

Monaro Highway Upgrade Package 1C - Construction Environmental Management Plan

Transport Canberra and City Services Directorate (ABN 37 307 569 373)

14 August 2025

Monaro Highway Upgrade – Lanyon Drive Upgrade Package 1C, Hume, ACT

Action: The upgrade of the Monaro Highway between David Warren Road (intersection with Monaro Highway) and Sheppard Street (intersection with Lanyon Drive), Hume, ACT [See EPBC Act referral 2020/8768].



Declaration of Accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed



Full name (please print) Josh Tracey

Organisation (please print) Stantec Australia Pty Ltd

Date 14/08/2025

**Monaro Highway Upgrade
Package 1C - Construction
Environmental Management Plan**

14 August 2025

Prepared for:

Transport Canberra and City
Services (TCCS), ACT



Prepared by:

Stantec Australia Pty Ltd



Monaro Highway Upgrade Package 1c - Construction Environmental Management Plan| August 2025

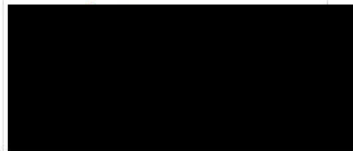
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1	Draft CEMP	12/05/2023	JT	JB	SS
2	1 st Submission to ACT Conservator of Flora and Fauna	15/07/2023	JT	DL	SS
3	2 nd Submission to ACT Conservator of Flora and Fauna	16/09/2023	JT	DL, DF	SS
4	Update to include the Package 1C Early Works. Submission to DCCEEW.	7/02/2025	JT	DL, DF	JE
5	Update following comments from DCCEEW	14/08/2025	JT	JE	DF

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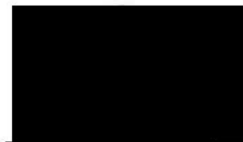
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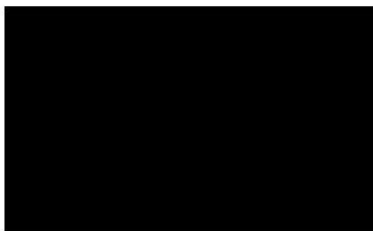


Table of Contents

DECLARATION OF ACCURACY	I
1.0 INTRODUCTION.....	1
1.1 BACKGROUND	1
1.2 THE STRIPED LEGLESS LIZARD (<i>DELMAR IMPAR</i>)	1
1.3 PROJECT STAGING	2
1.4 SEQUENCE OF PROJECT STAGING	2
2.0 PROJECT DESCRIPTION.....	3
2.1 PACKAGE 1C EARLY WORKS.....	4
2.2 PACKAGE 1C INVESTIGATION WORKS.....	7
2.3 PACKAGE 1C MAIN WORKS	9
3.0 EXISTING ENVIRONMENT.....	13
3.1 PACKAGE 1C EARLY WORKS.....	13
3.2 PACKAGE 1C INVESTIGATION WORKS.....	15
3.3 PACKAGE 1C MAIN WORKS	18
5.0 ENVIRONMENTAL LEGISLATION AND GUIDELINES	22
6.0 PURPOSE AND OBJECTIVES	22
7.0 ENVIRONMENTAL MANAGEMENT ROLES AND RESPONSIBILITIES.....	23
7.1 EMERGENCY CONTACTS AND PROCEDURES	27
8.0 ENVIRONMENT RISK ASSESSMENT AND MANAGEMENT	28
8.1 ALL STAGES OF WORKS	29
8.3 PACKAGE 1C EARLY WORKS.....	40
8.5 PACKAGE 1C INVESTIGATION WORKS.....	44
8.6 PACKAGE 1C MAIN WORKS	48
9.0 INCIDENT AND NON-COMPLIANCES	54
9.1 GENERAL.....	54
9.2 NOTIFICATIONS.....	54
10.0 MONITORING, INSPECTIONS, REPORTING AND AUDITS	57
10.1 SITE MONITORING AND INSPECTIONS.....	57
10.2 ENVIRONMENTAL REPORTING	60
10.3 ENVIRONMENTAL AUDITS.....	64
10.4 ENVIRONMENT RECORDS	65
11.0 CEMP REVIEW AND REVISION.....	67
11.1 NEED FOR CEMP REVIEW AND RECORDS	67
11.2 MANAGEMENT PLAN VARIATION APPLICATION TO DCCEEW	68
11.3 TIMING OF CEMP REVIEW.....	68
12.0 CONDITIONS OF APPROVAL TABLE EPBC 2020/8768	69
13.0 REFERENCES.....	84

List of Tables

Table 1 Summary of order of activities for EPBC Approval 2020/8768.....	3
Table 2 Project description Package 1C Early Works.....	4
Table 3 Project description Package 1C Investigation Works.....	7
Table 4 Project description Package 1C Main Civil Works	9
Table 5 Existing environment Package 1C Early Works.....	13
Table 6 Existing environment Package 1C Investigation Works	15
Table 7 Existing environment Package 1C Main Civil Works.....	18
Table 8 Parties responsible for this CEMP	24
Table 9 CEMP roles and responsibilities	24
Table 10 Risk assessment and mitigation measures – applicable to all stages of works	29
Table 11 Risk assessment and mitigation measures – Applicable only to the Package 1C Early Works.....	40
Table 12 Risk assessment and mitigation measures – Applicable only to the Package 1C Investigation Works	44
Table 13 Risk assessment and mitigation measures – Applicable only to the Package 1C Main Works	48
Table 14 Inspection and monitoring schedule	57
Table 15 Reporting requirements	60
Table 16 Audit requirements	64
Table 17 EPBC Record requirements	66
Table 18 Other environment records.....	66
Table 19 CEMP review requirements.....	68
Table 20 Table of commitments to EPBC conditions.....	69

List of Figures

Figure 1 Locality Plan

Figure 2 Monaro Highway Staging Overview

Figure 3 Early Works Design Features

Figure 4 Investigations Works Plan

Figure 5 Main Works Design Features

Figure 6 Site Plan

Figure 7 Organisational chart

Figure 8 Vegetation plan

List of Appendices

Appendix A: Figures

Appendix B: EPBC 2020/8768 Approval

Appendix C: ACT Heritage Excavation Permit

Appendix D: Unexpected finds procedure

Appendix E: Fire Management Plan Criteria

Appendix F: Striped Legless Lizard (*Delma impar*) Guidelines for Salvage Operations
(ACT Gov, 2023)

Appendix G: Temporary Fencing Plan

Glossary

Term	Definition
AMC	Alexander Maconochie Centre
CEMP	Construction Environmental Management Plan (<i>this document</i>)
CHA	Cultural Heritage Assessment
DCCEEW	Department of Climate Change, Energy, the Environment and Water
EPBC Approval	Refers to the project EPBC Approval 2020/8768
EPA	ACT Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPSDD	Environment, Planning and Sustainable Development Directorate
ESA	Emergency Services Agency ACT
FDR	Fire Danger Rating
iCBR	Infrastructure Canberra
MHU	Monaro Highway Upgrade Program
MPC	Major Projects Canberra
Navin	Navin Officer Heritage Consultants
NC Act	Nature Conservation Act 2004
NCA	National Capital Authority
Package 1C	The upgrade of the Monaro Highway between David Warren Road (intersection with Monaro Highway) and Sheppard Street (intersection with Lanyon Drive), Hume, ACT
PAD	Potential Archaeological Deposit
PCS	EPSDD Parks and Conservation Service
PSI	Preliminary Site Investigation
RAOs	The four ACT Representative Aboriginal Organisations
SHE	Statement of Heritage Effect
SLL	Striped Legless Lizard (<i>Delma impar</i>)
Stantec	Stantec Australia Pty Ltd and its former companies including Cardno Pty Ltd
TCCS	Transport Canberra and City Services Directorate
The Approval Holder	<i>Refers to the Approval Holder for EPBC 2020/8768 - Transport Canberra and City Services Directorate</i>
The Conservator	The ACT Conservator of Flora and Fauna
The department	<i>Refers to the Department of Climate Change, Energy, the Environment and Water</i>
The minister	<i>Refers to the Federal Minister for the Environment</i>

1.0 Introduction

Stantec Australia Pty Ltd (Stantec), (formerly named Cardno) were commissioned by Transport Canberra and City Services (TCCS) to develop a Construction Environmental Management Plan (CEMP) for Package 1C of the Monaro Highway Upgrade (MHU) at the Lanyon Drive intersection (the Project) located in Hume in the Australian Capital Territory (ACT).

This Construction Environmental Management Plan (CEMP) has been prepared to manage the risks to the environment from the Project and address Conditions 2, 3 and 4 of an approval under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act), being EPBC Approval 2020/8768 (see **Appendix B**). This CEMP has been written in accordance with Environmental Management Plan Guidelines Version 1.2, (Commonwealth of Australia 2024).

1.1 Background

Infrastructure Canberra (ICBR), on behalf of the ACT Government, TCCS Directorate is planning to carry out Monaro Highway upgrade works at, and near to, the intersection of Monaro Highway and Lanyon Drive and along David Warren Road and its extension towards Lanyon Drive to Sheppard Street in the ACT, the locality of the project is shown in **Figure 1**, **Appendix A**.

The Monaro Highway Upgrade will improve the safety of the Monaro Highway, improve traffic performance and provide greater connectivity between Queanbeyan and Canberra City, and between southern suburbs and the industrial areas of Hume and Fyshwick.

The Monaro Highway Upgrade at the Lanyon Drive intersection has been split into two work Packages which will be carried out separately as Package 1B and Package 1C, with Package 1C to be carried out in several stages as described below. An overview of the Monaro Highway Upgrade Packages is shown in **Figure 2**, **Appendix A**.

Main construction works for Package 1B commenced in October 2023. This plan does not address environmental risks for the adjacent project of the Monaro Highway Upgrade, Package 1B. The environmental risks associated with Package 1B are managed by a separate CEMP prepared by the Package 1B Design and Construct Contractor. It is important to note that Package 1B was subject to a separate EPBC referral and found to be “not a controlled action” due to the barriers to movement that exist for the SLL between Package 1C and Package 1B.

1.2 The Striped Legless Lizard (*Delmar impar*)

Package 1C was referred under the EPBC Act on 13 July 2020 and subsequently declared a controlled action. The trigger for the controlling provision was due to impacts to habitat for the Striped Legless Lizard (SLL; *Delma impar*), which is listed as ‘vulnerable’ under the EPBC Act. A known important population of SLL occurs in the Jerrabomberra East Grassland Nature Reserve, located to the east of the controlled action.

The SLL is a grassland specialist, being found only in areas of native grassland and nearby grassy woodland and exotic pasture. Natural temperate grassland is one of Australia's most

threatened ecological communities. It is the loss and degradation of native grassland, through a variety of processes, that is primarily responsible for the decline of the SLL.

Subsequent to the approval of EPBC 2020/8768 on the 15 March 2022, design changes resulted in a 0.81ha increase in the area of SLL habitat to be directly impacted by Package 1C. This additional area occurs to the east of the initial 3.2 ha referred on 13 July 2020 and is contiguous with native grasslands known to be occupied by the Jerrabomberra SLL important population.

The total area of SL habitat that will be lost as a result of the Project is 4.05ha.

1.3 Project staging

Due to the timing for obtaining the necessary approvals it has been decided that the Project would be carried out in three stages:

- Package 1C Early Works (Early Works)
- Package 1C Investigation Works (Investigations Works)
- Package 1C Main Civil Works (Main Works)

The Project will be carried out in stages ensure that activities within Striped Legless Lizard (SLL) (*Delma impar*) habitat or the vicinity do not occur until the Offset Management Plan (OMP) has been approved and written evidence of the initiation of securement of all offset sites specified in the approved OMP has been provided to DCCEEW. This CEMP must also be implemented during all project stages to avoid harm to protected matters.

“Commencement of the action” for the Package 1C Early Works will not be carried out until the Commonwealth Minister for the Environment has approved this CEMP in writing and implementation of the CEMP will begin prior to commencement of any physical activities associated with the Action.

There will not be any clearing, construction or other physical activity associated with the Action outside of the Package 1C Early Works Boundary (i.e. the Investigation Works, the Main Works) until all the other relevant conditions of EPBC 2020//8768 are met.

The Action must not commence later than 15 March 2027 and EPBC Approval 2020/8768 has effect until 30 June 2052. The CEMP must be implemented until completion of the action which means the date on which all activities associated with the approved Action have permanently ceased and/or been completed.

1.4 Sequence of project staging

In accordance with the EPBC Approval there are actions required to be completed and approvals to be gained before to stages of the project can be undertaken. **Table 1** provides an overview of these tasks in the order they must be undertaken and includes reference to the specific EPBC approval conditions that must be met before each activity can be undertaken. It should be noted that the table only includes conditions in Part A (Conditions specific to the action) and does not include conditions in Part B (Standard administrative conditions) that also need to be met.

Table 1 Summary of order of activities for EPBC Approval 2020/8768

Activity #	Summary of approval step	EPBC approval reference. Refer Section 12.
1.	CEMP Approval	2,4
2.	Commence implementation of the CEMP	1,2,3
3.	Package 1C Early Works can commence The first physical activity associated with the Action is considered " <i>commencement of the action</i> "	10
4.	OMP approval	5,6
5.	Provide written evidence of initiation of securement of all offset sites specified in the OMP	7
6.	Package 1C Investigation Works and Package 1C Main Works can commence	5
7.	Provide written evidence of final securement of all offset sites specified in the approved OMP within 18 months of the commencement of the Action.	7
8.	The approval holder must achieve all offset outcomes for each offset site specified in the approved OMP by the time specified in the OMP. Once achieved, the approval holder must maintain or exceed the offset outcomes at least until the expiry date of the EPBC approval.	8

2.0 Project Description

The Project is split into three stages due to the staging of approvals and these include:

- Package 1C Early Works (Early Works)
- Package 1C Investigation Works (Investigations Works)
- Package 1C Main Civil Works (Main Works)

Each of the Project Stages will be carried out within a works boundary as shown in **Figure 2**, **Appendix A**. "The Site" when noted in this CEMP refers to the works boundary for the respective stage.

The Early Works boundary is the same boundary as defined in the EPBC approval. The Early Works will be carried out to ensure that activities within Striped Legless Lizard (SLL) (*Delma impar*) habitat or the vicinity do not occur until the Offset Management Plan (OMP) has been approved.

The Main Works boundary is the remainder of the Package 1C Project area (beyond the Early Works boundary) that is included in EPBC 2020/8768, this is the same boundary as defined in the EPBC approval.

The Investigation Works boundary is a sub-area of Package 1C contained wholly within the Main Works boundary and will not be carried out until the necessary conditions to commence the Main Works are met. The Investigations works are not a separate stage of

works in the EPBC approval, however, they have been referenced separately in this CEMP due to the need to undertake these activities prior to commencing the Main Works.

2.1 Package 1C Early Works

Table 2 Project description Package 1C Early Works

Package 1C Early Works (Early Works)																							
Purpose	To complete Early Works for the Project prior to obtaining the approval for the Main Works. This will ensure works do occur within SLL habitat prior to approval of the OMP.																						
Actions and approvals required prior	• CEMP Approval • Commence implementation of the CEMP																						
The Site	The Site is 8.30 hectares shown as green dashed line denoted as Package 1C Early Works Boundary in Figure 2 , Appendix A. The Early Works includes three non-contiguous areas: • Portions of the Alexander Maconochie Centre (AMC) and including David Warren Road • The Emergency Services Agency Facility (ESA) including David Warren Road • Lanyon Drive and Sheppard Street The Early Works will be carried out in the following blocks and road reserves: <table><tr><th>Suburb</th><th>Block Number</th><th>Section Number</th></tr><tr><td>Hume</td><td>14</td><td>18</td></tr><tr><td>Hume</td><td>16</td><td>18</td></tr><tr><td>Hume</td><td>10, 19</td><td>18</td></tr></table> <table><tr><th>Road Reserve</th><th>Description</th></tr><tr><td>Lanyon Drive</td><td>Between Monaro Highway south bound to east of the intersection with Sheppard Street</td></tr><tr><td>Sheppard Street</td><td>Near the intersection with Lanyon Drive</td></tr><tr><td>David Warren Road</td><td>Existing road and road reserve</td></tr><tr><td>David Warren Road – extension stub</td><td>Blocks 10 and 19 Section 18. Road stub adjacent to Lanyon Drive for proposed extension from David Warren Road to Lanyon Drive (road connection to be completed in future Package 1C Main Works).</td></tr></table>	Suburb	Block Number	Section Number	Hume	14	18	Hume	16	18	Hume	10, 19	18	Road Reserve	Description	Lanyon Drive	Between Monaro Highway south bound to east of the intersection with Sheppard Street	Sheppard Street	Near the intersection with Lanyon Drive	David Warren Road	Existing road and road reserve	David Warren Road – extension stub	Blocks 10 and 19 Section 18. Road stub adjacent to Lanyon Drive for proposed extension from David Warren Road to Lanyon Drive (road connection to be completed in future Package 1C Main Works).
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Design features	The design features of the Package 1C Early Works are shown in Figure 3 , Appendix A. • Roadworks to create a four-way signalised intersection at the intersection of Sheppard Street, Lanyon Drive and a stub for the future extension of David Warren Road*. Roadworks will include: – Demolition and removal of kerbing, concrete islands and other infrastructure as nominated on the drawings. – Earthworks. – Construction of drainage works. – Construction of kerbing. – Road pavements and subsoil drains. – Finishing works including line marking, traffic signals and signage. • A 3 m Shared User Path from the Lanyon Drive/Monaro Highway Intersection to just north of the Sheppard Street/Lanyon Drive intersection. Includes crossings at the signalised intersection and to extent of the stub of the future extension of David Warren Road. It includes all associated works such as pavements, drainage, signposting, line marking and pedestrian rails. • Property works at the Emergency Services Agency (ESA) including driveway access, fencing, earthworks pad and a 2.8m wall along David Warren Road. • Property works at the Alexander Maconochie Centre (AMC) for the area fronting the Monaro Highway and David Warren Road. Including replacement of a property boundary fence, new privacy and security fences, and security features such as pole mounted CCTV cameras. – Property boundary fence to replace the existing fence and will be a 'rural style' wire mesh fence approximately 1m high with regular warning signage for the AMC. – Privacy and security fencing will include solid fences up to maximum of 4.0m high and is intended to prevent the public from viewing AMC operations from David Warren Road and the adjacent shared user path. The privacy fence has been designed to be approx. 2.0m higher than the level of the adjacent shared user path and David Warren Road. – Multiple CCTV security cameras will be installed on poles up to 6m high to allow surveillance of the AMC property boundary and operations. • Utilities works including: – Protection slabs over 250mm high pressure gas main near the ESA. – Relocation of a 150mm gas main parallel to Lanyon Drive. – Removal of Secondary District Regulator Set (SDRS) valve at Lanyon Drive – Relocation of traffic signal control box at the Lanyon Drive / Sheppard Street intersection, including communication and electrical supplies, and new signal infrastructure to accommodate the future extension of David Warren Road*. – Installation of new Intelligent Traffic System (ITS) infrastructure within the Lanyon Drive corridor. – Installation of a new 225mm Icon Water main from Sheppard Street limit of works crossing to the north side of Lanyon Drive, for future extension to the Alexander Maconochie Centre as part of the Main Works package. – Installation of all lighting (road and shared path) infrastructure including new conduits, cables and light poles and luminaires. • Includes all site establishment, environmental controls, traffic management and temporary works. • Landscaping works * The extension of David Warren Road is planned to be included in the Package 1C 'Main Works'. A stub for this road is planned to be constructed during the Package 1C 'Early Works'. ^ The existing ground level of the privacy and security fencing is lower than the adjacent Shared User Path so requires the fencing to be higher than 2.0 m to prevent the public viewing AMC operations.
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Activities	• Installation of a SLL exclusion fence and project boundary fence (rural style fence) between the Site and 4.05ha of SLL habitat south of the ESA. • Site establishment • Installation of erosion and sediment, and other environment controls • Clearing and grubbing • Minor earthworks • Utility works • Pavement construction • Installation of concrete shared user path • Landscaping and urban design features • Traffic management • Finishing features for road construction such as signage, road furniture, linemarking • Site rehabilitation
Equipment required	• Hydro vacuum trucks • Excavators (20T, 13T, 5T) • Trucks (Truck and Dogs, Bogies) • Vibratory rollers (padfoot, smooth drum, multi-tyre) (16T – 2T) • Watercarts • Grader • Asphalt equipment (Asphalt paver, shuttle buggy, asphalt trucks) • Bobcat • Loaders • Piling Rig • Franna Crane • Concrete trucks and pumps • Smaller machinery (Generator/compressors, quick cut saw, plate compactor, water pumps).

2.2 Package 1C Investigation Works

Table 3 Project description Package 1C Investigation Works

Package 1C Investigation Works (Investigations Works)																	
Purpose	To complete Investigation Works for the Project needed to finalise the design and environment and heritage approvals.																
Actions and approvals required prior	• CEMP Approval • Commence implementation of the CEMP • OMP approval • Provide written evidence of initiation of securement of all offset sites specified in the OMP* <i>*Written evidence of the initiation of securement of all offset sites specified in the approved OMP must be provided before undertaking any clearing, construction or other physical activity associated with the Action outside of the Package 1C Early Works Boundary. Written evidence of final securement must be provided within 18 months of the commencement of the Action.</i>																
The Site	The Site is 4.05* hectares shown as bright orange dashed line denoted as Package 1C Investigation Works Boundary in Figure 2 , Appendix A. The Investigation Works includes one area: • Land between Dog Trap Creek and the Emergency Services Agency Facility (ESA) The Investigations Works will be carried out in the following blocks and road reserves: <table><tr><th>Suburb</th><th>Block Number</th><th>Section Number</th></tr><tr><td>Hume</td><td>16</td><td>18</td></tr><tr><td>Hume</td><td>19</td><td>18</td></tr><tr><td>Hume</td><td>20</td><td>18</td></tr></table> <table><tr><th>Road Reserve</th><th>Description</th></tr><tr><td>N/A</td><td>David Warren Road will be used for access but no works will be carried out in road reserves</td></tr></table>	Suburb	Block Number	Section Number	Hume	16	18	Hume	19	18	Hume	20	18	Road Reserve	Description	N/A	David Warren Road will be used for access but no works will be carried out in road reserves
Suburb	Block Number	Section Number															
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Hume	19	18															
Hume	20	18															
Road Reserve	Description																
N/A	David Warren Road will be used for access but no works will be carried out in road reserves																
Design features	Nil, only investigations to be carried out.																

Activities	The Investigation Works will include investigations for the below activities which are shown in Figure 4 , Appendix A: • Aboriginal heritage – [REDACTED] • Geotechnics and contamination – 3 x test pits (300-450mm width pit) – 1 x Cone Penetration Test (CPT) (35-50mm in diameter) – 4 x Boreholes (75-100mm in diameter) Enabling activities need to be carried out to support the Investigation works. The enabling works include: † [REDACTED] • Pre-clearance ecological surveys • Grass slashing • Installation of an exclusion fence for the SLL along the eastern boundary of the site and no-go signage • Construction of vehicle access tracks • Installation of erosion and sediment controls. The investigation works activities will need to be staged in the order below to ensure that harm to the SLL and unidentified heritage items or places does not occur 0) Approval from DCCEEW 1) Ecologist pre-Inspection of the Site 2) Installation of SLL Exclusion Fence and ERSED Controls 3) Installation of access tracks 4) Archaeological investigations (Stage 1) 5) Geotechnical investigations 6) Archaeological investigation (Stage 2) 7) Contamination investigations 8) Utility potholing 9) Demobilise and secure the site
Equipment required	• Light vehicles • Posi-track or Bobcat • Excavator (5T, 7T or 13T) • Bogie Trucks (for access track construction) • Water cart • Truck or track mounted drill rig • CPT vehicle • Hydro vacuum trucks

2.3 Package 1C Main Works

Table 4 Project description Package 1C Main Civil Works

Package 1C Main Civil Works (Main Works)

Purpose	The Main Civil Works for the Project includes all activities that are required to complete the construction of permanent infrastructure for Package 1C																																											
Actions and approvals required prior	- CEMP Approval - Commence implementation of the CEMP - OMP approval - Provide written evidence of initiation of securement of all offset sites specified in the OMP* <i>*Written evidence of the initiation of securement of all offset sites specified in the approved OMP must be provided before undertaking any clearing, construction or other physical activity associated with the Action outside of the Package 1C Early Works Boundary. Written evidence of final securement must be provided within 18 months of the commencement of the Action.</i>																																											
The Site	The Site is 50.3 hectares shown as blue solid line denoted as Package 1C Project Boundary in Figure 2 , Appendix A. The Main Works consists of one-contiguous area consisting of the following locations: - David Warren Road - Portions of the southbound Monaro Highway - Dog Trap Creek and land to the north and south - Lanyon Drive, between the southbound Monaro Highway and east to the intersection with Sheppard Street The Main Works will be carried out in the following blocks and road reserves: <table><tr><th>Suburb</th><th>Block Number</th><th>Section Number</th></tr><tr><td>Hume</td><td>22</td><td>2</td></tr><tr><td>Hume</td><td>23</td><td>2</td></tr><tr><td>Hume</td><td>45</td><td>3</td></tr><tr><td>Hume</td><td>10</td><td>18</td></tr><tr><td>Hume</td><td>14</td><td>18</td></tr><tr><td>Hume</td><td>16</td><td>18</td></tr><tr><td>Hume</td><td>19</td><td>18</td></tr><tr><td>Hume</td><td>20</td><td>18</td></tr><tr><td>Hume</td><td>7</td><td>19</td></tr><tr><td>Hume</td><td>4</td><td>24</td></tr></table> <table><tr><th>Road Reserve</th><th>Description</th></tr><tr><td>Monaro Highway</td><td>Portions of the southbound Monaro Highway between the AMC and Tralee Street</td></tr><tr><td>Lanyon Drive</td><td>Between the southbound Monaro Highway and east of the intersection with Sheppard Street</td></tr><tr><td>Sheppard Street</td><td>Adjacent to the intersection with Lanyon Drive</td></tr><tr><td>David Warren Road</td><td>Existing road and road reserve</td></tr></table>	Suburb	Block Number	Section Number	Hume	22	2	Hume	23	2	Hume	45	3	Hume	10	18	Hume	14	18	Hume	16	18	Hume	19	18	Hume	20	18	Hume	7	19	Hume	4	24	Road Reserve	Description	Monaro Highway	Portions of the southbound Monaro Highway between the AMC and Tralee Street	Lanyon Drive	Between the southbound Monaro Highway and east of the intersection with Sheppard Street	Sheppard Street	Adjacent to the intersection with Lanyon Drive	David Warren Road	Existing road and road reserve
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Hume	4	24																																										
Road Reserve	Description																																											
Monaro Highway	Portions of the southbound Monaro Highway between the AMC and Tralee Street																																											
Lanyon Drive	Between the southbound Monaro Highway and east of the intersection with Sheppard Street																																											
Sheppard Street	Adjacent to the intersection with Lanyon Drive																																											
David Warren Road	Existing road and road reserve																																											

Design features	The design features of the Package 1C Main Works are shown in Figure 5 , Appendix A. • Extending David Warren Road to the south to connect to the Lanyon Drive and Sheppard Street intersection, to compensate for the removal of the general access from the Monaro Highway. • Exit from the Monaro Highway southbound carriageway to Lanyon Drive via a new off ramp, including a roundabout at the intersection of the Monaro Highway southbound off ramp and the extension of David Warren Road. • A new bridge over Dog Trap Creek to connect the extension of David Warren Road with the new intersection with Lanyon Drive • Widening of Dog Trap Creek adjacent to the new southbound off ramp bridge (east of the Monaro Highway) for flood mitigation purposes. • Installation and relocation of utilities required to accommodate the new road arrangement and ensure supply of essential services. • Inclusion of a maintenance track for access to the Gas Enclosure near the proposed roundabout. • Re-configuration of intersection at AMC to remove traffic signals and existing public vehicular access to intersection which will be modified to allow emergency access only. This includes the installation of variable speed zone signs and yellow flashing light boards to be enabled during emergency vehicle use. • Re-construct southbound Monaro Highway carriageway (within 1C – approximately 400m north and 400m south of the existing traffic signals near the AMC) to ensure compliance with new design speed of 110km/h. Earthworks, roadworks and road furniture adjustment required. • Demolish existing southbound Monaro Highway Bridge. Reinstatement and revegetation of Dog Trap Creek following demolition. • Removal of existing southbound carriageway between Lanyon Drive and the new South Bound off-ramp. Revegetation of the area is to be carried out on following removal. • Removal of traffic signal infrastructure and associated road furniture at Lanyon Drive. Adjustments to be made to the intersection following. • Vegetated swales adjacent to the roadway to provide drainage and pollution control from sediment, nutrients and hydrocarbons.
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Activities	• Maintaining SLL exclusion fencing, and no-go signage installed along the eastern boundary of the Site to protect lands not to be impacted • Silt fencing to Eastern Boundary to be made of smooth rigid material to prevent SLL climbing into work zone. Material example – plastic root barrier. • Clearing and grubbing • Bulk earthworks (works to be undertaken in fill with drainage blanket installed) including: – Topsoil stripping – Installation of drainage blanket – Stockpiling of material – Bulk import and placement of fill material (greater than 100m³ of fill) • Waterway works – Excavation to widen Dog Trap Creek to provide flood mitigation for the new bridge including: – Installation of scour protection – Rehabilitation of the waterway following completion of works • Bridge construction including: – Piling – Abutment construction – Girder installation – Concrete pours over the waterway • Utilities to be installed through underboring or trenching including – Communications – Water main – Sewer line – ITS – Conduit of gas corrosion protection (protection for existing service) – Streetlighting including conduits and new cabling • Drainage features to be installed including: – Reinforced concrete box culvert – Vegetated open drains with hydrocarbon spill containment capacity – Hydrocarbon spill containment basin • Pavement construction • Finishing features for road construction – Signage – Road furniture – Line marking – Guard rails • Shared user path • Landscaping and urban design features • Installation of erosion and sediment controls (likely including sediment basins) • Site rehabilitation – Removal of all waste materials from the Site – Removal of all temporary materials including erosion and sediment controls • Completion of permanent design features including remaining landscaping and revegetation.
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Equipment required	• Hydro vacuum trucks • Excavators (30T, 20T, 13T, 5T) • Trucks (Dump Trucks, Truck and Dogs, Bogies) • Bulldozers • Scrapers • Compactor • Vibratory rollers (padfoot, smooth drum, multi-tyre) (16T – 2T) • Watercarts • Grader • Asphalt equipment (Asphalt paver, shuttle buggy, asphalt trucks) • Bobcat • Loaders • Piling Rig • Mobile crane (250 – 700T) • Franna Crane • Concrete trucks and pumps • Smaller machinery (Generator/compressors, quick cut saw, plate compactor, water pumps).
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3.0 Existing Environment

The aim of this section is to provide a summary of the key aspects of the existing environment that will be affected by activities within the Site. As three stages of works have a different definition of “the Site” this section provide a description of each stage which should be referred to. The Site for each stage of works and the environment and heritage constraints are shown in **Figure 6 , Appendix A**.

3.1 Package 1C Early Works

Table 5 Existing environment Package 1C Early Works

Package 1C Early Works (Early Works)	
General description of the site	The Site is made of three non-contiguous areas mainly within or adjacent to existing road reserves of David Warren Road, Lanyon Drive and Sheppard Street Works will also be carried out at the AMC and ESA. In each of these areas the Site has mostly flat topography.
Surrounding land users	Surrounding the Site are land users that would need to be considered during the Project as they may be affected by noise, dust, light pollution, and traffic impacts emanating from the Project. These land users include: • Emergency Services Agency (ESA) Training Centre* • Rural Fire Service (RFS) ACT* • Alexander Maconochie Centre (AMC) <i>*These land users may be more sensitive to noise and light due to the nature of their operations which include the provision of sleeping quarters.</i>
Waterways	No waterways are present within the Site. There are several first order drainage lines present within the Site. Dog Trap Creek is approximately 40m from the Site, being closest to the works on the north side of Lanyon Drive.
Flora and Fauna	The Site contains planted native trees, exotic grasslands and no threatened ecological communities (TECs). The Site exhibits little diversity in vegetation, flora or landscapes. There is sparse vegetation and minimal habitat complexity, with the absence of hollow bearing trees, rocky habitat or fallen timber in situ, generally flat topography and the highly modified landscape condition. The exotic grassland within the Site is considered likely to provide some, or at least contributes to part of a larger area of, potential foraging habitat for the SLL with habitat values across the site considered to be very low. There is known SLL habitat immediately south and east of the Site in proximity to the ESA which is contiguous to habitat in the Jerrabomberra East Grasslands Nature Reserve which supports an important SLL population. There is also mapped SLL habitat immediately north of the Site at the AMC. These areas will be 'no-go' zones for the duration of the Early Works. No threatened flora or fauna have been identified by site surveys within the Site.
Aboriginal Heritage	The Site contains no known Aboriginal heritage objects or places. _____. While there are no other identified heritage items or place within the Site there is still the potential for unexpected heritage finds.
Historic Heritage	There are no protected heritage items under the Commonwealth or Territory legislation within the site. An unlisted heritage item 'Granite Quarries' is located approximately 200m from the Site but will not be impacted by the proposed works. The Granite Quarries are located within the historic boundary of the Woden Homestead and are an early example of extraction of construction material extraction in the ACT. This area will be a 'no-go' zone for the duration of the Early Works. While there are no identified heritage items or place within the Site there is still the potential for unexpected heritage finds.

Contamination	A Detailed Site Investigation (Douglas Partners, 2024) was carried out for the Site. The following results can be stated: • Results of soil and groundwater testing have not revealed soil or groundwater contamination at the tested locations. • Copper and zinc concentrations in groundwater exceeded the default guidelines value but were considered to be at background levels and not indicative of contamination. • There is still the potential for unexpected contamination finds, such as for asbestos.
Bushfire risk	The Site is located in an area designated by ESA ACT as a Bushfire Prone area, which has been assessed as high risk. Part of the site is mapped as a Bushfire Abatement Zone which continues to the east and north from of the Site. Bushfires present a risk to staff, the general public and the environment either from a fire being ignited within the Monaro Highway site or from adjacent lands and then spreading into the site. The risk of bushfires is most prevalent during the warmer months from October through to March, but fires can occur at all times during the year.

3.2 Package 1C Investigation Works

Table 6 Existing environment Package 1C Investigation Works

Package 1C Investigation Works (Investigations Works)	
General description of the site	The Site is a 4.05ha area within the Project which is located to the east of the existing Monaro Highway which slopes gently from the north towards Dog Trap Creek. The Site is bound in the south by Dog Trap Creek, to the north by the ACT Emergency Services Agency (ESA) training centre, and in the northwest by a gas pressure reduction station and an access road to it. These bounds act as barriers to movement for the SLL. The eastern extent of the Site is defined by the Package 1C Project Boundary, while further to the east is the Jerrabomberra East Grasslands Nature Reserve.
Surrounding land users	Surrounding the Site are land users that would need to be considered during the Project as they may be affected by noise, dust, light pollution, and traffic impacts emanating from the Project. These land users include: • Emergency Services Agency (ESA) Training Centre* • Rural Fire Service (RFS) ACT* • Alexander Maconochie Centre (AMC) • Hume industrial precinct businesses • Local residents from nearby suburbs <i>*These land users may be more sensitive to noise and light due to the nature of their operations which include the provision of sleeping quarters.</i>
Waterways	Dog Trap Creek is a fourth order stream that runs approximately southwest to northeast through the Site and converges with Jerrabomberra Creek approximately 300m east of the Site. Dog Trap Creek is mostly ephemeral, flowing only after periods of high rainfall. A series of pools in the creek line have been observed during site inspections in the absence of continuous flow. Dog Trap Creek is a disturbed waterway of variable quality as habitat due to the patchy presence of emergent aquatic vegetation (EAV), a bare channel, and ephemeral and eroded sections. (Stantec, 2023) No records of threatened aquatic species are known to occur in Dog Trap Creek. Given the high level of erosion in creek banks and the patchy nature of emergent aquatic vegetation (EAV) and water puddles in Dog Trap Creek, threatened aquatic species are not expected to occur. Notwithstanding this, Dog Trap Creek does provide habitat, albeit low value, for aquatic fish and invertebrate. (Stantec, 2023)

Flora and Fauna	The Site is dominated by 4.05ha of exotic grassland and contains no trees. The exotic grasslands were dominated by exotic grass and forb species. The most common species recorded included Phalaris (<i>Phalaris aquatica</i>), African Lovegrass (<i>Eragrostis curvula</i>), Oats (<i>Avena sp.</i>), Spear Thistle (<i>Cirsium vulgare</i>), Saffron Thistle (<i>Carthamus lanatus</i>), Ribwort Plantain (<i>Plantago lanceolata</i>) and St Johns Wort (<i>Hypericum perforatum</i>). The 4.05ha of exotic grassland provide low quality habitat for the SLL and has been assessed to have a significant impact on the SLL due to the proximity to the Jerrabomberra Grasslands which supports an important SLL population. The Site is connected to mapped SLL habitat to the east at ESA that is contiguous with the Jerrabomberra East Grasslands Nature Reserve which supports an important SLL population. The area outside the Package 1C Investigations Works Boundary and will be ‘no-go’ zones for the duration of the Investigations Works. Excluding habitat for the SLL, the Site does not support habitat for any other threatened flora or fauna species. No threatened ecological communities (TECs) listed under the NC Act or EPBC Act will be directly impacted by the Project. The aquatic habitat of Dog Trap Creek to be affected by the Project is in poor condition due to previous development for the Monaro Highway and existing Lanyon Drive intersection. Agricultural activity within the catchment has also resulted in changes to hydrological conditions, increased input of nutrients, sedimentation and weed invasion. The pooling sections of the creek support wetland species such as <i>Eleocharis acuta</i> (Common Spike-rush) and <i>Carex appressa</i> (Tall Sedge). The creek is currently in poor condition and any construction impacts would be negligible. There is an opportunity to improve the environment by revegetating with native species during rehabilitation in the Main Package 1C Civil Works. (BAR Jacobs, 2020).
Aboriginal Heritage	There are no registered Aboriginal Places within the Site, and no new Aboriginal objects were recorded during field surveys undertaken for the Project.
Historic Heritage	There are no protected heritage items under the Commonwealth or Territory legislation within the site. An unlisted heritage item ‘Granite Quarries’ is located outside of the study area to the east (40m and 140m) and is not likely to be impacted by the proposed works (Navin, 2022).

Contamination	There are no recorded contaminated sites within the Site, as shown on the ACT EPA Register of contaminated sites. A Preliminary Site Investigation (PSI) (Cardno, 2022) concluded there were several Areas of Environmental Concern (AEC) within or adjacent to the Site that are a potential contamination risk, these AECs would be investigated during the Investigation Works so will be untested until these works are completed. The AECs of relevance to the Site include: • AEC 6 (RFS and ESA training centre) - Given the activities including the use of fuels and fire training substances and the close proximity to and the Site there is a high likelihood of migration of contaminants via run-off, leaching, and air dispersion to surface water and groundwater and soil migration. • AEC 3 (Hume Industrial Area) - Given the concentration of heavy industrial activities located up-gradient of the site with drainage ways leading surface water into Dog Trap Creek and areas of Package 1C, there is a medium likelihood of contamination migration in groundwater, surface waters (including man-made stormwater drains) and sediments of water bodies. • AEC 4: Fly tipping in cleared area of forested area between north and south bound lanes of Monaro Hwy, just north of Lanyon Drive — Illegal dumping of inert waste materials was observed on visible parts of the land near Dog Trap Creek within Package 1B. Whilst not within Package 1C the AEC is close enough that potential migration of contaminants could occur. Undulating ground surfaces in some areas also indicated the potential for ground disturbances or buried fill. The quantity and quality of materials at surface or buried is not known along with the potential of leach from these materials into the groundwater and nearby Dog Trap Creek. Given the identification of these AECs it was recommended that further intrusive investigation would be required to determine if actual contamination exists within the Site and Package 1C generally which will be carried out during the Investigation Works.
Bushfire Risk	The Site is located in an area designated by ESA ACT as a Bushfire Prone area, which has been assessed as high risk. Part of the site is mapped as a Bushfire Abatement Zone which continues to the east from of the Site. Bushfires present a risk to staff, the general public and the environment either from a fire being ignited within the Monaro Highway site or from adjacent lands and then spreading into the site. The risk of bushfires is most prevalent during the warmer months from October through to March, but fires can occur at all times during the year.

3.3 Package 1C Main Works

Table 7 Existing environment Package 1C Main Civil Works

Package 1C Main Civil Works (Main Works)	
General description of the site	The Site is 50.3 ha and will be carried out in and adjacent to existing road reserves in the proximity of Lanyon Drive. The majority of the activities will be carried out in the area between Lanyon Drive and David Warren Road, which is exotic grassland, Dog Trap Creek also runs from west to east through this area. Naturally, the fall of the land is towards Dog Trap Creek with gentle slopes either side of waterway.
Surrounding land users	Surrounding the Site are land users that would need to be considered during the Project as they may be affected by noise, dust, light pollution, and traffic impacts emanating from the Project. These land users include: • Emergency Services Agency (ESA) Training Centre* • Rural Fire Service (RFS) ACT* • Alexander Maconochie Centre (AMC) • Hume industrial precinct businesses • Local residents from nearby suburbs <i>*These land users may be more sensitive to noise and light due to the nature of their operations which include the provision of sleeping quarters.</i>
Waterways	Dog Trap Creek is a fourth order stream that runs approximately southwest to northeast through the Site and converges with Jerrabomberra Creek approximately 300m east of the Site. Dog Trap Creek is mostly ephemeral, flowing only after periods of high rainfall. A series of pools in the creek line have been observed during site inspections in the absence of continuous flow. Dog Trap Creek is a disturbed waterway of variable quality as habitat due to the patchy presence of emergent aquatic vegetation (EAV), a bare channel, and ephemeral and eroded sections. No records of threatened aquatic species are known to occur in Dog Trap Creek. Given the high level of erosion in creek banks and the patchy nature of emergent aquatic vegetation (EAV) and water puddles in Dog Trap Creek, threatened aquatic species are not expected to occur. Notwithstanding this, Dog Trap Creek does provide habitat, albeit low value, for aquatic fish and invertebrate. There are also several first order drainage lines present within the Site.

Flora and Fauna	The landscape has been historically modified for the highway and rural activities and as a result is disturbed and predominately cleared of native remnant vegetation. Existing vegetation within the study area is made up of planted native and exotic trees and large areas of exotic grassland, dominated by the exotic species <i>Eragrostis curvula</i> (African Lovegrass) and <i>Phalaris aquatica</i> (Phalaris). Exotic grassland occurs almost continuously across the study area along the road verges and as groundcover under the planted vegetation. Riparian and wetland vegetation is present along Dog Trap Creek including Carex/Typha and artificial drainage lines. Dog Trap Creek is a third-order stream (Strahler) that runs through the study area near the existing Lanyon Drive intersection. The 4.05ha of exotic grassland provide low quality habitat for the SLL and has been assessed to have a significant impact on the SLL due to the proximity to the Jerrabomberra Grasslands which supports an important SLL population. The Site is connected to mapped SLL habitat to the east at ESA, and north at the AMC that is contiguous with the Jerrabomberra East Grasslands Nature Reserve which supports an important SLL population. These areas outside the Package 1C Project Boundary and will be ‘no-go’ zones for the duration of the Main Works. Excluding habitat for the SLL, the Site does not support habitat for any other threatened flora or fauna species. The planted native trees may provide potential foraging and connectivity habitat for nectivorous species including the superb parrot (<i>Polytelis swainsonii</i>), swift parrot (<i>Lathamus discolor</i>), regent honeyeater (<i>Anthochaera Phrygia</i>) and the grey-headed flying fox (<i>Pteropus poliocephalus</i>). The Site is largely devoid of important habitat features, such as hollow bearing trees, dense leaf litter, stags or woody debris, with the exception of one stag located adjacent to the Hume industrial precinct, at the western extent of the Site, which will not be impacted. No threatened ecological communities exist in the Site or will be directly impacted by the proposal.
Aboriginal Heritage	There are no registered Aboriginal Places within the Site, and no new Aboriginal objects were recorded during field surveys undertaken for the Project.

Historic Heritage	The Site is adjacent to a Registered Heritage Place from the ACT Heritage Register. The 'Woden Homestead and Environs' ('Woden Homestead'). The Site does not intersect this heritage item. An unlisted heritage item 'Granite Quarries' is located outside of the study area to the east (40m and 140m) and is not likely to be impacted by the proposed works. This will be a no-go zone for the duration of the works.
Contamination	A Detailed Site Investigation (Douglas Partners, 2024) was carried out for the Site. The following results can be stated: • Results of soil and groundwater testing have not revealed soil or groundwater contamination at the tested locations. • Copper and zinc concentrations in groundwater exceeded the default guidelines value but were considered to be at background levels and not indicative of contamination. There is still the potential for unexpected contamination finds, such as for asbestos. There are no recorded contaminated sites within the Site, as shown on the ACT EPA Register of contaminated sites. The location between Dog Trap Creek and the ESA has not yet been investigated for contamination using intrusive methods and will be during the Investigation Works. This will be carried out prior to the Main Works and as such this section will be updated to reflect the findings.
Bushfire risk	The Site is located in an area designated by ESA ACT as a Bushfire Prone area, which has been assessed as high risk. Part of the site is mapped as a Bushfire Abatement Zone which surrounds the Site. Bushfires present a risk to staff, the general public and the environment either from a fire being ignited within the Monaro Highway site or from adjacent lands and then spreading into the site. The risk of bushfires is most prevalent during the warmer months from October through to March, but fires can occur at all times during the year.

5.0 Environmental legislation and guidelines

All works must be undertaken with all due regard to relevant environmental and planning legislative requirements. Work on Site is to comply with the requirements of the following Commonwealth and Australian Capital Territory (ACT) legislation and endorsed guidelines:

- *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*
- *Planning Act 2023*
- *Planning (General) Regulation 2023*
- *Planning and Development Act 2007 (PD Act) (repealed)*
- *Planning and Development Regulations 2008 (repealed)*
- *Environment Protection Act 1997*
- *Environment Protection Regulation (2005)*
- *Emergencies Act 2004*
- *Heritage Act 2004*
- *Nature Conservation Act 2004 (NC Act)*
- *Urban Forest Act 2023*
- *Contaminated Sites Environment Protection Policy (2017)*
- Environmental Management Plan Guidelines, Commonwealth of Australia 2024
- Environmental Guidelines for the Preparation of an Environmental Management Plan, May 2013;
- ACT's Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes, July 2021;
- Information Sheet No.4 - Contaminated Sites - Requirements for Re-use and Disposal of Contaminated Soil in the ACT;
- Information Sheet No. 6 – Contaminated Sites – Management of small scale, low risk soil asbestos contamination;
- Environmental Protection Guidelines for Construction and Land Development in the ACT, August 2022; and
- National Environment Protection (Assessment of Site Contamination) Measure 1999 amended May 2013 (ASC NEPM 2013).

6.0 Purpose and objectives

This CEMP has been developed to address conditions of the EPBC Approval 2020/8768 (see **Appendix B**) which require that the approval holder for the project (TCCS) must submit a CEMP to the Commonwealth Minister for the Environment (the Minister) who must approve the CEMP before commencement of the action (Package 1C).

The primary purpose of this CEMP is to prevent any avoidable harm to protected matters and mitigate unavoidable and accidental harm to protected matters, being the SLL and its habitat that exists within Package 1C. This CEMP has also been written to address other impacts on the environment.

The objectives of this CEMP are:

- Ensuring all personnel involved in the Project are aware of the environmental issues at the site and their roles and responsibilities in regard to the environment
- Minimise the impacts to the SLL by ensuring that the following takes place:
 - Not undertake any clearing, construction or other physical activity associated with the Action outside of the Package 1C Early Works Boundary until the OMP is approved in writing by the Minister and written evidence of the initiation of securement of all offset sites specified in the approved OMP is provided to DCCEEW.
 - Not clear more than 4.05ha of SLL habitat within the site
 - Not clear SLL habitat outside the site
 - Minimise the risk of harming SLL individuals within the site or harming the SLL individuals offsite from impacts emanating from the Project area
- Preserve Aboriginal and non-Aboriginal heritage
 - Act in accordance with the excavation permit granted by ACT Heritage
 - Impacts to Aboriginal heritage to be limited to those specified within the Statement of Heritage Effect (SHE) (*to be approved by ACT Heritage following the investigation works*)
 - Not to impact on heritage outside of the site, including the Woden Homestead and the unlisted heritage items the Granite Quarries.
 - Manage unexpected heritage finds in accordance with the Project unexpected finds procedure (see **Appendix D**)
- Protect other environmental aspects by:
 - Controlling the risk of a bushfire emanating from the Project
 - Not allowing unauthorised impacts to flora and fauna from clearing outside the Project area, fauna kills during construction, or spreading weeds and pathogens.
 - Avoiding water pollution and sedimentation to Dog Trap Creek
 - Appropriately manage any unexpected finds (see **Appendix D**)
- Carry out the Project with minimal impacts to the community by minimising:
 - Dust, noise and light pollution
 - Impacts to traffic caused by construction activities
- Meet conditions 2, 3, and 4 of EPBC Approval 2020/8768 (see **Appendix B**)
- Comply with environment and planning legislation, approvals, licences and environment best practice guidelines.

These objectives will be reviewed and updated if required based on subsequent approvals and/or findings of investigations.

7.0 Environmental management roles and responsibilities

Transport Canberra and City Services (TCCS) Directorate are the approval holder of EPBC 2020/8768 and are responsible for compliance with the conditions of the EPBC approval. TCCS will authorise a Responsible Party to undertake each stage of the Project.

There will be a transfer in authorisation granted by TCCS to the Responsible Party that will carry out the stage of the Project. TCCS will still be responsible for submission of reporting

required under the EPBC Approval but will rely on the information to be collected by the Responsible Party.

Prior to the commencement of each stage of the Project this CEMP will be reviewed and updated by the Responsible Party for that stage of the Project. This will ensure that any new or amended conditions from approvals can be incorporated, any new findings from investigations can be considered, and will provide an opportunity for improvement following the previous stage of works.

For clarity the stage of works and responsible parties are shown in the **Table 8** below:

Table 8 Parties responsible for this CEMP

Responsible Party	Stage of Works
Approval Holder: Transport Canberra and City Services (TCCS) Directorate	All stages
Principal Package 1C Early Works Contractor	Early Works
Stantec Australia Pty Ltd	Investigation Works
Principal Package 1C Main Works Contractor	Main Works

The project roles necessary for protecting the environment and heritage are shown in **Table 9** below and the organisational chart in **Figure 7 , Appendix A**. If project roles or responsibilities change then this section and the CEMP will be updated accordingly.

Table 9 CEMP roles and responsibilities

Role	Responsible Party	Responsibilities
Approval Holder	Transport Canberra and City Services (TCCS) Directorate Client	The environmental responsibilities of the Approval Holder include (but are not limited to): - To ensure compliance with the conditions of EPBC 2020/8768 - Inform all parties involved in the project of the conditions of EPBC 2020/8768 - Nominate the person(s)/company to act on their behalf to carry out the works required for the Project in accordance with this CEMP.
Project Manager	Responsible Party (for the Stage of Works)	The environmental responsibilities of the Project Manager include (but are not limited to): - Act on behalf of the Approval Holder to carry out the works in accordance with the CEMP - Overall responsibility for delivery of the project and adherence to relevant environmental procedures and protocols included in this CEMP - Environmental Control of all field activities. - Authority to update CEMP to meet project requirements. - Liaison with TCCS communications and stakeholder team, government agencies. - Participate and provide guidance in the review of this CEMP and supporting documentation.

Role	Responsible Party	Responsibilities
		• Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements. • Responsible for reporting, investigating, implementing corrective actions and closing out actions related to incidents and non-compliances. Ensure that complaints are investigated to ensure effective resolution. • Project Manager has the authority to stop work immediately if an unacceptable impact on the environment is likely to occur. • Manage sub-contractors, ensure the sub-contractors clearly understand the work scope, ensure the sub-contractors satisfy the requirements of safety, environment and quality. • Project Manager has the authority to nominate an inspector on their behalf to inspect the site, works and control measures implemented.
Project Director	Responsible Party (for the Stage of Works)	The environmental responsibilities of the Project Director include (but are not limited to): • Provide advice to the Project Manager on all matters including protection of the environment • Liaise with the proponent (TCCS) • Provide assistance to the Project Manager and project team in the event of a major incident, near miss or risk.
Environment Manager	Responsible Party (for the Stage of Works)	The environmental responsibilities of the Environment Manager include (but are not limited to): • Coordination of environment and heritage specialists • Coordination of all monitoring, auditing, and reporting of this CEMP • Review and update of this CEMP as required • Assist the Project Manager in implementation of this CEMP
Project Engineer(s)	Responsible Party (for the Stage of Works)	The environmental responsibilities of the Project Engineers include (but are not limited to): • Act on behalf of the Project Manager to provide direction to Site Supervisors and Site Staff • Management of sub-contractors. • Acting on behalf of the Project Manager to ensure this CEMP is implemented
Site Supervisor(s)	Responsible Party (for the Stage of Works)	The environmental responsibilities of the Site Supervisor(s) include (but are not limited to): • Acting on behalf of the Project Manager to manage day-to-day onsite works • Manage the wider project team including site staff and subcontractors. • Acting on behalf of the Project Manager to ensure this CEMP is implemented
Project Ecologist	Responsible Party (for the Stage of Works)	The environmental responsibilities of the Project Ecologist include (but are not limited to): • Supervising removal and/or disturbance of Striped Legless Lizard habitat • Capture, handling and relocation of any Striped Legless Lizard individuals identified during investigation works • Management of any injured Striped Legless Lizard individuals identified during investigation works • Conducting pre-clearance ecological surveys

Role	Responsible Party	Responsibilities
		Providing advice to the Project Manager that will allow the project to comply with the CEMP, respond to incidents and non-conformances. The Project Ecologist will be suitably qualified and experienced in the identification, handling and relocation of the SLL or similar reptiles.
Project Heritage Consultant	As engaged by the Responsible Party	The environmental and heritage responsibilities of the Project Heritage Consultant include (but are not limited to): - Lead site heritage investigations in accordance with the excavation permit approved by ACT Heritage; - Liaise with Registered Aboriginal Organisations (RAOs) and ACT Heritage during site heritage investigations and construction works. - Prepare a Results and Further Analysis Report (RFAR) and/or Statement of Heritage Effect (SHE) following completion of onsite investigations. - Advise immediately the Project Manager of any unexpected heritage finds or any required alterations to the site heritage investigations. - Assist the Project Manager in responding to unexpected heritage finds. - Provide advice to the Project Manager and All Site Staff regarding the protection of heritage.
Registered Aboriginal Organisations (RAOs)	Various	The environmental and heritage responsibilities of the Registered Aboriginal Organisations (RAOs) include (but are not limited to): - Provide advice to the project team regarding Aboriginal Heritage - Share knowledge with the project team of the traditional value and land uses of the area - Assist in the site heritage investigations in accordance with the excavation permit approved by ACT Heritage - Endorse a Results and Further Analysis Report (RFAR) and/or Statement of Heritage Effect (SHE) following completion of onsite investigations.
Project Geomorphologist	As engaged by the Responsible Party	The environmental and heritage responsibilities of the Project Geomorphologist include (but are not limited to): - Provide advice to the Project Heritage Consultant during the Investigation Works regarding the age of soils, in accordance with the recommendations of the Excavation Permit - Provide advice to the Project Manager about the potential for fossils to be contained within site soils.
Sub-contractors and All Site Staff	As engaged by the Responsible Party	The responsibilities of the wider Project Team (including all site staff and sub-contractors) include (but are not limited to): - Comply with the relevant requirements of the project CEMP. - Participate in the mandatory Project / site induction program. - Stop activities where there is an actual or immediate risk of harm to the environment - Report any environmental incidents to the Project Manager immediately or as soon as practicable if reasonable steps can be adopted to control the incident. - Undertake remedial action as required to ensure environmental controls are maintained in good working order. - Comply with the directions of the Project Manager and/or Site Supervisor in to comply with the objectives of this CEMP.

7.1 Emergency contacts and procedures

In the event of an emergency that has caused or has the potential to cause serious injury or harm to human safety or health, emergency services should be contacted immediately on 000.

In the event of other serious emergencies that have caused or have the potential to harm the environment then the Project Manager must be contacted immediately so that they can coordinate the response to the emergency and carry out the required notifications to public authorities as required. It is likely that the ACT EPA will need to be notified.

If material environmental harm has occurred, is occurring or is likely to occur (an environmental situation) then the ACT EPA must be notified. This can be carried out with a phone call to the 24-hour Access Canberra hotline on 13 22 81. The Project Manager or the Environment Manager acting on their behalf will be responsible for this notification.

Notification to the ACT EPA must occur as soon as reasonably practicable after becoming aware of the environmental situation, the project must notify the EPA of the environmental situation, its nature and the action taken to deal with the situation and any environmental harm that has been caused.

For contact details of the Project Manager, please see the contacts list at the beginning of this CEMP.

8.0 Environment risk assessment and management

A risk assessment has been conducted for activities to be carried out within the Site in accordance with the Stantec RMS7 Quantified Hazard Assessment.

The aspects of the environment that have been considered may be impacted have been based on the information gathered in the project environment assessments carried out. The below risk matrix has been used to assign a risk rating to activities based on the criteria for likelihood and consequence shown below. Appropriate mitigations and management measures have been developed reduce the risks of the activities and are also shown in the tables below in this section.

Due to the Project being carried out in several stages, the risks and mitigations have been split into the following categories:

- Applicable to all stages of works* - **Table 10**
- Applicable only to the Package 1C Early Works - **Table 11**
- Applicable only to the Package 1C Investigation Works - **Table 12**
- Applicable only to the Package 1C Main Works - **Table 13**

For all stages of works, the management measures from **Table 10** will apply in addition to the management measures in the table relevant to that stage. So, two tables of management measures will need to be followed for each stage of works.

Prior to the commencement of each stage of the Project this CEMP will be reviewed and updated by the Responsible Party for that stage of the Project. This will ensure that any conditions from new approvals can be incorporated, any new findings from investigations can be considered and will provide an opportunity for improvement following the previous stage of works.

Likelihood

Description	Frequency
Very Likely 4	Constant or continuous exposure to the risk. Task or activity is performed or may occur daily on a continuing basis Incidents have occurred several times per year either locally, or within the Company.
Probable 3	Regular exposure to the risk. Task or activity is performed or may occur once per week or more Incidents have happened locally, or more than once per year in the Company
Possible 2	Low frequency of exposure to the risk. Task or activity is performed or may occur two or three times per month. Incidents have happened within the Company, or more than once per year in the Industry.
Unlikely 1	Very low frequency of exposure to the risk. Task or activity performed or may occur once per month or less. Incidents are very unlikely and may not have occurred in the past.

Risk Rating

Risk Level	Category	Actions Required
A	Very High – Unacceptable	Must be mitigated with appropriate controls to a risk ranking of C or D immediately
B	High – undesirable	Must be mitigated with appropriate controls to a risk ranking of C or D as soon as possible
C	Medium – Acceptable with controls	Risk mitigation to risk ranking of D is optional; procedures and controls must be verified.
D	Low Acceptable as is	No risk mitigation required

Consequence

Description	Impact
Minor 1	Minor damage to the environment Onsite impact that can be immediately controlled or contained, effects reversible
Moderate 2	Moderate damage to the environment Release or incident within boundaries with known consequences.
Significant 3	Significant damage to the environment Release or incident outside the boundaries that requires reporting to external agencies. Localised effects
Serious 4	Detrimental effects to the environment Release or incident outside the boundaries that requires assistance from external agencies for response. Reporting to external agencies required.

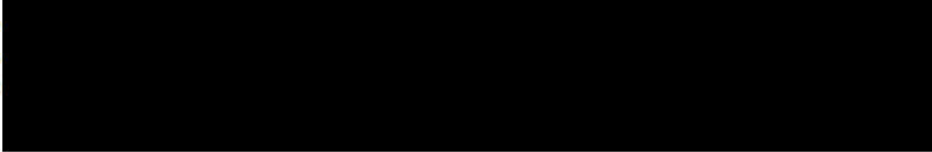
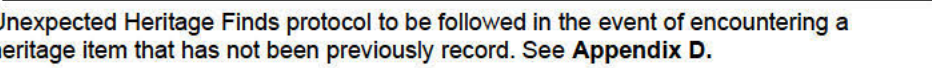
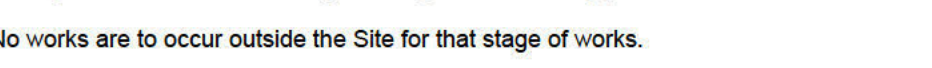
Risk Matrix

RISK LEVEL MATRIX					
LIKELIHOOD	4	C	B	A	A
	3	C	B	B	A
	2	D	C	B	B
	1	D	D	C	C
		1	2	3	4
SEVERITY					

8.1 All stages of works

Table 10 Risk assessment and mitigation measures – applicable to all stages of works

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
Applicable to all stages of works												
A-001	Project approvals	Prior to construction	Additional requirements from additional approvals (such as Environmental Authorisation) not communicated to staff	Breach of approval conditions	Very Likely	Significant	A	Once any environment, planning or heritage approvals are received these will be reviewed and any mitigations arising from these approvals will be included in this CEMP. Such approvals include (but may not be limited to): - Conditions of EPBC Approval 2020//8768 - ACT Heritage Statement of Heritage Effect (SHE) - NCA Works Approval - Development Application - EPA Environmental Authorisation	Environment Manager	Unlikely	Significant	C
A-002	Project Induction	Prior to construction	All Site Staff not aware of environment requirements	Environment or heritage harm, breach of legislation	Very Likely	Significant	A	Prior to commencing any works onsite All Site Staff will undertake a mandatory Project Induction During the Project Induction - all site workers will be informed of heritage and environment values in and around the Site. This is to ensure all Site Staff are appropriately informed of the values that exist, the importance in protecting them and the potential impacts that could be caused by the stage of the Project. The project induction will inform staff of the presence, location and control measures for: - SLL within and adjacent to the Site - SLL habitat within and adjacent to the Site - Other ecological values of the Site and surrounding area ██████ and the potential for Aboriginal artefacts at this location - Heritage significance of heritage items within and adjacent to the project area and what historical archaeological remains may be present. - The waterway Dog Trap Creek - The heritage item "Woden Homestead and Environs" - The unlisted heritage item (Granite Quarries) - Nearby land users such as the ACT Emergency Services Agency Inductions records of personnel will be held by the Responsible Party Visitors to site may be exempt from a site induction if they are not performing any works and are escorted by an inducted member of the Responsible Party.	Project Manager Environment Manager	Unlikely	Significant	C
A-003	Toolbox Talks	All activities	All Site Staff not aware of changes to environment requirements, incidents or near misses	Environment or heritage harm, breach of legislation	Very Likely	Significant	A	Toolbox talk attendance is mandatory for all field crew, and attendees of toolbox talks are required to sign an attendance form with all records being maintained. Regular toolbox meetings will be held to ensure staff are continue be made aware of the values of the Project area and the mitigations from this CEMP that need to be followed Toolbox talks will be held to communicate changes to conditions or control measures described in this CEMP and in response to near misses or incidents during site works.	Site Supervisors Project Manager	Unlikely	Significant	C
A-004	Daily pre-start meetings	All activities	All Site staff not aware of new environmental risks or changes to site conditions	Environment or heritage harm, breach of legislation	Very Likely	Significant	A	Daily prestart meetings will be held to discuss the day's activities and the environment and safety risks that are posed by the site or those activities. Reminders will be given to staff of the environment mitigation measures that will need to be followed as well as potential new risks at the Site.	Site Supervisors Project Manager	Unlikely	Significant	C

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
A-005	Boundary of the Site	Prior to construction All activities	Impacts to values outside the approved boundary of the Site	Unapproved or unmitigated impacts	Very Likely	Significant	A	The boundary of the Site (for the stage of works) is to be clearly marked onsite. The boundary of the Site will be clearly delineated with 1.8m high temporary construction fencing erected in accordance with AS 4687—2007 Temporary fencing and hoardings that is signposted to indicate the area outside is a No-Go-Zone. All Site Staff will be made aware of the boundary of the Site and No-go-Zones No 'Work' or vehicle access is to occur outside the Site or within No-go Zones. These areas only accessed on foot for environment surveys as approved by the Project Manager Sub-contractors will be provided with a map displaying the Site and No-Go-Zones. All entry and exit points to the site must be locked when the site is unattended.	Project Manager Site Supervisors All Site Staff	Unlikely	Significant	C
A-006	Aboriginal Heritage	Prior to construction All activities	All ground disturbing activities		Possible	Significant	B	Each stage of works will not commence until approval from ACT Heritage is gained and conditions of the heritage approval met. Any additional mitigation measures requested will be included in an updated revision of this CEMP. A Heritage Consultant will be engaged by the Contractor to provide advice during construction as required, and in the event of unexpected finds. During the Project Induction - all site workers will be informed of:    Unexpected Heritage Finds protocol to be followed in the event of encountering a heritage item that has not been previously record. See Appendix D. No works are to occur outside the Site for that stage of works.	Project Manager	Unlikely	Significant	C
A-007	Historic Heritage	Prior to construction All activities	Inadvertent impacts to heritage items	Damage to an unlisted heritage item (Granite Quarries)	Possible	Moderate	C	No works are to occur outside the Site.  Granite Quarries are nearby to the Site. Project Heritage Consultant may be required for the monitoring during site construction activities nearby and the consultant will provide recommendation to overcome any potential damage to the heritage site such as if vibratory impacts that would affect these items.	All Site Staff Project Heritage Consultant	Unlikely	Moderate	D
A-008	Historic Heritage	Prior to construction All activities	All ground disturbing activities	Damage to previously unidentified historic heritage items	Unlikely	Moderate	D	During the Project Induction - all site workers will be informed of the heritage significance of heritage items within and adjacent to the Site and what historical archaeological remains may be present. A Heritage Consultant will be engaged by the Contractor to provide advice during construction as required, and in the event of unexpected finds. If any unexpected archaeological remains or other heritage artefacts are encountered during the works, all works will cease in the vicinity of the find, the Project Manager shall be advised immediately and Monaro Highway's unexpected finds protocol is to be followed and further advice from the heritage consultant will be gained, please see the protocol in Appendix D.	All Site Staff Project Heritage Consultant	Unlikely	Moderate	D

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
A-009	Flora and Fauna	Commencement of construction All activities	Construction vehicle movement, clearing	Impacts to surrounding vegetation (such as SLL habitat)	Probable	Significant	B	No works are to occur outside the Site. If any damage occurs to vegetation outside of the Site, the Environment Manager will be notified so that appropriate remediation strategies can be developed. Accurately and clearly mark out the limits of the Site, areas for parking and turning of vehicles and plant equipment prior to commencement of works. These areas shall be located so that vegetation disturbance is minimised, and the dripline of trees avoided. Appropriate methods to exclude access into adjacent areas will be implemented The boundary of the Site will be clearly delineated with temporary construction fencing erected in accordance with AS 4687—2007 Temporary fencing and hoardings that is signposted to indicate the area outside is a No-Go-Zone This is to prevent unauthorised entry outside of the Site. Trees will be protected in accordance with the requirements of the Australian Standard 4970-2009 for the Protection of Trees on Development Sites. Works will be carried out according to the approved Landscape Management and Protection Plan (LMPP) Materials, plant, equipment, work vehicles and stockpiles will be placed to avoid damage to surrounding vegetation and will be outside tree driplines. Erosion and sediment controls will remain in place until all restoration has been completed.	Environment Manager Site Supervisors All Site Staff	Unlikely	Significant	B
A-010	Flora and Fauna	Commencement of construction All activities	Construction vehicle movement, clearing	Impact to native plants and animals including threatened species	Probable	Moderate	B	A Construction Site Plan will be prepared to show the: • No go areas and boundary of the Site • Locations of parking, lay-down and storage areas for materials, plant and stockpiles. • Location and full extent of any lopping, trimming, clearing or other vegetation disturbance required for the works. Works will be carried out in accordance with the approved Landscape Management and Protection Plan (LMPP). Areas of native vegetation that do not require disturbance during must be flagged and protected from impacts for the duration of construction. All site staff and contractors will be made aware during the Project Induction that any native fauna species encountered must be allowed to leave site without being harassed. Works will cease in the vicinity until the species safely leaves, if this does not occur then a and a local wildlife rescue organisation or Project Ecologist must be called for assistance where necessary. In the unlikely event that any threatened species (plants or animals) are discovered during the works, all work will stop immediately, and the Environmental Manager will be notified. Work will only recommence once the impact on the species has been assessed and appropriate control measures provided. Where a fauna species is located at the Site works will cease immediately the Project Manager is to engage an ecologist and site work will cease until appropriate instructions have been provided from the ecologist to all field personnel to address the issue.	Environment Manager All Site Staff	Possible	Moderate	C

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
A-011	Flora and Fauna	SLL relocation	Incorrect handling of SLL	Death or injury to SLL	Probable	Significant	A	In the event that a SLL is identified, works in the area will cease immediately and the Project Manager will be notified. The Project Ecologist will supervise the handling and relocation of the SLL, in accordance with the procedures below: - SLL will be handled and transported in accordance with the ACT Government document (found in Appendix F) - <i>Striped Legless Lizard (Delma impar)</i> Guidelines for Salvage Operations. - Any found SLL must be captured and individuals assessed for injuries and then released immediately (if uninjured) into suitable adjoining habitat to the east (preferably within 10 m of capture and within a marked No-Go Zone). - Any injured SLL will be taken to a local vet. Animals will be transported in calico bags and placed in a small plastic box with abundant air holes to avoid further stress. - SLL should be released or transported to a vet as soon as possible after capture. - Any severely injured animals are to be assessed and humanely euthanised immediately on site by the Project Ecologist. - Works can only recommence after the SLL has been relocated by the Project Ecologist. - All capture and release locations (latitude / longitude) must be documented and reported to the relevant ACT Government Biodiversity Officer in accordance with EPBC condition 20 (i.e. within 20 business days following the end of the annual compliance reporting period) - Works in the vicinity of the area must not re-commence without the approval of the Project Manager.	Project Ecologist Project Manager All Site Staff	Possible	Significant	B
A-012	Flora and Fauna	All activities	Spread of pathogens from vehicles/machinery	Impacts from introduction and spread of plant pathogens	Possible	Moderate	C	All vehicles driving to and from site will follow a protocol to prevent the spread or introduction of <i>phytophthora</i>, namely vehicles will be clean, including the tyres and any equipment. Follow a cleaning and decontamination protocol to prevent introduction of pathogens into Dog Trap Creek. Access towards creek lines and riparian corridors (e.g., tracks) beyond the works area to be identified as No-Go areas to prevent accidental impacts and introduction of pathogens, such as <i>Batrachochytrium dendrobatidis</i>, a pathogen that caused chytridiomycosis, an infection disease on amphibians All machinery should be cleaned of foreign soil and vegetative matter to avoid the spread of <i>Phytophthora cinnamomi</i>, Exotic Rust Fungi of the order Pucciniales pathogenic (Myrtle Rust) and dispersal of seeds of non-native plants	Site Supervisors All Site Staff	Unlikely	Moderate	D

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
A-013	Waterways	All activities	Hydrocarbon and chemical spills	Contamination of surface water by petroleum products and chemicals, leading to waterways as a result of stormwater runoff	Possible	Significant	B	A greater than 50m rule will apply for the storage of liquids, materials, plant and equipment that could potentially contaminate the waterway. The items will not be stored in within 50m of the waterway and not within 10m of a drainage line. If maintenance of plat and machinery occurs on site, it is to be carried out in an approved area greater than 50m away from the waterway and drainage lines. Employ best practice management to minimise potential for oil/diesel spills e.g. bunding of temporary storage areas, no open top containers containing chemicals to be left in open, use of drip trays when decanting from large to small containers, etc. Spill kit to be provided onsite, including a specific waterway spill kit to be located next to any works being undertaken in or next to the waterway. Refuelling plant to have spill kit available. Maintain a hardstand or lined and bunded area for the refuelling and storage of equipment. Cleaning of vehicles and equipment to be undertaken in designated wash down areas where untreated wash water is contained and cannot enter drainage lines, waterways or stormwater drainage system. Refuelling of machinery/equipment to be undertaken greater than 50m from the waterway. Where it is not feasible to move machinery/equipment (such as a piling rig) then spill containment measures will be in place around the refuelling. Any spills to be cleaned up and disposed of immediately. Environment Manger to be advised.	All Site Staff	Unlikely	Significant	C
A-014	Waterways	All activities	Mud tracking	Mud tracking on public roads and near stormwater drainage may lead to deposition of sediments in stormwater and slow intake in waterways during rainy season	Very Likely	Minor	C	Stabilised access (e.g., shakedown grids, gravel or paved access) to be established. Concept design and locations will be provided in the erosion and sediment control plan. Controls such as shake down grids should be checked and cleared out regularly. A street sweeper or equivalent to be used when appropriate to remove accumulated dirt/mud from affected roads where there is evidence of material deposition related to the works. Do not wash mud and sediment into stormwater system or waterway. Check stabilised entrances weekly and prior to rain events.	Site Supervisors	Possible	Minor	D
A-015	Waterways	Bridge Construction	Concrete slurry/curing compound spills	Contamination of surface water by concrete slurry/curing compounds	Possible	Significant	B	A least 24 hours prior to any concrete pours over the waterway, a 'leak test' will be conducted using water to test the formwork. Any leaks that a not negligible will be rectified prior to the concrete pour. Concrete trucks bringing material onsite will be given a designated area and containers to wash the trucks after concrete delivery. Concrete slurry after being dried out will be removed offsite for safe disposal.	Site Supervisors All Site Staff	Unlikely	Significant	C
A-016	Waterways	Stormwater Management	Dirty Site Water	Release of contaminated site water	Possible	Significant	B	Discharges from the site (including sumps and sedimentation basins must meet criteria that will be agreed with the EPA. Ensure discharges from Site do not caused erosion.	Environment Manager Site Supervisors	Unlikely	Significant	C

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
A-017	Groundwater/Land Contamination	Unexpected finds	Unexpected contamination finds not previously assessed or encountered (including additional/ongoing fly tipping of waste in open space, asbestos, heavy metals, uncontrolled fill)	Unmanaged risk to WHS and environment. Potential restrictions on beneficial reuse onsite	Possible	Moderate	C	Contractor the review Project contamination investigations and inform site staff of potential locations with risk of encountering contaminated material. Unexpected Finds Protocol (see Appendix D) to be followed in the event of encountering contaminated material: Works at the location of the will cease immediately; the Environment Manager and Project Manager will be notified. The area will be excluded to ensure it is not disturbed. The find will be investigated by a suitably qualified environmental consultant who will advise on the subsequent management actions. Works will not recommence until the management measures have been carried out and direction is given by the Project Manager, acting on advice from a contamination consultant.	Project Manager Environment Manager All Site Staff	Unlikely	Moderate	D
A-018	Groundwater/Land Contamination	Water use/extraction	Dewatering of deep excavations	Drawdown of local groundwater levels and reduced recharge rates	Unlikely	Moderate	D	Water source for all construction activities to be approved by the Project Manager. Project Manager and Environment Manager to be contacted if groundwater located during construction works. Should groundwater, that requires off-site disposal, be encountered during construction.– a groundwater management plan should also be incorporated into the CEMP detailing required management of groundwater,	Project Manager/Site Supervisors	Unlikely	Moderate	D
A-019	Groundwater/Land Contamination	Waste	Waste generated onsite, or fly-tipped by the public	Waste disposed to the environment	Probable	Minor	C	Good housekeeping is to be implemented will the site to be kept tidy Adequate waste receptacles are to be provided at the site and ancillary facilities Site staff to collect litter (including waste fly-tipped by the public)	All Site Staff	Unlikely	Minor	D
A-020	Groundwater/Land Contamination	Unexpected finds	Asbestos containing material	Worker's exposure to asbestos, spread of contaminated soils in the environment	Possible	Serious	A	All Site Staff must have undertaken the WorkSafe ACT accredited Asbestos Awareness Training before working on the site. Where asbestos containing material is identified, work should be stopped, and an asbestos control plan should be implemented. Any material removed from an investigation area containing asbestos must be classified as asbestos waste and disposed of at an appropriately licensed facility.	All Site Staff	Unlikely	Serious	C
A-021	Bushfire	All activities	Plant and equipment, lightning strikes, human activities	Bushfire from adjacent lands	Possible	Serious	A	A fire emanating from adjacent lands may already be established and may present a greater risk than a fire originating from within the site. In the event of a fire entering the site from adjacent lands the following procedure is to be followed: 1. Rescue any people in immediate danger from the fire (only if safe to do so) 2. Raise the alarm by calling 000, notifying direct supervisor and the Project Manager 3. Attempt to extinguish the fire (only if safe to do so) a. If fire is extinguished, then monitor the location for 30 mins and move to Step 6 4. If fire is not able to be extinguished, then the Project Manager is to instruct the site to be evacuated. 5. Once at a safe location, await further instructions of emergency services 6. Once the danger from fire is removed, report the incident	All Site Staff	Unlikely	Serious	B

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
A-022	Air Quality	Clearing and Grubbing Bulk Earthworks Landscaping	Dust generation from construction activities	Potential health effects from particulates, loss of amenity for nearby stakeholders	Probable	Moderate	B	Visual monitoring of dust and exhausts must be undertaken during construction. Evaluate weather conditions prior to works commencing and during any change in wind direction. Air borne dust resulting from excavation, stockpiling of soil, high wind and vehicle movements around site will be minimised using dust suppression (e.g. water carts, sprinklers etc). Working in extremely dry windy conditions must be avoided. Dust generating works must cease if dust or odour generation is likely to cause public nuisance. The transportation of all materials and substances used to carry out the activity must be covered during movements to and from the site. Construction traffic will be restricted to designated areas and tracks. Dust suppression ground covers such as hydromulch or environmentally friendly soil binder may be employed to reduce excessive dust. Stockpiles to be in place for four weeks or longer to be stabilised by the application of suitable ground cover or other method. Progressive rehabilitation of the Site is to be undertaken as soon as possible after other works are completed to reduce exposed areas.	Site Supervisors	Possible	Moderate	C
A-023	Air Quality	All activities	Emissions from plant and equipment	Potential health effects from particulates, loss of amenity for nearby stakeholders	Probable	Minor	C	Plant and equipment to have regular maintenance in accordance with (Original Equipment Manufacturer) OEM specifications carried out. Conduct spot checks that regular servicing has been undertaken in line with the equipment schedule. Servicing to be undertaken if overdue. If excessive exhaust fumes observed to be emitted for a period of ten seconds or more, vehicle will be requested to shut down and undergo a maintenance check.	Site Supervisors	Possible	Minor	D
A-024	Community/Stakeholder	All activities	Dust, odour, noise, vibration, light visual amenity and traffic impacts	Reduced amenity impacts to nearby community and stakeholders	Possible	Moderate	C	The Project Manager will be responsible for responding to any community complaints or issues raised during construction and will instruct the project team on the appropriate actions to be taken. A complaints register will be established and maintained to receive and address complaints from the community. If necessary, businesses and residents in the vicinity of the proposed works will be informed of potential impacts prior to the commencement of works such as dust generating activities or high noise activities.	Project Manager All Site Staff	Possible	Minor	D
A-025	Community/Stakeholder	All activities	Temporary traffic management	Increased travel times for the public. Disruptions to nearby stakeholders	Very Likely	Moderate	B	Traffic management to be carried out in accordance with Temporary Traffic Management Plans (TTMs) approved by Roads ACT. TTMs should aim to minimise impacts to the public. TTMs will be submitted to NCA, as required. Property access will be maintained. If access is to be affected the relevant stakeholders will be consulted prior, allowing adequate time to consider their input prior to any changes. Stakeholders to be advised if any major disruptions during construction are expected. Pedestrian warning signs to be utilised in the vicinity of the site access points.	Site Supervisors Project Engineers	Possible	Moderate	C

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
A-026	Sustainability	All activities	Use of non-renewable fuel	Greenhouse gas emissions due to consumption of energy from non-renewable resources, such as diesel	Possible	Moderate	C	Consider alternative fuel options e.g. biodiesel or E10 fuel in light vehicles for minimal impact on GHG emissions. Seek options to utilise electric/hybrid vehicles and plants, where possible. Use of solar power, battery storage or other renewable sources to meet site energy demands, where possible.	Project Manager All Site Staff	Unlikely	Moderate	D
A-027	Sustainability	All activities	Alternative sustainable products/practices not considered	Missed opportunity to use sustainable materials.	Probable	Moderate	B	The use of sustainable products will be preferred where possible. Project team will investigate potential alternatives to business-as-usual products and practices. Some rocks recovered from the site will be suitable for reuse by EPSDD PCS. PCS will be contacted for the rocks desired for reuse and to arrange supply of recovered rocks (e.g. habitat rocks for reptiles, large rocks for entrance gates and car parks).	Project Manager Project Engineers	Possible	Moderate	C
A-028	Noise	Construction vehicles movement within and outside the Site	Noise generation from vehicular movements and operations	Reduced amenity and potential for construction fatigue for community and stakeholders	Possible	Significant	B	AS 2436-2010 – Guide to noise control on construction, demolition and maintenance sites will be followed for the works Where possible, plant and equipment will be located / orientated to direct noise away from the closest residents Consideration will be given so that ancillary sites are located away from noise sensitive land users. Undertake regular maintenance of plant and equipment in accordance with OEM specifications to minimise noise emissions. Other noise control measures, including acoustic barriers, will be examined and put in place should the need arise. All trucks, plant and equipment to have efficient low noise muffler design and be well-maintained. Where practicable, ensure that noisy plant/machinery are not working simultaneously in close proximity to sensitive receivers. Queuing of trucks is not to occur adjacent to any residential properties Where queuing is required engines near receivers, engines are to be switched off. Trucks will follow the designated haulage route between locations and will adhere to the designated speed limits. Trucks will refrain from using compression breaking where possible. Any pumps or generators used nearby to sensitive receivers will be encapsulated or appropriately encased to ensure noise generation is minimised and emissions are muffled. All vehicles (plant, heavy vehicles and site vehicles) will be fitted with low tonal reversing alarms (i.e., squawkers) in preference to beepers.	All Site Staff	Possible	Moderate	C

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
A-029	Noise	Works outside of standard hours	Works outside of standard hours	Reduced amenity and sleep disturbance for community and stakeholders	Probable	Significant	B	Works will be carried out during standard working hours (i.e. 7am–6pm Monday to Friday, 8am–1pm Saturdays), excluding public holidays. Works north of Lanyon Drive are not permitted between 11:00pm and 6:00am. Plant and equipment will not be permitted to 'warm-up' before the nominated working hours. Works outside of standard working hours (OOHW) will only be conducted following consultation with impacted stakeholders. OOHW is only likely to be required for: • Delivery of oversize equipment or materials (e.g. Super T Girders) • Emergency work, where such work is necessary to avoid the loss of lives, property and / or prevention of environmental harm. • Works where the impact or risk from required temporary traffic management is considered too great to be conducted during standard working hours • Works likely to be inaudible to nearby receivers (i.e. <5 dBA above the rating background noise level or noise standard for the zone) As above, Works north of Lanyon Drive are not permitted between 11:00pm and 6:00am.	All Site Staff	Probable	Moderate	B
A-030	Flora and Fauna	Night works	Artificial lighting for construction	Negative effects to SLL individual behaviour	Possible	Minor	D	No nightworks are permitted to occur north of Lanyon Drive between 11:00pm and 6:00am hence artificial lighting within or adjacent to SLL habitat should not be required. However following conditions should still be adhered to (if artificial lighting should be required): • Artificial lighting is not to illuminate outside the project boundary and into adjacent habitat for the SLL. • Artificial lighting in proximity to adjacent SLL habitat will be setup with lighting facing away from adjacent SLL habitat In the case of any doubt, advice from the Project Ecologist should be sought for the setup of artificial lighting to ensure that SLL behaviour is not negatively impacted	Site Supervisors All Site Staff	Unlikely	Minor	D
A-031	Vibration	Earthworks Structures construction Pavement construction	Plant and machinery causing vibration such as rollers and rock breaking	Damage to structures, reduced public amenity	Possible	Significant	B	Select appropriately sized machinery and equipment and design procedures for use in order to comply with vibration limits and to reduce vibration generation. See the German Standard DIN 4150-2016 Structural vibration Part 3: Effects of vibration on Structures. Keep plant vibratory plant at the minimum working distances from sensitive receivers. Referring to Table 2 from Construction Noise and Vibration Guideline (TfNSW, 2016) Stakeholders are to be consulted prior to activities that are likely to cause vibration at the receiver. Alternative methods are to be used vibration is excessive and is likely to lead to structural damage and/or community concern. This may include the use of non-vibratory equipment. This would be considerate of the competing objectives of reducing noise and construction duration compared to the effects of vibration.	Site Supervisors	Unlikely	Significant	C

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
A-032	Waste	All activities	Waste generated onsite	Incorrect waste disposal, harm to the environment	Probable	Significant	H	Waste must only be disposed of at facility or location that is legally able to accept the type of waste. Copies of waste transport and disposal documentation (such as waste dockets) will be retained and provided to the Project Manager at the conclusion of the investigation works for environmental auditing. Waste material is not to be left onsite at the completion of works. Working areas are to remain free of rubbish, crews to remove their own waste and each works location will be cleaned up at the end of each day. Waste will not be buried or burned on site. When material is to be removed, it is to be assessed and classified in accordance with the Waste Classification Guidelines (EPA, November 2014) and managed in ACT EPA requirements. Prior to soil being removed from the site for beneficial re-use (BRU) or waste purposes, approval must be obtained from the ACT EPA. The soil must be assessed in accordance with the requirements ACT EPA 'Information Sheet 4 - Requirements for Re-use and Disposal of Contaminated Soil in the ACT'. The results of the assessment must be presented in a brief report prepared by the Environmental Consultant and forwarded to the EPA for review If there is rock excavated or purchased for the project that is excess and will not be used, EPSDD Parks and Conservation Service (PCS) will be contacted to offer materials for reuse. Materials of use to PCS include habitat rocks for small reptiles and larger rocks used for uses such as car parks. Avoid unnecessary resource consumption as a priority. Avoidance would be followed by resource recovery (including reuse of materials, reprocessing, recycling, and energy recovery). Disposal would be undertaken as a last resort.	All Site Staff	Unlikely	Significant	C
A-033	Unexpected Finds	Unexpected Finds	Unidentified sources	Unexpected finds that cannot be managed by existing management measures, causing harm to the environment	Probable	Moderate	B	The unexpected finds procedure in Appendix D is to be followed in the event of unexpected finds. Unexpected finds may require the need for additional approval or permits to be obtained where required, these would be obtained before recommencing works.	All Site Staff	Unlikely	Moderate	C

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation																				
					L	C	R			L	C	R																		
A-034	Flora and Fauna	Site rehabilitation	Inappropriate species planted for the area	Proliferation of inappropriate species. Spread of weeds due to failure of rehabilitation	Probable	Moderate	B	Following completion of activities in each area, progressively rehabilitate the area as soon as possible with permanent landscape plantings. Rehabilitation is to be in accordance with approved project landscaping plans for each stage of works which include species recommended by EPSDD PCS. In some areas where temporary landscaping needs to be installed, progressively rehabilitate the area as soon as possible with the TCCS, temporary grass mix: for use in dryland areas: Temporary Grass: I <table><thead><tr><th>Grass Species</th><th>Percent by Weight</th><th>Sowing Rate (kg/ha)</th></tr></thead><tbody><tr><td>Cereal Rye (<i>Secale cerele</i>)</td><td>16</td><td>3</td></tr><tr><td>Perennial Rye Grass (<i>Lolium perenne</i>)</td><td>26</td><td>5</td></tr><tr><td>Currie Cocksfoot (<i>Dactylis glomerata</i>)</td><td>16</td><td>3</td></tr><tr><td>Subterranean Clover (<i>Trifolium subterraneum</i>)</td><td>26</td><td>5</td></tr><tr><td>Crimson Clover (<i>Trifolium incarnatum</i>)</td><td>16</td><td>3</td></tr></tbody></table>	Grass Species	Percent by Weight	Sowing Rate (kg/ha)	Cereal Rye (<i>Secale cerele</i>)	16	3	Perennial Rye Grass (<i>Lolium perenne</i>)	26	5	Currie Cocksfoot (<i>Dactylis glomerata</i>)	16	3	Subterranean Clover (<i>Trifolium subterraneum</i>)	26	5	Crimson Clover (<i>Trifolium incarnatum</i>)	16	3	Project Manager Project Engineers	Possible	Minor	D
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Subterranean Clover (<i>Trifolium subterraneum</i>)	26	5																												
Crimson Clover (<i>Trifolium incarnatum</i>)	16	3																												

8.3 Package 1C Early Works

Table 11 Risk assessment and mitigation measures – Applicable only to the Package 1C Early Works

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
Applicable only to the Package 1C Early Works												
EW-001	Flora and Fauna	Prior to commencement of construction	Machinery/Equipment Strike to SLL	Death or injury to SLL	Probable	Significant	A	Prior to works adjacent to mapped SLL habitat, the Project ecologist will conduct pre-clearance surveys to: - Identify areas of suitable habitat for SLL that will require supervision by the Project Ecologist during initial earthworks. - Identify rocks that can reused by EPSDD PCS as habitat features. PCS will be contacted to arrange reuse of these rocks. - Capture and release any SLL found to outside of the Site Prior to the commencement of any other activity for the Early Works a rural style fence and SLL exclusion fence will be installed between the Package 1C Early Works and the 4.05ha of SLL habitat. The fence will be installed with a minimum 5m buffer* to the habitat. <i>*where track to the gas maintenance facility does not allow a 5m buffer, the fence will be installed on the edge of the track</i> A registered surveyor shall mark out the location and extent of the SLL exclusion fence The fence will include warning signage at regular intervals along the fence to denote the area as a 'No-Go' zone.	Project Ecologist Project Manager All Site Staff	Possible	Significant	B
EW-002	Project approvals	Prior to construction	Sub-plans inconsistent with this CEMP	Breach of approval conditions	Very Likely	Significant	A	The Responsible Party for the Early Works may develop sub-plans for specific aspects to meet conditions of the contract and/or to manage risks from those aspects. The measures proposed in these sub-plans must be consistent with those approved in this CEMP, while measures additional measures may also be proposed. These sub-plans may include: - Soil and Water Management Sub-Plan - Contaminated Land Management Sub-Plan - Specific Spill Response Plan - Air Quality Management Sub-Plan - Noise and Vibration Management Sub-Plan - Flora and Fauna Management Sub-Plan - Heritage Management Sub-Plan - Waste Management Sub-Plan - Flood Management Plan - Traffic Management Plan (TMP) The sub-plans must be approved by the proponent before being implemented.	Environment Manager	Unlikely	Significant	C

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
EW-003	Heritage	Prior to construction Clearing and Grubbing Bulk Earthworks	Inadvertent impacts to heritage items		Possible	Significant	B	No works are to occur outside the Site. During the Project Induction - all site workers will be informed of the heritage significance of heritage items within and adjacent to the Site and what historical archaeological remains may be present. The boundary of the Site is close to  the Granite Quarries, a safety buffer and construction-style fencing be maintained on the outer edge of these items with an additional 5m buffer (from the edge of the heritage items). ACT Heritage will be provided with photographic evidence of this fencing prior to the commencement of the 1C Early Works. Granite Quarries are nearby to the Site. Project Heritage Consultant may be required for the monitoring during site construction activities nearby and the consultant will provide recommendation to overcome any potential damage to the heritage site such as if vibratory impacts that would affect these items.	All Site Staff Project Heritage Consultant	Unlikely	Significant	C
EW-004	Flora and Fauna	Clearing and grubbing Weed control	Incorrect control of weeds	Impacts from introduction and spread of weeds	Probable	Moderate	B	A weed management plan is to be developed and implemented for the Early Works of the Project. This will form a sub-plan to this CEMP. Weed management, monitoring and control practices should be implemented as part of the Construction Environmental Management Plan (CEMP) to minimise the spread of exotic species into natural areas within and outside of the Site. In particular, pest plants and weeds of national significance (WoNS) should be targeted in accordance with the ACT pest plant and animals declarations and National Weed Strategy (Commonwealth of Australia 2017) Weed control will be undertaken by suitably qualified and/or experienced personnel. This may include: - Manual weed removal in preference to herbicides. - Replacing non-target species removed/killed as a result of weed control activities. - Protecting Non-target species from spray drift. - Using only herbicides registered for use within or near waterways for the specific target weed. - Applying herbicides during drier times when the waterway level is below the high-water mark. - Not applying herbicide if it is raining or if rain is expected. - Mixing and loading herbicides, and cleaning equipment away from waterways and drains. Manage weeds in accordance with the requirements of the Pest Plants and Animals Act 2005, to ensure they are not spread to the surrounding environment, including during transport disposal off-site to a licenced waste disposal facility. All weeds, propagules, other plant parts and/or excavated topsoil material that is likely to be infested with weed propagules that are likely to regenerate will be treated on site or bagged, removed from site and disposed of at a licensed waste disposal facility.	Site Supervisors All Site Staff	Unlikely	Moderate	D

EW-005	Waterways	Clearing and grubbing Bulk Earthworks	Sediment laden runoff from disturbed areas entering the waterway (Dog Trap Creek)	Reduced water quality in local waterways due to increased turbidity and sediment loading	Very Likely	Significant	For the Early Works, the successful civil contractor will develop a Soil and Water Quality Management Plan. This will be provided to the Conservator and EPSDD PCS for review. For the Early Works, the successful contractor is to develop a robust Erosion and Sediment Control (ESC) Plans in accordance with the Environment Protection Guidelines for Construction and Land Development in the ACT (ACT EPA, 2022) to be approved by the EPA. Controls to be implemented in accordance with Managing Urban Stormwater: Soils and Construction (NSW Blue Book; 2004). The initial site plans will be provided to the Conservator and EPSDD PCS for review. A suitably qualified, independent consultant must be engaged to develop the erosion and plans, and the review the implementation of the measures onsite. The design of sediment and erosion controls must demonstrate consideration of catchment analysis, erodibility of the receiving landscape, peak velocity, and flow in drainage lines during high rainfall events. Demonstration of calculations for the sizing of sediment and erosion controls must be provided. ESC Plans is to be updated progressively throughout construction where required by changes in onsite conditions Installation of sediment control structures shall be implemented in accordance with Environment Protection Guidelines for Construction and Land Development in the ACT (ACT EPA, 2022) and ESC Plan implemented prior to the commencement of works. Controls are to be inspected at minimum weekly and, before and after rainfall events that cause runoff, and any damaged controls are to be reinstated before works recommence in the area. Control measures to be implemented will include but are not limited to: - Sediment and erosion controls must be designed to ensure there is no significant impact to environmental offset areas and Nature Reserve values, downstream water quality, downstream values or connectivity. - Sediment and erosion controls must ensure turbidity/total suspended solids is < 50NTU/60mg/L in creek lines and/or drainages. - Sediment and erosion control are designed to withstand a minimum 1 in X year storm, where X is the expected timeframe of the development - Note the Environment Protection Guidelines for Construction and Land Development in the ACT (EPA 2022) state that for developments > 1Ha, temporary sedimentation basins need to be sized to handle a 1 in 5-year 3-hour peak rainfall duration. - Sequencing of development activities must explicitly demonstrate consideration for minimising risk of sedimentation, erosion and other pollution entering the receiving environment. - Ground cover vegetation clearing must be minimised to reduce likelihood of surface erosion and runoff. - Sediment and erosion controls must be established prior to the commencement of work, maintained for the duration of the works until disturbed areas are stabilised - Stormwater egress points must consider and mitigate risk of causing or contributing to erosion downstream of the project. - Any batters or sloping ground that may be impacted by the project must be appropriately stabilised and include erosion mitigation measures. - Where large areas are exposed, contour drains, or equivalent controls must be used to minimise overland flows at appropriate spacings dependent on batter length and slope. - Sediment basins must be flocculated and discharged within 7 days if they are more than 50% full. - All temporary sediment basins must be checked and maintained for the duration of the development period. Temporary basins may require periodic desilting to maintain their functional holding capacity. - Any permanent ponds or basins used for the duration of the development period must be checked and maintained. Permanent ponds or basins may require periodic desilting to maintain their functional holding capacity. - Silt and debris removed from channels and traps must not be disposed of within a reserve or offset area. - Controls must be adjusted as required for the life of the development period to ensure that impacts to conservation values are appropriately managed and mitigated.	Project Manager, Environment Manager, All Site Staff	Possible	Significant	B
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Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
								- Temporary erosion and sediment control measures must be removed once the site is fully stabilised to the satisfaction of the land custodian. - Temporary creek protection measures will be established during construction to reduce the potential for inadvertent impacts to Dog Trap Creek. Permanent measures are to be built as part of the design. - Excess materials such as fill and topsoil to be stockpiled with erosion protection and sediment controls, after approval of location. Stockpile to be stabilised with soil binder, hydromulch or other means if not used for four weeks or more. - Weather will be monitored daily to ensure the Site is adequately prepared for rainfall events with potential wet weather events communicated to construction teams				

8.5 Package 1C Investigation Works

Table 12 Risk assessment and mitigation measures – Applicable only to the Package 1C Investigation Works

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
Applicable only to the Package 1C Investigation Works												
I-001	Flora and Fauna	Prior to Investigation Works	SLL not identified	Death or injury to SLL	Probable	Significant	A	The Project ecologist will conduct pre-clearance surveys to: - Identify areas of suitable habitat for SLL that will require supervision by the Project Ecologist during initial earthworks. - Identify rocks that can reused by EPSDD PCS as habitat features. PCS will be contacted to arrange reuse of these rocks. - Capture and release any SLL found to outside of the Site	Project Ecologist All Site Staff	Possible	Significant	B
I-002	Flora and Fauna	SLL relocation	Incorrect handling of SLL	Death or injury to SLL	Probable	Significant	A	In the event that a SLL is identified, works in the area will cease immediately and the Project Manager will be notified. The Project Ecologist will supervise the handling and relocation of the SLL, in accordance with the procedures below: - SLL will be handled and transported in accordance with the ACT Government document (found in Appendix F) - <i>Striped Legless Lizard (Delma impar)</i> Guidelines for Salvage Operations. - Any found SLL must be captured and individuals assessed for injuries and then released immediately (if uninjured) into suitable adjoining habitat to the east (preferably within 10 m of capture and within a marked No-Go Zone). - Any injured SLL will be taken to a local vet. Animals will be transported in calico bags and placed in a small plastic box with abundant air holes to avoid further stress. - SLL should be released or transported to a vet as soon as possible after capture. - Any severely injured animals are to be assessed and humanely euthanised immediately on site by the Project Ecologist. - Works can only recommence after the SLL has been relocated by the Project Ecologist. - All capture and release locations (latitude / longitude) must be documented and reported to the relevant ACT Government Biodiversity Officer in accordance with EPBC condition 20 (i.e. within 20 business days following the end of the annual compliance reporting period) - Works in the vicinity of the area must not re-commence without the approval of the Project Manager.	Project Ecologist Project Manager All Site Staff	Possible	Significant	B

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
I-003	Flora and Fauna	Commencement of Investigation Works	SLL not excluded correctly from the Site	SLL can continue to enter the Site, creating a risk of injury or death	Probable	Significant	A	Reptile specific No-Go / exclusion fencing will be established along the eastern boundary of the David Warren Road extension works, to block passage of any ground-dwelling fauna (specifically the SLL) from entering the Site. Exclusion fencing requirements include: - Fencing is to be made from a hard and smooth material (mesh will not to be used to avoid creating a trapping hazard) and will be dug into the ground to limit potential for burrowing. - Exclusion fencing will also include signage at 30m intervals. - Fencing is to remain in place for the whole period of Investigation Works and will not be removed until all works are completed. - No machinery or construction equipment, waste, storage materials are permitted with No-Go Zones. Activities within No-Go Zones will be limited to essential, non-intrusive activities (e.g. environmental studies and fauna relocation). - Exclusion fencing is to be inspected prior to the commencement of Investigation Works. Weekly inspections of the fencing will also be undertaken for the duration of Investigation Works. - If holes are found beneath the fence, then these will be appropriately backfilled and/or blocked to maintain a continuous barrier for the SLL.	Project Ecologist All Site Staff	Possible	Significant	B

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
I-004	Aboriginal Heritage	Investigation Works	Ground disturbance from – vehicle and machinery movements, clearing, excavations.	Damage/destroying Aboriginal artefacts	Possible	Significant	B	Investigation Works are to be carried out in accordance with the excavation permit approved by ACT Heritage (see Appendix C), to be led by the Project Heritage Consultant in consultation with the RAOs. During the Project Induction - all site workers will be informed of the heritage significance of heritage items within and adjacent to the project area and what historical archaeological remains may be present. All sub-contractors and sub-consultants are to be provided with the locations of the [REDACTED], shp or CAD files can be provided upon request. Access into the [REDACTED] will not be allowed until approval from the Project Manager is given. Ground disturbing works within the [REDACTED] will not proceed at each stage until the Project Manager directs works to proceed, following the advice of the Project Heritage Consultant. [REDACTED]: [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] No works are to occur outside the Site. [REDACTED] If any unexpected archaeological remains or other heritage artefacts are encountered during the works, all works will cease in the vicinity of the find, the Project Manager shall be advised immediately and Monaro Highway's unexpected finds protocol is to be followed and further advice from the heritage consultant will be gained, please see the protocol in Appendix D.	Project Manager Project Heritage Consultant All Site Staff	Unlikely	Significant	C
I-005	The Site (project boundary)	All activities	Impacts to values outside the Site	Unapproved or unmitigated impacts	Very Likely	Significant	A	The Site (being the extent of that stage of works as shown in Figure 2) be clearly delineated with 1.8m high temporary construction fencing erected in accordance with AS 4687—2007 Temporary fencing and hoardings that is signposted to indicate the area outside is a No-Go-Zone. All Site Staff will be made aware of the boundary of the Site and No-go-Zones A fencing design drawing is shown in Appendix G. No 'Work' or vehicle access is to occur outside the Site or within No-go Zones. These areas only accessed on foot for environment surveys as approved by the Project Manager Sub-contractors will be provided with a map displaying the boundary of the Site and No-Go-Zones. All entry and exit points to the site must be locked when the site is unattended.	Project Manager Site Supervisors All Site Staff	Unlikely	Significant	C

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
I-006	Flora and Fauna	Access track installation	Machinery/Equipment Strike to SLL	Death or injury to SLL	Probable	Significant	A	Project Ecologist must be on-site during the disturbance or removal of SLL habitat (as identified in the pre-clearance survey); Installation of access tracks will be undertaken in the following manner to maximise the probability of safely locating and capturing SLL; - Machinery will tynes or similar will be used to strip the grass and topsoil in areas that are identified as potential SLL habitat - Moving slowly, scraping will occur at a depth of approximately up to 20-30 cm - The Project Ecologist will follow the machinery on foot, carefully watching the scraped material and inspecting the newly scraped area for SLL individuals. 4.5m access tracks will be installed to allow for vehicles such as drill rigs and excavators to access the Site which has been observed to become boggy following wet weather. - To install the access tracks geotextile will be laid over the ground surface to provide a platform for gravel which will form the surface of the tracks. This will likely be carried out by small trucks (bogies) an excavator and/or posi-track. - Where allowable with advice from the Project Heritage Consultant some minor earthworks may be carried out to level the surface before installing the tracks.	Project Ecologist Project Manager All Site Staff	Possible	Significant	B
I-007	Waterways	All activities	Sediment laden runoff from disturbed areas entering the waterway (Dog Trap Creek)	Reduced water quality in local waterways due to increased turbidity and sediment loading	Possible	Significant	B	Erosion and sediment controls for the Investigation Works will be those as shown in Figure 4 .Due to the limited ground disturbance from the Investigation Works, only a sediment fence above the bank of Dog Trap Creek is considered necessary. Erosion and sediment controls will be implemented in accordance with Environment Protection Guidelines for Construction and Land Development in the ACT (ACT EPA, 2022) and the Managing Urban Stormwater: Soils and Construction (NSW Blue Book; 2004). In the case where there is an inconsistency in these documents, controls and conditions from the NSW Bluebook are to be followed.	Project Manager, Environment Manager, All Site Staff	Unlikely	Significant	D
I-008	Flora and Fauna & Heritage	Geotechnical, contamination and utility investigations	Test locations not cleared for SLL individuals or heritage objects before intrusive investigations commence	Impact to SLL individuals or heritage objects	Probable	Significant	A	Above conditions are to be adhered to during the Investigation Works. Intrusive investigations are not to commence until direction is provided from the Project Manager OR the Environment Manager acting on their behalf. The Project Manager will give direction after seeking advice from the Project Ecologist and Project Heritage Consultant to proceed.	Project Manager, Environment Manager, Project Heritage Consultant All Site Staff	Possible	Significant	B
I-009	Waste	Demobilise from the Site	Site not returned to pre-existing condition	Waste left onsite. SLL exclusion fence not removed, diminishment of natural values	Probable	Minor	D	All materials are to be removed from site following the completion of works in this order: - Erosion and sediment controls - Temporary site boundary fence - SLL exclusion fence	Project Manager	Possible	Minor	D

8.6 Package 1C Main Works

Table 13 Risk assessment and mitigation measures – Applicable only to the Package 1C Main Works

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
Applicable only to the Package 1C Main Works												
M-001	Project approvals	Prior to construction	Sub-plans inconsistent with this CEMP	Breach of approval conditions	Very Likely	Significant	A	The Responsible Party for the Main Works may develop sub-plans for specific aspects to meet conditions of the contract and/or to manage risks from those aspects. The measures proposed in these sub-plans must be consistent with those approved in this CEMP, while measures additional measures may also be proposed. These sub-plans may include: • Soil and Water Management Sub-Plan • Contaminated Land Management Sub-Plan • Specific Spill Response Plan • Air Quality Management Sub-Plan • Noise and Vibration Management Sub-Plan • Flora and Fauna Management Sub-Plan • Heritage Management Sub-Plan • Waste Management Sub-Plan • Flood Management Plan • Traffic Management Plan (TMP) The sub-plans must be approved by the proponent before being implemented.	Environment Manager	Unlikely	Significant	C

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
M-002	Flora and Fauna	Prior to Main Works	SLL not excluded correctly from the Site	SLL can continue to enter the Site, creating a risk of injury or death	Probable	Significant	A	Reptile specific No-Go / exclusion fencing will be established along the eastern boundary of the David Warren Road extension works, to block passage of any ground-dwelling fauna (specifically the SLL) from entering the Site. Exclusion fencing requirements include: - Fencing is to be made from a hard and smooth material (mesh will not to be used to avoid creating a trapping hazard) and will be dug into the ground to limit potential for burrowing. - Exclusion fencing will also include signage at 30m intervals. - Fencing is to remain in place for the whole period of Investigation Works and will not be removed until all works are completed. - No machinery or construction equipment, waste, storage materials are permitted with No-Go Zones. Activities within No-Go Zones will be limited to essential, non-intrusive activities (e.g. environmental studies and fauna relocation). - Exclusion fencing is to be inspected prior to the commencement of Main Works. Weekly inspections of the fencing will also be undertaken for the duration of Main Works. - If holes are found beneath the fence, then these will be appropriately backfilled and/or blocked to maintain a continuous barrier for the SLL. The Project ecologist will conduct pre-clearance surveys to: - Identify areas of suitable habitat for SLL that will require supervision by the Project Ecologist during initial earthworks. - Identify rocks that can reused by EPSDD PCS as habitat features. PCS will be contacted to arrange reuse of these rocks. The removal of the 4.05ha of suitable habitat identified for Striped Legless Lizard must be undertaken between September – May to coincide with the species' active period. The higher temperatures experienced during this time may allow individuals to disperse out of the construction without risk of injury or the direct handling of individuals. Carry out regular toolbox meeting regarding SLL to be undertaken, as required	Project Ecologist All Site Staff	Possible	Significant	B

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
M-003	Flora and Fauna	Clearing and grubbing Bulk Earthworks	Machinery/Equipment Strike to SLL	Death or injury to SLL	Probable	Significant	A	Project Ecologist must be on-site during the disturbance or removal of SLL habitat (as identified in the pre-clearance survey); Stripping of topsoil will be undertaken in the following manner to maximise the probability of safely locating and capturing SLL; - A grader with tynes will be used to strip the grass and topsoil in areas that are identified as potential SLL habitat - Moving slowly at speed specified by the Project Ecologist, scraping will occur at a depth of approximately up to 20-30 cm to encourage dispersal of any SLL individuals that are present. - The Project Ecologist will follow the machinery on foot, carefully watching the scraped material and inspecting the newly scraped area for SLL individuals. In the event that a SLL is identified, works in the area will cease immediately and the Project Manager will be notified. The Project Ecologist will supervise the handling and relocation of the SLL, in accordance with the procedures below: - SLL will be handled and transported in accordance with the ACT Government document (found in Appendix F) - <i>Striped Legless Lizard (Delma impar) Guidelines for Salvage Operations</i>. - The Project Manager will be notified by the Project Ecologist of the find - Any found SLL must be captured and individuals assessed for injuries and then released immediately (if uninjured) into suitable adjoining habitat to the east (preferably within 10 m of capture and within a marked No-Go Zone). - Any injured SLL will be taken to a local vet. Animals will be transported in calico bags and placed in a small plastic box with abundant air holes to avoid further stress. - SLL should be released as soon as possible after capture or in the case of injured SLL, transported to a vet as soon as possible after capture. - Any severely injured animals are to be assessed and humanely euthanised immediately on site by the Project Ecologist. - Works can only recommence after the SLL has been relocated by the Project Ecologist and approval to re-commence has been granted by the Project Manager - All capture and release locations (latitude / longitude) must be documented and reported to the relevant ACT Government Biodiversity Officer in accordance with EPBC condition E-24 (i.e. within 20 business days at the Annual Compliance Reporting Period).	Project Ecologist Project Manager All Site Staff	Possible	Significant	B
M-004	Flora and Fauna	Commencement of Main Works	Construction vehicle movement, clearing, earthworks	Death or injury to wombats	Probable	Moderate	B	Prior to the commencement of earthworks, a survey is to be conducted to detect wombat burrows. The survey should be conducted by the Project Ecologist and include documentation of burrow locations and activity levels. A visual assessment of burrow activity should include an external assessment for signs of recent use (e.g. tracks and scats) and an internal search using a torch. If it is not possible to conduct an internal search of the entire burrow, a remote camera aimed at the burrow entrance should be deployed and captures assessed to determine any activity at the burrow. If a burrow is determined active or cannot be determined as inactive, it is to be clearly marked and not disturbed until it is determined to be inactive. A one-way gate may be installed to exclude wombats from continuing to use a burrow. The gate should be kept in place for at least a week to ensure the wombat has moved on. The burrow must be confirmed inactive before it is collapsed and backfilled.	Project Ecologist	Unlikely	Moderate	D

Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
M-005	Flora and Fauna	Clearing and grubbing Weed control	Incorrect control of weeds	Impacts from introduction and spread of weeds	Probable	Moderate	B	A weed management plan is to be developed and implemented for the Main Works of the Project. This will form a sub-plan to this CEMP. Weed management, monitoring and control practices should be implemented as part of the Construction Environmental Management Plan (CEMP) to minimise the spread of exotic species into natural areas within and outside of the Site. In particular, pest plants and weeds of national significance (WoNS) should be targeted in accordance with the ACT pest plant and animals declarations and National Weed Strategy (Commonwealth of Australia 2017) Weed control will be undertaken by suitably qualified and/or experienced personnel. This may include: - Manual weed removal in preference to herbicides. - Replacing non-target species removed/killed as a result of weed control activities. - Protecting Non-target species from spray drift. - Using only herbicides registered for use within or near waterways for the specific target weed. - Applying herbicides during drier times when the waterway level is below the high-water mark. - Not applying herbicide if it is raining or if rain is expected. - Mixing and loading herbicides, and cleaning equipment away from waterways and drains. Manage weeds in accordance with the requirements of the Pest Plants and Animals Act 2005, to ensure they are not spread to the surrounding environment, including during transport disposal off-site to a licenced waste disposal facility. All weeds, propagules, other plant parts and/or excavated topsoil material that is likely to be infested with weed propagules that are likely to regenerate will be treated on site or bagged, removed from site and disposed of at a licensed waste disposal facility.	Site Supervisors All Site Staff	Unlikely	Moderate	D
M-006	Flora and Fauna	All activities	Construction vehicles	Death and mortality of native animals by vehicle strike	Probable	Moderate	B	During the Main Works and Main Works a temporary 1.8m high construction fencing will be erected in accordance with AS 4687—2007 (Temporary fencing and hoardings) along the eastern boundary of the Site, between Dog Trap Creek and the ESA. Please refer to Figure 5 for installation location and Appendix G for fencing details. A permanent fence will not be installed along the eastern boundary of the Site	Environment Manager Site Supervisors	Possible	Moderate	C

M-007	Waterways	Clearing and grubbing Earthworks	Sediment laden runoff from disturbed areas entering the waterway (Dog Trap Creek)	Reduced water quality in local waterways due to increased turbidity and sediment loading	Very Likely	Significant	For the Main Works, the successful civil contractor will develop a Soil and Water Quality Management Plan. This will be provided to the Conservator and EPSDD PCS for review. For the Main Works, the successful contractor is to develop a robust Erosion and Sediment Control (ESC) Plans in accordance with the Environment Protection Guidelines for Construction and Land Development in the ACT (ACT EPA, 2022) to be approved by the EPA. Controls to be implemented in accordance with Managing Urban Stormwater: Soils and Construction (NSW Blue Book; 2004). The initial site plans will be provided to the Conservator and EPSDD PCS for review. A suitably qualified, independent consultant must be engaged to develop the erosion and plans, and the review the implementation of the measures onsite. The design of sediment and erosion controls must demonstrate consideration of catchment analysis, erodibility of the receiving landscape, peak velocity, and flow in drainage lines during high rainfall events. Demonstration of calculations for the sizing of sediment and erosion controls must be provided. ESC Plans is to be updated progressively throughout construction where required by changes in onsite conditions Installation of sediment control structures shall be implemented in accordance with Environment Protection Guidelines for Construction and Land Development in the ACT (ACT EPA, 2022) and ESC Plan implemented prior to the commencement of works. Controls are to be inspected at minimum weekly and, before and after rainfall events that cause runoff, and any damaged controls are to be reinstated before works recommence in the area. Control measures to be implemented will include but are not limited to: - Sediment and erosion controls must be designed to ensure there is no significant impact to environmental offset areas and Nature Reserve values, downstream water quality, downstream values or connectivity. - Sediment and erosion controls must ensure turbidity/total suspended solids is < 50NTU/60mg/L in creek lines and/or drainages. - Sediment and erosion control are designed to withstand a minimum 1 in X year storm, where X is the expected timeframe of the development - Note the Environment Protection Guidelines for Construction and Land Development in the ACT (EPA 2022) state that for developments > 1Ha, temporary sedimentation basins need to be sized to handle a 1 in 5-year 3-hour peak rainfall duration. - Sequencing of development activities must explicitly demonstrate consideration for minimising risk of sedimentation, erosion and other pollution entering the receiving environment. - Ground cover vegetation clearing must be minimised to reduce likelihood of surface erosion and runoff. - Sediment and erosion controls must be established prior to the commencement of work, maintained for the duration of the works until disturbed areas are stabilised - Stormwater egress points must consider and mitigate risk of causing or contributing to erosion downstream of the project. - Any batters or sloping ground that may be impacted by the project must be appropriately stabilised and include erosion mitigation measures. - Where large areas are exposed, contour drains, or equivalent controls must be used to minimise overland flows at appropriate spacings dependent on batter length and slope. - Sediment basins must be flocculated and discharged within 7 days if they are more than 50% full. - All temporary sediment basins must be checked and maintained for the duration of the development period. Temporary basins may require periodic desilting to maintain their functional holding capacity. - Any permanent ponds or basins used for the duration of the development period must be checked and maintained. Permanent ponds or basins may require periodic desilting to maintain their functional holding capacity. - Silt and debris removed from channels and traps must not be disposed of within a reserve or offset area. - Controls must be adjusted as required for the life of the development period to ensure that impacts to conservation values are appropriately managed and mitigated.	Project Manager, Environment Manager, All Site Staff	Possible	Significant	B
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Number	Element	Aspect/Construction Activity	Risk/Source of Impact	Potential Impact	Before Mitigation			Mitigation / Management Measure	Responsible	After Mitigation		
					L	C	R			L	C	R
								- Temporary erosion and sediment control measures must be removed once the site is fully stabilised to the satisfaction of the land custodian. - Temporary creek protection measures will be established during construction to reduce the potential for inadvertent impacts to Dog Trap Creek. Permanent measures are to be built as part of the design. - Excess materials such as fill and topsoil to be stockpiled with erosion protection and sediment controls, after approval of location. Stockpile to be stabilised with soil binder, hydromulch or other means if not used for four weeks or more. - Weather will be monitored daily to ensure the Site is adequately prepared for rainfall events with potential wet weather events communicated to construction teams				
M-008	Bushfire	All activities	Plant and equipment, lightning strikes, human activities	Bushfire emanating from the Site (potential loss of life and damage to flora and fauna)	Probable	Serious	A	A Fire Management Plan will be prepared for the Main Works and submitted to the land custodian and the ACT Emergency Services Agency (ESA) for approval. The Responsible Party shall submit the approved Fire Management Plan to the Proponent prior to any construction commencing. The criteria in Appendix E shall be incorporated into the fire management plan: Referring to the ACT Fire Danger Rating (FDR) the following controls will be undertaken: - The FDR will be checked daily prior to works commencing - If FDR is catastrophic or where a total fire ban is declared the Project Manager is to instruct all works on site are to cease, and for all non-essential personnel to evacuate the site - If FDR is extreme or higher the Project Manager is to instruct all hot works to cease including cutting, grinding, welding and excavation of rock which could emit a spark. - The Project Manager will subscribe to the ESA total fire ban alerts - Hot works will be carried out only with a hot works permit, approved by the Project Manager - All plant to have fire extinguishers which are to be checked during daily pre-starts. The Project Manager will assess the adequacy of fire extinguishers provided at each site to ensure that the requirements of the project activities, relevant legislation, Codes of Practice, and Australian Standards are met. - Throughout the duration staff will ensure that the site is accessible to emergency services and access to adjacent land from the site does not impede emergency services who may need to enter in the event of a bushfire	Project Manager All Site Staff	Unlikely	Serious	B

9.0 Incident and non-compliances

9.1 General

9.1.1 Incident definition

Incidents may be defined as actions that result in environmental harm that is not trivial. Examples of such incidents that have the potential to occur at the Site include:

- Carrying out works without prior planning approval from the ACT or Commonwealth Governments.
- Injury or mortality to a SLL individual.
- Disturbance of Aboriginal artefacts or areas that is not in accordance with the excavation permit approved by ACT Heritage.
- Damage to a historic heritage item or place.
- Unauthorised clearing within or outside of the site.
- Pollution of waters.

9.1.2 Non-compliance definition

Non-compliances may be defined as the failure to carry out conditions of this CEMP or other approvals but are not incidents. Examples of non-compliance that have the potential to occur include:

- Failure to carry out inspections at the frequency specified in this CEMP.
- Failure to keep sufficient records to demonstrate compliance with conditions of EPBC approval 2020/8768.
- Site Staff not completing an Induction prior to commencing works at the Site.

9.2 Notifications

9.2.1 Incident notification

In the event of an incident occurring, all Site Staff must:

- Secure the scene of the incident and provide/obtain care for any injuries or environmental harm, if able. An employee must never place themselves or others at additional risk in responding to an incident.
- Immediately undertake notification, in accordance with this section.
- Assist in incident investigations as required.

Project-specific requirements for notifying, investigating, and reporting environmental incidents include:

- All Site Staff including subcontractors must notify the Project Manager of any project-related incident immediately. The Project Manager will determine the appropriate course of action depending on the nature of the incident;

- The HSSE incident response procedure of the Project Managers respective company will be followed. For Stantec Section 14.0 of the HSSE manual will be followed.
- The Project Manager must notify TCCS and regulatory authorities of incidents involving all site staff and subcontractors in accordance with the requirements of legislative obligations. Such notifications may include;
 - ACT Environment Protection Authority (EPA).
 - ACT Heritage.
 - EPSDD Parks and Conservation Service (PCS).
 - ACT Emergency Services Agency (ESA).
 - DCCEEW (see **Section 10.2.2**) below for requirements for notifications to DCCEEW).
- Stantec and their sub-contractors must provide TCCS, upon request, with copies of any correspondence between Project parties and any regulatory agency, in relation to project-related incidents.

9.2.2 Reporting incidents and non-compliances to DCCEEW

If an incident or non-compliance impacts or has the potential to impact on SLL individuals or SLL habitat (that is not approved to be impacted), then DCCEEW must be notified by the approval holder (TCCS). This notification would be carried out concurrently with incident notifications in accordance with **Section 9.2**. This does not apply to impacts that are authorised by EPBC Approval 2020-8768. This notification may be prepared on behalf of TCCS by their authorised delegate.

In the case of an incident or non-compliance with this CEMP or EPBC 2020/8768 that relates to the SLL then the following needs to be carried out:

The approval holder must notify DCCEEW electronically, within 2 **business days** of becoming aware of any **incident**. The approval holder must specify in each notification:

- a) any condition or commitment made in a **plan** which has been or may have been not complied with,
- b) a short description of the **incident**, and
- c) the location (if applicable, including co-ordinates), date and time of the **incident**.

Following notification of the incident further details must be provided to DCCEEW by the approval holder (TCCS) which may be prepared on behalf of TCCS by their authorised delegate. The following will need to be provided:

The approval holder must provide to DCCEEW in writing, within 12 **business days** of becoming aware of an **incident**, the details of that **incident**. The approval holder must specify:

- a) all corrective measures and investigations which the approval holder has already taken in respect of the **incident**,
- b) the potential impacts of the **incident**,
- c) the method and timing of any corrective measures that the approval holder proposes to undertake to address the **incident**, and

- d) any variation of these conditions or revision of a plan that will be required to prevent recurrence of the **incident** and/or to address its consequences.

9.2.3 Reporting incidents to the EPA

In the event of an incident that has caused or is likely to cause material or serious environmental harm then this must be reported to the ACT EPA. This notification must be carried as soon as possible after the person becomes aware of the incident and would be carried out by the Project Manager on behalf of any Site Staff or sub-contractors.

The Project Manager would notify EPA via the Access Canberra 24-hour hotline on 13 22 81. They would inform the EPA about the nature of the incident and any actions taken to contain or correct the incident.

The *Environment Protection Act 1997* provides for each person in the ACT to take all practicable and reasonable steps to prevent or minimise environmental harm or environmental nuisance their actions might cause. There is also a legal obligation for each person carrying out activities to report any significant environmental harm caused by their actions.

An Environmental Authorisation from the EPA is likely to be required for the Civil Works of Package 1C, this section will be updated accordingly to reflect the reporting conditions provided by the EPA for incidents.

9.2.4 Non-compliance action and notification

The Project Manager, TCCS Representative or public authority may raise a non-compliance or improvement opportunity using a process which will typically include the following steps:

- An analysis of the results by the Project Manager in more detail with a view of determining possible causes for the non-compliance.
- A site inspection by the Project Manager or their delegate.
- Advising relevant personnel of the problem.
- Identifying and agreeing on actions to resolve or mitigate the non-compliance.
- Implementing actions to rectify or mitigate the non-compliance.

For each non-compliance identified a corrective/preventative action (or actions) must be implemented. In addition, any environmental management improvement opportunities can be initiated as a result of incidents or emergencies, monitoring and measurement, audit findings, or other reviews. Improvement opportunities may also result in the implementation of corrective/preventative actions.

Non-compliant activities may be stopped, if necessary, by the Project Manager or any site staff acting as their delegate. The works will not commence until a corrective/ preventative action has been closed out. In such circumstances a non-compliance report must be prepared.

10.0 Monitoring, inspections, reporting and audits

10.1 Site monitoring and inspections

Regular project monitoring will be undertaken to ensure the Project is meeting the performance objectives of **Section 6.0** using the management measures of **Section 8.0**. The inspection and monitoring schedule that will be undertaken for the Project is shown below in **Table 14**.

Prior to the commencement of works, inspection checklists will be developed to guide the items to be reviewed, non-compliance triggers, and guides for corrective actions.

Table 14 Inspection and monitoring schedule

Ref	Type	Frequency	Standard	Reporting	Responsible
I-01	SLL pre-clearance survey	Prior to ground disturbing works	N/A	Inspection checklist	Project Ecologist
I-02	Site Surveillance	Daily	N/A	Inspection checklist	Site Supervisors
I-03	SLL Exclusion Fence Inspection	Weekly	N/A	Inspection checklist	Project Ecologist
I-04	Regular Environment Inspection	Weekly	Environment Protection Guidelines for Construction and Land Development in the ACT (EPA, 2022)	Inspection checklist	Project Manager Environment Manager
I-05	Pre-rainfall inspection*	Prior to any rainfall forecast > 10mm that has over 75% chance of occurring	Environment Protection Guidelines for Construction and Land Development in the ACT (EPA, 2022)	Inspection checklist	Site Supervisors
I-06	Post-rainfall inspection*	Following any rainfall causing runoff at the Site	Environment Protection Guidelines for Construction and Land Development in the ACT (EPA, 2022)	Inspection checklist	Site Supervisors
I-07	Shutdown Environment Inspections	Prior to any period where the worksites will be shut down for more than four days (i.e. long weekends, the Christmas period, etc.)	Environment Protection Guidelines for Construction and Land Development in the ACT (EPA, 2022)	Inspection checklist	Project Manager Environment Manager

**These inspections are not deemed necessary for the Investigations Works due to the limited area of disturbance that will occur. So, will not be carried out for the Investigation Works.*

10.1.1 SLL Pre-clearance survey

Pre-clearance surveys by the Project Ecologist will be carried prior to the first activity in any area within known SLL habitat or in areas adjacent to mapped SLL habitat. The purpose of the inspection will be to identify, capture and release any SLL individuals in the area, and to allow the Project Ecologist to advise if any additional management measures will need to be followed at that location. Additional measures may include supervision from the Project Ecologist during initial activities while the area of the site is being established, after which it is considered the risk of SLL being present in the works area will be lower as topsoil and vegetation will generally be removed during site establishment.

10.1.2 Site surveillance

Daily inspection will be carried out during Project activities that have a high inherent environmental risk, such as work in [REDACTED] work carried out before SLL exclusion fence is in place, work in or near the waterway. Daily surveillance will include a check of relevant environmental controls and resources required to ensure effective operation and maintenance. If deficiencies are noted, they can be rectified immediately by the Site Supervisor.

If any SLL or reptiles suspected to be SLL are sighted works in the vicinity will cease immediately and the Project Manager will be notified. The Project Manager will contact the Project Ecologist for assistance.

A review will be undertaken for measures included in this CEMP for the SLL.

10.1.3 SLL exclusion fence inspection

An inspection of the SLL fence along the eastern boundary of the Site will be undertaken weekly for the project duration. The purpose of this inspection will be to ensure that the SLL fence remains in good working order and continues to block the passage of ground dwelling fauna. Non-compliances that may need be rectified include:

- Damaged fencing (fallen fencing, holes in fencing, loose material allowing fauna to climb).
- Inadequate trenching of the fence into the ground.
- Loss of signage and/or boundary delineation indicating no-go zones.
- Burrows beneath the fence creating potential passage for fauna.

If any of these issues are identified, then the Project Ecologist notify the Site Supervisor who will cease works in the immediate area, notify the Project Manager (who will contact the Project Ecologist) before proceeding with the required repairs to ensure that passage for ground dwelling fauna is once again blocked. The Project Ecologist can advise if any further actions are required due to the non-compliance such as a clearance survey of the immediate area.

10.1.4 Regular environment inspection

Weekly inspections will be carried out by the Project Manager or an authorised delegate acting on their behalf (such as the Environment Manager or Project Engineer). The purpose of the inspection will be to ensure that the Project is meeting the objectives of this CEMP,

and onsite mitigations are being adequately implemented. As a minimum a visual inspection of the following will be carried out:

- Site boundary delineation (fencing, flagging and signage).
- No-go zones.
- SLL exclusion fencing.
- Dog Trap Creek (visual check of water quality).
- Heritage management measures.
- Erosion and sediment controls.
- Mud tracking on public roads.
- Emissions of dust, odour and noise.
- Site waste management, housekeeping.
- Storage of fuel, oils, chemicals, concrete washouts.

If any non-compliances are identified, then the Project Manager (or their delegate) will provide corrective actions to the Site Supervisor to rectify the issue. These will need to be carried out within one week, with shorter durations for more urgent or risky items, as determined by the Project Manager

10.1.5 Pre and post rainfall inspections

Both pre and post rainfall inspection will be carried out by the Site Supervisor to ensure that erosion and sediment controls are adequate to manage risks, particularly to Dog Trap Creek. A copy of the Project Erosion and Sediment Control (ESC) Plan will be taken for the inspection to ensure the specified controls are in place and that the plan can be amended if required.

Pre-rainfall inspections will be carried out prior to any rainfall event with greater than 75% chance of occurring that is predicted to be greater than 10mm, as forecast by the Bureau of Meteorology. The Site Supervisor will ensure controls are in place as shown in the ESC Plan and will function correctly for the forecast rainfall. If issues are identified, then they must be rectified prior to forecast start of rainfall.

Post-rainfall inspections will be carried out following any rainfall event causing runoff at the Site. The purpose is to check that erosion and sediment controls performed as planned and determine if any maintenance (such as cleaning out sediment sumps or basins) is required. The Site supervisor will check the controls in accordance with the ESC Plan and ensure any issues are rectified within one week, or prior to the next forecast rainfall event (whichever is sooner).

10.1.6 Site shutdown environment inspections

Prior to any period where the worksites will be shut down for more than four days (i.e. long weekends, the Christmas period, etc.) the Site will be inspected by the Project Manager (or their authorised delegate). This inspection is to ensure that the Site is secure and will not pose an environmental risk during a period where there will not be staff readily available to rectify issues. The focus of the inspection may include:

- Ensuring site entry/exit points are secured.
- No-go zones are clearly delineated.

- SLL exclusion fence is in place and does not require any maintenance.
- Site signage is in place.
- Erosion and sediment controls are in accordance with the ESC and adequate.
- Dust generating stockpiles or areas have been adequately stabilised.
- Plant and equipment are secured and stored correctly.
- Waste, chemicals, fuels are stored correctly.

Issues identified in the inspection must be rectified prior to shutdown of the Site.

10.1.7 Summary of SLL monitoring measures

A range of measures to monitor for the SLL are included in the CEMP which will be summarised here to show compliance with condition 4(h) of the EPBC approval. Monitoring for the SLL from the Project Ecologist includes:

- Pre-clearance surveys for the SLL (see Section 10.1.1 and conditions EW-001, I001, M-002)).
- Supervision during topsoil stripping in known SLL habitat (see conditions EW-001, I-006, M-003).
- Weekly inspections of the SLL exclusion fence (see Section 10.1.3).

Environmental inspections will also be conducted by Site Supervisors and the Environment Manager.

The trigger value for corrective measures is the find of a single SLL individual. If this is triggered works must cease in the vicinity of the SLL find immediately until the SLL can be safely captured and released and advice is provided by the Project Ecologist that works are safe to re-commence.

If an SLL is found the Project Ecologist will advise the Project Manager if any corrective actions are required such as additional supervision during works, or setting further exclusion zones for the SLL.

10.2 Environmental reporting

The reporting requirements for the Project is shown below in **Table 15**.

Table 15 Reporting requirements

Ref	Report	Timing	Responsibility	Recipient
Rep-01	Notify of commencement of the action	At the 'commencement of the action (the first instance of any on-site clearing, construction or other physical activity associated with the Action)	TCCS	DCCEEW
		Notification within 5 business days		
Rep-02	CEMP • Approval	Approval – prior to the commencement of the Action	TCCS	Approval - DCCEEW

Ref	Report	Timing	Responsibility	Recipient
	Published	Published - Within 15 business days of approval		Published Public Website
Rep-03	OMP	Approval – prior to the commencement of the Action	TCCS	Approval - DCCEEW
	- Approval - Published	Published - Within 15 business days of approval		Published - Public Website
Rep-04	Written evidence of the initiation of securement of all offset sites specified in the approved OMP	Before undertaking any clearing, construction or other physical activity associated with the Action outside of the Package 1C Early Works Boundary.	TCCS	DCCEEW
Rep-05	Written evidence of final securement of all offset sites specified in the approved OMP	Within 18 months of the commencement of the Action (the first instance of any on-site clearing, construction or other physical activity associated with the Action).	TCCS	DCCEEW
Rep-06	Annual compliance report	Annually on the Annual Compliance Report Period	TCCS	DCCEEW Public Website
Rep-07	Completion of the action	Within 20 business days after completion of the action	TCCS	DCCEEW
Rep-08	Notification prior to expiry of the approval	60 business days prior to the expiry date of the approval (30 June 2052)	TCCS	DCCEEW
Rep-XX	Other Reports	TBA	TBA	TBA

10.2.1 EPBC reporting

The following requirements for reporting need to be carried out in accordance with EPBC Approval 2020/8768. Where conditions specify actions to be carried out by the approval holder (TCCS) they may authorise a delegate to act on their behalf.

10.2.1.1 Commencement of the action

The approval holder (TCCS) must notify the DCCEEW in writing of the date of commencement of the Action (the first instance of any on-site clearing, construction or other physical activity associated with the Action) within 5 business days after the date of commencement of the action. This will occur at commencement of the Package 1C Early Works.

10.2.1.2 Submission and publication of plans

This CEMP (and any other plans required by DCCEEW) will need to be submitted to DCCEEW and also publicly published on DCCEEW or TCCS website.

TCCS must:

- be submitted to the department electronically.

- b) Publish each plan on the TCCS or DCCEE website within 15 business days of the date the plan is approved by the Minister OR
- c) Exclude or redact sensitive ecological data from plans published on the website or provided to a member of the public
- d) Keep plans published on the website until the end date of EPBC 2020/8768.

Plan(s) means any of the documents required to be prepared, approved by the Minister, implemented by TCCS and published on the website in accordance with these conditions (includes action management plans and/or strategies).

Website means a set of related web pages located under a single domain name attributed to the approval holder and available to the public. This could be the TCCS website.

Sensitive ecological data means data as defined in the Australian Government Department of the Environment (2016) *Sensitive Ecological Data – Access and Management Policy V1.0*.

Monitoring data means the data required to be recorded under the conditions of EPBC Approval 2020/8768.

10.2.1.3 Initiation of offset securement

Before undertaking any clearing, construction or other physical activity associated with the Action outside of the Package 1C Early Works Boundary, TCCS must provide written evidence of the initiation of securement of all offset sites specified in the approved OMP.

10.2.1.4 Final offset securement

Within 18 months of the commencement of the action (the first instance of any on-site clearing, construction or other physical activity associated with the Action), TCCS must provide written evidence of final securement of all offset sites specified in the approved OMP.

10.2.1.5 Annual compliance reporting

The approval holder (TCCS) must prepare a compliance report for each Annual Compliance Report period (ACT period), which will be required for each subsequent 12 month period following the EPBC2020/8768 approval decision until the expiry date of the approval, unless otherwise specified in writing by the **Minister**.

Each **compliance report** is completed to the satisfaction of the **Minister** and must be consistent with the *Annual Compliance Report Guidelines*, Commonwealth of Australia 2023.

The compliance report demonstrates compliance with the EPBC approval including conditions of this CEMP and the OMP. Each compliance report must include:

- a. accurate and complete details of compliance and any non-compliance with:
 - i. each condition attached to this approval decision, and
 - ii. all commitments made in each **plan**,

- b. a schedule of all **plans** in effect in relation to these conditions during the **ACR period**,
- c. accurate and complete details of how each **plan** was implemented during the **ACR period**, and
- d. if any **incident** occurred, accurate and complete details of each **incident**.

The approval holder (TCCS) must:

- a) Publish each compliance report on a publicly available the website within 20 business days following the ACR period
- b) Notify DCCEEW by email that a compliance report has been published on the website and provide the weblink for the compliance report within 5 business days of the date of publication
- c) Keep all compliance reports publicly available on the website until this approval expires
- d) Exclude or redact sensitive ecological data from compliance reports published on the website
- e) Where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the department within 5 business days of publication.

Note: Compliance reports may be published on the **department's** website.

Compliance reports means written reports:

- i. providing accurate and complete details of compliance, incidents, and non-compliance with the conditions and the **plans**
- ii. consistent with the DCCEEW's *Annual Compliance Report Guidelines* (2014)
- iii. include a shapefile of any clearance of any protected matters (such as the SLL), or their habitat, undertaken within the relevant 12-month period
- iv. annexing a schedule of all plans prepared and in existence in relation to the conditions during the relevant 12-month period.

10.2.1.6 Completion of the action

Within 20 business days after the completion of the Action, and, in any event, at least 20 business days before EPBC approval 2020//8768 expires, the approval holder must notify DCCEEW electronically of the date of completion of the Action and provide completion data. The approval holder must submit any spatial data that comprises completion data as a shapefile.

The approval holder must notify DCCEEW electronically 60 business days prior to the expiry date of this approval, that the approval is due to expire.

10.2.2 Reports to others

Reports to others may be required as conditions of heritage, environmental and planning approvals obtained by the Project. Other parties that may request reporting include Conservator of Flora and Fauna, ACT EPA and ACT Heritage.

This section will be updated following receipt of reporting requirements and during reviews of the CEMP, discussed below.

10.3 Environmental audits

Environment audits will be conducted for the Project to determine compliance with this CEMP and other approvals. Audits will also identify improvements that can be made to this CEMP, and project procedures with the aim of continuous improvement in environmental performance.

Audits to be completed for the Project are shown in **Table 16** below.

Table 16 Audit requirements

Ref	Type	Frequency	Timing	Responsibility	Recipient
A-01	Internal Audit -CEMP	Following the completion of the Investigation Works	Following the completion of the Investigation Works	Environment Manager	TCCS
A-02	Internal Audit – CEMP	Every 26 weeks (from commencement) *	Following the commencement of the Main Civil Works, until completion	Environment Manager	TCCS
A-03	DCCEEW Independent Audit	Within three (3) months following each audit period [^]	Every three (3) years following commencement of the Action	As appointed by DCCEEW	DCCEEW

**An audit will not be undertaken at regular six-month intervals during the period between the Investigation Works and the Main Civil Works. It is expected that findings from audit A-01 will be incorporated as changes to this CEMP prior to the commencement of the Main Civil Works. Further it is expected that no works will take place in this period hence an audit in addition to A-01 would be redundant.*

*[^]**Audit period** means each subsequent three-year period following the **commencement of the Action** until the expiry date of this approval unless otherwise specified in writing by the **Minister**.*

10.3.1 DCCEEW independent audit

TCCS must conduct independent audits to determine compliance with the EPBC Approval which will include audit of this CEMP. The below conditions apply the independent audit:

Independent audit means an audit, conducted by an **independent auditor**, of compliance with and fulfilment of these conditions and the commitments made in plans, objectively evaluated against the audit criteria developed by the independent auditor, in accordance with the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines*, Commonwealth of Australia 2019.

Independent auditor means a person, or firm, who:

- does not have any individual, financial*, employment* or family affiliation or any conflicting interests with the Action, the approval holder or the approval holder's staff, representatives, or associated persons,
- has demonstrated experience in undertaking government-regulated environmental compliance audits, and
- holds relevant professional qualifications and accreditations.

*Other than for the purpose of undertaking the role for which an independent person, or firm, is required.

- 30) The approval holder must ensure that an **independent audit** of compliance with the conditions is conducted for every **audit period**.
- 31) The approval holder must submit details of the proposed **independent auditor** and their qualifications to the **department** within 10 **business days** following the end of each **audit period**.
- 32) The approval holder must ensure the scope of each **independent audit** is sufficient to determine the compliance status for each condition of approval, and each commitment made in each **plan**.
- 33) The approval holder must ensure the criteria for each **independent audit** and the undertaking of each independent audit are consistent with the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines*, Commonwealth of Australia 2019.
- 34) The approval holder must submit an **audit report** to the **department** for written agreement from the **department** within 3 months following the end of each **audit period**, or as otherwise directed by the **Minister** in writing.
- 35) The approval holder must ensure each **audit report** is completed to the satisfaction of the **Minister** and is consistent with the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines*, Commonwealth of Australia 2019.
- 36) The approval holder must publish each **audit report** on the **website**, in a format that is easily accessible and downloadable, within 10 **business days** of the date of the **department** agrees to the **audit report** in writing.
- 37) The approval holder must notify the **department** within 5 **business days** of the date the **audit report** is published on the **website**. In this notification, the approval holder must provide the **department** with the web address for where the **audit report** is published on the **website**.
- 38) The approval holder must keep each **audit report** published on the **website** from the first date which that **audit report** must be published and until the expiry date of this approval.

10.4 Environment records

Records must be kept to demonstrate compliance with this CEMP, EPBC approval 2020/8768, legislation, and best practice guidelines. Record keeping will be the responsibility of the Responsible Party during each stage of works, with records provided to TCCS as the Approval holder.

EPBC Compliance Records

Compliance records for EPBC approval 2020/8768 must be taken and kept for the duration of the Project. TCCS (or their authorised delegate) must maintain accurate and complete

compliance records. If DCCEEW makes a request in writing, TCCS must provide electronic copies of compliance records to DCCEEW within the timeframe specified in the request.

Stantec and then the successful Main Civil works contractor will act as delegate for TCCS in maintaining timely and accurate records for EPBC approval 2020/8768.

Note: Compliance records may be subject to audit by DCCEEW or an independent auditor in accordance with section 458 of the EPBC Act, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on DCCEEW'S website or through the general media.

Compliance records means all documentation or other material in whatever form required to demonstrate compliance with these conditions of approval (including compliance with commitments made in **plans**) in the approval holder's possession, or that are within the approval holder's power to obtain lawfully.

The following records will be kept for the Project to demonstrate compliance with EPBC approval 2020/8768 as shown below in **Table 17**. These records will be maintained by the Environment Manager for the Responsible Party.

Table 17 EPBC Record requirements

Ref	Record	Responsibility
R-01	EPBC 2020/8768 and any subsequent approval advice provided by DCCEEW	Environment Manager (Responsible Party)
R-02	This Construction Environment Management Plan (CEMP) and a register of reviews and revisions	Environment Manager (Responsible Party)
R-03	SLL data including: - Project sightings - Actions taken because of sightings - All capture and release locations (latitude / longitude)	Environment Manager (Responsible Party)
R-04	Environmental audit reports (of EPBC 2020/8768 and this CEMP)	Environment Manager (Responsible Party)
R-05	Non-compliances with EPBC 2020/8768	Environment Manager (Responsible Party)

Other environment records

Other records may be kept to demonstrate compliance with this CEMP. These records could include those shown in shown below in **Table 18**

Table 18 Other environment records

Ref	Record	Responsibility
R-06	Environment site plans	Environment Manager (Responsible Party)
R-07	Induction records	Environment Manager (Responsible Party)
R-08	Training records	Environment Manager

Ref	Record	Responsibility
		(Responsible Party)
R-09	Environmental incidents	Environment Manager (Responsible Party)
R-10	Environmental non-compliances	Environment Manager (Responsible Party)
R-11	Community and stakeholder feedback, and complaints	Environment Manager (Responsible Party)
R-12	Inspection records	Environment Manager (Responsible Party)
R-13	Monitoring records (e.g. dust, noise, vibration, water quality)	Environment Manager (Responsible Party)
R-14	Correspondence with public authorities	Environment Manager (Responsible Party)
R-15	Waste material received onsite for beneficial reuse	Environment Manager (Responsible Party)
R-16	Waste sent offsite	Environment Manager (Responsible Party)
R-17	Unexpected Finds	Environment Manager (Responsible Party)

11.0 CEMP review and revision

11.1 Need for CEMP review and records

Change adaptation and continual improvement is key to achieving the environmental objectives and targets described in **Section 6.0**. Ongoing measurement and evaluation, as well as regular audit and review of the effectiveness of this CEMP will be undertaken throughout the Project.

It is anticipated that this CEMP will be reviewed at regular intervals, in response to new or updated project approvals or when site conditions or investigation/construction methodologies change (which trigger a change in controls and commitments outlined in the CEMP). While a review of this CEMP may be undertaken it may not require that any revision is made to the CEMP. A record of CEMP reviews will be kept which will include (as a minimum):

- Name, position, and organisation of the reviewer(s).
- Date the review was completed.
- Reason for the review.
- Focus of the review (e.g. sections reviewed).
- If the review resulted in a revision of this CEMP.

A record of the revisions to the CEMP will also be kept. The revision table at the beginning of this document will be updated following any revision.

11.2 Management plan variation application to DCCEEW

If this management plan is revised then an application must be made to **Minister** for a variation to an action management plan approved by the **Minister** by submitting an application in accordance with the requirements of section 143A of the **EPBC Act**. If the **Minister** approves a revised action management plan (RAMP) then, from the date specified, the approval holder must implement the RAMP in place of any previous version of the action management plan.

11.3 Timing of CEMP review

The CEMP will be reviewed at the following periods as shown in **Table 19**.

Table 19 CEMP review requirements

Ref	Type	Timing	Responsibility
C-01	Full CEMP review	Every 12 months (following commencement)	Environment Manager (Responsible Party)
C-02	Review of risk assessment and mitigation measures Review of A-01 audit findings	No more than 3 months following completion of each Stage of the Project	Environment Manager (Responsible Party)
C-03	Review that Project approval conditions, and any subsequent updates are included in CEMP	Following receipt of environment or planning approvals (including variations) such as: ACT Heritage Statement of Heritage Effect NCA Works Approval ACT DA	Environment Manager (Responsible Party)

12.0 Conditions of approval table EPBC 2020/8768

The following table is based on the draft conditions of approval from DCCEEW dated 28 August 2024 and will need to be updated once the conditions are approved by the Minister.

Table 20 Table of commitments to EPBC conditions

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
E-01	1) To minimise impacts to the Striped Legless Lizard , the approval holder must not: - clear more than 4.05 hectares (ha) of Striped Legless Lizard habitat within the site; and - clear outside of the site.	6.0 , 8.0 , Appendix A	- Conditions and objectives of this CEMP - The extent of the SLL habitat is shown in Figure 4 and Figure 6 - Installation of site exclusion fence and boundary No-Go signage along the boundary that is adjacent to SLL habitat
E-03	2) The approval holder must - submit a Construction Environmental Management Plan (CEMP) to the department for the Minister's approval to avoid and mitigate harm to protected matters within the site. - not commence the Action unless the Minister has approved the CEMP in writing. - must commence implementing the CEMP approved by the Minister prior to the commencement of the Action - continue to implement the approved CEMP until the completion of the Action.	1.0 , 6.0 , 8.0	CEMP condition that works will not commence until the CEMP is approved by the Minister
E-04	3) By implementing the CEMP, the approval holder must achieve the following environment outcome:	1.0 , 6.0 , 8.0	- Clearing only to occur within the approved area, adjacent SLL habitat to be excluded from the project area - Installation of site exclusion fence and boundary No-Go signage along the boundary that is adjacent to SLL habitat

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	a) Prevent any avoidable harm to protected matters and mitigate unavoidable and accidental harm to protected matters.		• Procedure for clearing SLL habitat including pre-clearance surveys and relocation procedure • Physical activity associated with the action outside the Package 1C Early Works area is not allowable until the OMP is approved.
E-05	4. The CEMP must be prepared by a suitably qualified ecologist. All commitments, including environmental outcomes, management measures, corrective measures, trigger values and performance indicators in the CEMP must be SMART and based on referenced or included evidence of effectiveness. The CEMP must be consistent with the Environmental Management Plan Guidelines, and must include: a) details of the relevant protected matters and a reference to EPBC Act approval conditions to which the plan refers, b) a table of commitments made in the plan to achieve the environmental outcomes, and a reference to exactly where these commitments are detailed in the plan, c) commitments capable of ensuring that the environmental outcomes is achieved, d) management measures to avoid and mitigate harm to Striped Legless Lizards, including artificial lighting management and a relocation protocol to safely relocate any Striped Legless Lizard individual away from an area of clearing or construction by a fauna spotter catcher e) reporting and review mechanisms to demonstrate compliance with the commitments made in the plan,	• Document control table • 7.0, 8.0, 9.0, 10.0 • 13.0 a) 1.2 b) 6.0, 8.0 and this table c) 6.0, 8.0 and this table d) 8.0, 9.0 and 10.0. e) 10.2, 10.3 and 11.0 f) 8.0 g) 8.0 h) 10.1 i) Section 8.3, Figure 1 , Figure 3 , Figure 6 , Figure 8 .	• Document control table at beginning of the document includes the authors of the CEMP which has been prepared by a team of environmental professionals including a suitably qualified ecologist. • CEMP commitments have been prepared in accordance with these criteria. • CEMP has been prepared in accordance with the Environmental Management Plan Guidelines. a) Introduction outlines the protected matter. This table provides reference to the applicable EPBC approval conditions which are also referenced within the CEMP, where applicable b) The objectives of the CEMP are given in Section 6.0. Commitments made in the CEMP are made in Section 8.0 and are supported by actions in Sections 9.0 and 10.0. This table references where the EPBC Approval conditions are met. c) The objectives of the CEMP are given in Section 6.0. Commitments made in the CEMP are made in Section 8.0 and are supported by actions in Sections 9.0 and 10.0. This table references where the EPBC Approval conditions are met. d) Commitments made in the CEMP are made in Section 8.0 and are supported by actions in Sections 9.0 and 10.0. Artificial lighting is addressed by measure A-030, relocation is addressed by measure A-011. e) Sections 10.2 and 10.3 include the reporting requirements. Section 11.0 includes CEMP revision. f) Section 8.0 includes and environmental risk assessment and management measures. g) Section 8.0 includes and environmental risk assessment and management measures.

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	f) an assessment of risks relating to achieving the environmental outcomes and risk management strategies and/or mitigation measures that will be applied to address identified risks, g) impact avoidance, mitigation and/or repair measures, and the timing of those measures, and h) a monitoring program, which must include: i. performance indicators, ii. triggers values for corrective measures, iii. the timing and frequency of monitoring, ensuring monitoring is capable of detecting trigger values and changes in the performance indicators. i) Details describing the Package 1C Early Works including, i. a map, shapefile and details specifying: A. The location and extent of where clearing will be undertaken B. The location and extent of SLL habitat and SLL exclusion fencing to provide a minimum 5-meter buffer from SLL habitat. ii. details of sub plans to the CEMP that will be used to implement Package 1C Early Works		h) Section 10.1 includes the project monitoring and inspections i) The Package 1C Early Works are described in Section 8.3. i. Figure 1 , Figure 2 Figure 3 Figure 6 , Figure 8 show the early works on a map. A. Figure 3 has been updated to show the location and extent of clearing. B. SLL habitat is shown in Figure 6 . Figure 3 has been updated to show the location and extent of SLL exclusion fencing.
E-06	5. To compensate for the residual significant impact on Striped Legless Lizard , the approval holder	1.0 , 2.0 , 8.0	• Works not to commence until all approvals are gained

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	must submit to the department for approval by the Minister an Offset Management Plan (OMP). The approval holder must not undertake any clearing, construction or other physical activity associated with the Action outside of the Package 1C Early Works Boundary unless the OMP is approved in writing by the Minister . The approval holder must implement the approved OMP from the date of approval by the Minister and continue to implement the approved OMP at least until the expiry date of this approval.	N/A refer to OMP	- Physical activity associated with the action outside the Package 1C Early Works area is not allowable until the OMP is approved. - Refer to OMP
E-07	6. The OMP must meet the requirements of the Environmental Offsets Policy and the Environmental Management Plan Guidelines to the satisfaction of the Minister. All commitments, including environmental outcomes, management measures, corrective actions, trigger values and performance indicators in the OMP must be SMART and based on referenced or included evidence of effectiveness. The OMP must be prepared by a suitably qualified ecologist and must include: a) detailed information on the residual impacts to Striped Legless Lizard that will be compensated for by the offset (comprising both the securement of all offset sites and the habitat quality improvements to be achieved at each offset site), including all areas of habitat, and the habitat quality, for Striped Legless Lizard at all locations impacted by the Action which the offset is to address,	N/A refer to OMP	Refer to OMP

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	b) the relevant protected matters and a reference to the EPBC Act approval conditions to which the OMP refers, c) detailed information and a shapefile specifying the location, area and boundaries of each offset site, d) detailed baseline information on the areas of the habitat, and the habitat quality, for protected matters at each offset site, e) achievable offset outcomes, relevant to the conservation of Striped Legless Lizard, for each offset site and the timeframes in which they will be achieved, f) a table summarising all commitments to achieve the offset outcomes for protected matters at each offset site and a reference to where each commitment is detailed in the OMP, g) reporting and review mechanisms to inform the department annually regarding compliance with the implementation of management measures and the attainment and maintenance of the offset outcomes, h) an assessment of risks to achieving each offset outcome and what risk management measures and/or strategies will be applied to address these, i. a monitoring program, which must specify:		

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	ii. measurable performance indicators and the timeframes for their achievement to gauge attainment of each offset outcome for the protected matters. iii. trigger values for corrective actions, and iv. the proposed timing (including season/time of day/frequency) methods and effort, and an explanation of how these will be effective for this purpose, of monitoring to detect trigger values, changes in the performance indicators and to gather evidence that effectively demonstrates actual progress towards, attainment of and maintenance of all offset outcomes for the protected matters, i) corrective actions to be implemented to ensure all offset outcomes for the protected matters are achieved or maintained if trigger values are reached or performance indicators are not achieved in the specified timeframes, j) references to related plans and conditions of approval, k) how each offset site will be protected, including securement, and all offset outcomes maintained or improved, at least until the expiry of the approval.		

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
E-08	7) To compensate for the residual impacts of the Action on Striped Legless Lizard , the approval holder must provide written evidence of the initiation of securement of all offset sites specified in the approved OMP before undertaking any clearing, construction or other physical activity associated with the Action outside of the Package 1C Early Works Boundary and provide written evidence of final securement within 18 months of the commencement of the Action .	8.0	- To be completed in accordance with Table 15 and Section 10.2.1 - Works not to commence until all approvals are gained
E-09	8) The approval holder must achieve all offset outcomes for each offset site specified in the approved OMP by the time specified in the OMP. Once achieved, the approval holder must maintain or exceed the offset outcomes at least until the expiry date of this approval. From the date of approval of the OMP the approval holder must: - have each offset site assessed annually by a suitably qualified ecologist to determine if the offset outcomes specified in the OMP have been achieved, - submit to the department a report prepared by a suitably qualified ecologist detailing the presence of Striped Legless Lizard and habitat quality of and their habitat within each offset site within 20 business days after each ACR period, and - notify the department in writing of any offset outcomes that has not been achieved at all offset sites and the likely reasons that this/these offset outcomes have not been met.	N/A refer to OMP	Refer to OMP
E-10	9) The approval holder may, at any time, apply to the Minister for a variation to an action management plan approved by the Minister by submitting an application in accordance with the requirements of section 143A of the EPBC Act . If the Minister	11.0	To be carried out, as required

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	approves a revised action management plan (RAMP) then, from the date specified, the approval holder must implement the RAMP in place of any previous version of the action management plan.		
E-11	10) The approval holder must notify the department electronically, within 5 business days of the date of: a) commencement of the Action, following commencement of the Action. b) Undertaking the first instance of any on-site clearing, construction or other physical activity associated with the Action outside of the Package 1C Early Works Boundary.	10.2.1.1	To be carried out, as required
E-12	11) The approval holder must not commence the Action later than 15 March 2027.	1.0	Action to be commenced prior to 15 March 2027
E-13	12) The approval holder must maintain accurate and complete compliance records and document the procedure for recording and storing compliance records. 13) If the department makes a request in writing, the approval holder must provide electronic copies of compliance records to the department within the timeframe specified in the request. Note: Compliance records may be subject to audit by the department, or by an independent auditor in accordance with section 458 of the EPBC Act, and/or be used to verify compliance with the conditions. Summaries of the results of an audit may be published on the department's website or through the general media.	10.4	Section details records to be maintained and reported
E-14	14) Wherever these conditions require the approval holder to submit any plan to the department , all	N/A	All documents to be submitted electronically

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	such plans must be submitted to the department electronically.		
E-15	15) Unless otherwise agreed to in writing by the Minister , the approval holder must publish each plan on the website within 15 business days of the date: a) the plan is approved by the Minister in writing, if the plan requires the approval of the Minister, b) the plan is submitted to the department in accordance with a requirement of these conditions, if the plan does not require the approval of the Minister.	N/A	Plans to be published on TCCS website
E-16	16) The approval holder must keep all plans published on the website , in a format that is easily accessible and downloadable, from the first date which that plan must be published and until the expiry date of this approval. This requirement applies to all current and superseded versions of plans .	N/A	Plans to be published on TCCS website in the correct format
E-17	17) The approval holder is required to exclude or redact sensitive ecological data from any version of a plan before that plan is published on the website or otherwise provided to a member of the public. If sensitive ecological data is excluded or redacted from a plan , the approval holder must notify the department in writing what exclusions and redactions have been made in the version published on the website .	N/A	Sensitive information to be redacted
E-18	18) The approval holder must ensure that any monitoring data (including sensitive ecological data), surveys, maps, and other spatial and metadata required under the conditions of this approval are prepared in accordance with the	N/A	Monitoring data to be prepared in accordance with condition

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	<i>Guidelines for biological survey and mapped data</i> , Commonwealth of Australia 2018, or as otherwise specified by the Minister in writing.		
E-19	The approval holder must ensure that any monitoring data (including sensitive ecological data), surveys, maps, and other spatial and metadata required under the conditions of this approval are prepared in accordance with the <i>Guide to providing maps and boundary data for EPBC Act projects</i> , Commonwealth of Australia 2021, or as otherwise specified by the Minister in writing.	N/A	Monitoring data to be prepared in accordance with condition
E-20	20) The approval holder must submit all monitoring data (including sensitive ecological data), surveys, maps, other spatial and metadata and all species occurrence record data (sightings and evidence of presence) electronically to the department within 20 business days following the end each ACR period except where otherwise specified in a plan .	N/A	To be completed
E-21	21) The approval holder must prepare a compliance report for each Annual Compliance Report period (ACR period) .	N/A	To be completed
E-22	22) The approval holder must ensure each compliance report includes: a) accurate and complete details of compliance and any non-compliance with: i. each condition attached to this approval decision, and ii. all commitments made in each plan, b) a schedule of all plans in effect in relation to these conditions during the ACR period,	N/A	To be completed

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	c) accurate and complete details of how each plan was implemented during the ACR period, and d) if any incident occurred, accurate and complete details of each incident.		
E-23	23) The approval holder must ensure each compliance report is completed to the satisfaction of the Minister and is consistent with the <i>Annual Compliance Report Guidelines</i> , Commonwealth of Australia 2023.	N/A	• To be completed
E-24	24) The approval holder must, within 20 business days following the end each ACR period, in a format that is easily accessible and downloadable, publish on the website: a) each compliance report, and b) a shapefile showing all clearing of protected matters, and their habitat, undertaken within the ACR period.	N/A	• To be completed
E-25	25) The approval holder must: a) Exclude or redact sensitive ecological data from each compliance report and shapefile published on the website or otherwise provided to a member of the public. b) If sensitive ecological data is excluded or redacted from a version of a compliance report published or otherwise provided to a member of the public, submit the full compliance report to the department within 5 business days of its publication on the	N/A	• To be completed

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	website and notify the department in writing what exclusions and redactions have been made in the version published on the website or otherwise provided to a member of the public. c) If sensitive ecological data is excluded or redacted from a version of a shapefile published or otherwise provided to a member of the public, submit the full shapefile to the department within 5 business days of its publication on the website and notify the department in writing what exclusions and redactions have been made in the version published on the website or otherwise provided to a member of the public.		
E-26	26) The approval holder must notify the department electronically, within 5 business days of each date of publication that the compliance report has been published on the website . In this notification, the approval holder must provide the department with the web address for where the compliance report and related shapefile are published on the website .	N/A	To be completed
E-27	27) The approval holder must keep each compliance report and related shapefile published on the website from the first date which that compliance report must be published and until the expiry date of this approval. Note: Compliance reports may be published on the department's website.	N/A	To be completed
E-28	28) The approval holder must notify the department electronically, within 2 business days of becoming aware of any incident. The approval holder must specify in each notification:	9.2.2	Condition included as a commitment

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	a) any condition or commitment made in a plan which has been or may have been not complied with, b) a short description of the incident, and c) the location (if applicable, including co-ordinates), date and time of the incident.		
E-29	29) The approval holder must provide to the department in writing, within 12 business days of becoming aware of an incident, the details of that incident. The approval holder must specify: a) all corrective measures and investigations which the approval holder has already taken in respect of the incident, b) the potential impacts of the incident, c) the method and timing of any corrective measures that the approval holder proposes to undertake to address the incident, and d) any variation of these conditions or revision of a plan that will be required to prevent recurrence of the incident and/or to address its consequences.	9.2.2	• Condition included as a commitment
E-30	30) The approval holder must ensure that an independent audit of compliance with the conditions is conducted for every audit period .	10.3	• Condition included as a commitment
E-31	31) The approval holder must submit details of the proposed independent auditor and their qualifications to the department within 10 business days following the end of each audit period .	10.3	• Condition included as a commitment
E-32	32) The approval holder must ensure the scope of each independent audit is sufficient to determine the compliance status for each condition of approval, and each commitment made in each plan .	10.3	• Condition included as a commitment

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
E-33	33) The approval holder must ensure the criteria for each independent audit and the undertaking of each independent audit are consistent with the <i>Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines</i> , Commonwealth of Australia 2019.	10.3	Condition included as a commitment
E-34	34) The approval holder must submit an audit report to the department for written agreement from the department within 3 months following the end of each audit period , or as otherwise directed by the Minister in writing.	10.3	Condition included as a commitment
E-35	35) The approval holder must ensure each audit report is completed to the satisfaction of the Minister and is consistent with the <i>Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines</i> , Commonwealth of Australia 2019.	10.3	Condition included as a commitment
E-36	36) The approval holder must publish each audit report on the website , in a format that is easily accessible and downloadable, within 10 business days of the date of the department agrees to the audit report in writing.	10.3	Condition included as a commitment
E-37	37) The approval holder must notify the department within 5 business days of the date the audit report is published on the website . In this notification, the approval holder must provide the department with the web address for where the audit report is published on the website .	10.3	Condition included as a commitment
E-38	38) The approval holder must keep each audit report published on the website from the first date which that audit report must be published and until the expiry date of this approval.	10.3	Condition included as a commitment
E-39	39) Within 20 business days after the completion of the Action , and, in any event, at least 20	10.2.1.6	Condition included as a commitment

Ref	EPBC approval condition	CEMP Section Reference	Summary of commitments made to meet this condition
	business days before this approval expires, the approval holder must notify the department electronically of the date of completion of the Action and provide completion data. The approval holder must submit any spatial data that comprises completion data as a shapefile.		
E-40	40) The approval holder must notify the department electronically 60 business days prior to the expiry date of this approval, that the approval is due to expire. Note: Section 145C of the EPBC Act entitles the approval holder to request an extension to the period of effect of this approval.	10.2	Condition included as a commitment

13.0 References

EPBC 2020/8768 Approval Monaro Highway – Lanyon Drive Upgrade Package 1C, Hume, ACT (Australian Government – Department of Agriculture, Water and the Environment, 2022)

Environmental Management Plan Guidelines, (Commonwealth of Australia 2014)

EPBC 2020/8768 Preliminary Documentation, Monaro Highway-Lanyon Drive Upgrade Package 1C (Jacobs, 2021)

Biodiversity Assessment Report, Monaro - Hume Upgrade Lanyon Drive Intersection (Jacobs, 2020)

Second Addendum Biodiversity Impact Assessment Report – Monaro Highway Upgrade – Package 1C (Stantec, 2023)

Cultural Heritage Assessment - Aboriginal Heritage Monaro Highway Upgrade Program, Hume (Jacobs, 2020)

Cultural Heritage Assessment – Historical Heritage Monaro Highway Upgrade Program, Hume (Jacobs, 2020)

Addendum Cultural Heritage Assessment Package 1C (Navin, 2022)

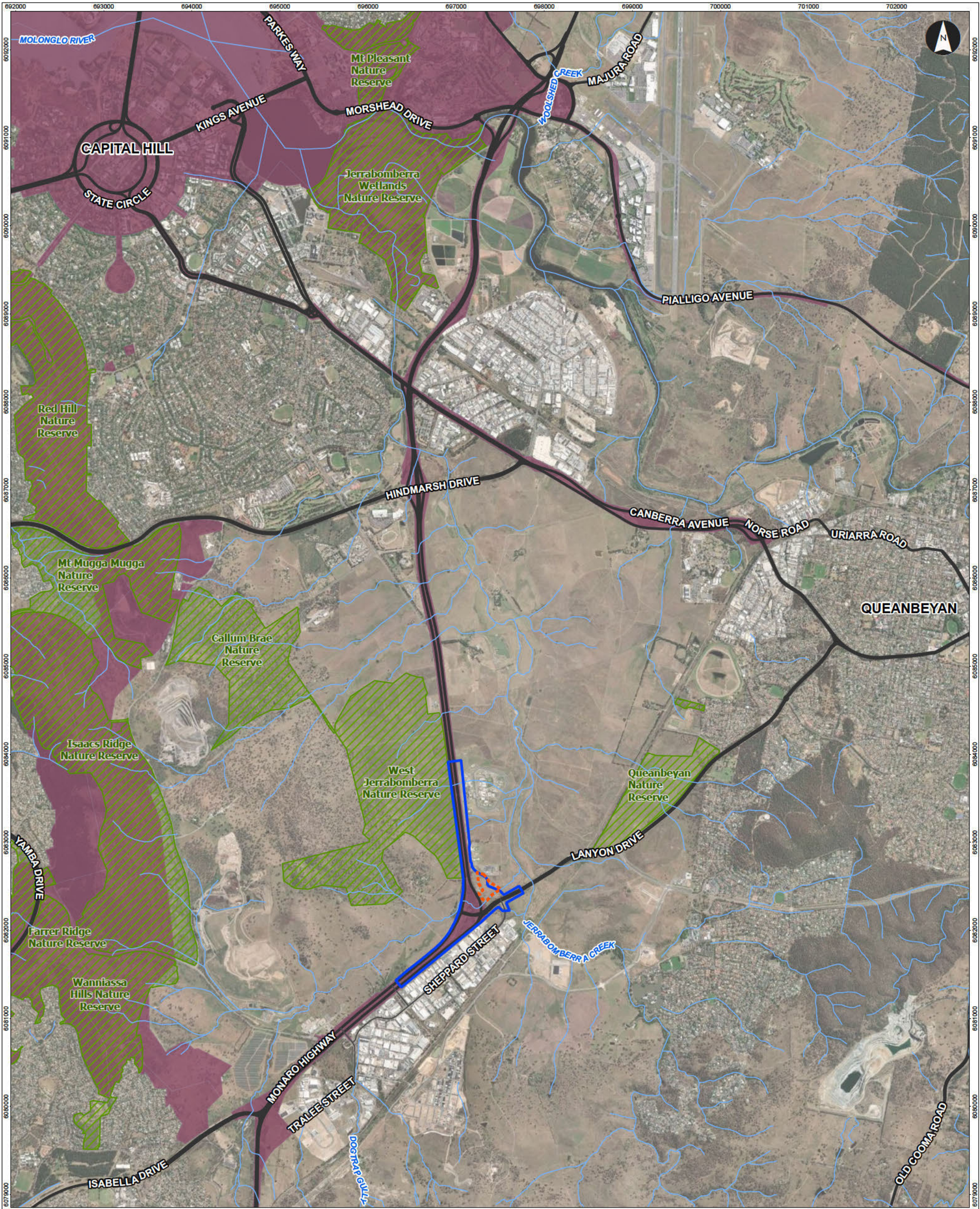
Phase 1 – Site History and Preliminary Site Assessment – Monaro Highway Upgrade, Package 1C (Cardno 2022)

Appendix A: Figures



- Figure 1 Locality Plan**
- Figure 2 Monaro Highway Staging Overview**
- Figure 3 Early Works Design Features**
- Figure 4 Investigations Works Plan**
- Figure 5 Main Works Design Features**
- Figure 6 Site Plan**
- Figure 7 Organisational chart**
- Figure 8 Vegetation plan**

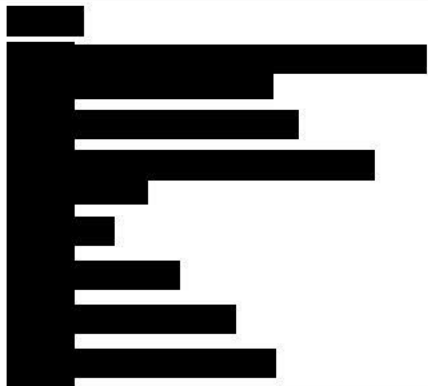




Locality Plan

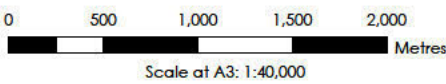
Monaro Highway Upgrade - Package 1C
Hume, ACT
EPBC 2020/8768

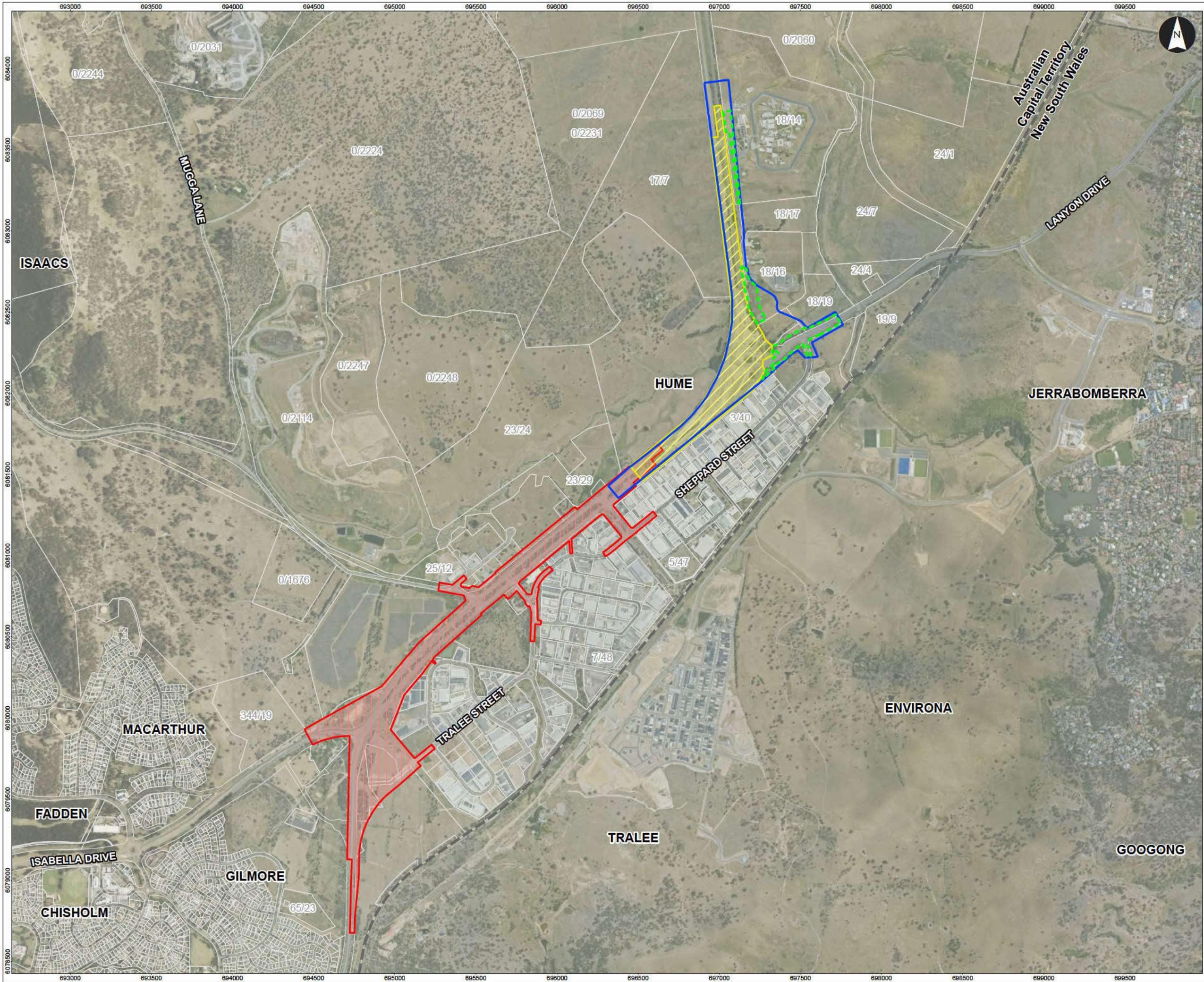
Client: Major Projects Canberra
Project Code: 304100138-GS-025
Drawn By: RM, Checked By: AS
Rev: 05
Date: 2025-01-31



Notes:
1. Map displayed in GDA2020 MGA Zone 55

References:
1. Basemap (Esri and third party suppliers)
2. NCA Designated Areas (ACTmapi, 2024)
3. Roads and Watercourses (NSW SS, 2023)
4. State Borders (ABS, 2022)
5. Terrestrial Reserves (CAPAD, 2022)





Monaro Highway Upgrade Overview

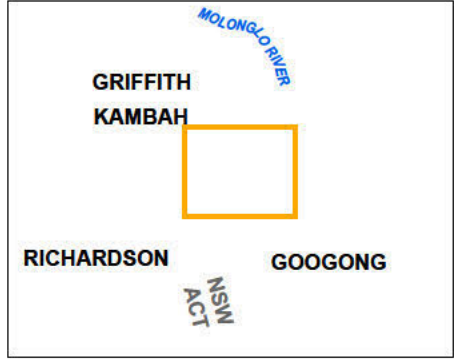
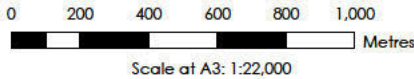
The Monaro Highway Upgrade
Hume, ACT
EPBC 2020/8768

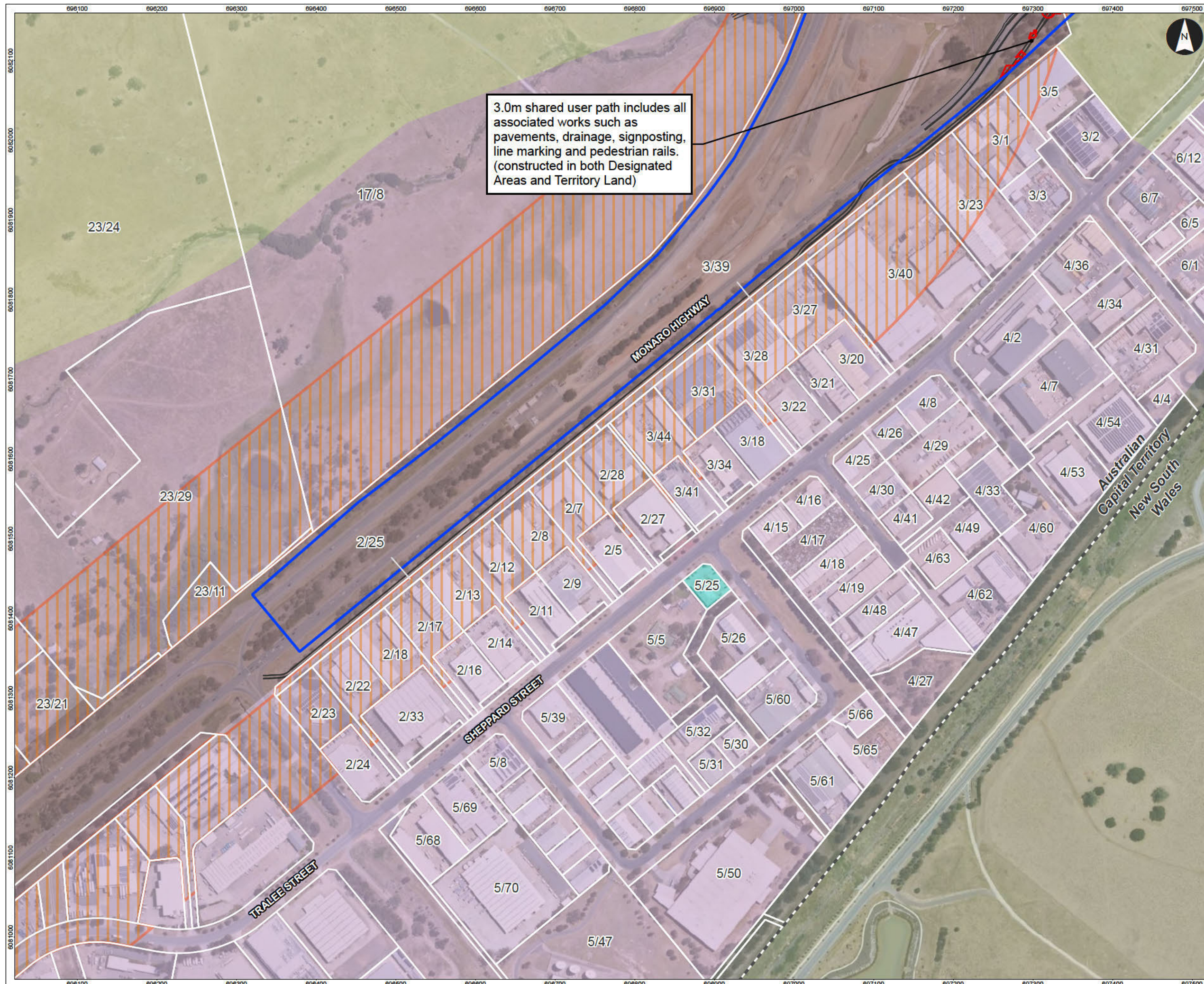
Client: Major Projects Canberra
Project Code: 304100138-GS-025
Drawn By: RM, Checked By: AS
Rev: 05
Date: 2025-01-31



Notes:
1. Map displayed in GDA2020 MGA Zone 55

References:
1. Aerial Imagery (MetroMap, Nov 2024)
2. Cadastre (ACTmap, 2023)
3. State Boundary (ABS, 2022)





Site Zoning Overview - Early Works

Monaro Highway Upgrade - Package 1C
Hume, ACT
EPBC 2020/8768

Page 1 of 3

Client: Major Projects Canberra
Project Code: 304100138-GS-025
Drawn By: RM, Checked By: SM
Rev: 06
Date: 2025-03-25

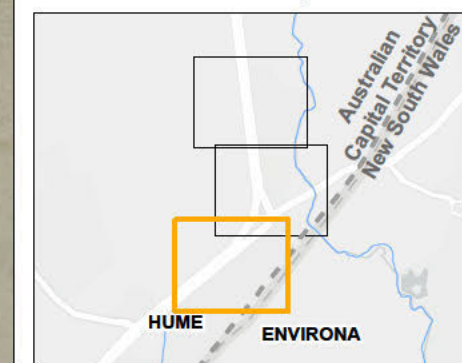


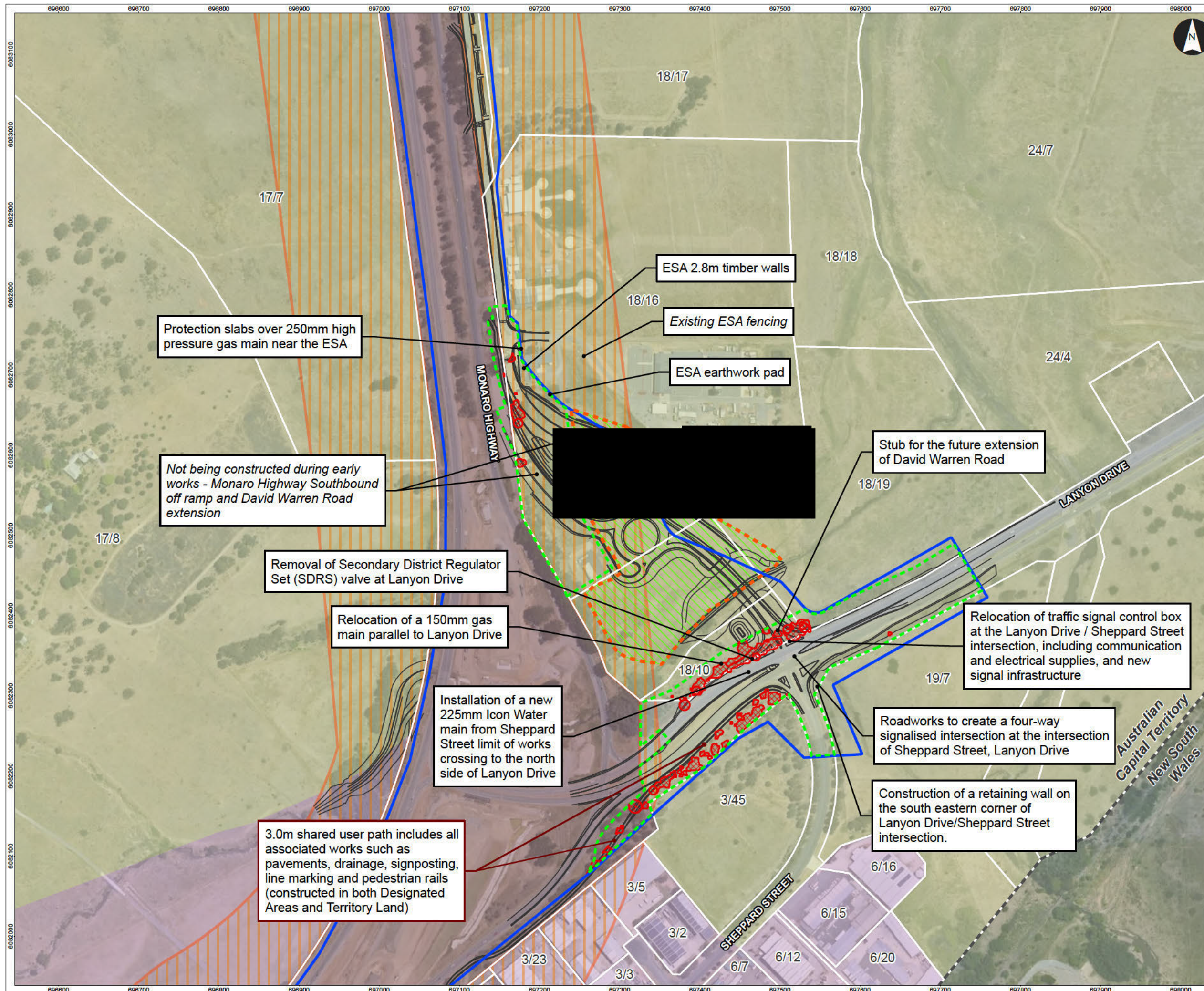
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1. Map displayed in GDA2020 MGA Zone 55

References:
1. Aerial Imagery (MetroMap, Nov 2024)
2. Zoning (ACTmap, 2024)
3. Cadastre (ACTmap, 2023)
4. State Borders (ABS, 2022)



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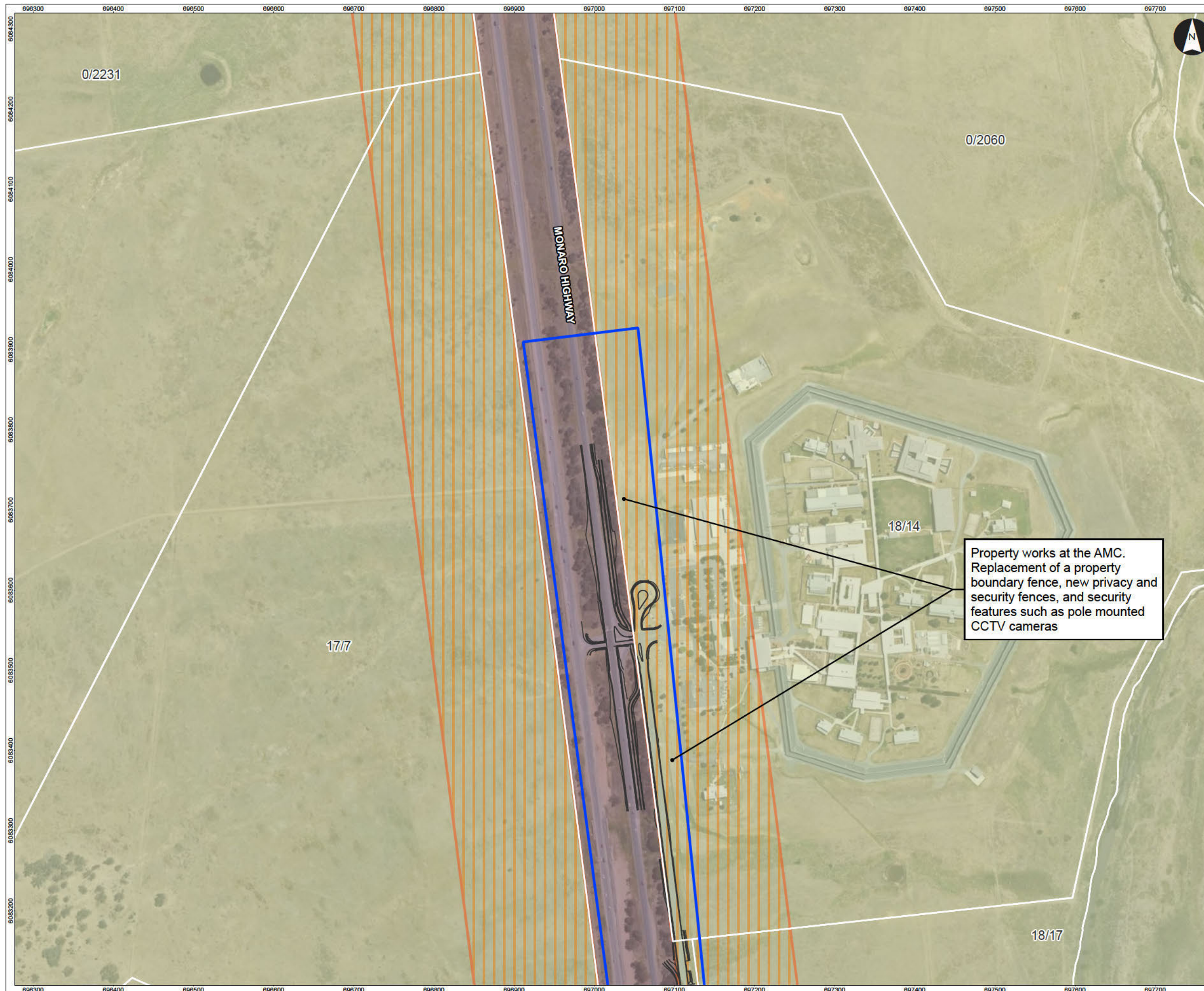
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2. Zoning (ACTmapi, 2024)
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4. State Borders (ABS, 2022)

Stantec

0 50 100 150 Metres
Scale at A3: 1:4,500

ENVIRONA

Australian Capital Territory
New South Wales



Site Zoning Overview - Early Works

Monaro Highway Upgrade - Package 1C
Hume, ACT
EPBC 2020/8768

Page 3 of 3

Client: Major Projects Canberra
Project Code: 304100138-GS-025
Drawn By: RM, Checked By: SM
Rev: 06
Date: 2025-03-25



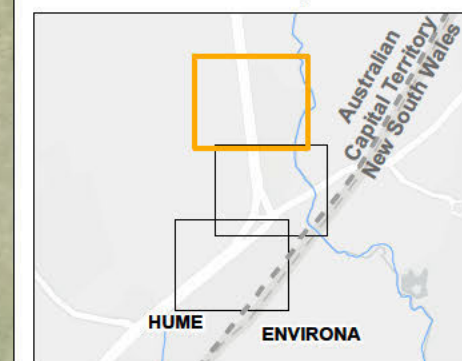
Property works at the AMC.
Replacement of a property
boundary fence, new privacy and
security fences, and security
features such as pole mounted
CCTV cameras

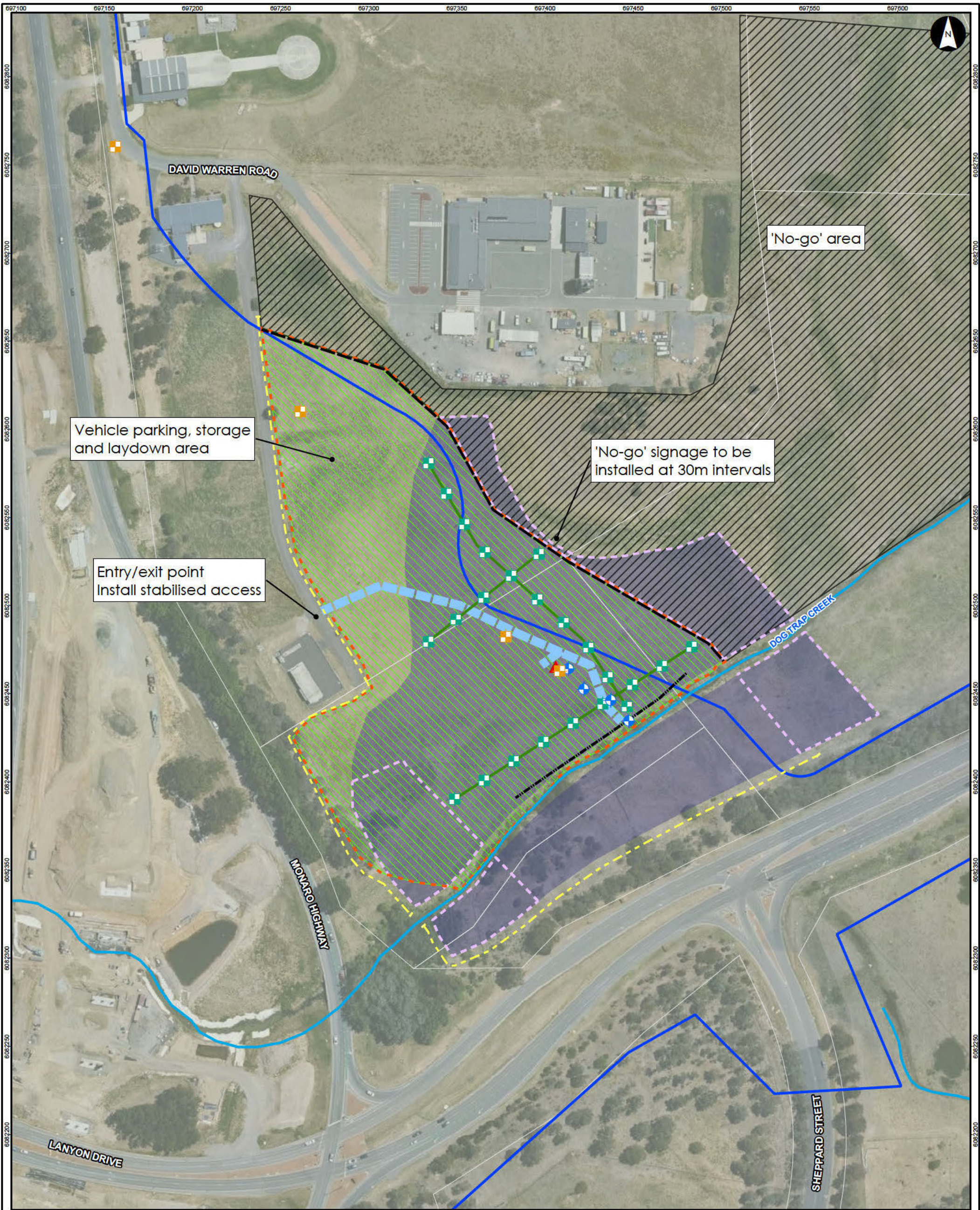
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References:
1. Aerial Imagery (MetroMap, Nov 2024)
2. Zoning (ACTmapi, 2024)
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4. State Borders (ABS, 2022)



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Metres
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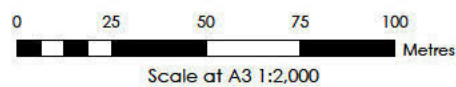


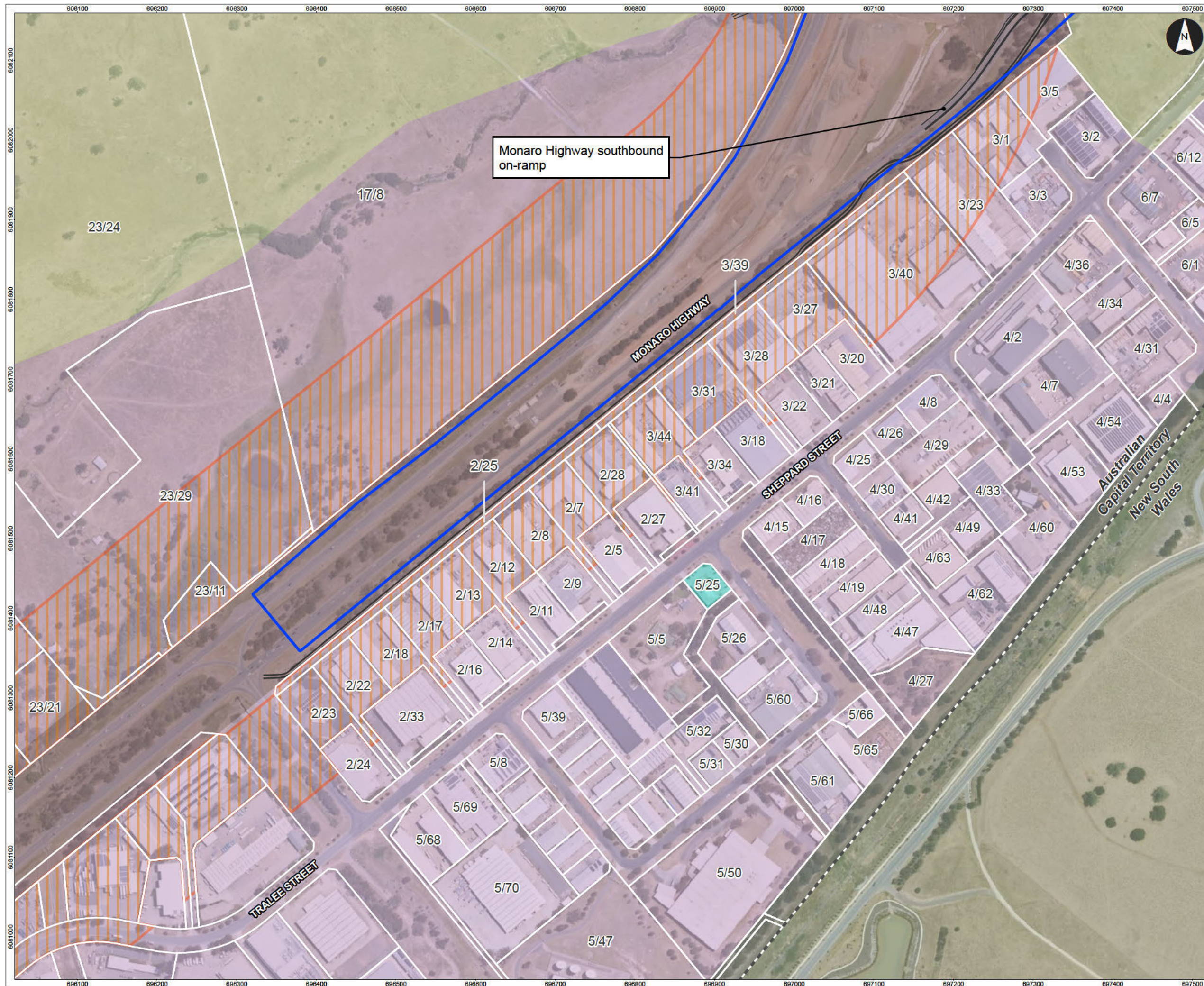


Investigation Works Plan

Monaro Highway Upgrade - Package 1C
Hume, ACT
EPBC 2020/8768

Project Code: 304100138-GS-023
Drawn By: RM, Checked By: AS
Rev: 10
Date: 2025-01-31





Site Zoning Overview - Main Works

Monaro Highway Upgrade - Package 1C
Hume, ACT
EPBC 2020/8768

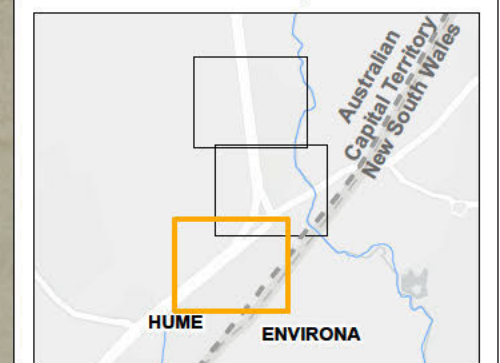
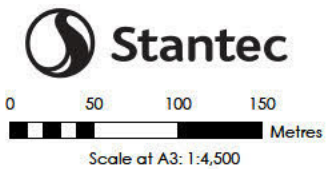
Page 1 of 3

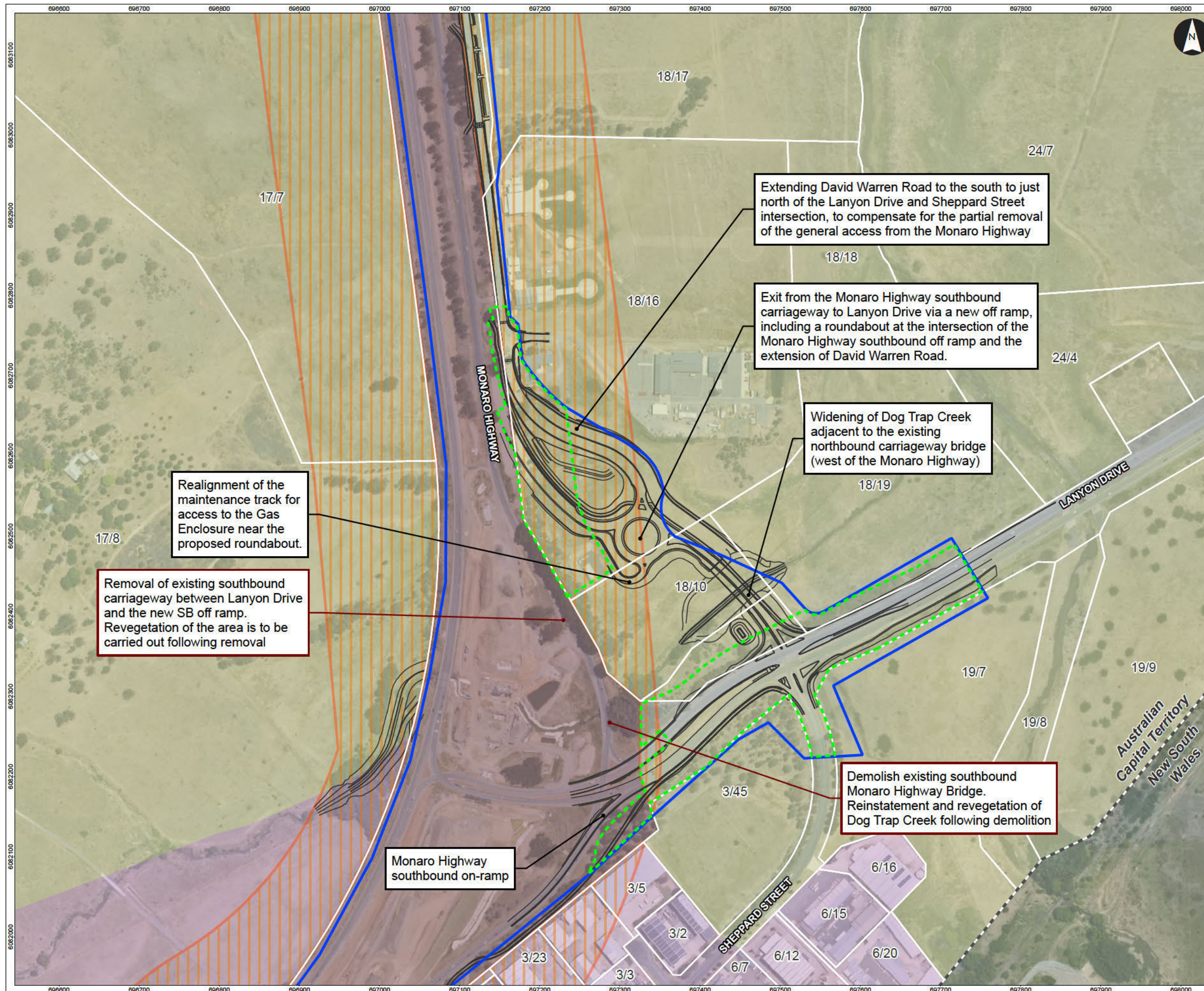
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Project Code: 304100138-GS-025
Drawn By: RM, Checked By: AS
Rev: 03
Date: 2025-01-31



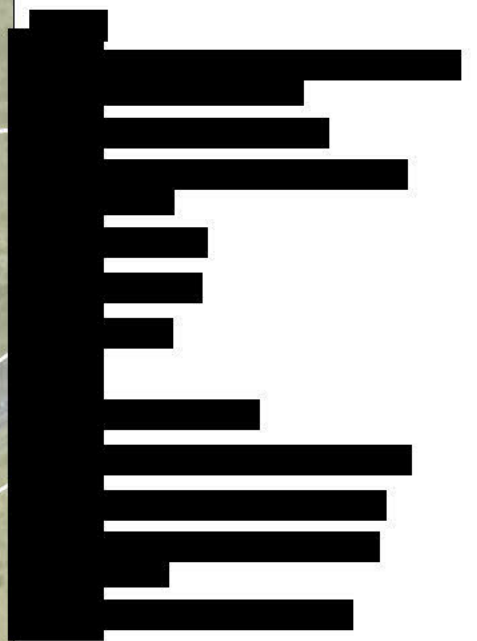
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1. Aerial Imagery (MetroMap, Nov 2024)
2. Zoning (ACTmapi, 2024)
3. Cadastre (ACTmapi, 2023)
4. State Borders (ABS, 2022)

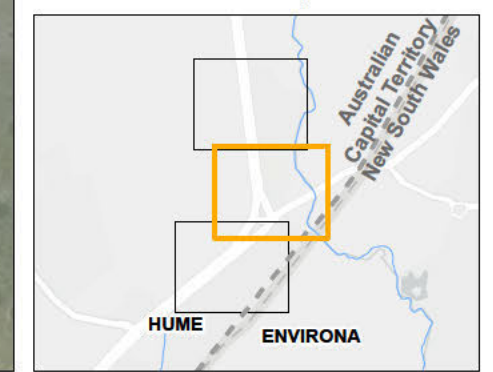
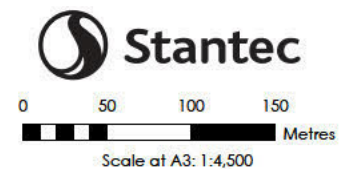


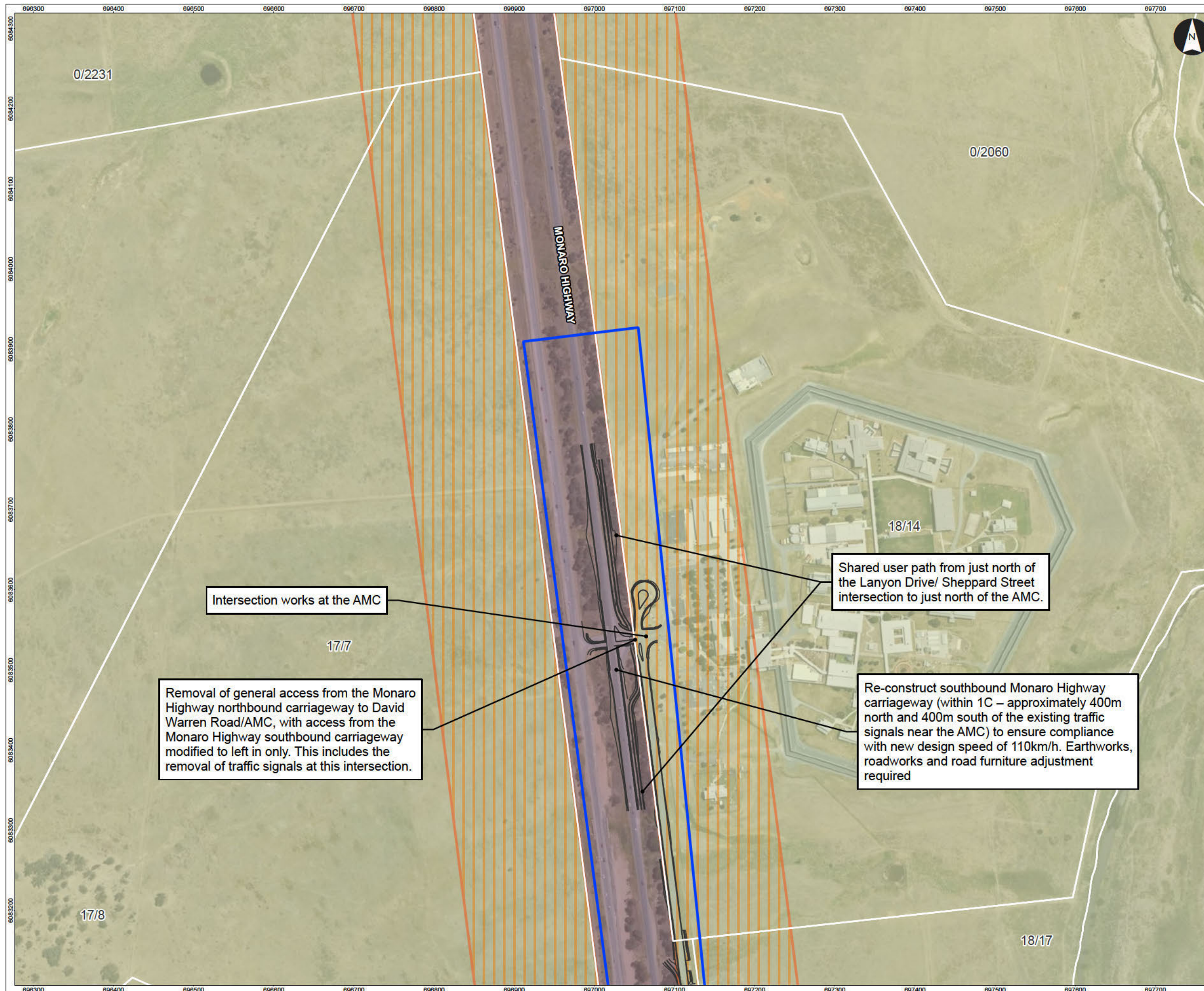


Client: Major Projects Canberra
Project Code: 304100138-GS-025
Drawn By: RM, Checked By: AS
Rev: 03
Date: 2025-01-31



- Notes:
1. Map displayed in GDA2020 MGA Zone 55
- References:
1. Aerial Imagery (MetroMap, Nov 2024)
2. Zoning (ACTmapi, 2024)
3. Cadastre (ACTmapi, 2023)
4. State Borders (ABS, 2022)





Site Zoning Overview - Main Works

Monaro Highway Upgrade - Package 1C
Hume, ACT
EPBC 2020/8768

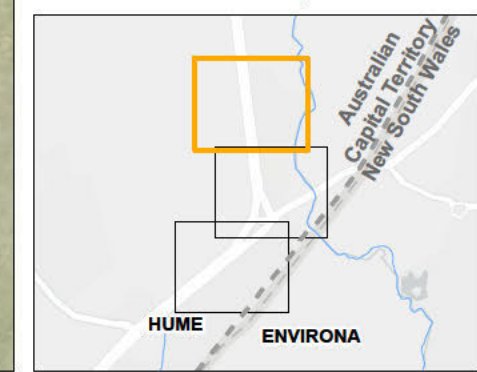
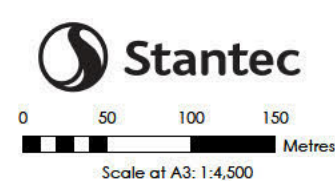
Page 3 of 3

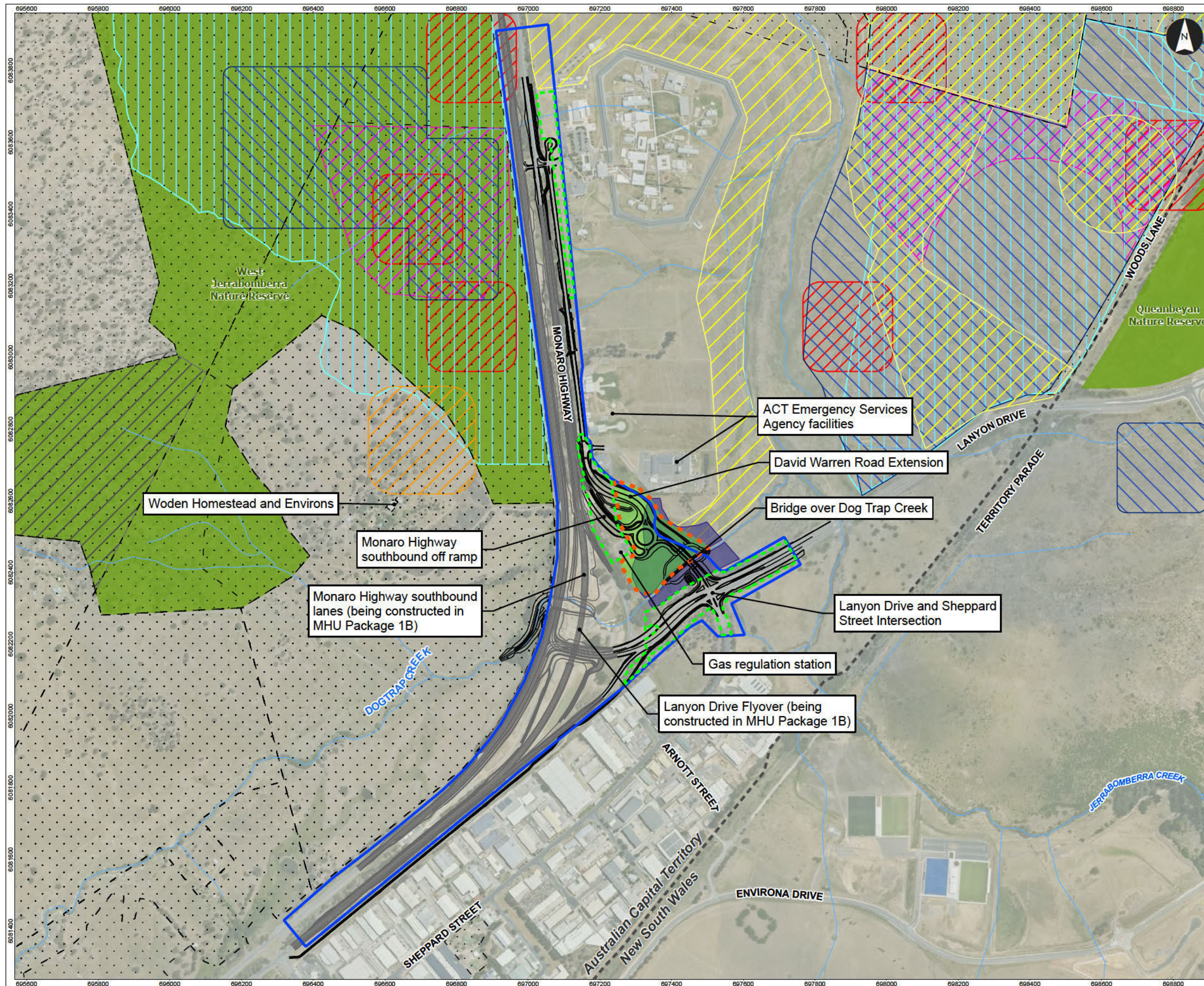
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Project Code: 304100138-GS-025
Drawn By: RM, Checked By: AS
Rev: 03
Date: 2025-01-31



Notes:
1. Map displayed in GDA2020 MGA Zone 55

- References:
- 1. Aerial Imagery (MetroMap, Nov 2024)
 - 2. Zoning (ACTmapi, 2024)
 - 3. Cadastre (ACTmapi, 2023)
 - 4. State Borders (ABS, 2022)





Site Plan

Monaro Highway Upgrade- Package 1C
Hume, ACT
EPBC 2020/8768

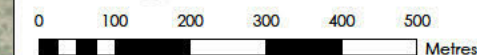
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Project Code: 304100138-GS-026
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Rev: 03
Date: 2025-01-31

Notes:

1. Map displayed in GDA2020 MGA Zone 55

References:

1. Aerial Imagery (MetroMap, Nov 2024)
2. Watercourses (NSW SS, 2023)
3. ACT Heritage (Actmap, 2023)
4. State Borders (ABS, 2022)
5. Threatened Fauna Habitat and Terrestrial Reserves (ACTmap, 2022)
6. Granite Quarry, PAD (Jacobs, 2020)



Scale at A3: 1:10,000



Approval Holder (TCCS)

Project Director

Project Manager

Environment Manager

Project Engineers

Site Supervisors

All Site Staff & Sub-
contractors

Project Heritage
Consultant

Project Ecologist

Registered
Aboriginal
Organisations (RAOs)

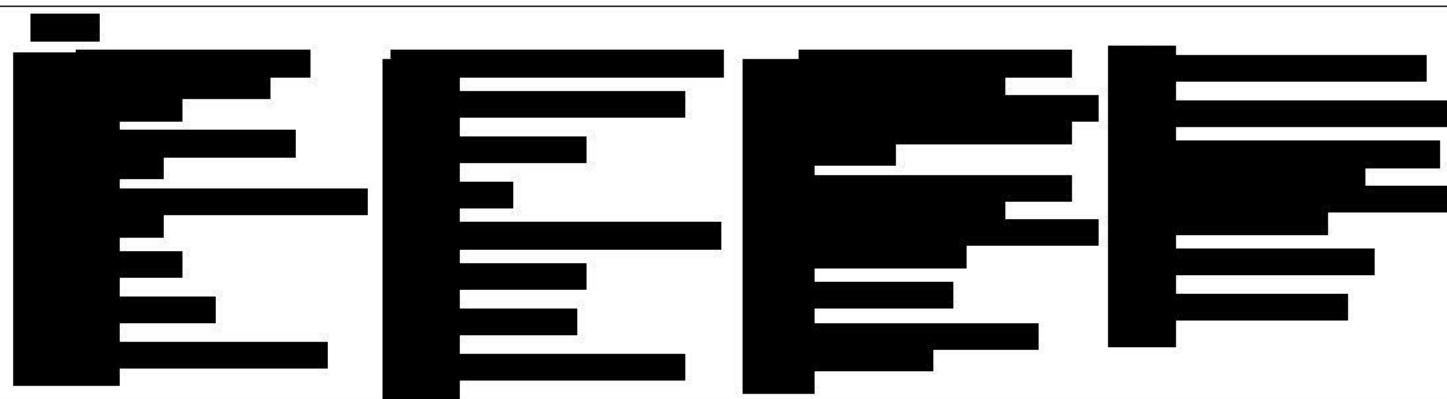
Project
Geomorphologist



Vegetation

Monaro Highway Package 1C
Hume, ACT
EPBC 2020/8768

Client: Major Projects Canberra
Project Code: 304100138-GS-027
Drawn By: RM, Checked By: AS
Figure: 2 | Rev: 3
Date: 2025-01-31



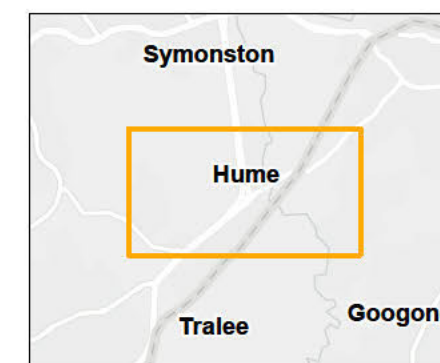
Notes:

1. Map displayed in GDA2020 MGA Zone 55

References:

1. Aerial Imagery (Metromap, Nov 2024)
2. Major Rd (NSW SS, 2023)
3. Native Grassland (ACT Government, 2023)
4. State Boundary (ABS, 2022)
5. Ground Truthed Vegetation - Jacobs (Jacobs, 2020)

0 100 200 300 400
Metres
Scale at A3: 1:15,500



Appendix B: EPBC 2020/8768 Approval





APPROVAL

Monaro Highway – Lanyon Drive Upgrade Package 1C, Hume, ACT (EPBC 2020/8768)

This decision is made under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (the EPBC Act). Note that section 134(1A) of the EPBC Act applies to this approval, which provides in general terms that if the approval holder authorises another person to undertake any part of the action, the approval holder must take all reasonable steps to ensure that the other person is informed of any conditions attached to this approval, and that the other person complies with any such condition.

Details

Person to whom the approval is granted (approval holder)	Transport Canberra and City Services Directorate
ABN of approval holder	37 307 569 373
Action	The upgrade of the Monaro Highway between David Warren Road (intersection with Monaro Highway) and Sheppard Street (intersection with Lanyon Drive), Hume, ACT [See EPBC Act referral 2020/8768].

Approval decision

My decision on whether or not to approve the taking of the action for the purposes of the controlling provision for the action is as follows.

Controlling Provisions

Listed Threatened Species and Communities	
Section 18	Approve
Section 18A	Approve

Period for which the approval has effect

This approval has effect until 30 June 2052.

Decision-maker

Name and position	Kate Gowland Acting Assistant Secretary Environment Assessments (NSW and ACT) Branch
Signature	
Date of decision	15/3/2022

Conditions of approval

This approval is subject to the conditions under the EPBC Act as set out in ANNEXURE A.

ANNEXURE A – CONDITIONS OF APPROVAL

Part A – Conditions specific to the action

1. To minimise impacts to the **Striped Legless Lizard**, the approval holder must:
 - a. not **clear** more than 3.2 ha of **Striped Legless Lizard habitat** within the **site**; and
 - b. not **clear** outside the **site**.
2. Prior to **commencement of the action**, the approval holder must submit a Construction Environmental Management Plan (CEMP). The environmental objective of the CEMP is to ensure that the action protects and conserves **protected matters** within the action area until the action is completed.
3. The approval holder must not **commence the action** unless the **Minister** has approved the CEMP in writing. The approval holder must implement the approved CEMP.
4. The CEMP must be consistent with the **department's Environmental Management Plan Guidelines**, and must include:
 - a. the environmental objective specified in condition 2, relevant protected matters and a reference to **EPBC Act** approval conditions to which the CEMP refers
 - b. a table of commitments made in the CEMP to achieve the environmental objective, and a reference to where the commitments are detailed in the CEMP
 - c. reporting and review mechanisms, and documentation standards to demonstrate compliance with the CEMP
 - d. an assessment of risks to achieving the environmental objectives and risk management strategies that will be applied
 - e. impact avoidance, mitigation and/or repair measures, and their timing
 - f. a monitoring program, which must include:
 - i. measurable performance indicators
 - ii. trigger values for corrective actions
 - iii. the timing and frequency of monitoring capable of detecting trigger values and changes in the performance indicators
 - iv. proposed corrective actions, if trigger values are reached.
 - g. Enforceable commitments to implement the measures described at Condition 4(b) above, and deadlines for implementation.

Offset requirements

5. To compensate for the residual significant impact on **Striped Legless Lizard**, the approval holder must submit an Offset Management Plan for approval by the **Minister**. The Offset Management Plan must, to the satisfaction of the **Minister**, meet the requirements of the **Environmental Offsets Policy** and the **Environmental Management Plan Guidelines**. The approval holder must not **commence the action** until the Offset Management Plan has been approved by the **Minister** in writing. The approval holder must implement the Offset Management Plan as approved by the **Minister**.
6. The Offset Management Plan must:
 - a. Include detailed information on the residual impacts to **Striped Legless Lizard** that will be compensated for by the proposed offset(s). This must include the area(s) of habitat for the **Striped Legless Lizard** and its condition and quality at all impact sites which the offset is to address

- b. Identify suitable environmental offset(s) for the impacts on the **Striped Legless Lizard**, and provide detailed baseline information on the proposed offset(s) and commit to achievable ecological benefits, and timeframes for their achievement, for the proposed offset(s)
 - c. Include a monitoring program, which must include:
 - i. evidence that effectively determines progress towards, attainment of and maintenance of the ecological benefits for the **Striped Legless Lizard**
 - ii. measurable performance indicators to monitor attainment of the ecological benefits for the **Striped Legless Lizard**
 - iii. trigger values for corrective actions
 - iv. the timing and frequency of monitoring to detect trigger values and changes in the performance indicators
 - d. Include reporting and review mechanisms, and documentation standards to inform others annually regarding compliance with management and environmental commitments, and attainment and maintenance of ecological benefits, as specified in the Offset Management Plan
 - e. Detail when and how the offset(s) will be secured and protected, and how the ecological benefits will be maintained, in perpetuity
 - f. Include a reference to the **EPBC Act** approval conditions to which the Offset Management Plan refers
 - g. Include a table of the commitments made in the Offset Management Plan to achieve the ecological benefits for relevant **protected matters**, and a reference to where the commitments are detailed in the Offset Management Plan
 - h. Include an assessment of risks to achieving the ecological benefit(s) and what risk management strategies will be applied to address these
 - i. Propose corrective actions to ensure ecological benefits for the protected matters are attained or maintained, if trigger values are reached or performance indicators not attained
 - j. Specify referenced plans and applicable conditions of approval (including State approval conditions), if any, and how these can be accessed.
7. The offset(s) identified in the approved Offset Management Plan must be **legally secured** prior to commencement of the action.

Part B – Standard administrative conditions

Notification of date of commencement of the action

- 8. The approval holder must notify the **department** in writing of the date of **commencement of the action** within 10 **business days** after the date of **commencement of the action**.
- 9. If the **commencement of the action** does not occur within 5 years from the date of this approval, then the approval holder must not **commence the action** without the prior written agreement of the **Minister**.

Compliance records

- 10. The approval holder must maintain accurate and complete **compliance records**. If the **department** makes a request in writing, the approval holder must provide electronic copies of **compliance records** to the **department** within the timeframe specified in the request.

Note: Compliance records may be subject to audit by the **department** or an independent auditor in accordance with section 458 of the **EPBC Act**, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the **Department's** website or through the general media.

Submission and publication of plans

11. The approval holder must:

- a. submit **plans** electronically to the **department** for approval by the **Minister**
- b. publish each **plan** on the **website** within 20 **business days** of the date the **plan** is approved by the **Minister**, unless otherwise agreed to in writing by the **Minister**
- c. exclude or redact **sensitive ecological data** from **plans** published on the **website** or provided to a member of the public
- d. keep **plans** published on the **website** until the end date of this approval.

12. The approval holder must ensure that any **monitoring data** (including **sensitive ecological data**), surveys, maps, and other spatial and metadata required under the **Offset Management Plan** is prepared in accordance with the **department's** *Guidelines for biological survey and mapped data* (2018) and submitted electronically to the **department** in accordance with the requirements of the **Offset Management Plan**.

Annual compliance reporting

13. The approval holder must prepare a **compliance report** for each 12 month period 30 August each year following date of **commencement of the action**, or otherwise in accordance with an annual date that has been agreed to in writing by the **Minister**. The approval holder must:

- a. publish each **compliance report** on a publicly available the **website** within 90 **business days** following the relevant 12 month period
- b. notify the **department** by email that a **compliance report** has been published on the **website** and provide the weblink for the **compliance report** within 5 **business days** of the date of publication
- c. keep all **compliance reports** publicly available on the **website** until this approval expires
- d. exclude or redact **sensitive ecological data** from **compliance reports** published on the **website**
- e. where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **department** within 5 **business days** of publication.

Note: Compliance reports may be published on the **department's** website.

Reporting non-compliance

14. The approval holder must notify the **department** in writing of any: **incident**; non-compliance with the conditions; or non-compliance with the commitments made in **plans**. The notification must be given as soon as practicable, and no later than 2 **business days** after becoming aware of the **incident** or non-compliance. The notification must specify:

- a. any condition which is or may be in breach
- b. a short description of the **incident** and/or non-compliance
- c. the location (including co-ordinates), date, and time of the **incident** and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.

15. The approval holder must provide to the **department** the details of any **incident** or non-compliance with the conditions or commitments made in **plans** as soon as practicable and no later than 10 **business days** after becoming aware of the **incident** or non-compliance, specifying:
- any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future
 - the potential impacts of the **incident** or non-compliance
 - the method and timing of any remedial action that will be undertaken by the approval holder.

Independent audit

16. The approval holder must ensure that **independent audits** of compliance with the conditions are conducted as requested in writing by the **Minister**.
17. For each **independent audit**, the approval holder must:
- provide the name and qualifications of the independent auditor and the draft audit criteria to the **department**
 - only commence the **independent audit** once the audit criteria have been approved in writing by the **department**
 - submit an audit report to the **department** within the timeframe specified in the approved audit criteria.
18. The approval holder must publish the audit report on the **website** within 10 **business days** of receiving the **department's** approval of the audit report and keep the audit report published on the **website** until the end date of this approval.

Completion of the action

19. Within 30 days after the **completion of the action**, the approval holder must notify the **department** in writing and provide **completion data**.

Part C - Definitions

In these conditions, except where contrary intention is expressed, the following definitions are used:

Business day means a day that is not a Saturday, a Sunday or a public holiday in the state or territory of the action.

Clear/Clearing means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of vegetation.

Commence/commencement of the action means the first instance of any specified activity associated with the action including **clearing** and **construction**. **Commencement of the action** does not include minor physical disturbance necessary to:

- undertake pre-clearance surveys or monitoring programs
- install signage and /or temporary fencing to prevent unapproved use of the project area
- protect environmental and property assets from fire, weeds and pests, including installation of temporary fencing, and use of existing surface access tracks
- install temporary site facilities for persons undertaking pre-commencement activities so long as these are located where they have no impact on the **protected matter**.

Completion data means an environmental report and spatial data clearly detailing how the conditions of this approval have been met. The **Department's** preferred spatial data format is **shapefile**.

Completion of the action means the date on which all specified activities associated with the action have permanently ceased.

Compliance records means all documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the approval holder's possession or that are within the approval holder's power to obtain lawfully.

Compliance reports means written reports:

- i. providing accurate and complete details of compliance, **incidents**, and non-compliance with the conditions and the **plans**
- ii. consistent with the **department's** *Annual Compliance Report Guidelines* (2014)
- iii. include a **shapefile** of any clearance of any **protected matters**, or their habitat, undertaken within the relevant 12 month period
- iv. annexing a schedule of all **plans** prepared and in existence in relation to the conditions during the relevant 12 month period.

Construction means the erection of a building or structure that is or is to be fixed to the ground and wholly or partially fabricated on-site; the alteration, maintenance, repair or demolition of any building or structure; preliminary site preparation work which involves breaking of the ground (including pile driving); the laying of pipes and other prefabricated materials in the ground, and any associated excavation work.

department means the Australian Government agency responsible for administering the **EPBC Act**.

Environmental Management Plan Guidelines means the **department's** Environmental Management Plan Guidelines (2014) or subsequent published revised version.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Environmental Offsets Policy means the **department's** *EPBC Act 1999 Environmental Offsets Policy*, Commonwealth of Australia, 2012 or a subsequent published revised version.

Incident means any event which has the potential to, or does, impact on one or more **protected matter(s)** other than as authorised by this approval.

Independent audit: means an audit conducted by an independent and **suitably qualified person** as detailed in the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines* (2019).

Legally secure/ing/d means to secure legally under ACT legislation in relation to a site, to provide enduring protection for the site against development incompatible with conservation.

Monitoring data means the data required to be recorded under the conditions of this approval.

Minister means the Australian Government Minister administering the **EPBC Act** including any delegate thereof.

Plan(s) means any of the documents required to be prepared, approved by the **Minister**, implemented by the approval holder and published on the **website** in accordance with these conditions (includes action management plans and/or strategies).

Protected matter(s) means a matter protected under a controlling provision in Part 3 of the **EPBC Act** for which this approval has effect.

Sensitive ecological data means data as defined in the Australian Government Department of the Environment (2016) *Sensitive Ecological Data – Access and Management Policy V1.0*.

Shapefile means location and attribute information of the action provided in an Esri shapefile format. Shapefiles must contain '.shp', '.shx', '.dbf' files and a '.prj' file that specifies the projection/geographic coordinate system used. Shapefiles must also include an '.xml' metadata file that describes the shapefile for discovery and identification purposes.

Site means the area enclosed by the solid orange line designated 'Study area' on the maps at **Attachment A** and **Attachment B**.

Site means the area enclosed by the solid orange line designated 'Study area' on the maps at **Attachment A** and **Attachment B**.

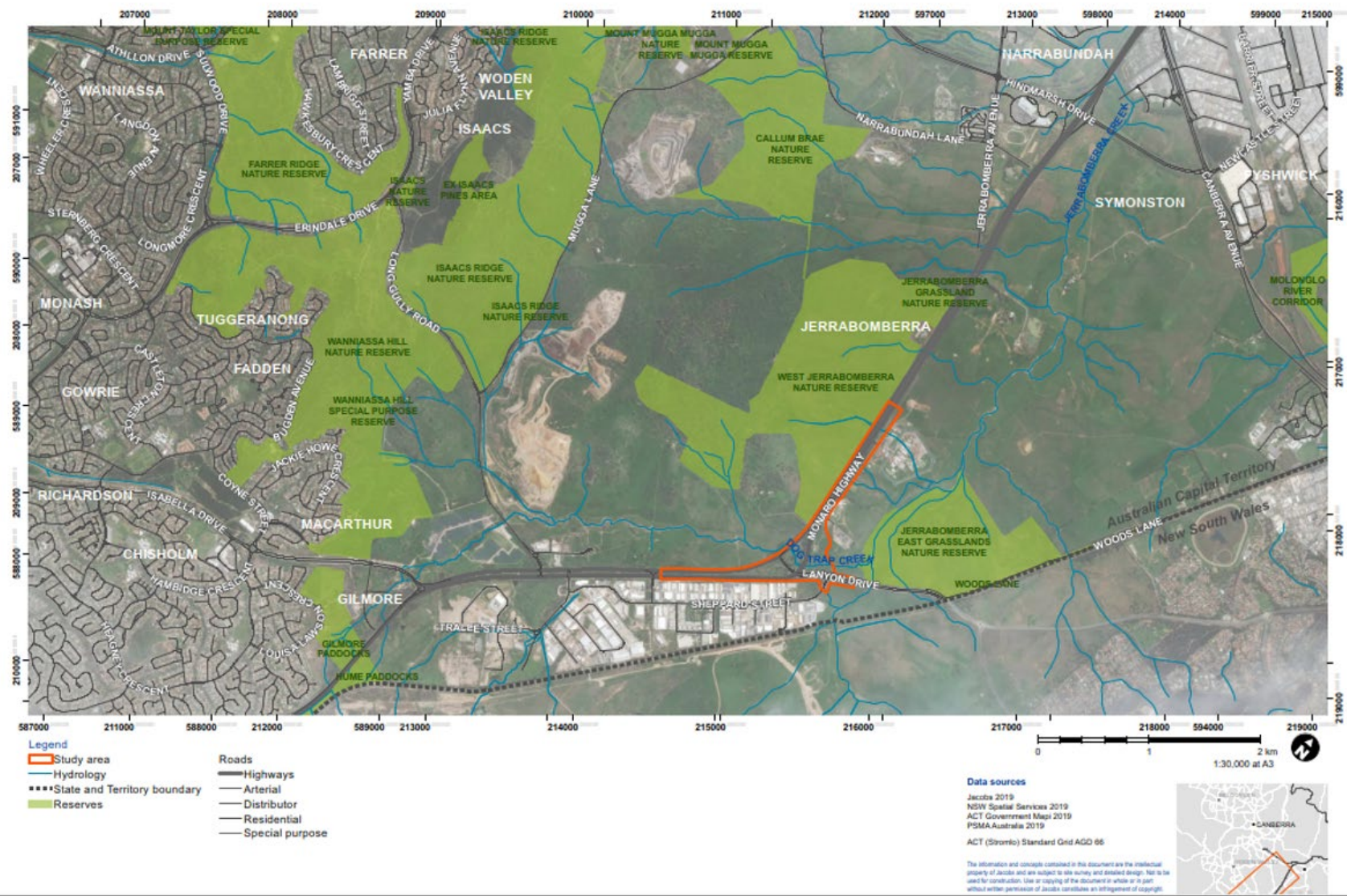
Striped legless lizard means the **EPBC Act** listed threatened species *Delma impar*.

Striped legless lizard habitat means the area enclosed by an orange line with orange cross hatching in the map at **Attachment B**.

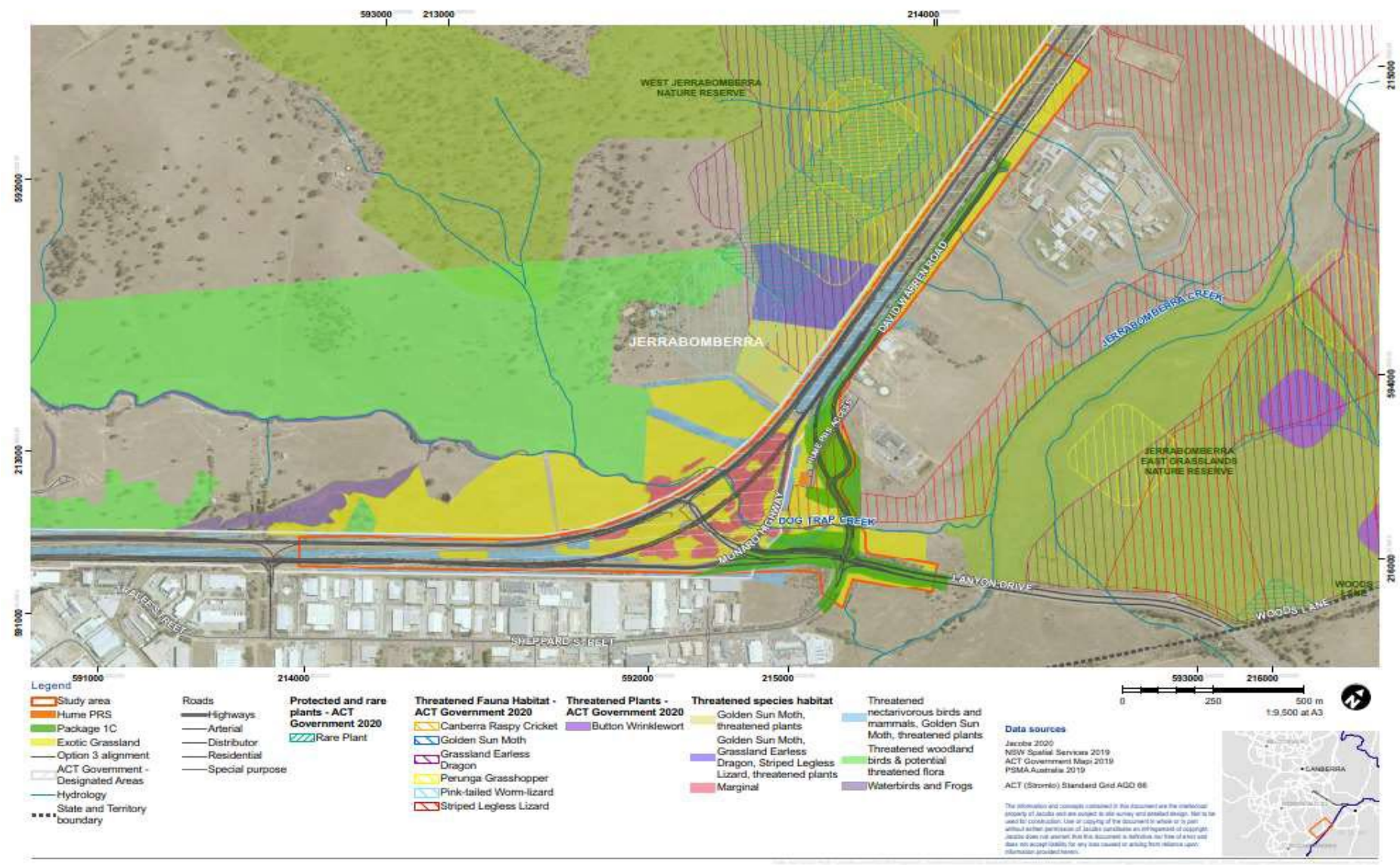
Website means a set of related web pages located under a single domain name attributed to the approval holder and available to the public

ATTACHMENTS

Attachment A: Map of the Site



Attachment B: Map of the Site including Striped Legless Lizard habitat



Appendix D: Unexpected finds procedure





This procedure aims to address unexpected finds that may occur during works for the Monaro Highway Upgrade – Package 1C.

Unexpected finds may be defined as discovery of items that cannot be managed by day to day construction management measures and may require assistance from specialists and/or notifications to external agencies. Unexpected finds that may occur include but are not limited to:

- Threatened flora or fauna species*
- Contaminated material
- Aboriginal cultural heritage items
- Non-Aboriginal cultural heritage items

**The delma impat (striped legless lizard) may be encountered and finds of individuals of this species are managed under the project specific CEMP*

Inductions and training

All personnel are to be inducted into the project. The project induction will include this unexpected finds procedure which should be supplied to all subcontractors.

General

For any unexpected finds the the general following procedure will be followed:

1. Stop works in the vicinity of the find and notify the Site Supervisor
2. Create an exclusion zone around the find and sign post the exclusion area as a 'No-Go' zone. A hard barrier is preferred for the exclusion zone.
3. The Site Supervisor is to notify the Project Manager
4. The Project Manager is to implement the appropriate unexpected finds procedure for the identified object which are shown in the sections below:



Threatened or other protected flora or fauna species

Nature Conservation Threatened Native Species List provides a list of threatened species protected under the *Nature Conservation Act 2014* and is available at <https://www.legislation.act.gov.au/>

In the event and unexpected threatened species is encountered during works the following procedure will be followed:

1. Stop works in the vicinity of the find and notify the Site Supervisor
2. Create an exclusion zone around the find and sign post the area as a 'No-Go' zone. A hard barrier around the exclusion zone is preferred.
3. The Site Supervisor is to notify the Project Manager
4. The Project Manager is to notify the proponent of the find
5. The Project Manager will seek advice from the Project Ecologist who will advise:
 - I. If notification to the ACT Conservator of Flora and Fauna or other agencies is required
 - II. If a site inspection is required
 - III. Any immediate management actions that need to be carried out
6. Following advice from the Project Ecologist and external agencies (if received), the Project Manager will advise the Staff of the required actions.
 - I. Additional permits or approvals may be required for these actions, no actions will proceed until the necessary approvals are obtained
5. Once the required management actions are carried out and the site is safe to workers and the environment, the Project Manager will advise that works can recommence.
6. If required the Project Manager and /or Project Ecologist will notify external agencies of the management actions carried out..



Contamination

Potentially contaminated materials may be identified by one or more of the following characteristics:

- Soil has visible rubbish material such as plastic, brick, concrete, metal etc. which may indicate the material is uncontrolled fill. Soil that contains such material could have asbestos containing material (ACM) even if it is not visible
- Soil has significantly different properties from naturally occurring material such as colour or composition (e.g. clay, sand or gravel) which may indicate the presence of uncontrolled fill
- Soil has visible staining or discolouration which may be an indication of the presence of chemical contaminants such as hydrocarbons
- Soil has a noticeable odour which may be an indicator of chemical contamination (e.g. hydrocarbons or other volatile compounds such as solvents) or microbiological contaminants associated with sewage (e.g. E.Coli, faecal coliforms).
- Water that exhibits an odour or has a visible surface sheen present.

In the event of unexpected contaminated material is encountered during works the following procedure will be followed:

1. Stop works in the vicinity of the contaminated material and notify the Site Supervisor
2. Create an exclusion zone around the material and sign post the exclusion zone as a 'No-Go' zone. A hard barrier is preferred for the exclusion zone. Containment controls around the exclusion zone such as earth bunds may also be necessary
3. The Site Supervisor is to notify the Project Manager
4. The Project Manager is to engage a suitably qualified Environmental Consultant to undertake assessment of the material. This would likely include:
 - I. A site inspection
 - II. Material sampling
 - III. Lab analysis
5. The Environmental Consultant will advise the Project Manager on:
 - I. Notifications required with the EPA
 - II. Approvals required for the disposal and/or remediation
 - III. Appropriate management and remediation measures
6. The Project Manager will:
 - I. Notify the EPA, as advised
 - II. Obtain the necessary approvals for the disposal and/or remediation, if required
 - III. Direct the Site Supervisor to carry out the required management and remediation measures
7. Once the necessary management and remediation measures have been carried out the Environmental Consultant may need to complete a validation assessment of the area
8. Once the unexpected find is suitably managed and the site is safe to workers and the environment (as advised by the Environmental Consultant) the Project Manager will advise that works can recommence.



Heritage

An unexpected heritage procedure has been provided to ACT Heritage. This procedure is to be followed if a previously unrecorded or unanticipated Aboriginal object (including objects that are suspected to be Aboriginal objects) are encountered during project works.

An **Aboriginal object** is defined, in Section 9 of The Heritage Act 2004, as a place or object associated with Aboriginal people through their customs, rituals, institutions, belief, or general way of life.

This definition includes stone artefacts, midden material, rock art, scarred and carved trees.

Note: A discovery of human remains (e.g. skeletal material) or of palaeontological material, trigger separate protocols, outlined below.

If an **Aboriginal object** is discovered during project works, the following actions will be taken:

- 1) All ground-disturbing works in the area of the Aboriginal object(s) cease immediately on discovery of the Aboriginal object. The discoverer of the object will notify machinery operators in the area to ensure work is halted.
- 2) The Aboriginal object will not be removed from the area.
- 3) Inform the Site Supervisor and the development proponent of the discovery.
- 4) Inform the Project Heritage Consultant of the discovery. The possibility of obtaining a qualified opinion within a short period of time (from the Project Heritage Consultant or similar qualified person) to confirm whether the object is of Aboriginal origin will be considered at this point. A swift assessment of the object can preclude further steps in the protocol being carried out, for objects that are identified as not being of Aboriginal origin. If identification of the object cannot be obtained within a short timeframe, or if the object is confirmed to be an Aboriginal object, proceed to the next step.
- 5) Notify the following organisations:
 - The ACT Heritage Unit 13 22 81
- 6) If feasible, leave excavations open (and make safe) so that the location where the Aboriginal object was found can be assessed by the Project Heritage Consultant or other suitably qualified person.
- 7) Organise the assessment and recording of the finds by a suitably qualified Heritage Consultant. This assessment will determine whether the Aboriginal object is from a new or previously recorded site, and will result in a lodgement of site information with the ACT Heritage Unit.
- 8) Clarify and comply with any legal constraints arising from the discovery. This will involve seeking and complying with advice from the ACT Heritage Unit. Unless advised otherwise by the ACT Heritage Unit, constraints will include a halting of all works in the area until a management strategy has been developed and implemented.
- 9) Develop and implement an appropriate management strategy. This will be done in cooperation with the Project Heritage Consultant (or other suitably qualified professional) and in consultation with the ACT Heritage Unit. The strategy will be developed in consultation with Registered Aboriginal Organisations (RAOs) where appropriate. The strategy must be approved by the ACT Heritage Unit prior to being implemented. The strategy developed will depend on variables that include the assessed significance of the Aboriginal object and the assessed likelihood of further Aboriginal objects being present in the area.
- 10) Where the management strategy for the area involves the resumption of works in the area, with or without salvage of Aboriginal objects, a Statement of Heritage Effect would be required.
- 11) Development works in the area can commence when stipulated by the management strategy.



If **human remains, or suspected human remains** (such as skeletal material suspected to be human), are encountered, the following actions will be taken:

- 1) All ground-disturbing works in the area of the suspected human remains will cease immediately. The discoverer of the object will notify machinery operators in the area to ensure work is halted.
- 2) The suspected human remains will not be removed from the area.
- 3) Inform the Site Supervisor and the development proponent of the discovery.
- 4) Inform the Project Heritage Consultant of the discovery. The possibility of obtaining a qualified opinion within a short period of time (from the Project Heritage Consultant or similar qualified person) to confirm whether the suspected human remains are in fact human will be considered at this point. A swift assessment of the object can preclude further steps in the protocol being carried out, for objects that are identified as not being human (for example, skeletal material that can be identified as a non-human animal species). If identification of the suspected human remains cannot be obtained within a short timeframe, or if the material is confirmed to be human, proceed to the next step.
- 5) Notify the police. It is a legal requirement that police are notified, to provide them with an opportunity to investigate the site and determine whether it is a crime scene.
- 6) If the material is assessed as being historic or prehistoric human remains, and not of interest to the police, then inform the ACT Heritage Unit of the find. The area will remain undisturbed while this occurs.
- 7) Develop and implement an appropriate management strategy. This will be done in cooperation with the Project Heritage Consultant (or other suitably qualified professional) and in consultation with the ACT Heritage Unit. The strategy will be developed in consultation with Registered Aboriginal Organisations (RAOs) where appropriate. The strategy must be approved by the ACT Heritage Unit prior to being implemented. The strategy developed will depend on variables that include the assessed significance of the Aboriginal object and the assessed likelihood of further Aboriginal objects being present in the area.
- 8) Where the management strategy for the area involves the resumption of works in the area, with or without salvage of the human remains, a Statement of Heritage Effect would be required.
- 9) Development works in the area can commence when stipulated by the management strategy.

If **palaeontological material, or suspected palaeontological material**, is encountered, the following actions will be taken:

(Note, 'palaeontological material' refers to fossilised or semi-fossilised bone or other organic material)

- 10) All ground-disturbing works in the area of the palaeontological material cease immediately. The discoverer of the material will notify machinery operators in the area to ensure work is halted.
- 11) The palaeontological material will not be removed from the area.
- 12) Inform the site supervisor and the development proponent of the discovery.
- 13) Inform the Project Heritage Consultant of the discovery. The possibility of obtaining a qualified opinion within a short period of time (from a palaeontologist or similar qualified person) to confirm whether the objects discovered are palaeontological material will be considered at this point. A swift assessment of the material can preclude further steps in the protocol being carried out, for objects that are identified as not being palaeontological material. If identification of the object cannot be obtained within a short timeframe, or if the find is confirmed to be palaeontological material, proceed to the next step.
- 14) Notify the following organisations:

- The ACT Heritage Unit 13 22 81

- 15) If feasible, leave excavations open (and make safe) so that the location where the material was found can be assessed by a suitably qualified person.
- 16) Organise the assessment and recording of the finds by a suitably qualified person. This assessment will determine whether the material is from a new or previously recorded site, and will result in a lodgement of site information with the ACT Heritage Unit.
- 17) Clarify and comply with any legal constraints arising from the discovery. This will involve seeking and complying with advice from the ACT Heritage Unit. Unless advised otherwise by the ACT Heritage Unit, constraints will include a halting of all works in the area until a management strategy has been developed and implemented.
- 18) Develop and implement an appropriate management strategy. This will be done in cooperation with the project archaeologist (or other suitably qualified professional) and in consultation with the ACT Heritage Unit. The strategy will be developed in consultation with RAOs where appropriate. The strategy must be approved by the ACT Heritage Unit prior to being implemented. The strategy developed will depend on variables that include the assessed significance of the material and the assessed likelihood of further palaeontological material being present in the area.
- 19) Where the management strategy for the area involves the resumption of works in the area, with or without salvage of the palaeontological material, a Statement of Heritage Effect would be required.
- 20) Development works in the area can commence when stipulated by the management strategy.

Appendix E: Fire Management Plan Criteria



Fire Management Plan Criteria

The following has been extracted from the Early Utility Works Specificaion for Package 1B of the Monaro Highway Upgrade. The Main Civil Works Contractor for Package 1C will need to meet this condition and criteria before commencing works.

Fire Management Plan

The Contractor shall prepare and submit a Fire Management Plan to the ACT Emergency Services Agency (ESA) for approval. The Contactor shall submit the approved Fire Management Plan to the Proponent prior to any construction commencing. The following criteria shall be incorporated into the fire management plan:

- Plant and equipment use that may cause accidental ignitions must be suspended when the local area Fire Danger Index (FDI) exceeds 30.
- Machinery may operate from early morning and work until 10:00am or until directed to suspend operations by the relevant Agency, based on the local area FDI exceeding 30.
- On days of Total Fire Ban, where slashers work in the morning, slashing is to be restricted to areas within the suburbs or irrigated areas. No work is permitted on the urban edge or in flood ways.
- Where machinery has operated for part of a day and subsequently been closed by the FDI exceeding 30, a machine operator must remain on site for a period of not less than 30 minutes after the close down of the machine to ensure no fires ignite from their operations.
- For graders, dozers, front-end loaders and backhoes, work may continue when the local area FDI exceeds 30 if they are working in the middle of a mineral earth area greater than 5m from any vegetation.
- Welding and oxyacetylene cutting may only be undertaken in the field when the FDI is less than 30. Operators must have the capacity and equipment to extinguish either fires started by the activity or fires on the welding or oxyacetylene equipment: a pressure operated water fire extinguisher to AS 1841 Pt 2, minimum capacity 16 litres, or a knapsack spray, minimum capacity 16 litres to extinguish fires started by the activity, unless it is supported by a chaser vehicle with either this equipment or a spray/slip on unit, plus either two serviceable powder type fire extinguishers to AS 1841, Pt 5, minimum capacity 0.9 kg, or one 1.8 kg or larger extinguisher to extinguish fires on the equipment.
- No Contractor will use a naked flame, this includes linemarking, asphalt laying and bitumen sealing works during Total Fire Bans.
- All plant (dozers, graders, backhoes, mulchers, slashers, front end loaders, chippers) and equipment (chainsaws, jackhammers, post-hole borers) must be:
 - Maintained and operated in a way that it will minimise the risk of a fire starting or catch fire itself.
 - Fitted with a securely fixed, spark free exhaust in good, serviceable condition.
 - Free of excessive build-up of either surplus oils, dust impregnated with oil, and/or vegetative matter.
- Every plant item must carry either a pressure operated water fire extinguisher to AS 1841 Pt 2, minimum capacity 16 litres, or a knapsack spray, minimum capacity 16 litres to extinguish fires started by the plant, unless it is supported by a chaser vehicle with either this equipment or a spray / slip on unit.
- Every plant item must carry either two serviceable powder type fire extinguishers to AS 1841, Pt 5, minimum capacity 0.9 kg, or one 1.8 kg or larger extinguisher to extinguish fires on the plant. (Note that local experience indicates that the capacity of a single 0.9 kg extinguisher has not been sufficient to stop a fire on a machine that is burning hydraulic hoses and oil).
- Fuel must be stored consistent with AS1940.
- Refuelling must occur where the ground is clear of flammable material for a distance of not less than 1.5m from the edge of the machine.
- Fuel and oils spills must be cleaned up, recovered or covered with not less than 5cm of non- flammable material.
- If an incident occurs that requires the use of a fire extinguisher, the plant involved cannot continue operating until it has been inspected and deemed safe by the relevant agency supervisor and the extinguisher has been replaced / refilled.

Appendix F: Striped Legless Lizard (*Delma impar*) Guidelines for Salvage Operations (ACT Gov, 2023)



Striped Legless Lizard (*Delma impar*)

Guidelines for Salvage Operations

Timing of Salvage

The Striped Legless Lizard (*Delma impar*; SLL) is surface active during the day from spring to early autumn, with a **peak in activity** from **September to November**. The species may still be detected from December to March/early April in the ACT if the conditions are suitable, however no detection (during this time in particular) cannot be taken to infer the species is not on site.

Field surveys to salvage the species from sites for future development should be undertaken during the peak active period of the species to maximise the number of animals able to be detected and captured. Survey techniques may be undertaken during the cooler months of the year, but this is less successful and not best practice. Reference sites may need to be monitored during the expected active period of the species and used to guide survey timing at the target site(s).

Methodology

Artificial Shelter Sites

Artificial shelter sites (roof tiles) should ideally be installed 4 weeks prior to the initial survey (i.e. August). If there are time constraints, tiles can be employed 2 weeks prior with success. Roof tiles should be placed in suitable vegetated habitat, with arrays as per the Commonwealth Survey Guidelines for Australia's Threatened Reptiles for *Delma impar*:

- Each consisting of **50 tiles**
- **5 metre spacing** between tiles
- Arranged in a **grid of 10 tiles by 5**
- Preferably **positioned on a northerly aspect**, with the long edge of the tile facing north/south

As a minimum, two tile arrays for sites less than two hectares in size; one array per three hectares for sites up to 30 hectares, and 10 arrays for sites greater than 30 hectares in size. Shelter sites should be checked when ambient **temperatures do not exceed 25°C**. The most favourable conditions are between 15-25°C, ideally in fine cooler weather or overcast conditions between the hours of 8 am until it becomes too warm (i.e. tiles become too warm, and animals will not be using them for thermoregulation. Animals appear to favour coming up under tiles just after rain.

Shelters should be **checked for a period of several weeks** starting in September when the weather is warm enough that reptiles will have emerged from brumation. ACT guidelines recommend a minimum of 10 weeks, with a minimum of 20 checks no more frequent than once or twice a week (as more frequently than once or twice a week may lead to animals abandoning the artificial shelters) for normal presence/absence surveys. For the purposes of salvage, **checks can be undertaken during suitable conditions on consecutive days** over several weeks/months during the active period, as the abandonment of tiles is not an issue due to the intended capture of animals. Previous salvage efforts in the ACT have undertaken checks **from 9am in suitable conditions**, checking tiles every second or consecutive day from September to November, over a period of two seasons (animals continued to be detected over this time, with numbers captured declining over the duration).

Active Searches

Active searching (checks under surface rock and debris and around tussocks) can generally be undertaken throughout the year and may be used in addition to tile checks whilst on site to exhaust all options. Surveyors need to ensure that rocks, logs and other refugia are placed back in the same position if these are to be checked multiple times. This technique has a low success rate, and it should only be used where necessary.

How to Capture

Striped Legless Lizards can be captured safely from under tiles, provided care is taken and skilled staff are undertaking the checks. When salvaging, it is best to get down on your knee/s ready to turn the tile with one hand, so that you are stable and in close proximity to grab an animal with your dominant hand. SLL should be carefully captured by gently pinching the animal in the upper half of the body with your thumb and forefinger, and supporting the rest of the body and tail with your other fingers from underneath (pictured below). They do have somewhat prehensile tails and are more secure when wrapping their tail around your fingers.



Correct positioning of thumb and forefinger to gently pinch a SLL in the upper half of its body, and provide support for the rest of the body and tail.

SLL can autonomously drop their tails (which make up a large proportion of their total length), and they will do so if not handling the animal correctly. It is imperative that you know where their body is, and when it becomes tail (see picture below). To avoid potentially breaking the animal's tail if grabbing too low, it is best to aim closer to the head. However, during salvage operations the risk of tail breakage versus ensuring all animals are removed from site, resulting in a few animals losing tails, may be considered an acceptable outcome for overall conservation gain.



Ventral view of SLL, showing the positioning of the cloaca along the body.

Transport

SLL can be held and transported in calico cloth bags, secured by folding over or carefully twisting the top section of the bag and securing with a rubber band. Cloth bags should not be overly large as animals may suffocate or be crushed in excess material. Ensure the SLL is carefully placed at the bottom of a bag, and run your hands gently over the bag (pushing the animal to the bottom) before securing, to ensure the animal has not run up into the twist or folds, as it will get damaged. Bags containing SLL must then be placed into a hard plastic container with abundant small air holes, to add an extra layer of safety and security against escape.

Ensure any SLL being transported are never exposed to extreme temperatures (less than 10-15°C or over 35°C) as they may die within minutes. Ensure any vehicle they may be travelling in is suitably warmed/cooled prior to the animals going in it, and never leave them in a vehicle during daylight hours (other than during the transport). When transporting them in a vehicle ensure they are protected from direct sunlight – this is easily achieved by placing them into an esky (with ventilation holes either drilled in, or holes made by a soldering iron). Never leave SLL restrained in a cloth bag in the sun, especially if also enclosed in a plastic container.

SLL should be held in calico bags for as minimal time as possible, ideally no more than a few hours; only whilst the search operation is taking place and during transport, with animals taken into the translocation site and released as soon as possible into suitable habitat and refugia sites.

Identification

Striped Legless Lizards can be found in the same environment as Eastern Brown Snakes, and often juvenile snakes use the tiles for shelter/thermoregulation. There is potential for a snake to be confused with a SLL, particularly during salvage when you have a split second to decide whether to grab the animal or not. The other species possible to find under tile and confused with either SLL or a snake is the Olive Legless Lizard (*Delma inornata*). They are larger than *D. impar*, and more matte, looking more akin to a juvenile Eastern Brown Snake. However, there are some features and behaviours that set legless lizards apart from snakes.

Snakes, even juvenile Eastern Brown Snakes, are a much larger and more robust animals than legless lizards. When first hatched, they are 20 cm+ in length and have a thicker body. SLL may reach up to 30 cm+ in larger adult individuals, but their body is much sligher. Even the larger of the local species, Olive Legless Lizard, are much sligher than a snake.

Typically, snakes will be coiled up under a tile, whereas SLL tend to loop body segments over themselves or be outstretched. Snakes also tend to stay stationary or start to move off slowly keeping relaxed at ground level from under a tile (provided the surveyor does not make sharp startling movements), whereas a legless lizard will sit still for a second or two, then dart off excitedly into the surrounds (sometimes throwing itself in the air whilst moving away from the tile). SLL will sometimes be woven through the thatch, or even sitting just below it, so it may be necessary to attempt to grab a small portion of exposed body – this should only be done if the ecologist is absolutely confident it is not a snake.

Refer to the images below for differences between Eastern Brown Snake juveniles and local legless lizard species.



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Striped Legless Lizard in outstretched position under a roof tile during surveys.



Typical positioning of a strongly striped Delma impar as often found under tile, with body segments looped over themselves.



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Striped Legless Lizard outstretched under a monitoring tile.



An Olive Legless Lizard positioned outstretched under a monitoring tile.



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A juvenile fully banded (left image) and unbanded (right image) Eastern Brown Snake under a tile, in typical coiled up position. It is clear in the photos that these animals are much more robust than a legless lizard.

For further advice or identification assistance, please contact:

Emma Carlson | Emma.Carlson@act.gov.au

Appendix F: Striped Legless Lizard (*Delma impar*) Guidelines for Salvage Operations (ACT Gov, 2023)



Striped Legless Lizard (*Delma impar*)

Guidelines for Salvage Operations

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Shelters should be **checked for a period of several weeks** starting in September when the weather is warm enough that reptiles will have emerged from brumation. ACT guidelines recommend a minimum of 10 weeks, with a minimum of 20 checks no more frequent than once or twice a week (as more frequently than once or twice a week may lead to animals abandoning the artificial shelters) for normal presence/absence surveys. For the purposes of salvage, **checks can be undertaken during suitable conditions on consecutive days** over several weeks/months during the active period, as the abandonment of tiles is not an issue due to the intended capture of animals. Previous salvage efforts in the ACT have undertaken checks **from 9am in suitable conditions**, checking tiles every second or consecutive day from September to November, over a period of two seasons (animals continued to be detected over this time, with numbers captured declining over the duration).

Active Searches

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How to Capture

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Ensure any SLL being transported are never exposed to extreme temperatures (less than 10-15°C or over 35°C) as they may die within minutes. Ensure any vehicle they may be travelling in is suitably warmed/cooled prior to the animals going in it, and never leave them in a vehicle during daylight hours (other than during the transport). When transporting them in a vehicle ensure they are protected from direct sunlight – this is easily achieved by placing them into an esky (with ventilation holes either drilled in, or holes made by a soldering iron). Never leave SLL restrained in a cloth bag in the sun, especially if also enclosed in a plastic container.

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Identification

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Typical positioning of a strongly striped Delma impar as often found under tile, with body segments looped over themselves.



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Striped Legless Lizard outstretched under a monitoring tile.



An Olive Legless Lizard positioned outstretched under a monitoring tile.



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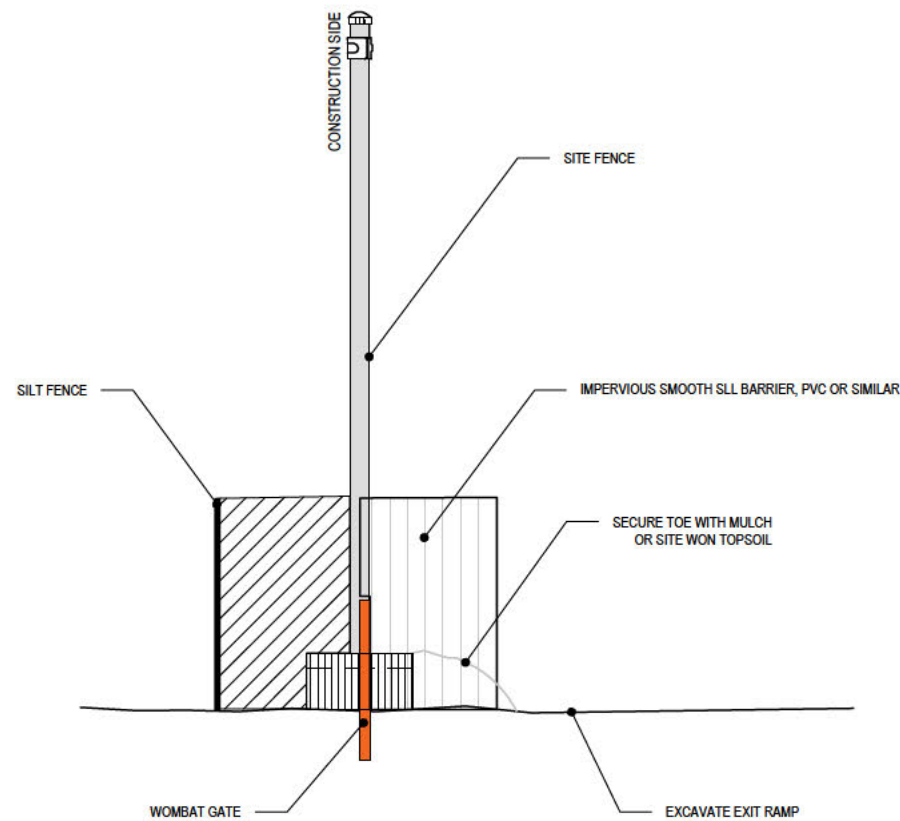
A juvenile fully banded (left image) and unbanded (right image) Eastern Brown Snake under a tile, in typical coiled up position. It is clear in the photos that these animals are much more robust than a legless lizard.

For further advice or identification assistance, please contact:

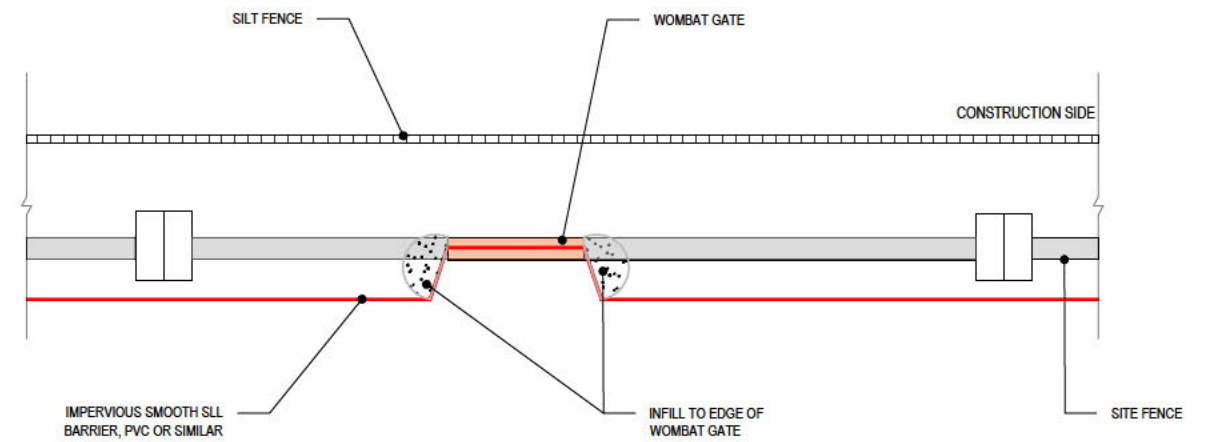
Emma Carlson | Emma.Carlson@act.gov.au

Appendix G: Temporary Fencing Plan

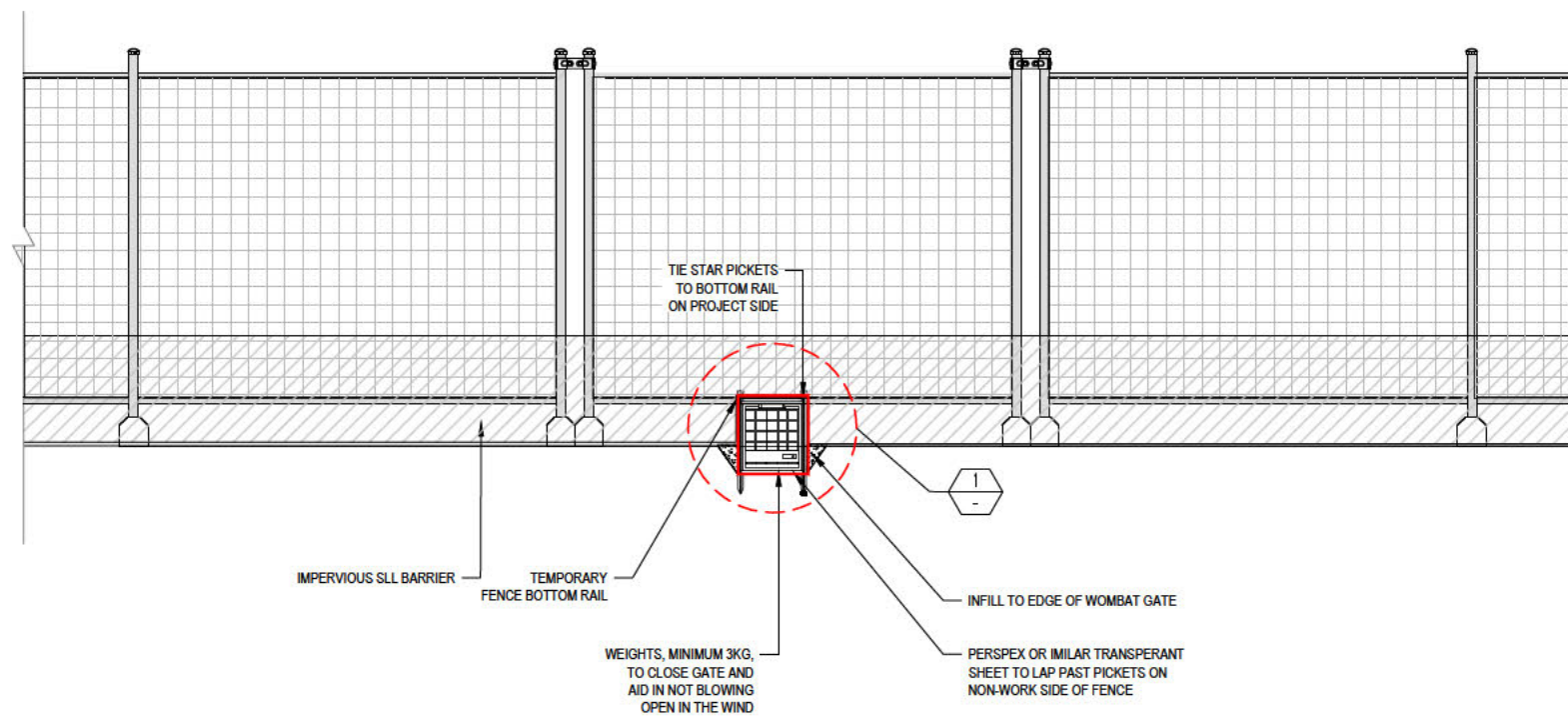




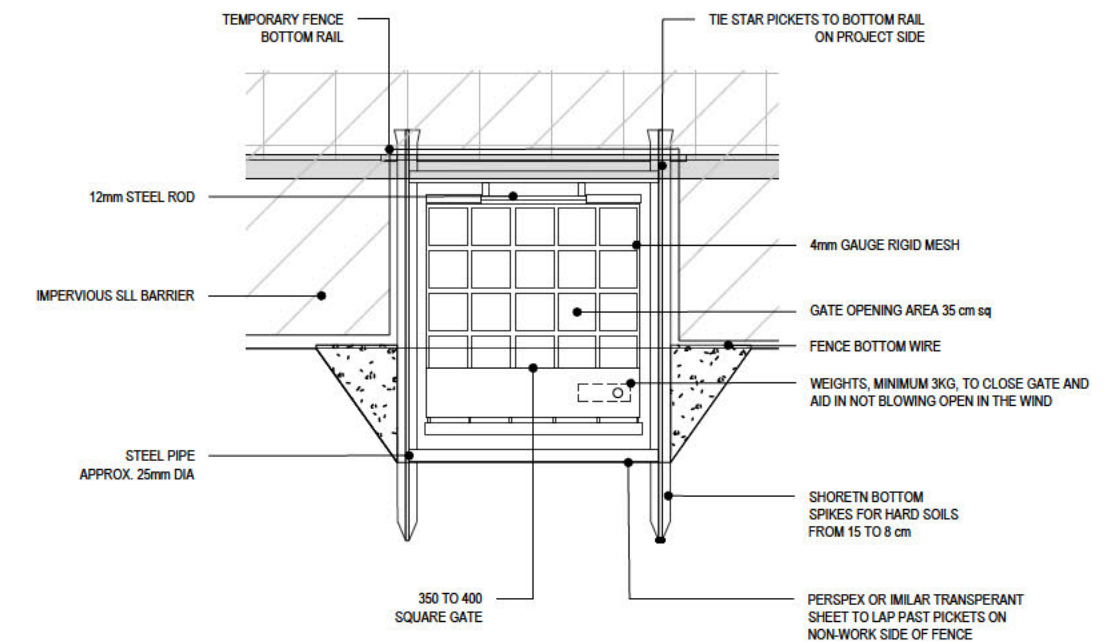
SECTION VIEW



PLAN VIEW



PACKAGE 1C WOMBAT GATE AND SLL FENCE

DETAIL
SCALE 1: 1500

Rev	Date	Description	Des.	Verif.	Appd.
A	05/09/2023	ISSUED FOR ???	?	?	?



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Drawn	Date	Client	MAJOR PROJECTS CANBERRA ON BEHALF OF TRANSPORT CANBERRA AND CITY SERVICES		
Checked	Date	Project	MONARO HIGHWAY UPGRADE LANYON DRIVE INTERCHANGE AND ASSOCIATED WORKS - PACKAGE 1C		
Designed	Date	Title	FENCING PLAN DETAILS		
Verified	Date				
Approved	Date				
			Status	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES	
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