PERTH OFFICE
Suite 4, 26 Railway Road
Subiaco
Western Australia 6008

P +61 8 9380 4988
F +61 8 9380 9636
emergeassociates.com.au

Emerge Environmental Services Pty Ltd ABN 57144772510 trading as Emerge Associates

Document Reference: EP19-073(26)—047

Emerge contact: [redacted]

21 December 2021

Attention: Native Vegetation Clearing Referral
Department of Water and Environmental Regulation
8 Davidson Terrace, Joondalup WA 6027

Delivered by email to: info@dwer.wa.gov.au

Dear Sir/Madam

NATIVE VEGETATION CLEARING REFERRAL FOR LOT 359 MURRAY ROAD, BRABHAM.

The Department of Communities and Peet Limited (Peet) (the proponent) has engaged Emerge Associates (Emerge) to provide environmental consultancy services to support the proposed residential development across several Department of Communities landholdings within the suburb of Brabham. As part of this broader development the wetland and drainage lines located within Lot 359 Murray Road, Brabham (herein referred to as 'the site') will be rehabilitated to accommodate stormwater generated from within the Brabham development to the west of the site. To enable the rehabilitation of the wetland and drainage lines in the site the clearing of 0.07 ha of native vegetation comprising a total of 13 native trees is required within the southern portion of the site along a section of the eastern drainage line (herein referred to as 'the clearing area').

On this basis the proponent refers the proposed native vegetation clearing to the Department of Water and Environmental Regulation (DWER) under Section 51DA of the amended *Environmental Protection Act 1986* (EP Act) to determine whether a clearing permit is required. This letter provides information on existing environmental conditions and relevant environmental considerations within the site and provides an assessment of the proposed clearing against all criteria listed in Section 51DA(4) of the EP Act. Based on a preliminary assessment against these criteria undertaken by Emerge, it would appear that there are reasonable grounds to suggest that the clearing within the clearing area would result in very low environmental impacts.

1 INTRODUCTION AND BACKGROUND

The site encompassing the clearing area is located approximately 19 km north-east of the Perth Central Business District within the City of Swan, as shown in **Figure 1**. The site is bound by Murray Road to the west, Woollcott Avenue to the south and rural residential land holdings to the north and east. The site was predominantly cleared prior to 1965; however, it has remained largely unused to the present time (Landgate 2021). Presently the site comprises scattered native vegetation patches and single trees or shrubs, whilst the northern extent of the eastern drainage line in the clearing area is predominantly vegetated.

The rehabilitation of the wetland and drainage lines within the site as part of the broader Brabham development will include a new connection between the existing drainage lines to accommodate increased drainage from the surrounding areas and improve the quality of water discharge into St. Leonards Creek through the introduction of natural weirs, allowing for improved aeration of water,

and planting of native riparian vegetation species along the edge of the drainage lines to assist with nutrient stripping. The rehabilitation of the wetland and drainage lines within the site requires some minor earthworks, which will allow for the removal of accumulated silt and invasive weed species that are currently within the drainage lines. This process requires some native vegetation clearing, anticipated to result in a very low environmental impact.

2 ENVIRONMENTAL CONTEXT

A botanist and an ecologist from Emerge visited the site on 23 October 2018 and undertook a reconnaissance flora and fauna survey in accordance with the Environmental Protection Authority's *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment*. A summary of the findings from the survey is presented as technical memorandum, provided as **Attachment 3**.

The site has historically largely been cleared of native vegetation prior to 1965 and currently primarily supports parkland cleared areas. Native vegetation values within the site are highly restricted to individual scattered trees and patches of native vegetation. The key environmental features within the site include the following:

- Based on the result of the fauna assessment, a total of 14 habitat trees for black cockatoo species occur within the northern portion of the site, outside of the clearing area, whilst one stag contains a suitable hollow for potential black cockatoo breeding.
- Additionally, native vegetation within the northern portion of the site potentially provides black cockatoo foraging habitat. No potential black cockatoo habitat occurs within the clearing area.
- A review of the *Geomorphic Wetlands of the swan Coastal Plain* dataset indicates that one multiple use wetland (MUW) unique feature identifier (UFI) #13396, which extends to the east and west of the site is present across the entire site. Additionally, a review of the *Hydrography* dataset (maintained by DWER) identifies that the drainage lines discharge into St. Leonards Creek to the north-west of the site. The western drainage line is identified as a minor, non-perennial watercourse within the dataset, whilst the eastern drainage line is identified as a minor drain, which based on observations on the site is also non-perennial. There are no specific retention measures that are required for MUWs; however, they do still form a hydrological function which will be retained and enhanced through the proposed wetland rehabilitation and associated native vegetation clearing.

3 APPROVALS CONTETX

In accordance with the provisions of the City of Swan's *Local Planning Scheme No 17* and the *Planning and Development (Local Planning Schemes) Regulations 2015,* approval to commence rehabilitation works to create a wetland ecosystem within the site and the clearing area has been granted on 13 March 2020. The approved planning approval is attached as **Attachment 3**.

4 CLEARING REFERRAL

Attachment 1 contains the signed application for 'New Permit of Referral to Clear Native Vegetation Form' for processing by DWER.

Attachment 2 contains the Certificate of Title for the site.

Attachment 3 Development application and approval: Rehabilitation works to create wetland ecosystem – Lot 359 (No.10) Murray Road, Henley Brook

Attachment 4 contains a copy of the technical memorandum for the flora and fauna survey undertaken by Emerge.

5 CLEARING REFERAL AREA

The clearing area sits in the southern portion of the site and runs parallel to the eastern drainage line, as shown in the attached **Figure 1** and **Figure 2**. The clearing area contains approximately 0.41 ha vegetation consisting of trees and shrubs growing along the drainage line. The clearing referral applies to only single trees within the clearing area that are required to be removed due to earthworks for the widening of the drainage corridors, introduction of natural weirs and the ultimate rehabilitation of the wetland and drainage lines. It is anticipated that that the clearing would include an area of 0.07 ha comprising 13 single trees within the clearing area, as shown in **Figure 2**, whilst all other vegetation within the clearing area and the remainder of the site will be retained.

5.1 Flora and vegetation values

A reconnaissance Flora and Fauna Survey was undertaken by Emerge on 23 October 2018, which assessed the vegetation within the clearing area and the broader site. A total of four native plant communities were identified within the site ranging from 'Degraded' to 'Degraded – Completely Degraded' condition, as shown in **Figure 3** and **Figure 4**. The majority of the site was identified as being in 'Completely Degraded' condition comprising cleared or parkland cleared areas consisting of scattered native trees and shrubs. One native plant community (**Mr**) was identified in the clearing area, growing in association with the existing drainage lines, in particular the eastern drainage line. The plant community has been identified as 'tall closed shrubland *Melaleuca rhaphiophylla* over forb/sedgeland of *Rumex crsipus, Cotula coranopifolia, Juncus pallidus, Alternanthera nodifora* and *Isolepis cernua'* in 'Degraded' condition, in accordance with the Keighery scale (1994). Photographic representation of plant community **Mr** is provided in **Plate 1** and **Plate 2** below.

*Plate 1: Plant community **Mr** in drainage line within clearing area.*

*Plate 2: Southern extent of plant community **Mr** with standing water in the drainage line within the clearing area*

Due to the vegetation condition within the site, the vegetation was unable to be assigned a floristic community type (FCT) and was not identified as being representative of a threatened or priority ecological community. In addition, no threatened or priority flora species were identified within the site including the clearing area.

Vegetation complex mapping for the Swan Coastal Plain undertaken by Heddle et al. (1980) indicates that the site occurs within an area mapped as the 'Southern River' complex, which is described as 'open woodland of *Corymbia calophylla – Eucalyptus marginata – Banksia spp.* with fringing woodland of *Eucalyptus rudis – Melaleuca rhaphiophylla* along creek beds', which shares some characteristics identified within the site. Notwithstanding this, it is important to note that the vegetation within the site was identified to be in 'Degraded' or 'Degraded – Completely Degraded' condition, hence the native vegetation within the site is not representative of the Southern River complex in 'Good' or better condition, which should be protected from vegetation clearing.

5.2 Fauna values

As part of the Reconnaissance Flora and Fauna Survey undertaken by Emerge, fauna habitat within the site and clearing area was assessed. Due to the historical clearing and disturbance of vegetation within the site, fauna habitat values are significantly reduced, and likely only provide habitat for a range of common and widespread species. One priority four species, *Isoodon fusciventer* (quenda) is known to occur within the broader area of the site and it was determined to be possible for the species to utilise the site, albeit vegetation within the majority of the site including the clearing area does not provide the suitable dense vegetation understorey that the species prefers. Suitable habitat for quenda occurs within the northern portion of the site where more dense vegetation occurs, and this area will not be impacted by the earthworks required within the clearing area.

No potential black cockatoo habitat trees providing foraging, roosting, or breeding habitat were identified within the clearing area. The northern portion of the site does provide trees suitable for use by species of threatened black cockatoo for nesting, namely Carnaby's black cockatoo, Forest red-tailed black cockatoo and Baudin's black cockatoo, including a total of 14 trees with a greater than 50 cm diameter at breast height, one of which has a suitable hollow for black cockatoo breeding, as shown in **Figure 5**. The site also contains a limited amount of black cockatoo foraging habitat in the northern portion.

5.3 Proposed clearing of native vegetation

Clearing of native vegetation is proposed to allow earthworks to occur in preparation for the rehabilitation of the wetland and drainage line within the clearing area. The proposed clearing would consist of the removal of 0.07 ha of native vegetation within plant community **Mr** comprising a total of 13 single native trees within the clearing area, whilst the remainder of native vegetation within the clearing area would be retained (approximately 0.34 ha or 83%), as shown in **Figure 2**.

5.4 Proposed revegetation

The approved rehabilitation of the wetland and drainage lines within the clearing area would include the planting of native trees, shrubs and grasses including *Melaleuca rhaphiophylla, Melaleuca vimina, Melaleuca pressii, Isolepsis nodosa, Lepidosperma longitudinale, Baumea articulata* and *Juncus pallidus.* Additionally, the rehabilitation would ultimately result in 70% of the areas abutting the drainage lines to be revegetated, with all side slopes of the drainage lines fully vegetated to stop potential erosion and improve water quality. The approved development application for the clearing area, provided as **Attachment 3**, provides the comprehensive list of native species that would be used during the rehabilitation process and outlines the Landscape Master Plan for the clearing area.

6 RESPONSE TO THE CLEARING REFERRAL CRITIERIA

Under Section 51C of the EP Act, clearing of native vegetation is an offence unless a clearing permit has been obtained, or unless:

- An exemption applies
- The proposed clearing was referred to DWER who determined that a permit is not required because the clearing is exempt, or the clearing satisfies all the referral criteria.

DWER's referrals process supports a risk-based approach to assessing native vegetation clearing proposals by establishing a pathway to assess very low impact clearing activities that are deemed not to require a permit. When assessing the clearing referral, DWER have regard to the referral criteria listed in Section 51DA(4) of the EP Act. A clearing permit is required if the referral does not meet all of the criteria.

In support of this clearing referral, the four referral criteria highlighted in the EP Act have been considered and responded to, which are detailed further in **Table 1** below.

Table 1: EP Act clearing referral criteria

EP Act Section 51DA(4) Criteria	Response to the EP Act Clearing Referral Criteria
Criterion 1: The area proposed to be cleared is small relative to the total remaining vegetation • Relative to the total remaining vegetation in the region where the proposed clearing is located, and • Relative to the total remaining vegetation of the ecological community that the vegetation proposed to be cleared forms a part of	The site is located within the Metropolitan Perth Region Scheme constrained area. The 'constrained area' of Metropolitan Perth is the Swan Coastal Plain IBRA portion of the Perth Region Scheme. The Native Vegetation Clearing Referrals Guideline ('the Guideline') (DWER 2021) states that if the extent of the proposed clearing is more than 1 ha, a clearing permit is required. The proposed clearing would involve the removal of 0.07 ha of native vegetation (17% of the total area of native vegetation within the clearing area) including a total of 13 trees, which is anticipated to result in a very low environmental impact. All remaining native vegetation within the clearing area and the broader site would be retained. Vegetation complex mapping for the Swan Coastal Plain undertaken by Heddle et al. (1980) indicates that the site occurs within an area mapped as the 'Southern River' complex, which is described as 'open woodland of *Corymbia calophylla – Eucalyptus marginata – Banksia spp.* with fringing woodland of *Eucalyptus rudis – Melaleuca rhaphiophylla* along creek beds', which shares some characteristics identified within the site. The southern river complex has 18.43% of its pre-European extent remaining on the Swan Coastal Plain, which is above the 10% threshold for remaining extent of native vegetation in the Swan Coastal Plain region as highlighted in the Guideline. A review of the current native vegetation extent dataset (DPIRD-005), within a 5 km buffer of the site, indicates that the threshold for remaining native vegetation surrounding the boundary of the site is above the 10% as highlighted in the Guidelines. There is an estimated total of 1890 ha of native vegetation within a 5 km radius of the clearing area, as shown in **Figure 6**. Due to the degree of historical disturbance and the present condition of the site, native vegetation was not identified to be considered part of any threatened ecological and/or priority ecological community. Additionally, the plant communities present within the site were considered too degraded to assign a 'floristic community type' with any degree of certainty due to the low number of native species remaining. Overall, the proposed clearing is not considered to be at variance with this criterion and ultimately would result in very low environmental impacts as required by the Guidelines and the EP Act.
Criterion 2: There are no known or likely significant environmental values within the area	The existing vegetation within the site was determined to be in predominantly 'Completely Degraded' condition dominated by non

EP Act Section 51DA(4) Criteria	Response to the EP Act Clearing Referral Criteria
• Biological values (e.g. flora, fauna, ecological communities) • Conservation values (e.g. impact to ecological linkages, conservation areas and heritage values) • Land and water resource values (e.g. wetlands and watercourses, water resources, land and soil quality)	native flora species. Plant community **Mr** identified within the clearing area is described as 'tall closed shrubland *Melaleuca rhaphiophylla* over forb/sedgeland of *Rumex crsipus, Cotula coranopifolia, Juncus pallidus, Alternanthera nodifora* and *Isolepis cernua',* identified in 'Degraded' condition and is the only plant community that would be impacted by the proposed clearing. Plant community **Mr** occurring within the clearing area was considered too degraded to assign a FCT due to the low native species diversity. The dominant species present within the clearing area is *Melaleuca rhaphiophylla,* a wetland species identified along the drainage line. No threatened or priority flora species were identified within the clearing area, nor anywhere else within the site. Furthermore, no threatened or priority ecological communities were identified within the site including the clearing area, likely due to the degraded condition. No potential black cockatoo habitat trees or other priority and/or threatened fauna habitat was identified within the clearing area. Due to the historical disturbance of the site and the small size of the clearing area, the fauna habitat values within the site and clearing area are considered to be significantly reduced and likely only provide habitat for a range of common and widespread species. One priority four species, *Isoodon fusciventer* (quenda), is known to occur within the broader area of the site and it is possible that they may utilise the site; however, the vegetation within the majority of the site including the clearing area does not provide suitable habitat for the species as it does not contain the dense vegetation understorey that this species prefers. The broader site does provide trees potentially suitable for use by species of threatened black cockatoo including a total of 14 trees with a greater than 50 cm diameter at breast height (suitable black cockatoo habitat tree), one of which has a suitable hollow for black cockatoo breeding. The northern portion of the site also contains a limited amount of black cockatoo foraging habitat, which would remain and not be impacted by the proposed clearing in the clearing area. A review of the *Geomorphic Wetlands of the Swan Coastal Plain* dataset indicates that one multiple use wetland (MUW) unique feature identifier (UFI) #13396, which extends to the east and west of the site is present across the entire site. Additionally, a review of the *Hydrography* dataset (maintained by DWER) identifies that the drainage lines discharge into St. Leonards Creek to the north-west of the site. The western drainage line is identified as a minor, non-perennial watercourse within the dataset, whilst the eastern drainage line is identified as a minor drain, which based on observations on the site is also non-perennial. There are no specific retention measures that are required for MUWs; however, they do still form a hydrological function which will be retained and enhanced through the proposed wetland rehabilitation and necessary removal of some native vegetation within the clearing area. Additionally, the ultimate rehabilitation and associated revegetation of the wetland and drainage line within the site is expected to improve the structural stability of the drainage lines, likely significantly improve water quality and overall likely improve wetland condition and hydrological functions. There are no conservation category wetlands (CCW) or resource enhancement wetlands (REW) within direct vicinity of the site and the clearing area. The nearest CCW and REW are located approximately 1 km to the east and 0.9 km to the south-east of the site respectively. The site is not within an area with high risk of decreasing water quality, rising groundwater levels or increasing salinity such as a public drinking water supply area according to the DWER Public Drinking Water Source Areas dataset. The ultimate rehabilitation of the wetland and drainage lines within the site would likely result in improved hydrological functions and water quality over time. Acid sulfate soil (ASS) mapping prepared by DWER indicates that the

EP Act Section 51DA(4) Criteria	Response to the EP Act Clearing Referral Criteria
	site has been classified as having no known risk of ASS occurring within 3 m of the natural soil surface. Additionally, the DWER Contaminated Sites Database does not indicate any contamination within the site and the site's broader surrounds. The site is not associated with or is in close vicinity of a Bush Forever site or environmentally sensitive area. Bush Forever Site 200 is located approximately 1 km south-west of the site and Bush Forever Site 302 is located 1 km to the east. The site is not situated within or in near proximity to a registered Aboriginal Heritage site. The nearest registered Aboriginal Heritage site occurs approximately 1.4 km to the east of the site namely the Swan River. Overall, there are no known or likely significant environmental values within the site including the clearing area and the proposed clearing is not considered to be at variance with this criterion.
Criterion 3: The state of scientific knowledge of native vegetation within the region is adequate	The site is located within the Swan Coastal Plain. Various databases, spatial datasets and other relevant readily available information is available for the site and the broader region. Additionally, a botanist and an ecologist from Emerge visited the site and undertook a reconnaissance flora and vegetation survey in 2018, with the Technical Memorandum attached as **Attachment 4**. The proposed clearing would be undertaken in an area that is included and covered by various environmental databases, spatial datasets and other relevant readily available information and is therefore not considered to be at variance with this criterion.
Criterion 4: Conditions will not be required to environmental impacts	The proponent has actively ensured that the least amount of native vegetation would be cleared as part of the rehabilitation of the wetland and drainage line within the site. As outlined above, the clearing area comprises native vegetation in 'Degraded' condition and does not support habitat for threatened or priority fauna and flora species or any threatened or priority ecological communities. It is anticipated that the approved rehabilitation of the wetland and drainage lines within the site would result in improved environmental values and attributes within the site and in particular the clearing area, which would likely provide future habitat for native flora and fauna species. Due to the detailed outline of the clearing area within the site, the anticipated very low environmental impact resulting from the proposed clearing and the approved landscape master plan highlighting the significant extent of revegetation within the clearing area, it is not anticipated that any conditions would be required to minimise, mitigate, offset or otherwise manage effects on the environment; therefore, the proposed clearing is not at variance with this criterion.

Summary and closing

The proposed clearing area covers 0.41 ha of native vegetation in 'Degraded' condition, whilst the broader site comprises predominantly cleared or parkland cleared areas in 'Completely Degraded' condition, with scattered patches of native vegetation.

Emerge suggests that the proposed clearing will only result in a very low environmental impact and is not at variance with the four referral criteria as outlined in the EP Act and the Guideline, which have been addressed in detail within this letter. In summary:

- The native vegetation within the site including the clearing area in the southern portion was identified as 'Completely Degraded' and 'Degraded' condition and does not represent a high level of biological diversity.

- There are no threatened or priority ecological communities, priority and/or threatened fauna and flora species likely to occur within the clearing area, whilst the northern portion of the site provides some potential habitat for black cockatoo species and quenda.
- Due to the degraded condition of vegetation within the site, no FCT was able to be assigned to any native vegetation within the site including the clearing area.
- One MUW was identified within the site including two drainage lines. There are no specific retention measures that are required for MUWs; however, they do still form a hydrological function which will be retained and enhanced through the proposed wetland rehabilitation and necessary removal of some native vegetation within the clearing area.
- The proposed clearing would result in the removal of 0.07 ha of native vegetation comprising a total of 13 trees and is therefore relatively small compared to the remaining vegetation in the broader region (Swan Coastal Plain).
- There are no known or likely significant environmental values within the clearing area.
- The state of scientific knowledge of native vegetation within the region in which the proposed clearing is to take place (Swan Coastal Plain) is adequate.
- Emerge does not anticipate that any conditions would be required to manage environmental impacts in relation to the proposed clearing, as the proposed clearing is anticipated to only result in very low environmental impacts and the ultimate approved rehabilitation and associated revegetation of the wetland and drainage lines within the site would likely increase the environmental values and attributes within the site.

Should you have any questions regarding the content of this letter please do not hesitate to contact the undersigned.

Yours sincerely
Emerge Associates

[redacted]

[redacted]

cc:

Encl: Figure 1: Site Location and Clearing Area
Figure 2: Proposed Clearing Extent
Figure 3: Plant Communities
Figure 4: Vegetation Condition
Figure 5: Black Cockatoo Habitat Trees
Figure 6: Local Native Vegetation Extent

General References

DWER 2021, *Guideline Native Vegetation Clearing Referrals*

Gibson, N., Keighery, B., Keighery, G., Burbidge, A. and Lyons, M. 1994, *A Floristic survey of the southern Swan Coastal Plain*, Department of Conservation and Land Management and the Conservation Council of Western Australia, Perth.

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 (ed.), *Atlas of Natural Resources Darling System Western Australia*, Perth.

Online References

Landgate 2021, *Landgate Map Viewer,* viewed 20 December 2021, < https://map-viewer-plus.app.landgate.wa.gov.au/index.html >

Figures

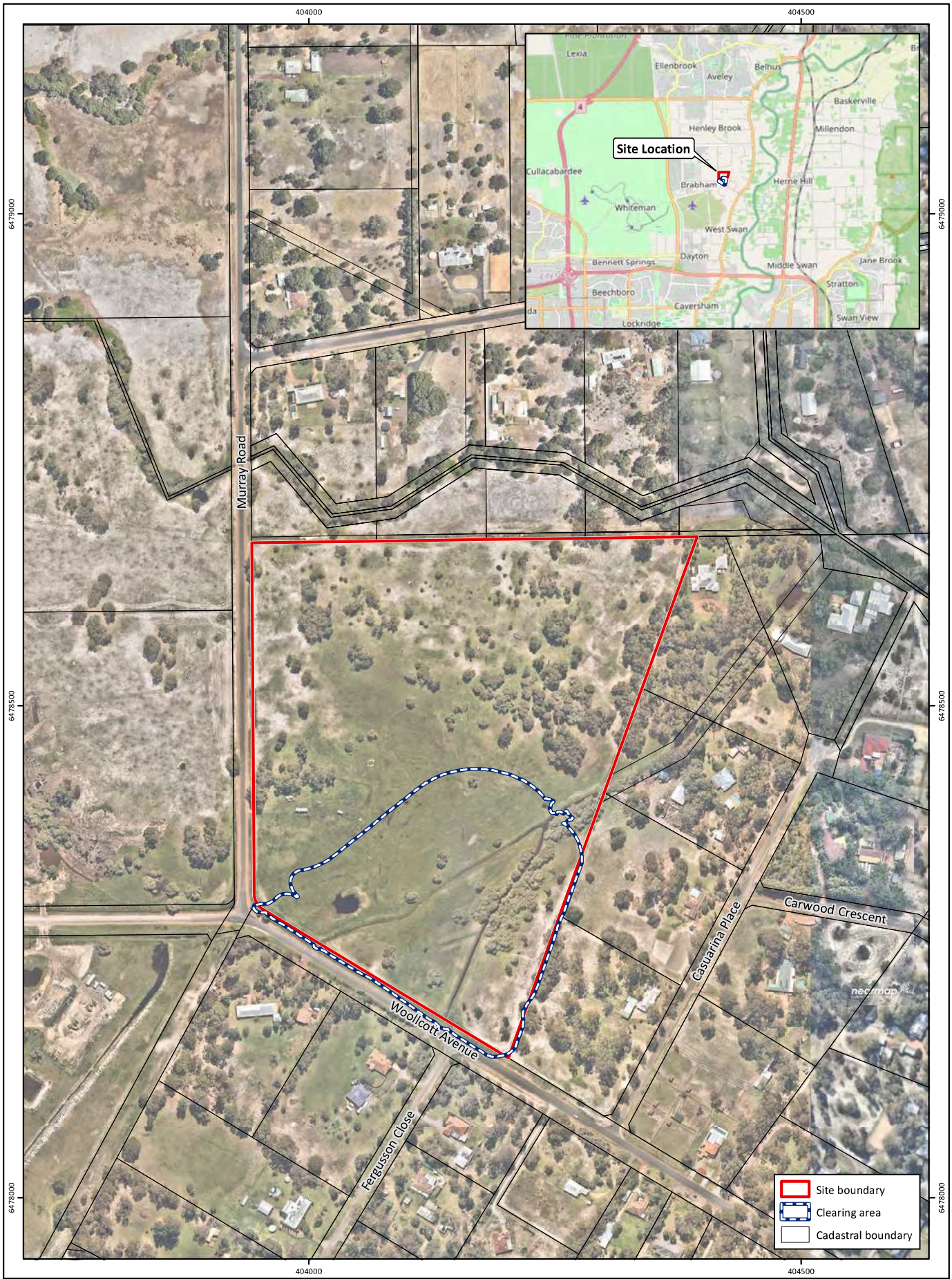

Figure 1: Site Location and Clearing Area

Project:	Clearing Referral Wetland Support
Client:	Department of Communities and Peet Limited

Plan Number:	**EP19-073(26)–F76**
Drawn:	GAR
Date:	21/12/2021
Checked:	PPS
Approved:	JDH
Date:	21/12/2021

N

0 50 100
Metres

Scale: 1:5,000@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

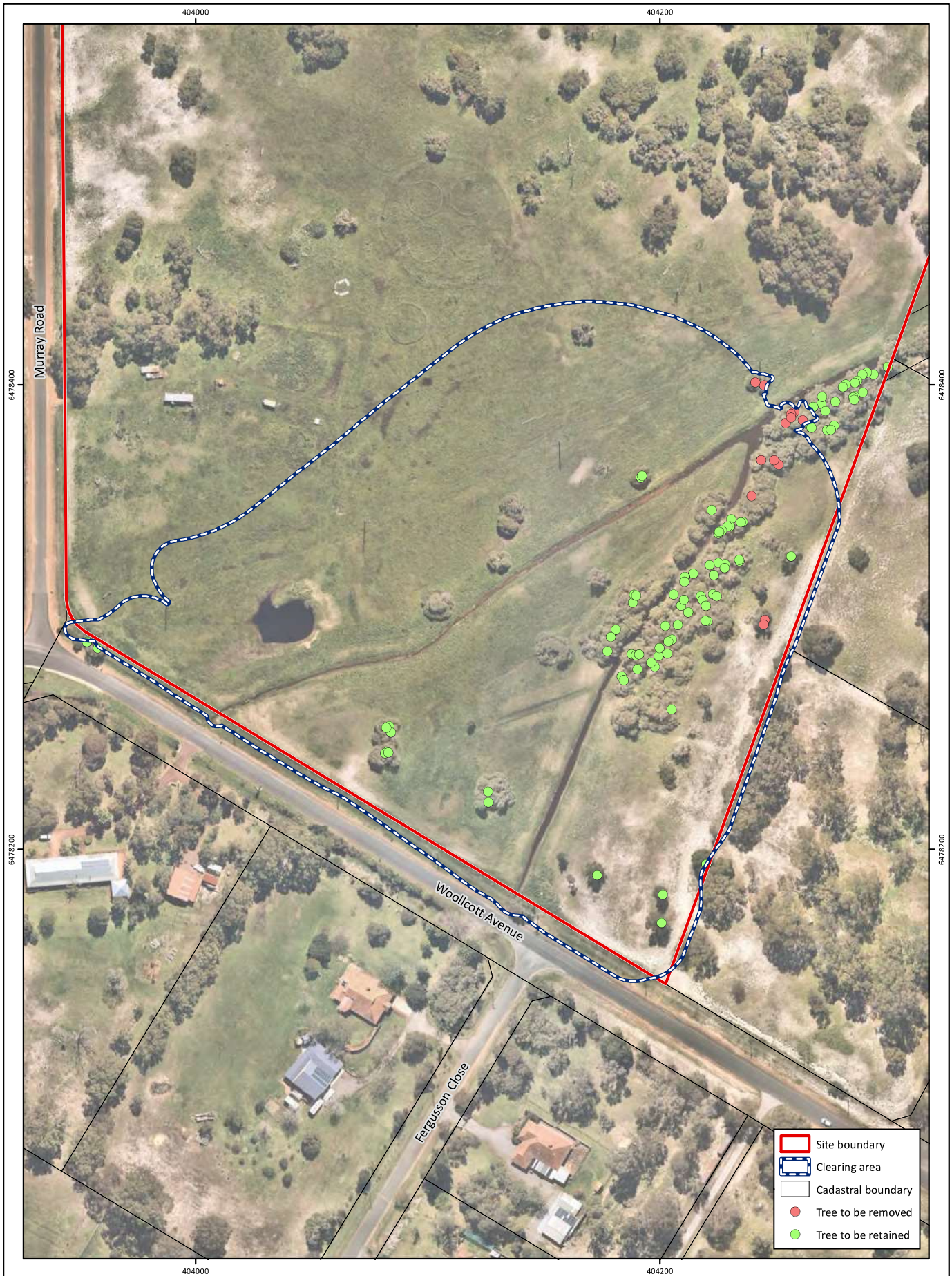

Figure 2: Proposed Clearing Extent

Project:	Clearing Referral Wetland Support
Client:	Department of Communities and Peet Limited

Plan Number:
EP19-073(26)--F77

Drawn:	GAR
Date:	21/12/2021
Checked:	PPS
Approved:	JDH
Date:	21/12/2021

N

0 20 40
Metres

Scale: 1:2,119@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

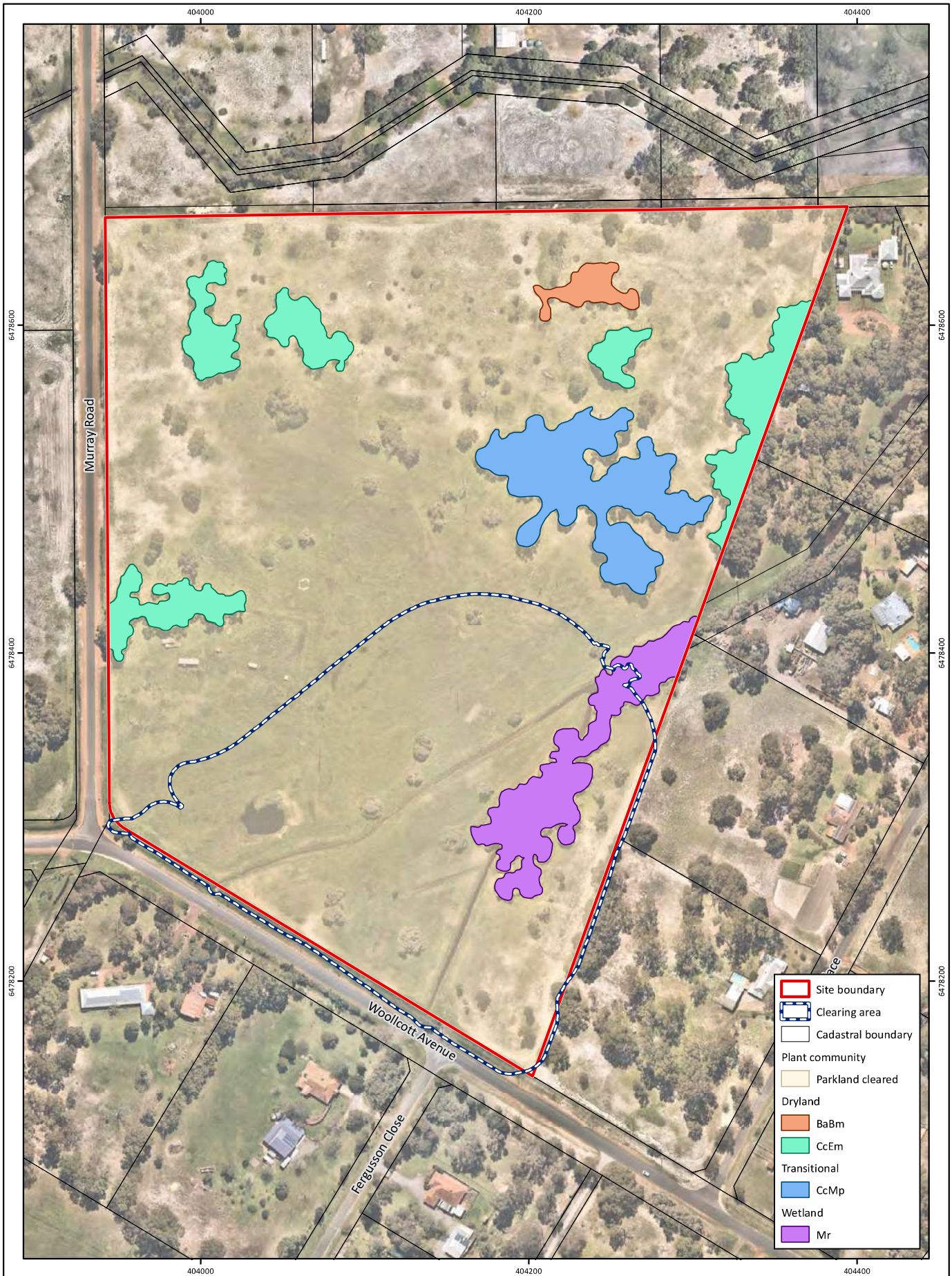

Figure 3: Plant Communities

Project: Clearing Referral
Wetland Support
Client: Department of Communities and Peet Limited

Plan Number: EP19-073(26)--F78
Drawn: GAR
Date: 21/12/2021
Checked: PPS
Approved: JDH
Date: 21/12/2021

N

0 2,000 4,000
Metres

Scale: 1:3,000@A4
GDA 1994 MGA Zone 50

emerge ASSOCIATES

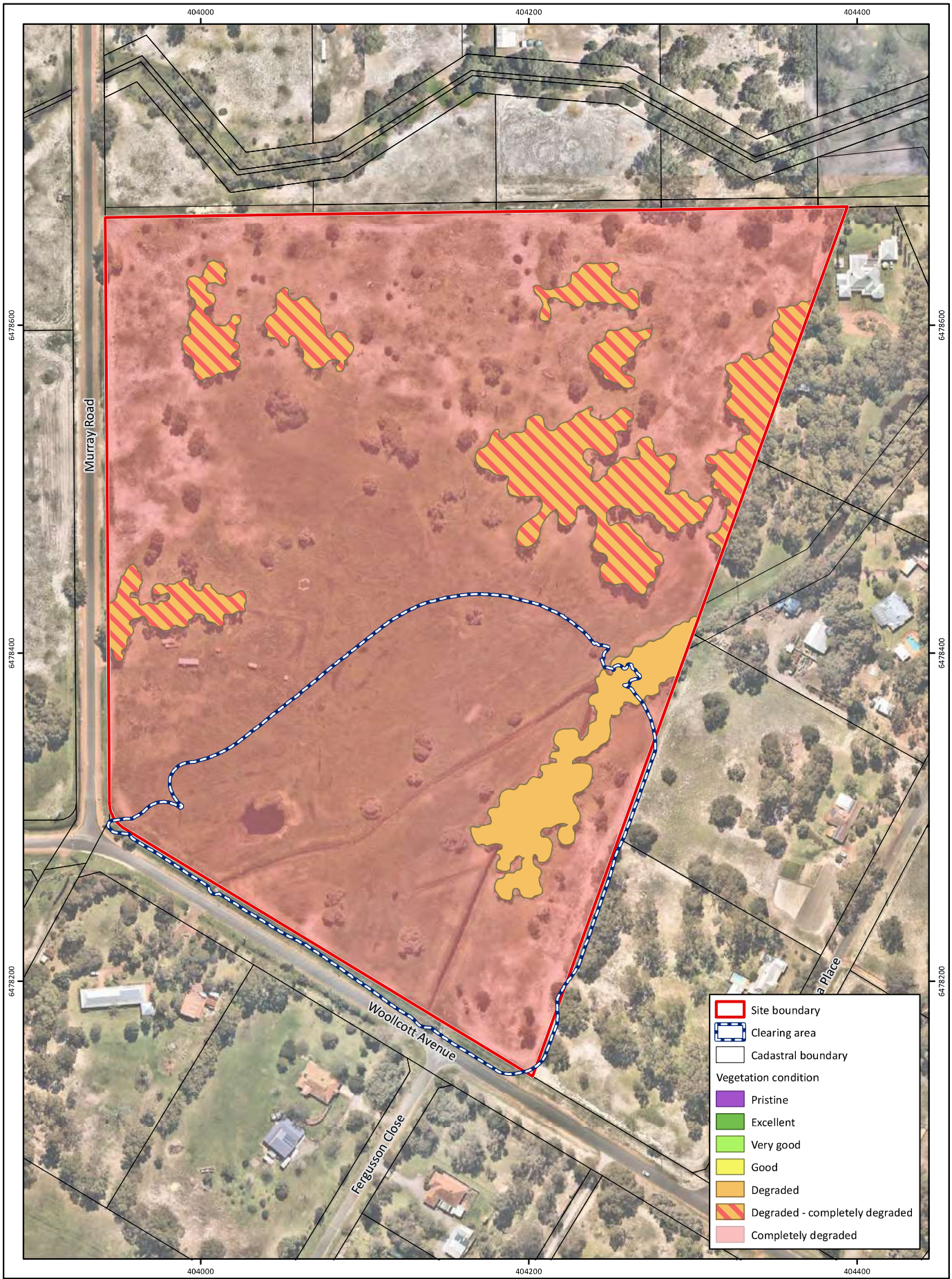

Figure 4: Vegetation Condition

Project: Clearing Referral
Wetland Support
Client: Department of Communities and Peet Limited

Plan Number:
EP19-073(26)--F79
Drawn: GAR
Date: 21/12/2021
Checked: PPS
Approved: JDH
Date: 21/12/2021

N

0 2,000 4,000
Metres

Scale: 1:3,000@A4
GDA 1994 MGA Zone 50

emerge ASSOCIATES

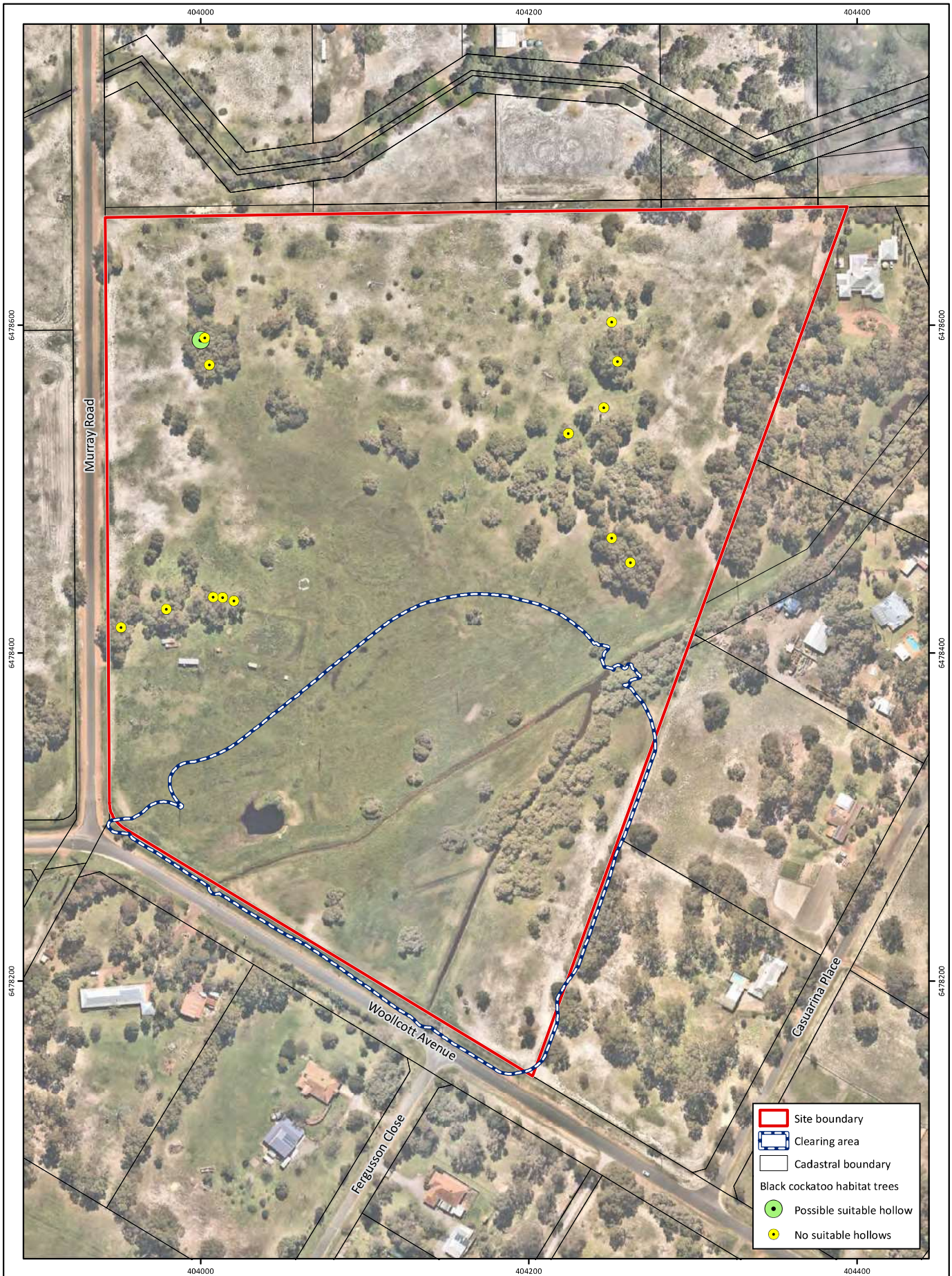

Figure 5: Black Cockatoo Habitat Trees

Project: Clearing Referral
Wetland Support
Client: Department of Communities and Peet Limited

Plan Number: EP19-073(26)–F80
Drawn: GAR
Date: 21/12/2021
Checked: PPS
Approved: JDH
Date: 21/12/2021

N

0 2,000 4,000
Metres
Scale: 1:3,000@A4
GDA 1994 MGA Zone 50

emerge ASSOCIATES

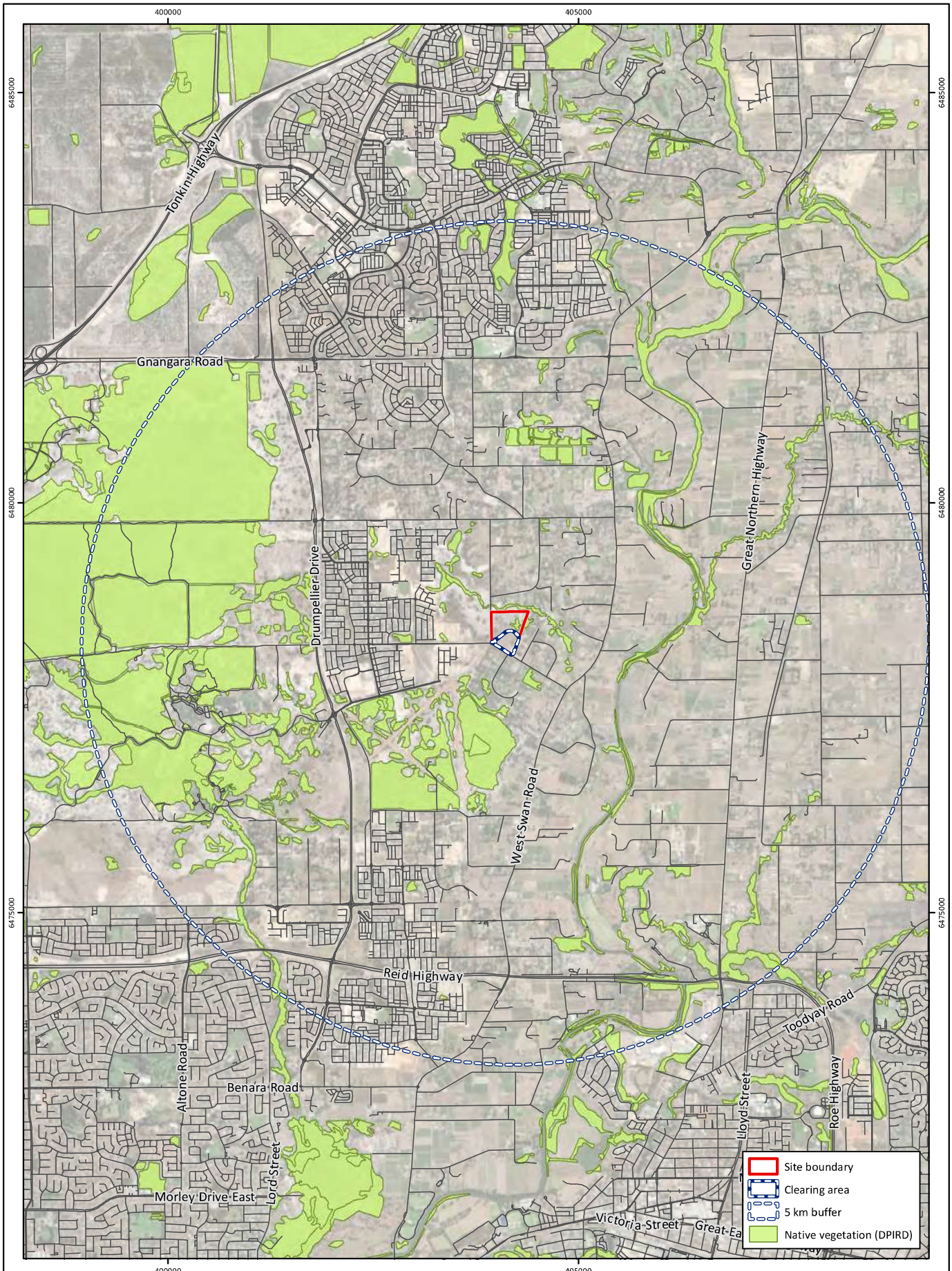

Figure 6: Local Native Vegetation Extent

Project:	Clearing Referral Wetland Support
Client:	Department of Communities and Peet Limited

Plan Number:	**EP19-073(26)--F81**
Drawn:	GAR
Date:	21/12/2021
Checked:	PPS
Approved:	JDH
Date:	21/12/2021

N

0 500 1,000 1,500

Metres

Scale: 1:60,000@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES