conclusion

Based on the above assessment, the proposed clearing may clear vegetation that facilitates fauna dispersal. Given the condition of the vegetation within the application area and the availability of vast, intact, and more suitable vegetation in the larger vegetation remnants nearby, the application area is unlikely to comprise significant habitat for fauna within the local context.

Conditions

To address the potential impact to any fauna individual present at the time of clearing, slow clearing in the direction of adjacent native vegetation is required to allow fauna to move into adjacent habitat ahead of clearing activity.

3.2.3. Land and water resources - Clearing Principle (g)

Assessment

The soils in the application area are sandy which makes them prone to wind erosion when exposed. Clearing may exacerbate this risk. The area is also mapped as prone to subsurface acidification, particularly in the valleys near to waterways. Subsurface acidification could be promoted by additional organic materials, including from the debris associated with the clearing activities. Noting the limited extent of clearing, the clearing is unlikely to result in permanent and detrimental impacts to land and water resources, provided appropriate management measures are in place.

Conclusion:

Given the above, the Delegated Officer has considered that the impact of clearing on the land and water resources is unlikely to be significant.

Conditions:

To mitigate the potential impacts, commencement of road works within 6 weeks of clearing is required as a condition to the permit.

3.3. Relevant planning instruments and other matters

The road works project is proposed and managed by the Shire of Toodyay who is the manager of the road reserves. The roadworks is a part of the State Program to improve safety on the rural roads, particularly those identified as having significant road hazards and with significant accident records.

Several Aboriginal sites of significance have been mapped in the local area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

4 Suitability of offsets

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

- Loss of a significant remnant of vegetation in a region and local area that have been extensively cleared.

The applicant proposed an environmental offset consisting of the conservation of 2.18 hectares of native vegetation within Lot 108 on Plan 13653, Toodyay, owned by the Shire situated approximately 4 km south of the application area. The Lot is approximately 123 hectares in size and will be conserved in its entirety through the implementation of a Conservation Covenant under section 30B of the *Soil and Land Conservation Act 1945*. Only 2.18 hectares is required to be conserved for this project (CPS 9376/1), with the remainder of the area conserved on the Lot to be used for future projects requiring similar offsets. The area to be conserved contains the following values:

- Vegetation in a very good to excellent (Keighery, 1994) condition (see Figure 5 below)
- Significant remnant of native vegetation within an extensively cleared landscape (Figure 6)
- Value as a steppingstone for fauna movement as well as breeding, roosting and foraging habitat
- Vegetation mapped as and considered representative of the Bindoon (valleys) vegetation complex.

The size of the offset required was determined using the Western Australia Environmental Offsets Assessment Guide. Given the above, the acquisition of 2.18 hectares within Lot 108 is considered adequate to counterbalance the significant residual impacts of the permitted clearing consistent with the WA Environmental Offsets Policy September 2011.

The Delegated Officer considers that this adequately counterbalances the significant residual impacts listed above. The justification for the values used in the offset calculation is provided in E.

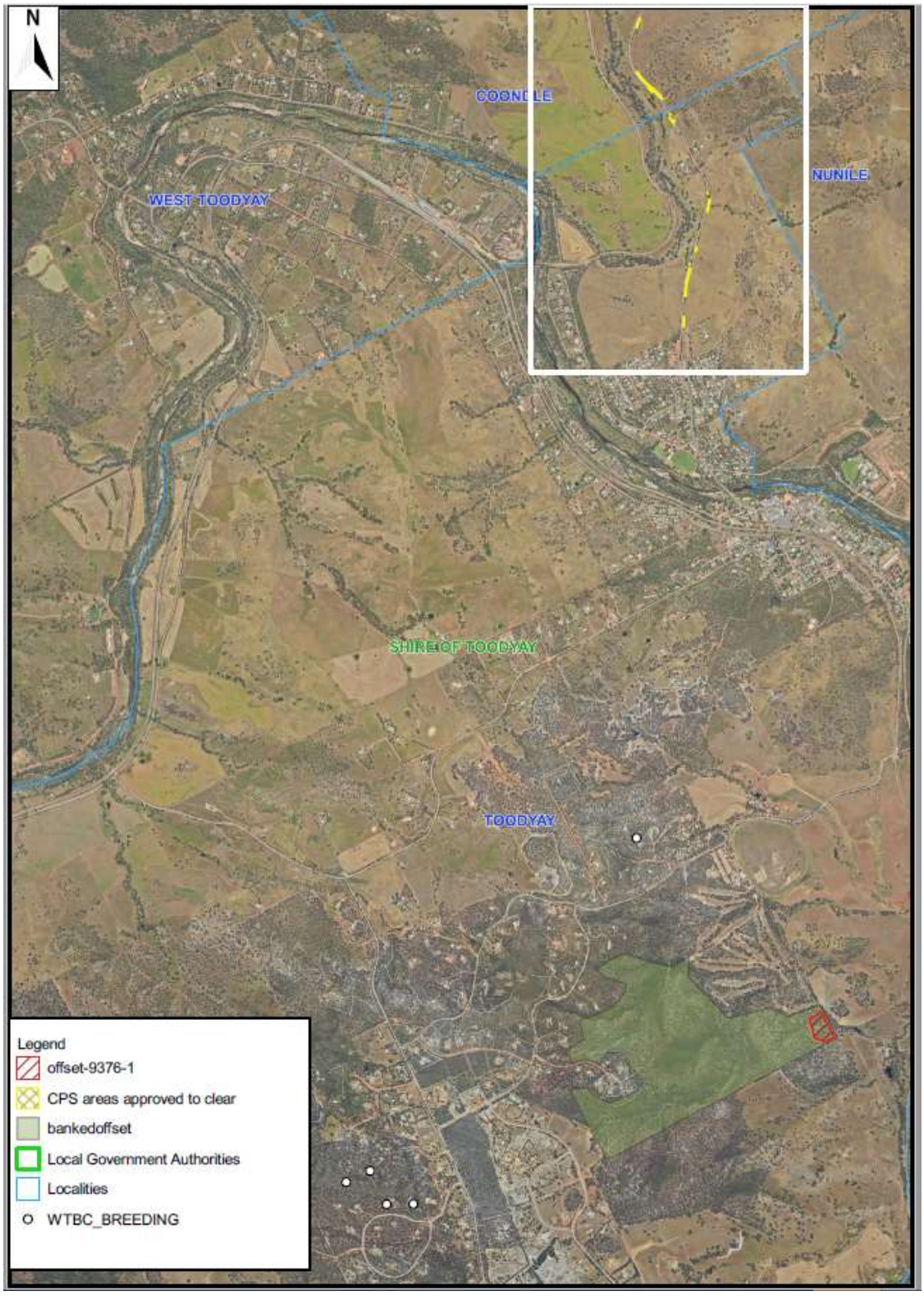


Figure 4. Map of the proposed offset site within the context of the application area.

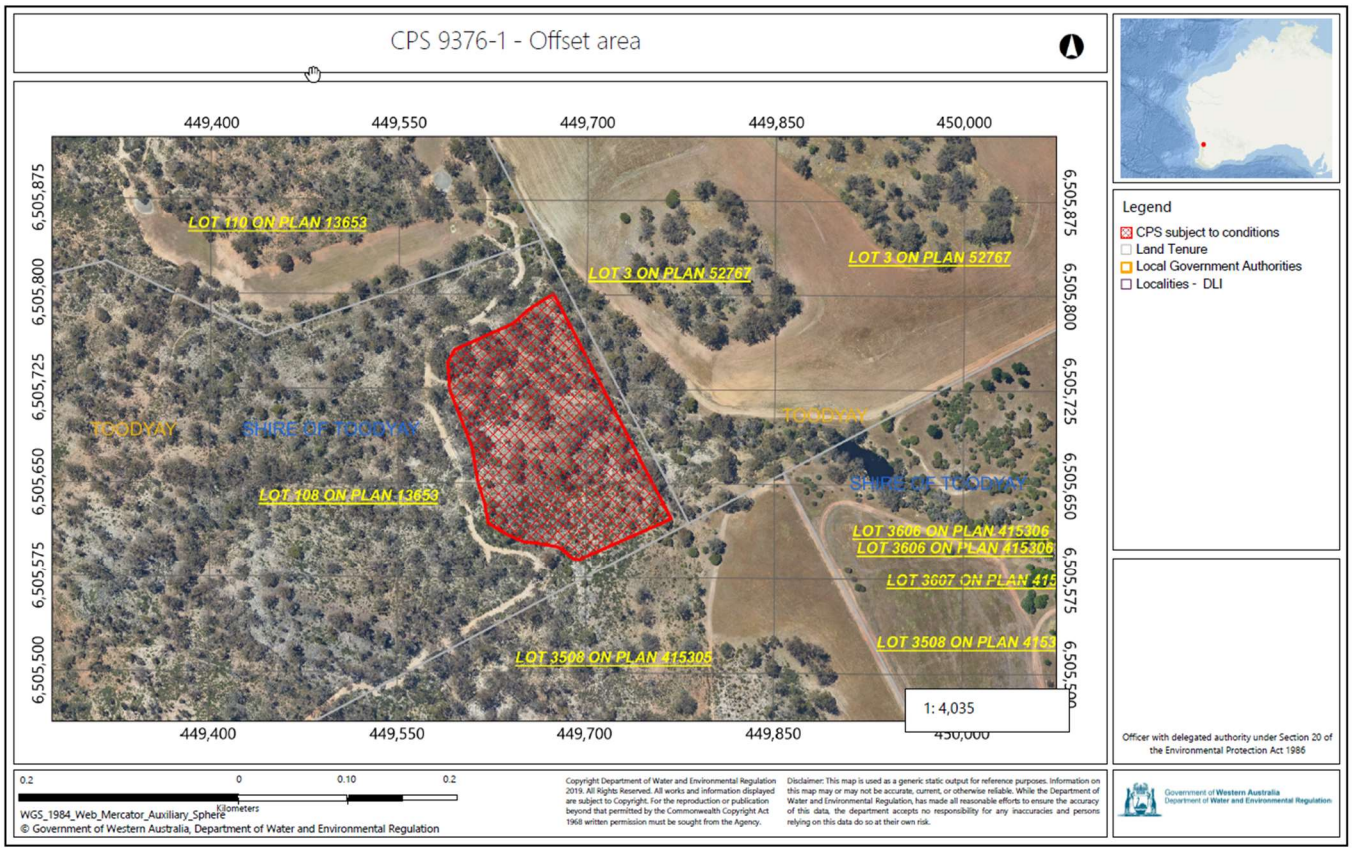


Figure 5. The proposed offset area (crosshatched red) measuring approximately 2.18 ha, consisting of *E. loxophleba* woodland within a larger vegetated area in Very Good – Excellent condition.

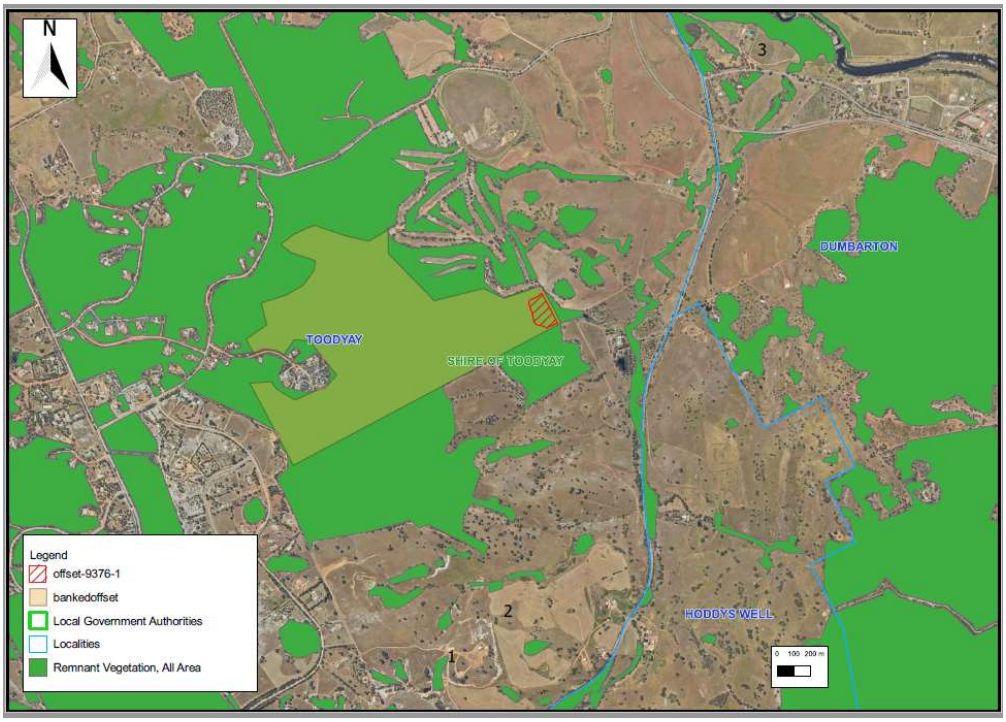


Figure 6. The offset site and proposed banked offset site comprise significant remnant vegetation in the extensively cleared landscape.

Figure 7. The vegetation in the proposed offset and banked offset areas mainly comprises of *E. loxophleba* woodland on the slopes and over outcrops, representative of the Bindoon valley vegetation complex (photographs provided by Shire of Toodyay, 2021)

End

Appendix A. Information received

During assessment, the Department provided the applicant with the results of a preliminary assessment on the potential impacts of the proposed clearing. Additional information was requested of the applicant to address a number of concerns arising from the preliminary assessment. The applicant has addressed the concerns as follows:

Summary of comments and information requested	Consideration of comments	Information provided by the applicant
Further justification for the need of clearing.	Spatial data indicates that most of the application area occurs within the Williams –Valley Floor and Swamps vegetation complex, which retains 25 percent of the original extent. In addition, the local area (10 km radius from the application area), retains approximately 22.8 percent of the original native vegetation cover. The above-mentioned vegetation extents are below the National Objectives Target for Biodiversity Conservation (Commonwealth of Australia, 2001) that aims to retain a minimum of 30 percent vegetation cover. The application area is located within the Wheatbelt region which has been extensively cleared. Clearing in the area will contribute to the further loss of native vegetation cover in the Wheatbelt region.	Bindi-Bindi Road is a road with increasing volumes of traffic including heavy haulage vehicles especially during harvest season and tourist caravan traffic during the wildflower season. Toodyay has experienced an upsurge in tourist/visitor numbers of late. The narrow road has become increasingly unsafe with three fatal traffic crashes occurring between 2016 and 2020. The Toodyay Shire was granted Black Spot Funding to allow for safety improvements on the road (Shire of Toodyay, 2021 b).
Implementation of the mitigation hierarchy is required to avoid or mitigate significant environmental impacts resulting from the clearing.	Same considerations as the above. Avoidance measures may include modifications to the area proposed to be cleared or alternative designs in order to retain the significant environmental values. Mitigation measures may include implementation of onsite impact mitigation strategies that reduce impacts from the proposed clearing.	Engineering design work was carried out with every effort applied to minimise the clearing of native vegetation. It was determined that to achieve the road widening and shoulder treatments necessary to gain the safety improvements that any reduction in the proposed clearing would severely compromise the benefits and indeed increase the hazardous nature of the road (Shire of Toodyay, 2021 b). Onsite revegetation was considered; however, the road reserve is narrow that onsite revegetation is not feasible. (Shire of Toodyay, 2022a). Offsite revegetation at a 16 hectare lot located approximately 1.2 km from the application area was also considered. However, the Shire is uncertain of the success of this revegetation (Shire of Toodyay, 2022a). The most feasible and desirable option is to provide an offset on Shire owned Lot 108 at 12 Hibbertia Place which totals 123 ha in size (Shire of Toodyay, 2022e). The Council voted unanimously to conserve the Lot for

		the purpose of banked offset for the current project and future project requiring similar offsets (Shire of Toodyay, 2022e).

Appendix B Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

B.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared consists of scattered native vegetation on the left and right verges of an approximately 3 km stretch of the Telegraph and Bindi-Bindi Road. The proposed clearing area is situated within a highly cleared landscape, surrounded by farmlands and patches of remnant vegetation. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 22.8 per cent of the original native vegetation cover.
Ecological linkage	The application area is not a part of any formal ecological linkages. Roadsides Conservation value scores range between 3 and 5, or Medium-Low conservation value roadsides: • Natural structure disturbed (shrubs and / or ground cover absent) • Low diversity of native flora – mostly weeds • Medium to low value as biological corridor
Conservation areas	The application area does not occur within any conservation areas. The closest conservation area is the Rugged Hills Nature Reserve (Class A) located approximately 5 km northwest of the northern most application area.
Vegetation description	The vegetation proposed to be cleared consists of 13 *Eucalyptus loxophleba*, 47 *E. rudis* and mixed shrubs of *Acacia acuminata* and *A. microbotrya* and non-native grass. Representative photos are available in Appendix F. This vegetation partly represents the two vegetation complexes mapped for the area, namely: • Bindoon - Valleys (Bi-22) of the Darling Plateau Sub-region, described as Woodland of *Eucalyptus loxophleba* on the slopes, flanked by woodlands of *Eucalyptus wandoo-Eucalyptus accedens* on the breakaways and upper slopes in the perarid zone. • Williams – Valley Floors and Swamps (Wi-301) of the Darling Plateau Sub-region, described as Mixture of woodland of *Eucalyptus rudis-Melaleuca rhaphiophylla*, low forest of *Casuarina obesa* and tall shrubland of *Melaleuca spp*. on major valley systems in arid and perarid zones (Shepherd et al, 2001). The mapped vegetation types retain approximately 29 and 25 per cent of the original extent respectively (Government of Western Australia, 2019).
Vegetation condition	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in Degraded condition (Keighery, 1994). The full Keighery (1994) condition rating scale is provided in D. Representative photos are available in F.
Climate and landform	The landform of the area is characterised by undulating terrain with rock outcrops.
Soil description	• Jelcobine York Subsystem (256JcYO), described as areas of soils derived from freshly exposed rock. This unit is typified by the red soils of the Avon Valley but also includes areas of similar, but often greyer and lighter textured soils to the east of the valley. • Avon Subsystem (Jelcobine) (256JcAV), described as alluvial terraces and floodplains that occur adjacent to the Avon, lower Mortlock and lower Dale rivers.

Characteristic	Details
Land degradation risk	The application area has a low to medium risk of land degradation due to wind erosion and salinity, and high risk of subsurface acidification.
Waterbodies	Desktop assessment and aerial imagery indicated that the application area intercepts four minor ephemeral watercourses, tributaries to the Toodyay Brook of the Avon River system.
Hydrogeography	The application area occurs within the Swan Avon (Main Avon) catchment area of the Avon River Basin. The local area lies in the Northern Zone of Rejuvenated Drainage, where perched aquifers may contain low salinity water, but ground water salinity is high, ranging between 2,750 to 30,250 mg/L (TDS) particularly near to drainage lines.
Flora	Nine conservation significant flora have been recorded within 10 km radius from the application area. Three of the flora are listed as threatened, four are Priority 4, one Priority 3 and one Priority 2. None of the recorded flora occurs within the application area. The closest record is of *Asterolasia grandiflora* (Priority 4), located 1.87 km from the application area.
Ecological communities	Several patches of remnant vegetation identified as the Eucalyptus Woodlands of Western Australia Wheatbelt (Eucalyptus Woodlands) are mapped within the local area. The Eucalyptus Woodlands are listed as Priority 3 PEC in Western Australia which is synonymous with the Commonwealth listed TEC. Some areas within the application area are on the edge of the Eucalyptus PEC/TEC remnants.
Fauna	Black cockatoo species have been recorded within the local area. The closest record of Black cockatoo sighting was from within 1 km from the application area. The most recent record was made in 2014.

B.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*					
Avon Wheatbelt	9,517,109.6	1,736,214.6	18.24	165,058.5	9.5
Vegetation complexes					
Bindoon Valley (Bi-22)	36,053	10,521	29.18	848.24	2.3
Williams – Valley Floors and Swamps (Wi-301)	28,984.0	7,516.5	25.93	99.76	34.44
Local area (calculation - delete if not required)					
10km radius	31,507	7,214.99	22.89	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

B.3. Flora analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Asterolasia grandiflora	4	N	Y	Y	1.87	11	N/A
Caladenia huegelii	T	N	Y	N	5.54	1	N/A
Caladenia integra	4	N	Y	N	6.89	1	N/A
Chordifex chaunocoleus	4	Y	N	N	5.35	8	N/A
Eremaea blackwelliana	4	N	N	N	2.78	1	N/A
Grevillea candolleana	2	N	N	N	6.46	4	N/A
Grevillea corrugata	T	N	Y	N	8.23	3	N/A
Grevillea flexuosa	T	N	Y	N	4.29	39	N/A
Verticordia serrata var. linearis	3	N	N	N	5.94	2	N/A

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

B.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)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Apus pacificus (Fork-tailed swift)	MI	Y	Y	4.16	1	N/A
Calyptorhynchus banksii naso (forest red-tailed black cockatoo)	VU	N	Y	4.13	2	N/A
Calyptorhynchus baudinii (Baudin's cockatoo)	EN	N	Y	1.29	2	N/A
Calyptorhynchus latirostris (Carnaby's cockatoo)	EN	N	Y	0.89	57	N/A
Calyptorhynchus sp. 'white-tailed black cockatoo' (White-tailed black cockatoo)	EN	N	Y	4.61	40	N/A
Dasyurus geoffroii (chuditch, western quoll)	VU	N	N	5.18	2	N/A
Falco peregrinus (Peregrine falcon)	OS	Y	Y	1.51	7	N/A
Idiosoma mcclementsorum (Julimar shield-backed trapdoor spider)	P2	N	N	1.40	2	N/A
Idiosoma schoknechtorum (Mortlock River shield-backed trapdoor spider)	P3	N	N	1.40	2	N/A
Isoodon fusciventer (quenda, southwestern brown bandicoot)	P4	N	N	7.61	1	N/A
Leipoa ocellata (malleefowl)	VU	N	N	1.40	2	N/A
Macrotis lagotis (bilby, dalgyte, ninu)	VU	N	N	0.62	2	N/A
Notamacropus irma (western brush wallaby)	P4	N	N	1.40	4	N/A

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Oxyura australis (Blue-billed duck)	P4	N	N	4.61	1	N/A
Phascogale tapoatafa wambenger (south-western brush-tailed phascogale, wambenger)	CD	N	N	1.82	1	N/A
Tringa nebularia (Common greenshank, greenshank)	MI	N	N	4.61	1	N/A
Westralunio carteri (Carter's freshwater mussel)	VU	N	N	1.34	6	N/A
T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority						

B.5. Ecological community analysis table

Community name	Conservation status (Western Australia)	Conservation Status (Commonwealth)	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)
Eucalypt woodlands of the Western Australian Wheatbelt	Priority 3	Critically Endangered	N	Y	Y	0	613

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

B.6. Land degradation risk table

Risk categories	Soil unit 256JcYO	Soil Unit 256JcAV
Wind erosion	M1: 10-30% of the map unit has a high to extreme hazard	L2: 3-10% of the map unit has a very high to extreme hazard
Water erosion	L2: 3-10% of the map unit has a very high to extreme hazard	L2: 3-10% of the map unit has a very high to extreme hazard
Salinity	L1: <3% of the map unit has a moderate to high hazard	M1: 10-30% of the map unit has a high to extreme hazard
Subsurface Acidification	H2: 70 % of the map unit has a high risk or currently acid	H2: 70 % of the map unit has a high risk or currently acid
Flood risk	L1: <3% of the map unit has a moderate to high hazard	L1: <3% of the map unit has a moderate to high hazard
Water logging	L1: <3% of the map unit has a moderate to high hazard	L1 : <3% of the map unit has a moderate to high hazard
Phosphorus export risk	L2: 3-10% of the map unit has a high to extreme hazard	L2: 3-10% of the map unit has a high to extreme hazard

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The area proposed to be cleared does not contain significant flora, fauna, habitats or assemblages of plants. However, parts of the application area occur within patches mapped as the Eucalypt Woodlands of WA Wheatbelt PEC/TEC.	May be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared does not contain significant habitat for conservation significant fauna. Low quality foraging habitat for black cockatoos occurs within the application area.	May be at variance	Yes *Refer to Section 3.2.2, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The area proposed to be cleared is unlikely to contain habitat for threatened flora.	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: Parts of the area proposed to be cleared occur within patches mapped as the Eucalypt Woodlands of the Wheatbelt TEC. Considering the patches condition and sizes, the mapped patches do not meet the requirements of the TEC	May be at variance	Yes *Refer to Section 3.2.1, 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 application area is within the Wheatbelt Region which is extensively cleared. The extent of native vegetation in the local area (approximately 22.9 %) is inconsistent with the national objectives and targets for biodiversity conservation in Australia. Although the vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area, clearing is likely to contribute to the cumulative loss of native vegetation in the region.	At variance	Yes *Refer to Section 3.2.1, above.*
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:	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Given the distance to the nearest conservation area, the proposed clearing is not likely to impact on the environmental values of nearby conservation areas.		
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 intercepts a few minor non perennial water courses, therefore clearing is associated with an environment associated with a watercourse. Given the limited extent of clearing at the interceptions, the clearing is unlikely to impact the hydrology and water quality within local context or contain significant riparian vegetation.	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 comprise of mostly sands that would be susceptible to wind erosion if exposed. The soils in the valleys of the creeks are also prone to subsurface acidification. Noting the extent of the application area the proposed clearing is not likely to have an appreciable impact on land degradation	Not likely to be at variance	Yes *3.2.3, above.*
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 intercepts a few minor non perennial water courses. Given the limited extent and timeframe of clearing, proposed clearing is unlikely to impact surface or ground water quality.	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 soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.	Not likely to be at variance	No .

Appendix D. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from 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 E. Offset Calculation and Justification (WA Environmental Offset Calculator, 2022)

WA Environmental Offsets Calculator
Rationale for scores used in the offset calculator

Calculation	Score (Area)	Rationale
Conservation significance		
Description	Clearing significant remnant	The application area is located within an extensively cleared region of the Avon Wheatbelt. The local area (10 km radius) retains approximately 22 percent native vegetation cover.
Type of environmental value	Vegetation/habitat	The roadside vegetation that is proposed to be cleared comprises of mixed Eucalyptus sp. totalling 0.58 hectares in area.
Conservation significance of environmental value	Terrestrial native vegetation complex - <30% extent remaining in bioregion	The local area and vegetation complexes impacted by the proposed clearing retain less than 30 percent of their pre-European extents.
Landscape level value impacted	Yes/No	No
Significant impact		
Description	Clearing significant remnant	The proposed clearing will contribute to the cumulative loss of native vegetation in the region and local area that have been extensively cleared.
Significant impact (hectares)	0.58	The roadside vegetation that is proposed to be cleared comprises of mixed Eucalyptus sp. totalling 0.58 hectares in area.
Quality (scale)	3.00	The vegetation is in a degraded (Keighery, 1994) condition. The vegetation does not form significant habitat for fauna so additional value for site context is not required.
Rehabilitation credit		
N/A	N/A	The Shire of Toodyay considered a mitigation measure which included onsite revegetation. The road reserve is narrow with steep batters. No suitable area along the road reserve was found suitable for onsite revegetation.
Offset		
Description	Conservation covenant in an existing reserve	An offset site will be secured through a conservation covenant under section 30B of the *Soil and Land Conservation Act 1945* registered on the Certificate of Title of the property. The covenant will require the protection and management of the vegetation in perpetuity. The offset site is a part of a 123 ha of land reserved with the Shire of Toodyay for recreation.
proposed offset (area in hectares)	2.18	The area required to be placed under a conservation covenant to offset the loss of 0.58 hectares of vegetation that is significant as a remnant in an extensively cleared landscape.
Current quality of offset site	8	The proposed offset area is in Very Good to Excellent (Keighery, 1994) condition
Future quality WITHOUT offset	8	The area is currently managed for recreation with no development proposed. The offset site landform/landscape with granite outcrops would limit future development. It is proposed the condition will not readily change.
Future quality WITH offset	8	Placing a conservation covenant to the area would retain the current vegetation condition and restrict any potential for future development.
Time until ecological benefit (years)	1	The ecological benefit of conserving the site to offset the loss of vegetation being removed.
Confidence in offset result (%)	0.9	There is a high level of confidence that the offset will reduce the risk of loss of native vegetation cover in the local and regional context.

Calculation	Score (Area)	Rationale
Duration of offset implementation (maximum 20 years)	20	An irrevocable conservation covenant is to be placed on the site, therefore the maximum 20 years was used.
Time until offset site secured (years)	1	The administrative process of executing the covenant can be achieved within 1 year.
Risk of future loss WITHOUT offset (%)	15%	Whilst it is zoned as rural, the landscape and granite outcrops make it unsuitable for development and is not likely to be cleared. However, the area is zone as recreation, with some recreation activities currently occurring within the site.
Risk of future loss WITH offset (%)	5%	Placing a conservation covenant would reduce the potential impact of development and restrict the type of recreation activities that can occur.
Offset ratio (Conservation area only)	N/A	
Landscape level values of offset?	N/A	

Appendix F. Photographs of the vegetation and species names (Shire of Toodyay, 2022 d)

Figure 8. Photographs of the vegetation proposed to be cleared and their locations. Refer to the list below for species identification.

SPECIES NAMES and NUMBERS REF. Points

A. 4 x *E. loxophleba*, various *A. microbotrya* and *A. acuminata*
B. Various medium *E. loxophleba, A. microbotrya and A. acuminata*
C. 2 x *E. loxophleba*
D. 6 x E. rudis
E. 4 x E. rudis
F. 1 x E. rudis, 1 x A. microbotrya
G. 3 x E. rudis
H. 2 x E. rudis
I. 8 x E. rudis
J. 1 x E. rudis
K. 7 x E. rudis
L. 1 x E. rudis
M. 2 x E. rudis
N. 6 x E. loxophleba
O. 1 x E. loxophleba
P. 10 x E. rudis
Q. 2 x E. rudis

Appendix G. Sources of information

G.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
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

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

G.2. References

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Department of Environment and Conservation (2012). Western Australia Wildlife Management Program No. 54.

Chudith (Daysurus geoffroii) National Recovery Plan. DEC, Bentley, WA

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