



Memorandum

8 February 2019

To Public Transport Authority

Copy to

From	GHD Pty Ltd	Tel	+61 8 6222 8222
Subject	Yanchep Rail Extension, Targeted FCT 26a Survey	Job no.	6137062

1 Introduction

1.1 Background

The Public Transport Authority (PTA) is in the planning stage for the extension of the northern suburbs passenger railway, the Yanchep Rail Extension (YRE) (the project). The project is a 14.5 kilometre (km) extension of the Joondalup railway line, which includes three new stations at Alkimos, Eglinton and Yanchep, and associated infrastructure. The project is being assessed in two parts, Part 1: Butler Station to Eglinton Station and Part 2: Eglinton Station to Yanchep Station.

GHD Pty Ltd (GHD) completed a biological assessment for the project with surveys undertaken in November 2016, May, July and December 2017 (GHD 2018). The GHD surveys assessed a total survey area of 165 hectares (ha).

Part 1 of the project was referred to the Environmental Protection Authority (EPA) under Section 38 of the *Environmental Protection Act 1986* (EP Act). The EPA decided to assess the proposal with the level of assessment set as Referral Information with Additional Information (4-week public review). Following the four-week public comment period, the EPA commented that *"More information is required in relation to the extent of FCT 26a TEC remaining outside but directly adjacent to the development envelope. Please provide details of the extent remaining beyond the development envelope of each occurrence of FCT 26a TEC that is intersected by the development envelope."* The additional information requested is in regards to Floristic Community Type (FCT) 26a, *Melaleuca huegelii* – *Melaleuca systema* shrublands of limestone ridges, which is a Threatened Ecological Community (TEC).

Part 2 of the project was also referred to the EPA under Section 38 of the EP Act. The EPA decided to assess the proposal with the level of assessment set as Public Environmental Review (6-week public review).

1.2 Purpose

The PTA commissioned GHD to complete a targeted survey for FCT 26a. The purpose of the survey was to address the EPA's comments on the Part 1 project; the PTA expanded the scope to include

6137062-1362/613706209-MEM_YRE Targeted FCT26a Survey

GHD Pty Ltd ABN 39 008 488 373
Level 10 999 Hay Street Perth WA 6000 Australia
T + 61 8 6222 8222 F + 61 8 6222 8555 E permail@ghd.com W www.ghd.com



Memorandum

the Part 2 project. The outcomes of the survey will be provided to the EPA to inform their environmental assessment.

1.3 Scope of works

The scope of works involved a targeted survey of the known FCT 26a patches intersecting the YRE Development Envelope (DE) to determine their extent outside, but adjacent to the DE. The Part 1 DE covers 70.2 ha and the Part 2 DE covers 72.8 ha, shown in Figure 1. The findings of the survey are provided in this brief memorandum.

1.4 Limitations and assumptions

The limitations and assumptions outlined in the GHD flora and fauna assessment report (GHD 2018) also apply to this memorandum.

2 Methodology

GHD undertook a 1.5 person-day targeted vegetation survey on the 22 and 29 January 2019. The field survey targeted mapped occurrences of FCT 26a within or intersecting the DE and involved mapping the boundaries of each FCT 26a occurrence using a handheld GPS device. Eight occurrences of FCT 26a were mapped within or intersecting the Part 1 and Part 2 DE by GHD (2018), and each occurrence was revisited during this targeted survey. The boundaries of each FCT 26a occurrence was determined based on the presence of typical species including *Melaleuca huegelii*, *M. systema*, *Banksia sessilis* over *Grevillea preissii*, *Acacia lasiocarpa* and *Spyridium globulosum*, and landform characteristics (e.g. skeletal soil on limestone ridge slopes and ridge tops) as outlined by Gibson et al. (1994). It is noted that in the majority of occurrences of FCT 26a graded into the surrounding vegetation, boundaries of occurrences were mapped where typical species occurred.



3 Results

Details and a representative photograph of each of the FCT 26a occurrence are provided in Table 1. The total extent of each occurrence and its extent within/intersecting the Part 1/Part 2 DE is also provided. The total extent of each mapped occurrence is shown in Figure 1, Attachment A.



Memorandum



Table 1 FCT 26a occurrences

Occurrence (Patch ID)	Total Area (ha)	Area in DE (ha)	Comments	Photograph
1	0.05	0.05	This occurrence is the most northern occurrence within the YRE survey area. This occurrence is wholly contained (100%) within the Part 2 Development Envelope.	
2	0.66	0.4	<p>This occurrence is located south of Pipidinny Road. The majority of the occurrence (0.40 ha, 60.5%) is within the Part 1 DE, with the remaining 0.26 ha is outside, but directly adjacent to the Part 1 DE.</p> <p>The Part 1 DE intersects the western part of this occurrence.</p>	

6137062-1362/613706209-MEM_YRE Targeted FCT26a Survey





Memorandum

Occurrence (Patch ID)	Total Area (ha)	Area in DE (ha)	Comments	Photograph
3	0.53	0.22	<p>This occurrence is located south of Pipidinny Road. There is 0.22 ha (41.4%) of this occurrence mapped within the Part 1 DE, with the remaining 0.31 ha (58.6%) outside, but directly adjacent to (north and south) the Part 1 DE.</p> <p>The Part 1 DE intersects the central part of this occurrence.</p>	
4	1.38	0.22	<p>This occurrence is located south of Pipidinny Road. There is 0.22 ha (15.8%) of this occurrence mapped within the Part 1 DE, with the remaining 1.16 ha (84.2%) outside of the Part 1 DE.</p> <p>The Part 1 DE intersects the central part of this occurrence.</p>	



Memorandum



Occurrence (Patch ID)	Total Area (ha)	Area in DE (ha)	Comments	Photograph
5	0.17	0.03	<p>This occurrence is located south of Pipidinny Road. There is 0.03 ha (16.4%) of this occurrence mapped within the Part 1 DE, with the remaining 0.14 ha (83.6%) outside (south) of the Part 1 DE.</p> <p>The Part 1 DE intersects the northern part of this occurrence.</p>	
6	0.44	0.2	<p>This occurrence is located north of Romeo Road and Alkimos town centre. There is 0.20 ha (44.4%) of this occurrence mapped within the Part 1 DE, with the remaining 0.24 ha (55.6%) outside (south) of the Part 1 DE.</p> <p>The Part 1 DE intersects this patch twice; it intersects the western and central parts of this occurrence.</p>	

6137062-1362/613706209-MEM_YRE Targeted FCT26a Survey

GHD Pty Ltd ABN 39 008 488 373
Level 10 999 Hay Street Perth WA 6000 Australia
T + 61 8 6222 8222 **F** + 61 8 6222 8555 **E** permail@ghd.com **W** www.ghd.com



Memorandum

Occurrence (Patch ID)	Total Area (ha)	Area in DE (ha)	Comments	Photograph
7	0.05	0.02	<p>This occurrence is located north of Romeo Road and Alkimos town centre. There is 0.02 ha (33.9%) of this occurrence mapped within the Part 1 DE, with the remaining 0.03 ha (66.1%) outside (north) of the Part 1 DE.</p> <p>The Part 1 DE intersects the southern part of this occurrence.</p>	
8	0.05	0.04	<p>This occurrence is located east of Marmion Avenue. There is 0.04 ha (82.3%) of this occurrence mapped within the Part 1 DE, with the remaining 0.01 ha (17.7%) outside but directly adjacent to (north and south) the Part 1 DE.</p> <p>The Part 1 DE intersects the central part of this occurrence.</p>	

6137062-1362/613706209-MEM_YRE Targeted FCT26a Survey

GHD Pty Ltd ABN 39 008 488 373
Level 10 999 Hay Street Perth WA 6000 Australia
T + 61 8 6222 8222 **F** + 61 8 6222 8555 **E** permail@ghd.com **W** www.ghd.com



Memorandum

4 References

Gibson, N, Keighery, BJ, Keighery, GJ, Burbridge, AH and Lyons, MN 1994, A Floristic Survey of the Southern SCP, Unpublished Report for the Australian Heritage Commission prepared by Department of Conservation and Land Management and the Conservation Council of WA (Inc).

GHD 2018, Yanchep Rail Extension Biological Assessment, unpublished report prepared for Public Transport Authority, November 2018.



Memorandum

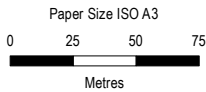
Attachment A – Figures

Figure 1 Floristic Community Type 26a occurrences intersecting the Development Envelope

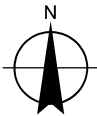


LEGEND

- FCT26a
- Part 1 development envelope
- Part 2 development envelope



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

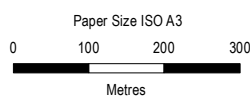


Public Transport Authority
PTA - Metronet Environmental Support

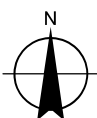
**Floristic Community Type 26a
Occurrences intersecting the
Development Envelope**

Project No. 3706209
Revision No. 0
Date 08 Feb 2019

Page 1 of 3
FIGURE 1



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50



Public Transport Authority
PTA - Metronet Environmental Support

**Floristic Community Type 26a
Occurrences intersecting the
Development Envelope**

Project No. 3706209
Revision No. 0
Date 08 Feb 2019

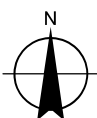
Page 2 of 3

FIGURE 1



Paper Size ISO A3
0 50 100 150
Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50



Public Transport Authority
PTA - Metronet Environmental Support

Floristic Community Type 26a
Occurrences intersecting the
Development Envelope

Project No. 3706209
Revision No. 0
Date 08 Feb 2019

Page 3 of 3

FIGURE 1