32 – Canning Bridge Station Mandurah

Environmental Site Assessment

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In accordance with the scope of services, WEPL has conducted environmental field monitoring and/or testing in the preparation of this report. The nature and extent of monitoring and/or testing conducted is described in this report.

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WEPL will not be liable to update or revise this report to take into account any events or circumstances or facts becoming apparent after the date of this report.

Executive Summary

Background

Western Environmental Pty Ltd (WEPL) was commissioned by UGL Engineering Pty Limited (the Client) to undertake an Environmental Site Assessment (ESA) assessment at **Site No 32 - Canning Bridge Station, Mandurah Line (the Site)**. The Site is identified as Lot 0 on Plan P ROAD and is located approximately 6.6km S of the Perth Central Business District (CBD) within the City of Perth. The Site is currently used for Primary regional roads (DPLH-023).

The Site is zoned unclassified (DPLH-071) under the South Perth Local Planning Scheme (LPS) No. 75. WEPL understand that the future Site use will remain unchanged, with only the proposed construction associated with this project being considered in this assessment.

The purpose of this investigation is to provide a preliminary understanding of environmental risks and constraints associated with the site, to inform future management requirements.

Scope of Work

The scope of work completed as part of this assessment included a desktop review of the environmental site conditions and relevant surrounding and historical land uses. Where relevant, site assessments for flora, vegetation and fauna will be undertaken to define the site's natural values. Site inspections and interviews with persons of interest, and limited sampling of media onsite will be undertaken and for the purpose of contaminated site assessment and acid sulphate soils will be undertaken. Assumptions and Uncertainties

This assessment has been undertaken on the basis of ongoing use of the Site in its current form (i.e. no change to site use or layout) and no groundwater abstraction occurring at the Site for any use. If any other change is land use is proposed (e.g. redevelopment for a more sensitive land use), further investigation may be warranted.

The conclusions drawn and recommendations made have been developed on the assumption that the data collected accurately represents the conditions at the Site. Assumptions and uncertainties pertaining to the data collected include the following:

- Historical information such as storage of any chemicals/fuels and/or spills that may have occurred on-site are not definitive.
- Gaps in historical aerial photography and government databases do not provide continuity of Site changes.
- A review of available land tenure does not always reveal potentially contaminating activities and land uses.

Summary of Findings

Following historical review and inspection of the Site, the following key outcomes have been identified:

- The Site was residential land use until being redeveloped in the 1970s and lies within the broader Kwinana Freeway and Manning Road to Canning Hwy Road reserve. The site has remained relatively unchanged from 2008 in which the rail line was completed to present date, with only minor upgrades occurring at Kwinana Freeway in 2020.
- The use of uncharacterised fill material was the potential source of contamination identified in association with the Sites historical development. A review of this information, in association with the site setting and historical use, indicates that there is a low risk of sub-surface impacts being present at the Site.
- The overall risk of potential contamination at the site is considered to be low.
- One isolated Tuart tree is located in the southern portion of the Site, which provides potential habitat for black cockatoo. Impact should be avoided if possible.
- No other native vegetation is present on the Site. The present vegetation is dominated by weeds and non-native species.

Recommendations

The following recommendations are made:

- Intrusive investigations should be undertaken to determine the presence or absence of ASS.
- While no further contamination assessment is recommended, if evidence of contamination is identified during construction the Unexpected Finds Sub-Plan should be adhered to.

Environmental Management Requirements

Contamination

Based on the findings of this ESA, the following management is required at the Site:

- Environmental Sub-Plan: Unexpected Finds.
- Environmental Sub-Plan: Acid Sulfate Soils Management.
- Based on the current site reference design and the findings of this ESA, a clearing permit may be required.

Ecology

- There was one, potentially planted, Tuart tree found on the subject site. This tree was not found to be part of a Tuart TEC, however, should be retained.
- Based on the current site layout, no clearing permit is required.

Key Terms/Acronyms

Abbreviation	Full Title
°C	Degree Celsius
ACM	Asbestos Containing Material
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999
ASS	Acid Sulfate Soil
BAM Act	Biosecurity and Agriculture Management Act 2007
BC Act	Biodiversity Conservation Act 2016
BTEXN	Benzene, Toluene, Ethyl-benzene, Xylenes and Naphthalene
CBD	Central Business District
CFCs	Chlorofluorocarbons
CoPC	Contaminant of Potential Concern
CR	Critically Endangered
CS Act	Contaminated Sites Act 2003
CSM	Conceptual Site Model
DBCA	Department of Biodiversity Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEWHA	Department of the Environment, Water Heritage and the Arts
DMIRS	Department of Mines, Industry Regulation and Safety
DoH	Department of Health
DotEE	Department of the Energy and Environment
DPLH	Department of Planning Lands and Heritage
DSEWPaC	Department of Sustainability Environment Water Population and Communities
DWER	Department of Water and Environmental Regulation
EDD	Environmental Due Diligence
EIA	Environmental Impact Assessment
EN	Endangered
EP Act	Environmental Protection Act 1986
EPA	Environmental Protection Authority
EPBC Act	Environment Protection Biodiversity and Conservation Act 1999
ESA	Environmentally Sensitive Area
GPS	Global Positioning System
ha	Hectares
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for Conservation of Nature
KL	Kilolitre
km	Kilometres

Abbreviation	Full Title
LPS	Local Planning Scheme
m	Metres
mAHD	Metres Above Australian Height Datum
mbgl	Metres Below Ground Level
mg/L	Milligrams/Litre
MNES	Matters of National Environmental Significance
MTBE	Methyl Ter-Butyl Ether
ND	No data
NEPC	National Environmental Protection Council
NEPM	National Environment Protection Measure
NVIS	National Vegetation Information System
OC/OP pesticides	Organochlorine/Organophosphorus Pesticides
P	Priority
PAH	Polycyclic Aromatic Hydrocarbons
PDWSA	Public Drinking Water Source Area
PEC	Priority Ecological Community
PF	Priority Flora
PFAS	Per- and Poly-Fluoroalkyl Substances
PMST	Protected Matters Search Tool
PSI	Preliminary Site Investigation
SVOC	Semi-volatile Organic Compounds
T	Threatened
TEC	Threatened Ecological Community
TPFL	Threatened and Priority Flora Database
TPFRF	Threatened and Priority Flora Report Forms
TRH	Total Recoverable Hydrocarbons
VOC	Volatile Organic Compounds
VU	Vulnerable
WA	Western Australia
WAH	Western Australian Herbarium
WC Act	Wildlife Conservation Act 1950
WEPL	Western Environmental Pty Ltd
WIR	Water Information Reporting

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Appendices

1. Introduction

Western Environmental Pty Ltd (WEPL) was commissioned by UGL Engineering Pty Limited (the Client) to undertake an Environmental Site Assessment (ESA) at Site No 32 - Canning Bridge Station, Mandurah Line, Western Australia (the Site).

1.1 Project Background

The Site is identified as Lot 0 on Plan P ROAD and is located approximately 6.6km S the Perth Central Business District (CBD) (Figure 1). The analysis buffer encompasses a total area of around 7725.4 square meters.

The Site is zoned unclassified (DPLH-071) under the South Perth Local Planning Scheme (LPS) No. 75 WEPL understand that the future Site use will remain unchanged, with only the proposed construction associated with this project being considered in this assessment.

1.2 Objectives

The objectives of this ESA are as follows:

- Determine the environmental characteristics of the Site and surrounding land.
- Identify historical land uses and activities at the Site and/or off-site and assess the potential for these to have potentially contaminated the Site.
- To undertake Site Inspection to confirm the desktop data collected in relation to the site.
- To identify environmental and heritage constraints that are likely to require management during construction.

1.3 Scope of Work

The scope of work completed as part of the ESA comprised:

- Determining the environmental characteristics of the Site and surrounding land through a detailed desktop assessment (including topography, geology, ASS, groundwater, public drinking water source areas, surface water/hydrology, ecological values, Aboriginal heritage values, and non-Aboriginal heritage values).
- Reviewing available environmental reports and other historical information relating to the Site.
- Reviewing current and historical Site plans (where available).
- Reviewing publicly available historical aerial photographs to ascertain historical land use and development within and adjacent to the Site.

- Determining the current registered contamination status of the Site and properties in the vicinity through a review of Government databases, including DWER's register of notices, pollution complaints and prosecutions, and the contaminated sites database (where available online).
- Searching DWER Water Information Reporting (WIR) groundwater bore database.
- Undertaking a Site Inspection to identify any contamination.
- Undertaking a flora and vegetation assessment.
- Interviewing relevant personnel with knowledge of current or historical land uses (where available).
- Identifying and documenting any environmental risks and constraints that require management and, where relevant, any necessary avoidance and mitigation measures required to attain environmental approvals.
- Preparation of an ESA report (this report).

2. Site Identification

Site identification details are summarised in Table A, and the location is shown on Figure 1.

Table A: Site Characterisation

Identifier	Details
Street Number, Street Name and Suburb	ND
Lot ID	0
Plan	P ROAD
Land ID	3600602
Lot Area	9.6309 ha
Local Government Authority	South Perth (LGATE-233)
Zoning	Primary Roads (DPLH-071)
Site Coordinates	391931.92, 6457826.36 (meter MGA 2020 Zone 50, EPSG: 7850) -32.010532, 115.855774 (WGS 84, EPSG: 4326)
Line	Portion 3 – Mandurah Line
Site Name	Canning Bridge Station
Track KM	7.3
Monopole Site	Yes
Tunnel	No
OEC or IER	IER
FO Link	Yes
AC Power	No
Electrical Upgrade	Minor

3. Site Environmental Conditions

The desktop assessment considered a broad range of published information, with the specific datasets interrogated presented in Table B. Table B provides a description of features identified, together with any relevant comments and a figure reference.

Table B: Summary of Existing Environmental Conditions of the Site and Surrounds

Dataset Name	Custodian	No. Features			Features within 50m Buffer Zone - Site (if Relevant)	Comments (if applicable)	Figure
		On-Site	within 50m buffer	within 100m buffer			
Topographic Contour Line	(LGATE-015)	-	6	8	From 2mAHD to 8mAHD	-	Figure 2
State linear structures layer	(DMIRS-015)	-	-	-	-	-	Figure 2
Geological Survey of Western Australia (GSWA)	(DMIRS)	1	2	3	S7, S14	S7 SAND - pale yellowish brown, medium to coarse-grained sub-angular quartz, trace of feldspar, moderately sorted, of residual origin. S14 SAND - white to pale grey, fine to medium, occasionally coarse angular to sub-angular quartz, little fines, poorly to moderately sorted.	Figure 2
Contaminated Sites Database	(DWER-059)	0	0	2	-	-	Figure 3
Water Information Reporting	DWER	0	0	0	-	-	Figure 4
Acid Sulfate Soil Risk Map, Swan Coastal Plain	(DWER-055)	1	1	2	Class 2	Class 2 – Moderate to low risk of ASS occurring within 3m of natural soil	Figure 5

Dataset Name	Custodian	No. Features			Features within 50m Buffer Zone - Site (if Relevant)	Comments (if applicable)	Figure
		On-Site	within 50m buffer	within 100m buffer			
						surface but high to moderate risk of ASS beyond 3m of natural soil surface.	
Groundwater Contours Maximum	(DWER-102) (DWER-100)	-	0	1	0.11m WTE	-	Figure 5
Hydrography Linear (Hierarchy)	(DWER-031)	0	0	1	Canning River	The Canning River is approximately 55 m south west of the Site.	Figure 6
Public Drinking Water Source Areas	(DWER-033)	0	0	0	-	-	Figure 6
Geomorphic Wetlands Swan Coastal Plain	(DBCA-019)	0	1	1	Approximately 45 m south west - 13316 – Swan River Estuary - Conservation		Figure 7
Region Scheme - Zones and Reserves	(DPLH-023)	1	2	3	Parks and recreation and Primary regional roads	-	Figure 8
Local Planning Scheme - Zones and Reserves	(DPLH-071)	1	2	5	Primary Regional Roads and Parks and recreation.	-	Figure 8
Bush Forever Areas - 2000	(DPLH-019)	0	0	0	-	-	Figure 9
Native Vegetation Extent	(DPIRD-005)	1	2	2	ID: 139861, 139862	-	Figure 10
Threatened Ecological Communities	(DBCA-038)	0	3	3	ID: 110981, 111101, 111102	-	Figure 11
Threatened and Priority Flora	(DBCA-036)	-	-	-	-	-	Figure 12

Dataset Name	Custodian	No. Features			Features within 50m Buffer Zone - Site (if Relevant)	Comments (if applicable)	Figure
		On-Site	within 50m buffer	within 100m buffer			
Threatened and Priority Fauna	(DBCA-037)	0	0	0	-	-	Figure 12
Black Cockatoo Roosting Sites - Buffered	(DBCA-064)	0	0	0	-	-	Figure 13
Black Cockatoo Breeding Sites - Buffered	(DBCA-063)	0	0	0	-	-	Figure 13
Aboriginal Heritage Places	(DPLH-001)	0	1	2	Registered Site-FORESHORE CAMPING GROUND. (ID.3705)	3705 – Camp, Hunting Place.	Figure 14

4. Site History and Characteristics

4.1 Review of Historical Aerials

Historical aerial photographs of the Site and its surrounds were reviewed. Photographs were sourced from Landgate and are provided in Appendix B. A summary of observations is provided in Table C.

Table C: Observations from Review of Historic Aerial Imagery

Year	Available	Changes	Findings (see Figure in Appendix B)
1947	No	NA	NA
1953	No	NA	NA
1955	Yes	Yes	First image, appears to be residential area along the northern portion of the site, with the centre of the Site being a road reserve between a major road.
1961	No	NA	NA
1963	Yes	No	NA
1965	Yes	Yes	Structure in the north eastern portion of the Site has been demolished and a vacant plot is visible.
1970	Yes	Yes	A structure is visible in the vacant plot in the eastern portion of the Site.
1974	Yes	Yes	A residential structure has been demolished in the northern portion of the Site.
1977	Yes	Yes	A residential structure outside the Site boundary to the north east has been demolished.
1979	Yes	Yes	Further clearing has occurred, particularly in the northern and eastern portion of the Site. Development occurring in the southern and centre of the Site.
1981	Yes	Yes	The site has been completely cleared of all structures and it appears that a road and freeway has been developed. To the south west of the Site the river bank has been developed.
1983	Yes	Yes	Public shared pathways has been developed in the south west of the Site. Some vegetation present on the Site.
1985	Yes	Yes	Road within the Site has been repaved.
1987	Yes	No	NA
1989	No	NA	NA
1991	Yes	Yes	Amount of vegetation increasing at the Site.
1993	No	NA	NA
1995	No	NA	NA

Year	Available	Changes	Findings (see Figure in Appendix B)
1999	Yes	No	NA
2000	No	NA	NA
2001	Yes	Yes	Some vegetation has grown through the centre of the site.
2002	Yes	No	NA
2003	Yes	Yes	The road has been upgraded.
2004	Yes	No	NA
2005	Yes	No	NA
2006	Yes	No	NA
2007	Yes	No	NA
2008	Yes	Yes	Rail line at the eastern portion of the Site now visible.
2009	Yes	No	NA
2010	No	No	NA
Feb/2011	Yes	No	NA
Aug/2011	Yes	No	NA
Feb/2012	Yes	No	NA
Sep/2012	Yes	No	NA
Jan/2013	Yes	No	NA
Sep/2013	Yes	No	NA
Feb/2014	Yes	No	NA
May/2014	Yes	No	NA
Aug/2014	Yes	No	NA
Nov/2014	Yes	No	NA
Feb/2015	Yes	No	NA
May/2015	Yes	No	NA
Sep/2015	Yes	No	NA
Nov/2015	Yes	No	NA
Feb/2016	Yes	No	NA
Jun-Oct-2016	Yes	No	NA
Aug/2016	Yes	No	NA
Nov/2016	Yes	No	NA
Jan/2017	Yes	No	NA
Feb/2017	Yes	No	NA
Apr/2017	Yes	No	NA

Year	Available	Changes	Findings (see Figure in Appendix B)
Aug/2017	Yes	No	NA
Oct/2017	No	NA	NA
Nov/2017	Yes	No	NA
Jan/2018	Yes	No	NA
May/2018	Yes	No	NA
Aug/2018	Yes	No	NA
Dec/2018	Yes	No	NA
Feb/2019	Yes	No	NA
Apr/2019	Yes	No	NA
Aug/2019	Yes	No	NA
Nov/2019	Yes	No	NA
Jan/2020	Yes	Yes	Road commences upgrades.
Apr/2020	Yes	No	NA
Aug/2020	Yes	Yes	Road upgrade completed.
Dec/2020	No	NA	NA
Jan/2021	Yes	No	NA
May/2021	No	NA	NA
Winter-2021	Yes	No	NA
Summer-2022	Yes	No	NA
Summer-2023	No	NA	NA

4.2 Surrounding Land Use

The land uses surrounding the Site are identified below:

- North – Primary regional roads (DPLH-023)
- South - Primary regional roads, Parks and recreation and waterways (DPLH-023)
- East –Primary regional roads and Urban (DPLH-023).
- West – Parks and Recreation and waterways (DPLH-023)

4.3 Site Inspections

The Site was inspected by WEPL Environmental Scientist(s) [redacted] on 18 July 2023 and 21 December 2023 by the Contaminated Land Team, and by WEPL Environmental Scientist [redacted] on 23 February 2024 by the Approvals Team.

The key observations from the Contaminated Land site inspection are summarised in Table D. Key observations from the Flora and Vegetation Survey are summarised in Table E.

Table D: Site Inspection Form – Contamination

Site Inspection Form – Western Environmental					
Date	18 July 2023 and 21 December 2023	**Site Name**	32 – Canning Bridge Station, Mandurah Line		
Coordinates (GDA2020-Z50)	[redacted]			**Portion No.**	3
Environmental Scientist	[redacted]				
Current Land Use	Road Reserve				
Presence of structures	No		**Staining**	No	
Accessibility	Accessible to public		**Odours**	No	
Site Surface					
Material	Open Ground		**Condition**	Good	
Topography in-situ					
Inclination	Gentle		**Direction**	SE	
Surface water near by	Yes				
Potentially dangerous good on-site	No				
If yes, provided details	Swan river				
Services Connections	Yes				
Groundwater bores/surface water sources	No				
If yes, provided details	Communication				
Vegetation Stress	No				
Surrounding Current Land Uses					
North	Highways and main roads		**South**	Highways and main roads	
West	Oceans/waterways		**East**	Highway/main road	
Human sensitive receptors nearby	Yes	**If yes, provided details**	Fill and waste material on surface general rubbish		
Site Photos	See Appendix C				
General Comments					
Pale yellow sand on surface with trace bricks and general waste plastic, wood etc with evidence of squatters and fires, communications services present.					

Site Inspection Form – Western Environmental

Table E: Site Inspection Form – Ecology

Site Inspection Form – Western Environmental					
Date	23 February 2024	**Site Name**	32 – Canning Bridge Station, Mandurah		
Coordinates (GDA2020-Z50)	[redacted]			**Portion No.**	3
Environmental Scientist	[redacted]				
Vegetation present	Yes				
Vegetation description	Vegetation within clearing footprint: Around Monopole location: Weedy and native open shrubland over bare ground. Dominant shrubs include Geraldton wax (*Chamelaucium uncinatum*), *Callitris* sp., *Calothamnus quadrifidus* and *Banksia menziesii* within 10 m radius from the point. Non-native **Eucalyptus* sp., scattered shrubs of *Hakea* sp., *Grevillea* sp., *Callitris* sp. over weedy grasses. Planted Geraldton wax along Canning Bridge ramp. Outside clearing footprint: One Tuart (*Eucalyptus gomphocephala*) to the north of the clearing footprint, One Marri tree (*Corymbia calophylla*) adjacent to southern boundary.				
Vegetation condition	Degraded				
Weed percentage cover	75-100%%				
Disturbance	Historical clearing, non-native species and invasive weeds				
Wetland mapped	No				
Is vegetation indicative of wetland vegetation?	No				
Does the condition align with MU/RE/CCW?	N/A				
Black cockatoo foraging habitat	No				
Black cockatoo roosting habitat	Yes – Limited to one isolated Tuart tree and one Marri tree outside clearing footprint				
Black cockatoo breeding habitat	Yes – Potential breeding habitat limited to one isolated Tuart tree and one Marri tree; no hollows present				
Fauna evidence	No				
Site Photos	See Appendix D				
General Comments					
One isolated Tuart (*Eucalyptus gomphocephala*) in the north of the Site (Figure 15), likely planted. **Avoid impact on Tuart if possible.** **Tuart is not linked to other Tuart patches and therefore potentially not part of a Tuart TEC.** **Vegetation within the clearing footprint is partially native. Regrowth since 1981.**					

5. Conclusions and Recommendations

5.1 Summary of Findings

5.1.1 Contamination

Following historical review and inspection of the Site, the following key outcomes have been identified:

- The Site was residential land use until being redeveloped in the 1970s and lies within the broader Kwinana Freeway and Manning Road to Canning Hwy Road reserve. The site has remained relatively unchanged from 2008 in which the rail line was completed to present date, with only minor upgrades occurring at Kwinana Freeway in 2020.
- The use of uncharacterised fill material was the potential source of contamination identified in association with the Sites historical development. A review of this information, in association with the site setting and historical use, indicates that there is a low risk of sub-surface impacts being present at the Site.
- The overall risk of potential contamination at the site is considered to be low.

5.1.2 Ecology

Based on review of publicly available data and biological assessment of the Site, the following key findings have been identified:

- The vegetation within the clearing footprint is partially native. The following native species have been recorded within the clearing footprint as shown in Figure 15:
    - Weedy and native open shrubland over bare ground, likely landscaping mix with regrowth since 1981. Dominant shrubs include Geraldton wax, *Calothamnus quadrifidus* and *Grevillea* sp. Scattered shrubs include *Hakea* sp., non-native *Eucalyptus* sp., *Callitris* sp.
    - Planted Geraldton wax along Canning Bridge ramp.
- A portion of the vegetation within the clearing footprint is considered native under the *Environmental Protection Act 1986* (EP Act) as per advice by DWER.
- Outside clearing footprint: One Tuart (*Eucalyptus gomphocephala*) to the north of the clearing footprint, one Marri tree (*Corymbia calophylla*) adjacent to southern boundary.
- One isolated Tuart tree is located north of the clearing footprint. The Tuart has not been identified as part of a Tuart TEC.

- The Tuart and Marri trees provide potential breeding and roosting habitat for black cockatoo. Impact should be avoided if possible.
- The clearing of 0.12 ha of native vegetation is not considered significant under the EPBC Act *Significant impact guidelines 1.1 – Matters of National Environmental Significance* (DoE, 2013).

5.2 Recommendations

The following recommendations are made:

- Intrusive investigations should be undertaken to determine the presence or absence of ASS.
- While no further contamination assessment is recommended, if evidence of contamination is identified during construction the Unexpected Finds Sub-Plan should be adhered to.
- Impact to Tuart and Marri should be avoided.

5.3 Summary of Environmental Management Requirements

5.3.1 Contamination

Based on the findings of this ESA (and subsequent intrusive investigations, if proposed), the following management is likely to be required at the Site:

- Environmental Sub-Plan: Unexpected Finds.
- Environmental Sub-Plan: Acid Sulfate Soils Management.

5.3.2 Ecology

Based on the findings of this ESA, the following management is required at the Site:

- The current site reference design does not indicate disturbance to the Tuart or Marri.
- As per the current site design, 0.12 ha of native vegetation will be removed (VT02).
- The clearing of native vegetation requires a Native Vegetation Clearing Permit. An exemption may however apply under Part V of the EP Act (DWER, 2019).

5.4 Assumptions and Uncertainties

The conclusions drawn and recommendations made have been developed on the assumption that the data collected accurately represents the conditions at the Site. Assumptions and uncertainties pertaining to the data collected include the following:

- Historical information such as storage of any chemicals/fuels and/or spills that may have occurred on-site are not definitive.
- Gaps in historical aerial photography and government databases do not provide continuity of Site changes.
- A review of available land tenure does not always reveal potentially contaminating activities and land uses.
- Current site reference design.

Although assumptions and uncertainties exist, these do not significantly change the overall history of the Site, which will be adequately assessed by the investigations proposed herein.

6. References

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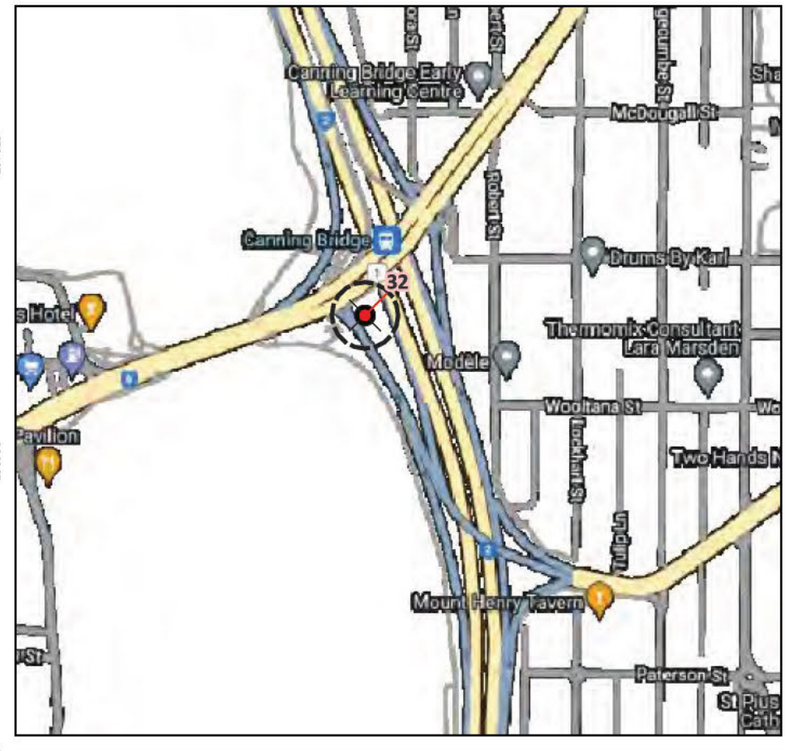

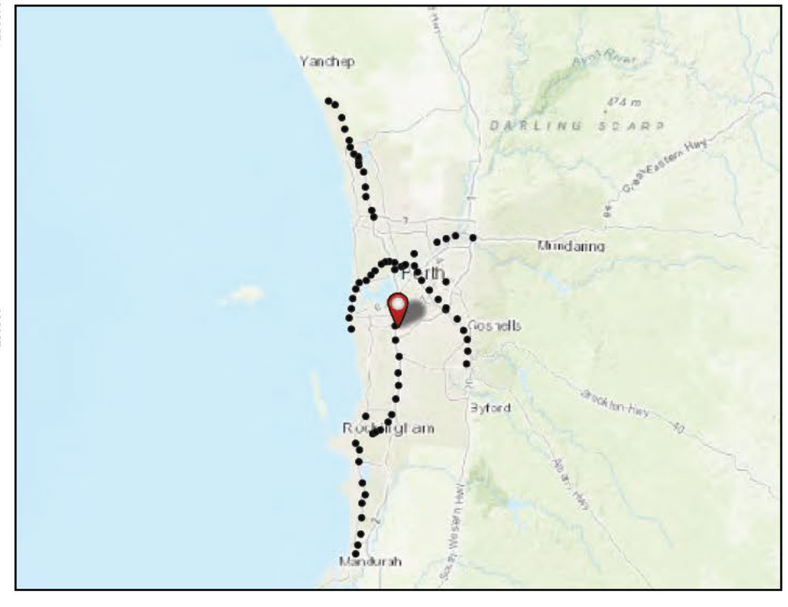

Figure 1: Site Location

N

0 25 50 75 100 m

PROJECT/REPORT NAME	Environmental Site Assessment Site No. 32- Canning Bridge Station- Mandurah Line
SCALE	1:1,500
SHEET SIZE	A3 COLOUR
CLIENT	UGL Engineering Pty Limited
COORDINATE REFERENCE SYSTEM	GDA2020 / MGA zone 50
PROJECT NUMBER	P22.100
VERSION	0
DATA SOURCE	LANDGATE AERIAL IMAGERY Perth_Metro_Summer_2023_Image
DRAWN BY / REVIEWED BY	MD / LG
DATE	15/3/2024

Legend

The Site

Buffer 50m

No	Description	Drawn	Approved	Date
A	Original issue	MD	LG	15/3/2024

NOTES:

Base map ESRI Topo.

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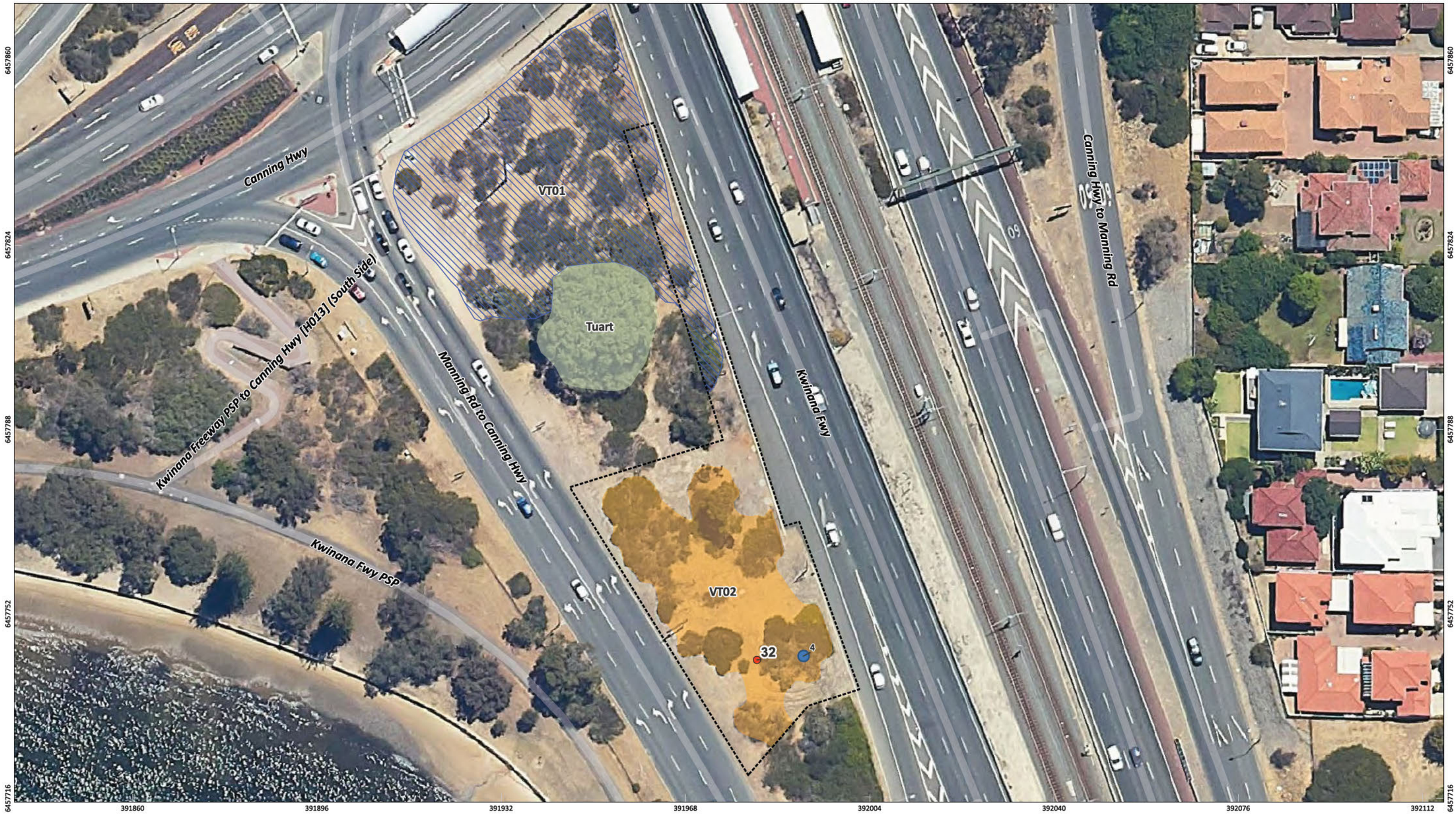

Figure 15: Canning Bridge Station #32 – Biological Assessment

N

0 10 20 30 40 m

PROJECT/REPORT NAME	Environmental Site Assessment Canning Bridge Station
SCALE	1:717
SHEET SIZE	A3 COLOUR
CLIENT	UGL Engineering Pty Limited
COORDINATE REFERENCE SYSTEM	GDA2020 / MGA zone 50
PROJECT NUMBER	P22.100
VERSION	0
DATA SOURCE	LANDGATE AERIAL IMAGERY Summer 2023
DRAWN BY / REVIEWED BY	MD/JB
DATE	22/3/2024

Legend

- Canning Bridge Station #32
- Banksia tree
- Clearing Extent

Vegetation

- VT01 – Not Native Vegetation
- VT02 – Landscape mix and regrowth since 1981
- Eucalyptus gomphocephala (Tuart) Tree

No	Description	Drawn	Approved	Date
A	Original issue	MD	JB	22/3/2024

NOTES:

Cadastral boundary from LANDGATE 2022. Label corresponds to the vegetation association number.

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Appendix C Site Photos – Contamination

Photo 1		**Date:** 18 July 2023

Description: Image of site facing north.

Photo 2		**Date:** 18 July 2023

Description: Image of site facing south.

Photo 3		Date: 18 July 2023

Description: : Image of site facing west.

Appendix D Site Photos – Ecology

Photo 4		Date: 7 July 2023

Description: Vegetation within proposed monopole fold direction

Appendix E Species List

Species	Stratum	Cover
Eucalyptus gomphocephala	Top	5%
**Chamelaucium uncinatum*	Mid	60%
**Calothamnus quadrifidus*	Mid	5%
Banksia prionotes	Mid	2%
**Ferraria crispa*	Ground	30%
**Oxalis pes-caprae*	Ground	20%
**Hypochaeris glabra*	Ground	5%
**Fumaria capreolata*	Ground	5%
**Lupinus cosentinii*	Ground	2%
**Grevillea olivacea (non-native to Perth)*	Ground	1%