

[REDACTED]

From: [REDACTED]
Sent: Wednesday, 20 September 2023 10:25 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: HPE CM: RE: HPE CM: Emergency Plan - Snowy 2.0 Transgrid Transmission Connection [Official]
Attachments: 3200-0645-PLN-026-EP_0.06_ELA_v1.pdf

Hi [REDACTED]

Thank you for [REDACTED] email below providing the National Parks and Wildlife Service (NPWS) with version 0.6 of the Transmission Connection Project Emergency Plan, and your email response to my questions dated 20 Sep 2023.

NPWS has reviewed version 0.06, particularly with regard to Condition B42 (Emergency Plan) of the planning approval.

On behalf of NPWS, I approve version 0.06 of the Emergency Plan as provided by email from [REDACTED] below dated 31 August 2023 and attached. This is on condition of the following:

- as per section 4.9, NPWS will always endeavour to advise Transgrid of relevant smoke sightings or incidents, however this should not be relied upon and Transgrid must be responsible for monitoring the NSW Rural Fire Service bushfire emergency alerts.

Please ensure that the approved plan is provided to DPE Planning and Assessment and placed on the project website.

If you have questions please contact me directly on the numbers below.

Regards

[REDACTED]



[REDACTED]
Manager Snowy 2.0
Southern Ranges Branch
**NSW National Parks and Wildlife
Service**

Kosciuszko Road Jindabyne
T [REDACTED]
M [REDACTED]
W nationalparks.nsw.gov.au

*The Department of Planning and Environment acknowledges that it stands on Aboriginal land.
We acknowledge the traditional custodians of the land and we show our respect for elders past, present
and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing
commitment to providing places in which Aboriginal people are included socially, culturally and economically.*

From: [REDACTED]
Sent: Thursday, 31 August 2023 2:57 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: HPE CM: RE: HPE CM: Emergency Plan - Snowy 2.0 Transgrid Transmission Connection [Official]

Good afternoon [REDACTED]

Please find attached the updated Snowy 2.0 Transmission Connection Project Emergency Plan, saved as rev0.06. The document has been amended following receipt of NPWS and FCNSW feedback. I have attached the updated document and supporting Document Change Register (spreadsheet) which details the document amendments.

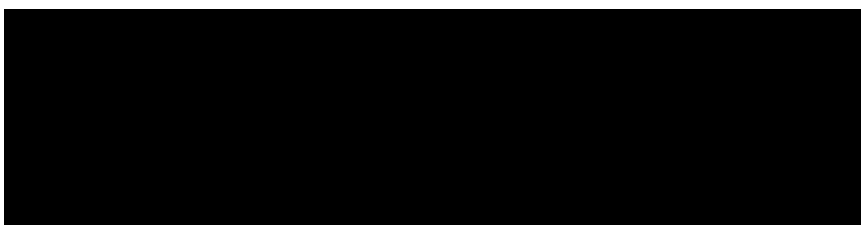
Can you please confirm that the Snowy 2.0 Transmission Connection Emergency Plan has now been prepared to the satisfaction of NPWS in accordance with SSI-9717 project Condition of Approval B42 (excerpt below). Email response is sufficient for our records and is requested by COB 7 September 2023.

Emergency Plan

B42. Prior to commencing construction, the Proponent must prepare and implement a comprehensive Emergency Plan and detailed emergency procedures for the development, in consultation with the Local Emergency Management Committee and to the satisfaction of the NPWS, FCNSW, RFS and FRNSW. This plan must:

Please let me know if you have any questions or need any additional information.

Thanks,



W: www.transgrid.com.au



Data Classification: Official

This email is intended for the addressee(s) named and may contain confidential and/or privileged information. If you are not the intended recipient, please notify the sender and then delete it immediately. Any views expressed in this email are those of the individual sender except where the sender expressly and with authority states them to be the views of the NSW Office of Environment, Energy and Science.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

From:

Sent:

Wednesday, 2 August 2023 6:19 PM

To:

Cc:

Subject:

RE: Emergency Plan - Snowy 2.0 Transgrid Transmission Connection [Official]

Hi

I can confirm that we have received the revised SNOWY 2.0 TRANSMISSION CONNECTION EMERGENCY PLAN. We have been through the document and revisions and are happy to accept it in its current format.

I would be more than happy to discuss further if required, Thank you for your patience,

Regards

District Manager - Riverina Highlands District



RFS

Tumut FCC 76 Capper St , Tumut NSW 2720
PO Box 401 Tumut NSW 2720

www.rfs.nsw.gov.au



The RFS acknowledges the Traditional Owners of Country throughout Australia. We pay our respects to Elders past and present.

From:

Sent: Friday, 28 July 2023 4:38 PM

To:

Cc:

Subject: RE: Emergency Plan - Snowy 2.0 Transgrid Transmission Connection [Official]

Importance: High

Hi

Following up on Tanvir's previous email, can you please confirm the attached Snowy 2.0 Transmission Connection Emergency Plan has been prepared to the satisfaction of NSW RFS in accordance with SSI-9717 project Condition of Approval B42 (except below). Email response is sufficient for our records and is requested by COB 31 July 2023.

Emergency Plan

- B42. Prior to commencing construction, the Proponent must prepare and implement a comprehensive Emergency Plan and detailed emergency procedures for the development, in consultation with the Local Emergency Management Committee and to the satisfaction of the NPWS, FCNSW, RFS and FRNSW. This plan must:

Please note, I have attached your previous response with RFS' comments which have been addressed in the current revision (rev0.05) of the plan.

Please let me know if you need any additional information or have any questions.

Hope you have a safe and relaxing weekend.

Thanks,



W: www.transgrid.com.au



[REDACTED]

From:

Sent:

Monday, 11 September 2023 1:53 PM

To:

Cc:

Subject:

RE: LEMC LRC Meeting - Snowy 2.0 Transmission Connection Project - Emergency Plan briefing [Official]

Hi [REDACTED]

I apologise for the delay, I have been on annual leave.

I am happy to endorse the newer version of the plan that is inclusive of these respective changes on behalf of Fire Rescue NSW

[REDACTED]
Zone Commander RS2
Goulburn
FRNSW
[REDACTED]

From:

Sent: Friday, September 8, 2023 7:27 AM

To:

Cc:

Subject: RE: LEMC LRC Meeting - Snowy 2.0 Transmission Connection Project - Emergency Plan briefing [Official]

CAUTION: This email originated from outside of Fire and Rescue NSW. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Good morning [REDACTED]

Following up on FRNSW's endorsement of the updated Snowy 2.0 Transmission Connection Project Emergency Plan (rev0.06).

Can you please provide FRNSW's response by COB today (08-09-2023), or If unable to provide a response within this timeframe, can you please advise when FRNSW's response will be available?

Thanks,

[REDACTED]



Data Classification: Official

From: [REDACTED]

Sent: Thursday, August 31, 2023 2:57 PM

To: [REDACTED]

Cc: [REDACTED]

Subject: RE: LEMC LRC Meeting - Snowy 2.0 Transmission Connection Project - Emergency Plan briefing [Official]

Good afternoon [REDACTED]

Please find attached the updated Snowy 2.0 Transmission Connection Project Emergency Plan, saved as rev0.06. The document has been amended following receipt of NPWS and FCNSW feedback. I have attached the updated document and supporting Document Change Register (spreadsheet) which details the document amendments.

Can you please confirm FRNSW's previous endorsement of the document (issued for rev0.05) remains for the revised document (rev0.06). Response by COB 7 September 2023 would be greatly appreciated.

Please let me know if you have any questions or need any additional information.

Thanks,



From: [REDACTED]

Sent: Wednesday, 10 May 2023 2:06 PM

To: [REDACTED]

Cc: [REDACTED]

Subject: RE: LEMC LRC Meeting - Snowy 2.0 Transmission Connection Project - Emergency Plan briefing [Official]

Greetings [REDACTED]

I hope this email finds you well. I am [REDACTED] Fire Rescue NSW Zone Commander for Region South 2 which incorporates the area of the Snowy Valley in which this part of this project lies. You have and continue to deal with one of my Duty Commanders for the area Dean Campbell who represents FRNSW and the zone at the respective LEMC and is one of our Liaisons for the project and associated infrastructure plans.

I apologies for the lateness of this response regarding the Snowy 2.0 Transmission Connection Emergency Plan (EP), as this project incorporates 3 different Zone Commands within the Region South Area. Dean and I disseminated the plan to all commands and the Area Commands to ensure the ability to review and comment if necessary.

Collectively the three Zone Commanders and overseeing Area Commander have reviewed the plan and took note of the Rural Fire Service response. The other zone commanders or their representatives and I also took the opportunity to visit several sites within the Snowy Hydro 2.0 project which included TransGrid infrastructure and ground truthed emergency processes and potential responses.

It was agreed that the infrastructure as detailed and as responded to by the Rural Fire Service comments all fall within the Rural fire Service area and they would be the responsible combat agency for initial response and there requirements as per their comments would be as they require. Fire Rescue would support as per our standard agency arrangements as per our standard protocol and this fits within your plan.

So based on this review and the response provided by the Rural Fire Service and our established agency arrangements, on behalf of Fire Rescue NSW we are happy with this version of the plan and have no further comment to add.

Best regards



SUPERINTENDENT

Zone Commander RS2, Goulburn

Fire and Rescue

1 – 5 Distribution Avenue, Orchard Hills NSW 2748

PO Box 159, St Clair NSW. 2759

www.fire.nsw.gov.au

From: [REDACTED]
Sent: Monday, May 1, 2023 1:51 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: FW: LEMC LRC Meeting - Snowy 2.0 Transmission Connection Project - Emergency Plan briefing [Official]

CAUTION: This email originated from outside of Fire and Rescue NSW. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Good afternoon [REDACTED]

Hoping you may be able to assist with my below request.

Transgrid are awaiting Fire and Rescue NSW feedback and/or endorsement of the Snowy 2.0 Transmission Connection Emergency Plan (EP).

The EP was shared with LEMC members prior to a LEMC meeting held on 21st March 2023, with feedback and/or endorsement requested to be provided prior to or following Easter (by 11th April).

Can you please advise if Fire and Rescue NSW intends to provide comment on the EP and an ETA for provision, noting consolidated comments will be issued for author review once received (previously intended last Friday).

Please let me know if you have any questions or need any additional information.

Thanks,

[REDACTED]

[REDACTED]

From: [REDACTED]
Sent: Friday, 8 September 2023 11:06 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Emergency Plan - Snowy 2.0 Transgrid Transmission Connection [Official]

Hi [REDACTED]

I can confirm Forestry Corporation are happy with the amended Snowy 2.0 Transmission Connection Project Emergency Plan.

Regards
[REDACTED]

From: [REDACTED]
Sent: Thursday, 31 August 2023 2:57 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Emergency Plan - Snowy 2.0 Transgrid Transmission Connection [Official]

Good afternoon [REDACTED]

Please find attached the updated Snowy 2.0 Transmission Connection Project Emergency Plan, saved as rev0.06. The document has been amended following receipt of NPWS and FCNSW feedback. I have attached the updated document and supporting Document Change Register (spreadsheet) which details the document amendments.

Can you please confirm that the Snowy 2.0 Transmission Connection Emergency Plan has now been prepared to the satisfaction of FCNSW in accordance with SSI-9717 project Condition of Approval B42 (excerpt below). Email response is sufficient for our records and is requested by COB 7 September 2023.

Emergency Plan

B42. Prior to commencing construction, the Proponent must prepare and implement a comprehensive Emergency Plan and detailed emergency procedures for the development, in consultation with the Local Emergency Management Committee and to the satisfaction of the NPWS, FCNSW, RFS and FRNSW. This plan must:

Please let me know if you have any questions or need any additional information.

Thanks,

[REDACTED]



SNOWY 2.0 TRANSMISSION CONNECTION EMERGENCY PLAN

Maragle 330kV Switching Station and 330kV Transmission Line Connections

Document number: 3200-0645-PLN-026-EP

Revision date: 30/08/2023

Revision: 0.06

Plan Approval

Rev.	Approval	Name	Position	Organisation	Signature	Date
0.01	Approved By	Trevor Noble	Project Manager	UGL		
0.01	Endorsed By	Andrew Buttigieg	Senior PM (Delivery)	TransGrid		
0.02	Approved By	Nathan Kearnes	Principal Consultant	Eco Logical	<i>Nathan Kearnes</i>	23/12/2022
0.02	Endorsed By	Andrew Buttigieg	Senior PM (Delivery)	TransGrid	<i>A. Buttigieg</i>	23/12/2022
0.03	Approved By	Nathan Kearnes	Principal Consultant	Eco Logical	<i>Nathan Kearnes</i>	07/03/2023
0.03	Endorsed By	Andrew Buttigieg	Senior PM (Delivery)	TransGrid	<i>A. Buttigieg</i>	07/03/2023
0.04	Approved By	Nathan Kearnes	Principal Consultant	Eco Logical	<i>Nathan Kearnes</i>	17/03/2023
0.04	Endorsed By	Andrew Buttigieg	Senior PM (Delivery)	TransGrid	<i>A. Buttigieg</i>	17/03/2023
0.05	Approved By	Nathan Kearnes	Principal Consultant	Eco Logical	<i>Nathan Kearnes</i>	22/06/2023
0.05	Endorsed By	Andrew Buttigieg	Senior PM (Delivery)	TransGrid	<i>A. Buttigieg</i>	22/06/2023
0.06	Approved By	Nathan Kearnes	Principal Consultant	Eco Logical	<i>Nathan Kearnes</i>	30/08/2023
0.06	Endorsed By	Andrew Buttigieg	Senior PM (Delivery)	TransGrid	<i>A. Buttigieg</i>	31/08/2023

Document Revision History

Rev.	Date	Prepared By	Reviewed By	Approved By	Remarks
0.01	05/10/2022	Ian Rembridge	Darrell Van Bruchem	Trevor Noble	Initial issue for review
0.02	23/12/2022	Mark Woods	Nathan Kearnes	Nathan Kearnes	Full review & revision
0.03	07/03/2023	Mark Woods	Nathan Kearnes	Nathan Kearnes	Revised following UGL and TransGrid comments
0.04	17/03/2023	Mark Woods	Nathan Kearnes	Nathan Kearnes	Revised following further UGL and TransGrid comments
0.05	22/06/2023	Mark Woods	Nathan Kearnes	Nathan Kearnes	Revised following stakeholder feedback from NPWS, FCNSW and NSW RFS.
0.06	30/08/2023	Mark Woods	Nathan Kearnes	Nathan Kearnes	Revised following further stakeholder feedback from NPWS and FCNSW, and endorsement from FRNSW and NSW RFS.

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ACRONYMS AND ABBREVIATIONS

Term	Definition
BOM	Bureau of Meteorology
BP	Bushfire Plan
CEMP	Construction Environmental Management Plan
CW	Chief Warden
DPIE	NSW Department of Planning and Environment
ECO	Emergency Control Organisation
EEC	Emergency Evacuation Coordinator
EIS	Environmental Impact Statement
EP	Emergency Plan
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
ERT	Emergency Response Team
EWP	Elevating Work Platform
FCNSW	Forestry Corporation of New South Wales
FRNSW	Fire and Rescue New South Wales
FRACM	Fire Risk Assessment and Control Measures form
HSE	Health, Safety, and Environment
HSSE	Health, Safety, Security, and Environment
ISSC	Industry Safety Steering Committee
km	Kilometre
KNP	Kosciuszko National Park
kV	kilovolt
LGA	Local Government Area
m	metres
ML	megalitres
mm	millimetres
MW	Megawatts
MWh	Megawatt hours
NPWS	National Parks and Wildlife Service
NSW	New South Wales
PC	People and Culture
PFES	Police Fire and Emergency Services

Term	Definition
PMF	Probable Maximum Flood
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
RFS	Rural Fire Service
SES	State Emergency Service
SHL or Snowy Hydro	Snowy Hydro Limited
SWMP	Soil and Water Management Plan
SVC	Snowy Valleys Council
WHS	Work, Health and Safety

1 INTRODUCTION

1.1 PROJECT OVERVIEW

In 2020, Snowy Hydro Limited (Snowy Hydro) obtained approval (application number SSI 9208 and EPBC 2018/8322) to expand the existing Snowy Mountains Hydro-electric Scheme (Snowy Scheme), by linking the existing Tantangara and Talbingo reservoirs through a series of underground tunnels and constructing a new underground hydro-electric power station (referred to as 'Snowy 2.0'). Snowy 2.0 will increase the generation capacity of the Snowy Scheme by almost 50%, by providing an additional 2,000 megawatts (MW). At full capacity, Snowy 2.0 will provide approximately 350,000 megawatt hours (MWh) (175 hours) of large-scale energy storage to the National Electricity Market (NEM). This will be enough to ensure the stability and reliability of the NEM, even during prolonged periods of adverse weather conditions.

To connect Snowy 2.0 to the NEM, a new transmission connection is required. NSW Electricity Networks Operations Pty Ltd as a trustee for NSW Electricity Operations Trust (known as TransGrid and the Proponent) received development approval on 14 September 2022 to construct a substation and overhead transmission lines ('the Project') to facilitate the connection of Snowy 2.0 to the existing electrical transmission network, approximately 27 kilometres (km) east of Tumbarumba. An overview of the project area is shown in Figure 1-1.

The Project was declared Critical State Significant Infrastructure (CSSI) under the *State Environmental Planning Policy (State and Regional Development) 2011* as part of the CSSI declaration for the Snowy 2.0 and Transmission Project in clause 9 of Schedule 5.

An Environmental Impact Statement (EIS) was prepared by the Proponent under Part 5, Division 5.2 of the *NSW Environmental Planning and Assessment Act 1979* to assess the environmental impacts of the proposed Project. The Minister for Planning is the determining authority for the Project. UGL has been engaged on behalf of the Proponent (TransGrid) to undertake the Project.

The project was approved by the Minister for Planning subject to several conditions. This plan has been created to satisfy condition B42 of the approval, which states that an Emergency Plan must be created prior to the commencement of construction.

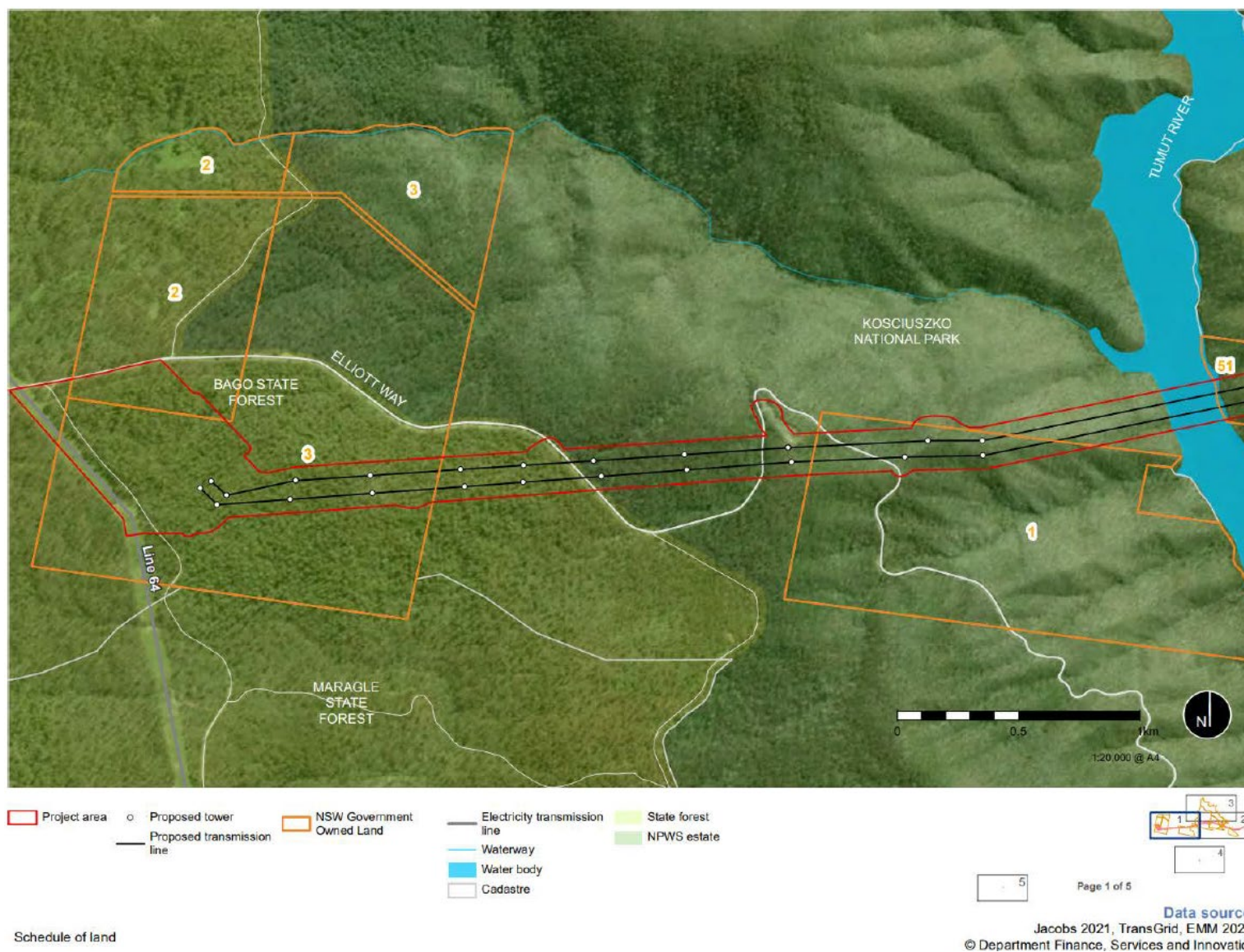


Figure 1-1 Project Area West Overview

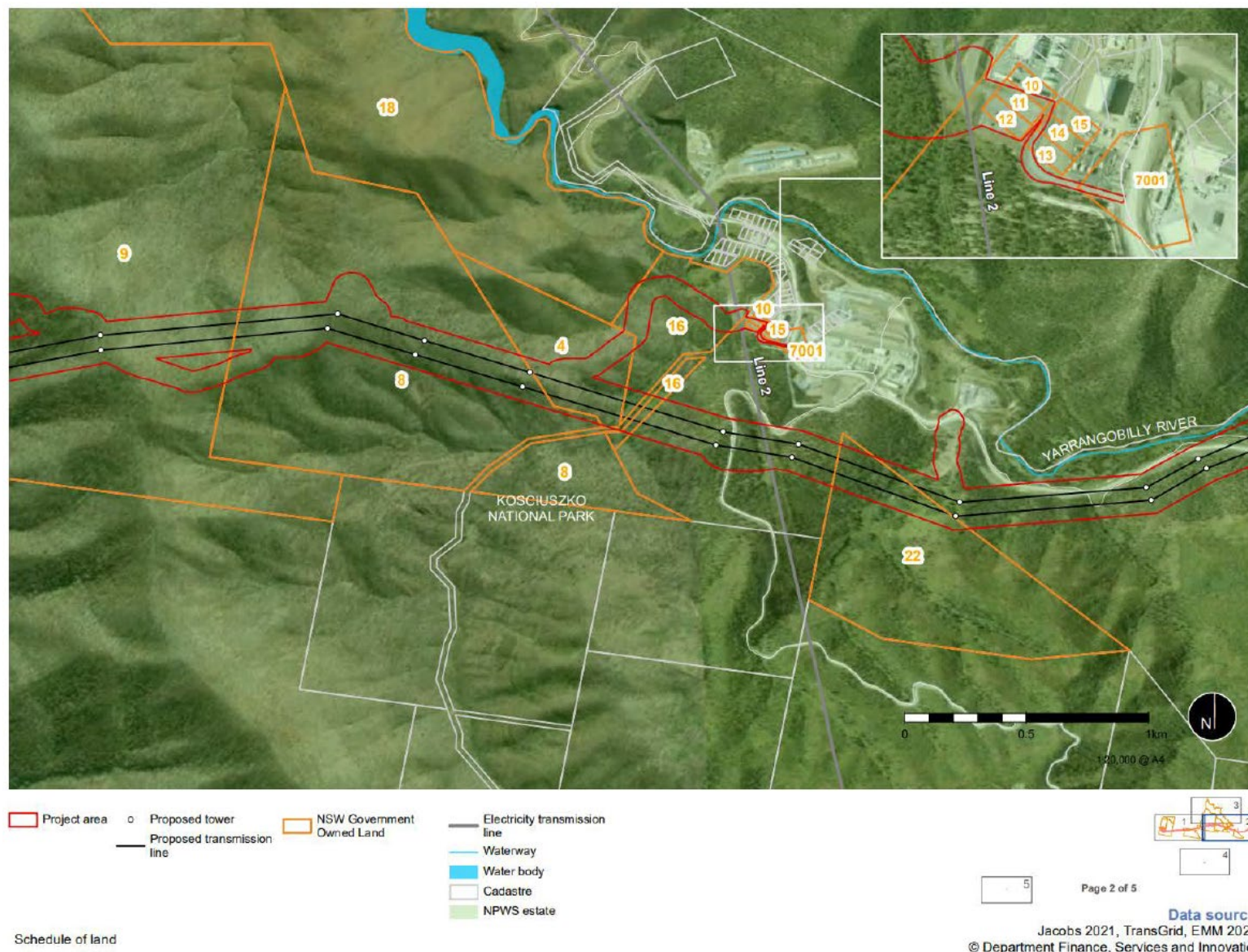


Figure 1-2 Project Area East Overview

1.2 PURPOSE

The purpose of this Emergency Plan (EP) is to describe the requirements and associated responsibilities to effectively prevent, prepare for, respond to, and recover from any emergency associated with the Project:

- Transmission Line East of the Tumut River (Transmission Tower sites 1-11)
 - Known as 'Project Area East'
- Transmission Line West of the Tumut River (Transmission Tower sites 12-21), and Switchyard Site West of the Tumut River on Elliott Way, Nurenmerenmong.
 - Known as 'Project Area West'

This EP has been prepared as a working document that outlines the course of action/s to be followed in the event of an emergency occurring during the execution of normal business activities. It also details a range of strategies to prevent, prepare for and recover from emergencies. The EP forms an integral part of the project Workplace Health and Safety Management Plan (3200-0645-PLN-010 WHSMP) TransGrid Maragle Project.

1.3 OBJECTIVE

To effectively prevent, prepare, respond to, and recover from emergency incidents, the Project shall ensure that potential and actual emergency incidents are managed through:

- Developing, communicating, and implementing this EP;
- Using proactive risk assessment processes and hazard analysis to identify major threats in the workplace to prevent the occurrence of any emergency event.
- Ensuring that responsibilities for the emergency prevention, preparedness, response and recovery procedures are well defined and communicated through induction and training programs, and workgroup meetings;
- Reviewing previous emergency incidents to ensure that corrective and preventative measures are developed and implemented as required;
- Maintaining direct and regular communication with local Emergency Services;
- Testing response plans where appropriate in the form of simulated emergencies or practice drills designed to systematically involve all people or processes likely to be mobilised in an emergency event;
- Reviewing and maintaining the EP to ensure it remains current and applicable to all hazards and risks.

1.4 CONSULTATION

Table 1-1 Consultation with stakeholder summary

Date	Consultation	Outcome
July 2021	Snowy Valleys Council	Snowy Valleys Council advised it could not meet the full estimated water demand requirements for project area west and advised on alternate water supply points at the existing Snowy Hydro T2 Tailbay site at Talbingo Reservoir and Paddy's River near Paddy's River Flat Campground.
16 July 2021	Forestry Corporation of NSW (FCNSW)	Meeting between the project team to discuss issues relating to bushfire management, ecology and biosecurity, transport management, construction clearing and earthworks and post construction rehabilitation.
13 September 2022	LEMC Meeting	An LEMC meeting took place involving a host of emergency agencies including Snowy Valleys Council, Fire and Rescue, NSW Police, VISY, Water NSW, NSW Health, and Transport NSW
October 2022	NPWS & FCNSW	NPWS and FCNSW endorsement of a suitably qualified person
18 October 2022	NPWS	NPWS reviewed the Bushfire Plan (see 3200-0645-PLN-032-CEMP-BP_0.04_IFR attached as Appendix H).
21 March 2023	LEMC Meeting	An LEMC meeting took place to present the Emergency Plan. It involved a host of emergency agencies including Snowy Valleys Council, Fire and Rescue, NSW Police, VISY, Water NSW, FCNSW, NSW Health, and Transport NSW.
24 March to 27 April 2023	NPWS, FRNSW, FCNSW, and NSW RFS	NPWS, FRNSW, FCNSW and NSW RFS provided feedback on the Emergency Plan.

1.5 AUTHORSHIP

In accordance with condition B42(a) of the Conditions of Approval, this plan is to be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by NPWS and FCNSW.

This plan was originally drafted (rev 0.01) by UGL. A full review and revision of rev 0.01 was undertaken by Nathan Kearnes of Eco Logical Australia. Nathan Kearnes is the approved suitably qualified and experienced person in relation to emergency and bushfire management, who was endorsed as such by NPWS on 24 October 2022 and FCNSW on 28 October 2022.

2 REQUIREMENTS

2.1 LEGISLATION

Legislation relevant to this EP includes:

- Commonwealth Environmental Protection and Biodiversity Conservation Act 1999
- Commonwealth National Environment Protection Council Act 1994
- NSW Biodiversity Conservation Act 2016
- NSW Biosecurity Act 2015
- NSW Electricity Supply Act 1995
- NSW Electricity Supply (Safety and Network Management) Regulation 2014
- NSW Environmental Planning and Assessment Act 1979
- NSW Fire Brigades Act 1989
- NSW National Parks and Wildlife Act 1974
- NSW Rural Fires Act 1997
- NSW State Emergency and Rescue Management Act 1989
- NSW State Emergency Service Act 1989
- NSW Work Health and Safety Act 2011

Relevant provisions of the above legislation are explained in the register of legal and other requirements included in Appendix C of the CEMP.

2.2 CONDITIONS OF APPROVAL

Table 2-1 Project conditions of consent relevant to the EP

Reference number	Requirement	Document Reference
Conditions of Approval		
Emergency Plan		
B42	Prior to commencing construction, the Proponent must prepare and implement a comprehensive Emergency Plan and detailed emergency procedures for the development, in consultation with the Local Emergency Management Committee and to the satisfaction of the NPWS, FCNSW, RFS and FRNSW. This plan must:	This Plan
	(a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by NPWS and FCNSW;	This Plan (see section 1.5)
	(b) be consistent with: (i) the Department's Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning',	This Plan
	(ii) Kosciuszko National Park Fire Management Strategy 2008-2013 (NPWS, 2008),	Appendix H

Reference number	Requirement	Document Reference
	(iii) FCNSW Guidelines including the Code of Practice for Timber Harvesting in Softwood Plantations 2022;	This Plan
	(iv) RFS's Planning for Bushfire Protection 2019 (or equivalent);	Appendix H
	(v) RFS's Development Planning – A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan (RFS, 2014);	Appendix H
	(vi) the Fire and Rescue NSW Act 1989; and	This Plan, Appendix H
	(vii) the Work Health and Safety (WHS) Act 2011;	This Plan
	(c) include evacuation protocols for the site;	Section 6 & Appendix D
	(d) describe the measures that would be implemented to:	Appendix H (sections 4 and 5)
	(i) minimise the risk of bushfire on site;	
	(ii) protect the assets on site from bushfires;	Appendix H (section 5.2)
	(iii) respond to any bushfires on or in the vicinity of the site;	Appendix H (section 8)
	(iv) minimise flood risks on site, including flooding response procedures;	Sections 4.4, 5.3, 6.3, & Appendix I
	(v) minimise the risk of landslips on site, including landslip response procedures;	Sections 4.5, 5.4 & 6.4
	(vi) evacuate the site in an emergency; and	Section 6 & Appendix D
	(e) include details on how live transmission infrastructure can be safely isolated in an emergency.	Sections 4.7.1, 5.6.1, & 6.6
	The Proponent must implement the Emergency Plan for the duration of the development	Noted

2.3 CONSISTENCY WITH PLANNING DOCUMENTS

Table 2-2 Consistency with project condition of consent B42(b)

Document	Elements Adopted (as applicable)	Document Reference
Conditions of Approval – B42		
(b) be consistent with: (i) the Department's Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning',	Introduction	Section 1
	Plan title and authority	Title page - page 1
	Table of contents	Page 2
	Introduction and definition of an emergency	Sections 1.2 and 1.3
	Aims and objectives of the plan	Sections 1.2 and 1.3
	Roles of agencies, groups, industry and community	Section 1.4 and Appendix B
	Hazards	Section 3
	Types and levels of emergency	Appendix A and C
	Emergency functions and organisational structure	Appendix B
	Emergency procedures	Appendix C
	Emergency resources	Appendix E
	Activation of the emergency plan	Section 6.1.1 and Appendix A
	Reporting of an emergency	Section 7.2
	Termination of an emergency	Section 6.7
	Management of the plan	Section 7.3
	Supporting information	Throughout this Plan
	Glossary of terms and abbreviations	See acronyms and abbreviations – page 4
(ii) Kosciuszko National Park Fire Management Strategy 2008-2013 (NPWS, 2008),	Bushfire Risk	Section 3 and Appendix H
	Bushfire management zones	Appendix H (sections 4.2 and 5.2)

Document	Elements Adopted (as applicable)	Document Reference
	Bushfire prevention strategies	Section 4
	Bushfire preparedness strategies	Section 5
	Bushfire response strategies	Section 6
	Bushfire recovery strategies	Section 7
(iii) FCNSW Guidelines including the Code of Practice for Timber Harvesting in Softwood Plantations 2022;	Wet Weather Controls	Sections 3.2, 4.5, 5.4 & 6.4
	Fuels and other hazardous chemicals	Section 4.7.2.4
	Fire Prevention	Appendix H (sections 5 and 7)
(iv) RFS's Planning for Bushfire Protection 2019 (or equivalent);	Bushfire Protection Measures	Section 5
(v) RFS's Development Planning – A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan (RFS, 2014);	Establish an emergency committee	Appendix B
	Analyse site characteristics	Appendix H (section 3)
	Decide Primary action (evacuation or sheltering)	Appendix H (section 7)
	Analyse the requirements for evacuation and sheltering	Appendix H (appendix A)
	Develop emergency procedures	Appendix H (section 5 and 8)
	Training staff and occupants	Appendix H (section 6)
(vi) the Fire and Rescue NSW Act 1989; and	Fighting and preventing fires	Appendix H (sections 4.7, 5.6 and 6.6)
(vii) the Work Health and Safety (WHS) Act 2011;	Health and safety duties	This Plan
	Incident notification	Section 5.1.3 and Appendix E

2.4 REVISED MITIGATION MEASURES

Table 2-3 Project mitigation measures relevant to the EP

Mitigation Measures		
SE3	<ul style="list-style-type: none"> •Development, monitoring and review of project incident response plans, including ongoing consultation with emergency service providers about changes to local access and potential delays and disruptions •Preparation of a Workplace Health and Safety Management Plan that includes measures for responding to health, medical and safety incidents during construction. 	<p>This Plan</p> <p>WHSMP</p>
T1	Consultation with the emergency services to ensure that procedures are in place to maintain safe, priority access for emergency vehicles and emergency management activities	<p>Consultation with emergency services occurred in March and April 2023. Feedback was provided and this plan has been updated in response.</p>

Note: Mitigation Measures taken from the Amendment Report, Snowy 2.0 Transmission Connection Project (December 2021)

2.5 PERMITS AND LICENCES

Environment Protection Licence (EPL) (No 21753) has been issued for this project. It includes obligations for incident notification, management and reporting, the requirement to prepare a Pollution Incident Response Management Plan (PIRMP) and prepare annual return reports. Details from the PIRMP and annual return reports will be added to this plan where relevant in future revisions. Further details regarding permits and licences are provided in Appendix C of the CEMP.

2.6 GUIDELINES AND OTHER RELEVANT DOCUMENTS

The main guidelines, specifications, and other documents relevant to this Plan include:

AS 1940:2017 “The storage and handling of flammable and combustible liquids

- Department of Planning (2011) HIPAP 1: Jan 2011 Hazardous Industry Planning Advisory Paper No 1. Emergency Planning
- TransGrid Fire Risk Assessment and Control Measures (FRACM) form
- ISSC 20 – Guideline for the Management of Activities Within Electricity Easements and Close to Electricity Infrastructure – ISSC, 2012
- Snowy 2.0 Transmission Connection Project Amendment Report – TransGrid, 2021
- Hot Work and Fire Risk Work Procedure Rev 12 – TransGrid, March 2020
- The Department’s Hazardous Industry Planning Advisory Paper No. 1, ‘Emergency Planning’,
- Kosciuszko National Park Fire Management Strategy 2008-2013 (NPWS, 2008),
- FCNSW Guidelines including the Code of Practice for Timber Harvesting in Softwood Plantations 2022;
- Planning for Bushfire Protection - RFS 2019;
- Development Planning – A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan -RFS, 2014;
- Ball, J et al (2016), Australian Rainfall and Runoff: A Guide to Flood Estimation, Commonwealth of Australia;
- DPIE (2020) NPWS Landslides and Rockfalls Procedures;
- NSW Department of Infrastructure, Planning and Natural Resources (2005), Floodplain Development Manual, NSW Government;
- Tree Risk Management Procedures, 2019, NSW National Parks and Wildlife Services (2019); and

- Australian Disaster Resilience Handbook 7 Managing the Floodplain: A Guide to Best Practice in Flood Risk Management in Australia, Supporting Guideline 7-3 - Flood Hazard, Australian Institute of Disaster Resilience 2017(AIDR 2017).

3 SITE CHARACTERISTICS

3.1 GENERAL

The Project is located within the Australian Alps in Southern NSW, about mid-way between Canberra and Albury and located wholly within the Snowy Valleys Local Government Area (LGA). The nearest towns to the Project area are Tumarumba, Cabramurra and Talbingo. Tumarumba is about 40 kilometres west of the Western Transmission Line via road. Cabramurra is about 30 kilometres south and Talbingo about 45 kilometres north of the Eastern Transmission Line via road.

The eastern extent of the Project is defined by the location of the Snowy 2.0 cable yard at Lobs Hole in Kosciuszko National Park (KNP), which is managed by National Parks and Wildlife Service (NPWS). From the cable yard, the transmission connection extends west through KNP and up Sheep Station Ridge, which is characterised by steep, mountainous terrain, before traversing Talbingo Reservoir. The transmission connection then continues west, crossing Elliott Way at three locations before entering Bago State Forest and terminating at the substation site. Bago State Forest is owned and managed by Forestry Corporation NSW (FCNSW).

When defining the area of works, the terms 'project area east' and 'project area west' have been used where required in this EP. These terms are defined as follows:

- **Project area east:** includes the Eastern Transmission Line, and existing surrounding access roads in the area east of Talbingo Reservoir
- **Project area west:** includes the Western Transmission Line, switch yard, and existing surrounding access roads in the area west of Talbingo Reservoir.

The Snowy 2.0 underground power station will be connected to the principal transmission network through two 330 kilovolts (kV) double circuit transmission lines and the Maragle 330kV Switching Station. The Maragle Switching Station is to be connected to the network by cutting into the existing Lower Tumut to Upper Tumut 330kV transmission line.

3.2 FACTORS INFLUENCING EMERGENCY

The work sites are remote and located in a rugged alpine environment, some distance from off-site emergency resources. Further, the east and west project areas are effectively separated by Talbingo Reservoir, with limited access between them, thus separating on-site resources. Thus, robust emergency planning is required.

There are several natural and non-natural factors that influence emergency management. Perceivable natural hazards include bushfire, flooding, landslips as well as high winds, lightning, storms, extreme temperatures, and snow/ice. Perceivable non-natural hazards (i.e. anthropogenic hazards) also influence the potential for an emergency situation due to the nature of the project and its remote location. These include hazards relating to excavation, work at heights, electrical infrastructure, building and equipment fire, chemical and fuel spills, gas leaks, vehicle and mobile plant incidents, medical emergencies, site security and stranded or missing persons.

The impact of flooding and landslips is lessened where access tracks are located along ridgelines. Localised runoff following heavy rainfall could result in overland flows entering excavations or stockpiles of construction materials, causing spoil to be washed into nearby waterways. Such flows could also impact access tracks affecting vehicle movements. In response, appropriate management measures are documented under the project Soil and Water Management Plan (SWMP).

The risk of landslips is related to the substrate and the slope of the land. There are some areas, mostly in the Eastern Transmission area, that are located on hillsides where the track descends off the ridge line and thus where there is a greater risk of a landslide. Within KNP, landslides are a known risk and have been known to periodically obstruct roads. Weather events such as heavy rainfall and flooding, can affect the stability of geological or geomorphological features and increase the risk of a landslide. This risk is mitigated by the strategies detailed in this plan.

Several factors influence a bushfire emergency and have been outlined in the Bushfire Plan (BP), Appendix H.

Identification and mitigation strategies are also documented in this plan for anthropogenic hazards.

4 PREVENTION

4.1 OVERVIEW

The prevention stage of emergency management includes the identification of hazards, the assessment of threats to life and property, and the taking of measures to reduce potential loss of life or property. Prevention is the reduction, elimination or mitigation of emergency risks using an all-hazards approach before an emergency event occurs. For Snowy 2.0 Transmission Connection, UGL proposes to take the following preventative measures.

4.2 GENERAL RESOURCES

There are three emergency Assembly Areas for the Project, one is located at the UGL Switching Yard Site for the Project West Area and the other two are located at the UGL Lobs Hole Yard, and the FGJV Lobs Hole Accommodation Camp for the Project East Area. These three locations will provide an emergency assembly and staging area for the emergency team and are the principal emergency response equipment storage areas. Once constructed, the buildings at both these site compounds (when available) may also provide potential shelter in place capacity for some emergency types. In addition, there is a dedicated Refuge Building located at the FGJV Lobs Hole Accommodation Camp, which provides capacity for on-site refuge for the Project East Area. To support the above, each tower work site will be identified as a Muster Point, to aid in the recall of persons to Assembly Areas if required.

An emergency helicopter landing pad is provided for Project Area East at the Lobs Hole Accommodation Camp. For the Project Area West (Switchyard and Western Transmission Line) there is no dedicated helipad, instead, emergency helicopters will provide vertical rescue or land on Elliott Way as determined by the attending crew. For details on the location of the helicopter landing sites see Table 4-1.

Communications for the project will be used to alert personnel of emergency incidents, direct emergency response operations and provide a means of maintaining contact with external parties (internal and external to UGL) who will support the project's emergency response. Communications will be established during Project construction and will include, but not be limited to:

- 2-way UHF / VHF radio;
- A satellite phones, or reliable alternative (e.g. Garmin inReach) at each assembly area and with the team leader of any remote working team; and
- Mobile phones (coverage may be limited as there are known blackspots in the Project area)

All persons on site (staff, contractors and visitors) should be made aware of the above resources and emergency procedures through training, induction and toolbox talks as appropriate.

Table 4-1 Helipad Locations

Helipad	Lat	Long
Ravine Accommodation Camp Helipad	35°46'57.31''S	148°23'50.87''E
	Located at the Lobs Hole Accommodation Camp	
Switchyard and Western Transmission Line	Following consultation with Toll Rescue Helicopters, vertical rescue or landing on Elliott Way at East Bago Powerline Road junction as determined by the attending crew. No dedicated helipad identified for the Western Project Area.	
All helipads should be established and maintained with consideration of the CASA Helicopter Landing Site Guidelines (CASA 2014).		

4.3 BUSHFIRE

See Appendix H for Bushfire Plan

Actions for bushfire prevention are provided in Section 5 of the BP, which is provided in Appendix H of this plan.

4.4 FLOOD DESIGN

As discovered during flood modelling undertaken for the EIS, the Project Area East contains some areas with the potential to be impacted during a Probable Maximum Flood (PMF) event. The proposed access track and associated waterway crossing at Sheep Station Creek would be prone to flooding impacts. However, the design for this structure has been adapted to account for this and will minimise flood risk as far as practicable. There is also a pair of transmission structures in the eastern extent of the project that would be subject to flooding during a PMF event. As such, these components will be designed and constructed accordingly to ensure appropriate flood immunity.

All other construction areas and excavations within the project areas are not expected to be subject to flooding during a PMF event. They are located away from major drainage lines and flood prone land and would be at low risk of flooding during construction. However, local overland flows have the potential to enter these areas during heavy rainfall. To minimise the effects of overland runoff, appropriate drainage systems and erosion protection works are to be provided to all construction areas.

4.5 LANDSLIP DESIGN

Landslip and stability issues for tracks and trails are dealt with through the design process using a combination of designs, all of which are in accordance with Transport for NSW quality assurance specifications. This includes but is not limited to:

- Soil stability:
 - batters to be reinforced with soil and or rock nails where required;
 - revegetation of slopes to be undertaken with temporary and permanent grasses to prevent undermining and erosion gullies;
 - depending on slope grade, batters will have scour protection;
 - as required cuttings will be shotcrete or terramesh supported;
- Water diversion to reduce soil saturation:
 - clean water drains on the upslope of all cuts; and
 - surface waters from the road will drain into an engineered swale drain/culvert.

4.6 OTHER NATURAL HAZARDS

4.6.1 Extreme Temperature

Persons working in hot or cold weather are faced with the potential risk of being affected by thermal stress. Heat Stress will be managed following the UGL Utilities Heat Exposure Management Procedure. Cold stress will be managed by a site shutdown over the winter period from June to August, plus daily monitoring of forecast weather conditions by the PIC. Outside of the winter shutdown, if significant (hot or cold) weather is forecast, all works, or at least remote works, will be temporarily ceased until conditions ease.

4.6.2 Significant Rain

The following activities are reviewed during periods of constant, intermediate or heavy rain and are not performed where hazards and risks are identified until assessed as safe to do so:

- Any electrical work, including welding where employees are exposed to wet conditions or with wet electrical cords and power tools;
- Working on open elevated wet steel (not including fixed plant stairways and grid mesh floors);

- Working inside tanks, confined spaces etc. where there is a possibility of significant water ingress;
- Working in areas that could be isolated due to rainfall, flood, track conditions or the like.

Other considerations must include:

- Slippery working surfaces including road surfaces;
- Slippery hand tools or hand grip surfaces;
- Reduced visibility.

4.6.3 Strong Wind & Storm

The following activities shall not be performed during periods of high winds or storm events without a risk assessment being performed:

- Crane lifting operations and Elevated work platforms (EWP);
Where wind speeds are greater than those recommended by the manufacturer, crane and EWP operations should be stopped and if necessary, crane or EWP stowed.
- Other works at height, scaffolding, erection of tarpaulins;
Where wind speeds exceed 40 km/h all works at heights, scaffolding and erection of tarpaulins shall not be performed.
- Ground works;
Where wind speeds exceed 75 km/h ground works should be reconsidered due to the risk of trees falling and branches snapping.

4.6.4 Lightning

All outdoors work shall stop when lightning is spotted or there is elevated risk during the passage of a storm. All personnel working outdoors will evacuate the immediate work site and move to within a vehicle or building. Evacuation of immediate worksites for lightning shall be undertaken in accordance with the extreme weather monitoring requirements (Section 5.1.7.3) and lightning preparedness requirements (Section 5.5.4).

4.7 ANTHROPOGENIC HAZARD PREVENTION

4.7.1 Electrical Infrastructure Management

During the construction phase, there will be live testing of the high voltage transmission line, which poses a risk to human life and property. Risk prevention for work on or near high voltage transmission lines is by adherence to relevant TransGrid and industry safety procedures, and will include:

- Isolation, de-energisation and earthing of conductors (including the application of locks);
- Continuous close and personal supervision of persons working by an authorised person;
- As soon as possible after an immediate emergency, normal safety precautions shall be applied

4.7.2 Other hazards

4.7.2.1 Mobile Plant and Vehicle Incidents

A Traffic and Transport Management Plan will be developed and implemented to manage moving mobile plant and vehicles. The plan will aim to minimise the risk of construction traffic incidents by eliminating traffic risks and applying control measures. These control measures may include bollards and safety barriers, audible and visible alarms on moving plant, spotters and traffic controllers, and restricting access. Lights and lighting are also a consideration for project vehicles & facilities, particularly when visibility is low. Personnel are encouraged to engage with the project team should lighting deficiencies be encountered.

4.7.2.2 Stranded and Missing Persons

Communication is key to preventing missing person incidents. Mobile phones may be used to communicate with personnel but may not be reliable due to blackspots within the project areas. All vehicles will be installed with 2-way radios. Satellite phones, or a reliable alternative (e.g. Garmin inReach), will be made available at each assembly area and to the team leader of any remote working team

Personnel will be required to follow a sign-in and sign-out process when starting or ending their shifts. When leaving the immediate vicinity of worksites, personnel will carry a radio and notify the site manager of where they are going and their estimated return time. Journey Management Plans (JMPs) are a project requirement for travel to and from the project site in excess of 4hrs. Project personnel will complete and submit JMPs to their supervisors prior to such travel, and advise their arrival by text or phone call.

4.7.2.3 Falls - Fall at Heights Fall to Depths, and Fall to Water

Where possible, work will be conducted on the ground or via mobile plant such as Cranes. When working at heights and depths (excavations) is required, work will be performed as per the *Model Code of Practice: Managing the Risk of Falls at Workplaces 2020*. Personnel working at heights and depths will be provided with safety equipment in line with the code. The safety equipment provided to personnel working at heights will include a combination of fall prevention devices (e.g. scaffolding and barriers) work positioning systems (e.g. industrial rope access) and fall arrest systems (e.g. safety nets and catch platforms).

Furthermore, the contract specification requires free-fall devices on project utilised cranes to be made inactive with engineered or computerised lockouts. Likewise mobile Elevated Work Platforms must have Emergency Decent Devices fitted & functional, with operator training provided. Personnel will be made aware to avoid 'line-of-fire' scenarios and not work under suspended loads wherever possible. Spotters and/or safety observers must also be used.

Works on and around water could include water quality monitoring activities, in-stream works and boating activities during stringing of wires over Talbingo Reservoir. When working around stretches of water, such as Talbingo Reservoir, personnel will be provided Personal Flotation Devices (PFD) in accordance with the NSW Marine Safety Regulation 2016.

4.7.2.4 Hazardous Storage (Materials, Chemicals, Gases, & Fuels)

Hazardous materials, chemicals and fuel will be stored according to relevant Australian Standards, including:

- AS1940-2017 - The storage and handling of flammable liquids
- AS NZS4452 - 1997 - The storage and handling of toxic substances
- AS4332-2004 - The storage and handling of gases in cylinders

As supported by these standards, chemical storage must be considered for segregation requirements. A chemical segregation chart will be provided by the project Safety Advisor at request if not already applied to chemical storage areas.

Safety data sheets will be made available to personnel and a central register of hazardous substances will be established. The project Safety Advisor will also ensure that an Emergency Information Manifest will be maintained with the chemicals register for use during any emergency events.

4.7.2.5 Equipment and Building Fires

All offices and buildings associated with the construction will be fitted with smoke alarms and fire extinguishers to enhance the early detection of any fire. There will be a minimum 20,000L dedicated fire water supply (rainwater roof collected, topped up by water cart) fitted with Storz bushfire couplings at the three Assembly Areas at the UGL Switchyard, UGL Lobs Hole Compound, and FGJV Lobs Hole Accommodation Camp. Fire threats or scenarios may initially be responded to by onsite fire units, trailers, water carts and trained personnel (see Appendix H – Section 4.7). Response capabilities and training will be managed by the project Safety Advisor.

All mobile plant, HV and LV on the project will be fitted with portable fire extinguishers to enable a prompt initial response to vehicle fires.

4.7.2.6 Site Security

Exposed project areas will be secured from unauthorised access. The Maragle Switchyard site will have a continuous 1.8m high panel type fence surrounding it, with locked gates and signage to prevent unauthorised access. Access tracks to tower sites will also have locked gates and signage to prevent unauthorised vehicular access. Site access will be

restricted to authorised personnel only. Any unauthorised person who requires entry to the site will report to the duty manager before entering the project areas. The project sites will be routinely monitored for unauthorised access. Authorised personnel will report unauthorised site access to the PIC.

Entry / Exit points must also be maintained for emergency access, free of plant, equipment and laydown materials. Parking will be limited to designated areas and delivery drivers must use bays provided.

Worksites will be secured prior to leaving them unattended to ensure hazards are removed and unauthorised people are prevented from gaining access.

Site protests, threats and forced entries must be reported to the duty manager immediately and be dealt with according to the incident escalation process outlined in Appendix A.

4.7.2.7 Site Shutdowns

A site shutdown will occur during the project shutdown period over winter and may also occur at other times throughout the year. Site shutdowns will commence in accordance with the site shutdown checklist and the site shutdown/restart plan (Appendix K – UGL Site Shutdown and Restart Plan). The site shutdown checklist details items that need to be checked prior to close of business on the last day of operation. The site shutdown/restart plan details site information, an on-call roster, key contractor personnel, shutdown considerations, a project shutdown action plan, project restart considerations and a project restart action plan.

5 PREPAREDNESS

5.1 GENERAL PREPAREDNESS

5.1.1 Information Requirements

All project personnel (including visitors), shall be informed of the following information:

- General requirements of this EP including prevention and awareness elements;
- Who are the key personnel identified in this EP;
- The location of the relevant resources;
- The location of the Muster Points, Assembly Areas, potential shelter in place buildings and dedicated Refuge Buildings;
- The location of emergency hardware/equipment;
- Emergency response information and resources;
- Evacuation procedures; and
- Communication details and procedures.

The above information shall form part of the Site/Project Induction.

The Emergency Control Organization (ECO) personnel shall undertake relevant training specific to the requirements of the EP.

5.1.2 High Risk Activity Response Planning

Hazard Identification and Risk Management activities for the Project have assessed the risks associated with the activities to be undertaken on site. Control measures for responding to these events (should they occur), are as defined in Specific Emergency Response Scenarios (Appendix G), and are indicated in the WHSMP & CEMP.

5.1.3 Emergency Management Hardware

The Hazard Identification and Risk Management Activities of the project requires review of the location, accessibility and suitability of emergency response hardware as associated with the project. Considerations have been made by the Safety Advisor and Construction Manager, further details of specific hardware are contained within Appendix E.

Whenever emergency and spill response equipment is used, the UGL Safety or Environmental Advisor must be informed so that supplies may be replenished.

Emergency and First Aid equipment expiry dates are to be inspected at least annually to ensure operational integrity.

Emergency hardware/equipment is to be located and marked as per the Site Plan.

An authorised external authority shall inspect fire extinguishers at least every 6 months. The fire alarm system for buildings (where installed) shall also be tested by UGL at least quarterly.

Emergency Response hardware, equipment and procedures have been reviewed by the Project Safety Advisor and Construction Manager who has been deemed competent by the Project Manager based on competency and industry experience.

Construction Manager

- Warden and building evacuation; and
- CPR & LR rescue.

Safety Advisor

- Degree/Cert IV; and
- Experience in Infrastructure and Construction safety.

5.1.4 Communication of Emergency Management Measures

The communications tools engaged in the project include:

- Alarm system (air horn/siren);
- Portable radio systems;
- Mobile phones;
- Satellite phones;
- Notice Board;
- Project Inductions;
- Pre-Starts;
- Mock trials;
- Toolbox meetings;
- Feedback after actual events;
- Management Meetings; and
- Exchange of information with external parties such as Fire, Ambulance and Police.

5.1.5 Training Drills and Exercises

5.1.5.1 Emergency Training

Training needs shall be determined by the Project Safety Advisor for project personnel based on:

- Training required by Management System and Client procedures (i.e. permit system) and regulatory authorities;
- Training identified in project risk assessments and/or training needs analysis;
- Assigned roles and responsibilities;
- The degree of risk associated with the requirements; and
- Legal requirements.

It is also a requirement that all site personnel have a general understanding of:

- This EP;
- OHS Legislation;
- Hazard Identification & Risk Assessments;
- Safe Work Method Statements and implementation;
- Communication and consultation;
- Incident Reporting & Investigation requirements, including Synergy; and
- Emergency Evacuation and First Response Training.

Competency based training may also be aligned to individual roles and responsibilities, and the degree of risk, and may include, but not be limited to, such areas as legal, Risk Management and Emergency Response.

Training and development are also available through internal and external mediums and, where appropriate, assistance is given to individuals to complete education which provides knowledge and skills that can be applied to promote UGL's core business values.

5.1.5.2 Emergency Exercises

Simulation exercises shall be carried out at least every 6 months to test the effectiveness of the EP. The aspects of the EP that shall be tested and evaluated are as follows, but not limited to:

- Response times in initiating the requirements of the EP; e.g. contacting external Emergency Services; Clients; Wardens initiating and clearing their respective areas etc;
- Effectiveness of emergency hardware/equipment including its suitability, location, and accessibility;
- Effectiveness of communications and procedure in response to potential emergency;
- Ensuring personnel who are involved in construction at heights are tower rescue qualified and trained in emergency descent;
- Response to injury; and
- Recovery mechanisms.

The EP should be reviewed at the conclusion of each response exercise and may result in:

- Changes to the EP;
- Changes to emergency equipment regarding the suitability, location, and accessibility;
- Identify additional training; and
- Communication to project personnel.

Records of the exercise shall be kept, including using the Emergency Response Checklist or equivalent.

The ECO shall also:

- Complete the Emergency Evacuation and Response Exercises Report after each Emergency; and
- Maintain records for all Emergency Evaluation and Emergency Response Exercises.

The emergency response requirements in the event of an emergency scenario/situation are as documented in Specific Emergency Response Scenarios.

The responsibilities of the personnel in the event of an emergency scenario/situation are documented in Appendix B.

5.1.5.3 Client Requirements

All ECO and other operational personnel must attend and participate in any client or site-specific drills and responses as determined by the client.

The client shall maintain the responsibility to communicate and schedule their response exercises and drills.

5.1.5.4 Records

All records of emergency response exercises, including notes, recommendations and debrief meetings shall be stored within the site HSE filing structure, and electronically within the UGL project folder. All records shall be maintained and archived as per the site quality management plan.

5.1.6 ECO Qualifications and Certification

All ECO personnel shall be trained and certified to undertake their functions. The minimum acceptable requirements are as follows:

Table 5-1 ECO Minimum Requirements

Role	Qualification/Certification
Chief Warden (CW):	Chief Wardens must hold chief warden certification [current]
Emergency Evacuation Coordinator (EEC):	Emergency Evacuation Coordinators should be competent, knowledgeable members of the Senior Site Management Team and be well trained and experienced in site emergency procedures.
First Aiders:	Should all hold senior first aid certification "HLTAID005 Provide First Aid in Remote Situations".

5.1.7 Monitoring and Awareness

5.1.7.1 Persons on site

The Chief Warden or their delegate should undertake the following monitoring activities monthly:

- confirm that the preparedness processes (as per Section 5) are being followed, including site inspections following adverse conditions (e.g. including bushfire, heavy rain, flood) to check for natural hazards;
- ensure the relevant personnel have received appropriate training (as per Section 5.1); and
- implement corrective actions where necessary to maintain compliance with this plan.

Bushfire monitoring and inspection requirements are provided in the BP provided in Appendix H of this plan.

Personnel will be made aware (as part of site induction / training) of the prevention and preparedness procedures established by this EP as well as the response procedures, including the emergency evacuation plan and who to contact in the event of an emergency. Copies of the appendixes relating to the internal incident workflow (Appendix A), emergency contact details (Appendix C), Site Evacuation Plan (Appendix D), Emergency Response hardware (Appendix E), Specific emergency response scenarios (Appendix G), and the flood response procedure (Appendix I) will be made available to all personnel.

5.1.7.2 Infrastructure

The ECO should undertake the following monitoring activities monthly:

- Ensure safety measures are in place to prevent falls from heights, to depths; and to waters. Ensure that one emergency descent device is provided for each occupant of an EWP basket.
- Ensure hazardous materials and liquids are being stored according to Australian standards;
- Ensure buildings and vehicles have access to fire extinguishers that are in good working order and meet service requirements;
- Ensure vehicles and mobile plants are in good working order, meet service requirements, and have the required safety equipment. LV safety requirements are indicated in the contract specification with 4X4 capability, amber beacon, two-way radio, first aid kit and fire extinguisher as standard. Other requirements such as spill kits and pole flags will be decided by the project team; and
- Ensure communications infrastructure is operational and adequate.

When entering the live testing phase of the transmission lines, it is important to monitor the live transmission lines. Monitoring will be performed by TransGrid in accordance with their live transmission guidelines.

5.1.7.3 Extreme Weather Monitoring

The ECO will monitor and interpret local conditions onsite, via the BOM South West Slopes Forecast (<http://www.bom.gov.au/nsw/forecasts/southwestslopes>) and the BOM Warning Centre website (<http://www.bom.gov.au/nsw/warnings/>). Snowy Hydro weather forecasts may also be made available at request for consideration. These forecasts will give details of anticipated wind speeds (both average and expected gusts), and wind direction at each work front location. Monitoring information will be used to allow appropriate planning for work tasks to be undertaken for the day and week. The weather forecast will be discussed at each morning briefing and be taken into consideration for the work planned.

The ECO will also monitor rainfall totals to ensure tracks and trails are not used following a significant rainfall (> 30 mm in 24 hours or otherwise depending on the intensity, duration, soil moisture or location). After significant rainfall, the CW or their delegate will perform a post-rainfall inspection as outlined in Section 7.1.

Risk notifications and warnings can also be found on the NSW SES website (www.ses.nsw.gov.au).

Due to the potential for a lag in accurate and local weather forecasting, the Emergency Evacuation Coordinator (EEC) may make the decision to stop work and find safe refuge based on their own analysis of the site conditions and available weather forecasts. This will enable proactive response to a potential hazard (e.g. in the event of a flash flood).

5.2 BUSHFIRE PREPAREDNESS

See Appendix H for Bushfire Plan

Actions for bushfire emergency preparedness and response are provided in Sections 7 and 8 of the BP, which is provided in Appendix H of this plan.

5.3 FLOOD PREPAREDNESS

Daily monitoring of flood alerts will be implemented in accordance with requirement for extreme weather monitoring (Section 5.1.7.3).

If a flood event is forecasted or occurs, work activities will be reviewed and the Flood Response Procedure within Appendix I will be implemented.

Where it is considered safe to do so, any plant, equipment and potentially contaminating materials located within potential flood zones would be moved to flood free locations on site as instructed by the EEC.

5.4 LANDSLIP PREPAREDNESS

Landslip preparedness measures will include:

- Monitoring weather forecasts for predictions of extreme weather and restricting the use of roads in severe storms and heavy rain and immediately following these events;
- Landslip hazard is minimised through design, as ground stability is considered in the design of all temporary and permanent structures including access roads; and
- Site personnel will be advised of the restrictions which apply on the project site (e.g. restricted road access when there is a risk of landslide)

5.5 OTHER NATURAL HAZARDS

Preparedness measures for other natural hazards, such as extreme temperatures, heavy rain, high wind and lightning, will include:

- Monitoring extreme weather to minimise exposure to other natural hazards
- Preventing certain works from being conducted when other natural hazards pose hazardous conditions. These prevention measures are listed under Section 4.6
- Advising site personnel when restrictions are in place
- Evacuating work sites if the EEC or delegate decides that the extreme weather or weather forecast warrants stopping all work for the safety of personnel

5.5.1 Extreme Temperature

Persons working in hot or cold weather are faced with the potential risk of being affected by thermal stress. Thermal Stress will be managed in accordance with the UGL Utilities Heat Exposure Management Procedure.

Extreme temperatures will be monitored for (Section 5.1.7.3) to work restrictions are enforced where relevant, otherwise to ensure personnel are aware and take the appropriate precautions in periods of extreme heat or cold.

5.5.2 Significant Rain

Storms and heavy rainfall will be monitored for (Section 5.1.7.3) to ensure stop work measures are enforced where relevant and precautions are taken if flooding is forecast that could pose risk to persons, operations or infrastructure.

5.5.3 Strong Wind & Storm

High winds and storms will be monitored for (Section 5.1.7.3) to ensure work restrictions are enforced where relevant, or personnel are aware and take appropriate precautions. If high winds are forecast or following such periods, work parties will have a chainsaw and a qualified operator in case branches or trees block access tracks.

5.5.4 Lightning

The Lightning Alert System is based on the Australian Bureau of Metrology's (BOM) Cyclone Alert Colours. The alert colours are Yellow Alert, Red Alert and "All Clear". All personnel including visitors will be advised of the requirements of these alerts. Lightning Hazard Awareness will be provided for all personnel through training and induction.

If there is a storm in the area, lightning will be monitored for (Section 5.1.7.3) and all outdoor work will stop until it is identified by the PIC that lightning risk has diminished and work can resume.

5.6 ANTHROPOGENIC HAZARDS

Emergency procedures have been established in preparation for an emergency. These are emergency response measures are outlined in section 6.

5.6.1 Training and Induction

Training and induction requirements in relation to anthropogenic hazards shall be determined in accordance with Section 5.1.5. for project personnel. There will also be designated people who are trained in first aid, see Appendix C. Competency based training may also be required on a needs basis and will be aligned to individual roles and responsibilities, and the degree of risk.

5.6.2 Emergency Equipment

Emergency equipment will be provided in preparation for an emergency. The emergency response hardware (e.g. First aid kits, fire extinguishers, etc) that will be made available for use in different types of emergencies is outlined in Appendix E. Personnel will also have access to first aid equipment and facilities for the administration of first aid. The CW will ensure that this equipment is adequate and well maintained.

5.6.3 Electrical Infrastructure Management

In the event of an emergency on or near high voltage transmission lines, TransGrid is to be notified immediately either through the TransGrid Site Manager or calling System Operations directly in which TransGrid's Transmission line Emergency Response Plan will be initiated.

6 RESPONSE

6.1 GENERAL RESPONSE

For specific emergency scenarios and the appropriate response, please refer to Appendix G.

6.1.1 Notification and Communication

Following an emergency event, two types of communication shall be required, as per Appendix A:

- Immediate incident notification to appropriate internal and external stakeholders. This includes notification to the DPE and NPWS via the Major Projects website portal; and
- Response to enquiries - from relatives, the media, the local community, and the general public.

As a rule, the Chief Warden (CW) is responsible for all local notifications (e.g. emergency services, nearby businesses, contractors etc.). All incidents and emergency events must be reported and communicated immediately as per UGL Incident Management Procedures. The Client is to be notified of all incidents, hazards and near misses as soon as is reasonably practicable, in accordance with Appendix A, Internal Incident Escalation Workflow.

All incidents requiring activation of this EP must be reported to the CW who in turn will provide communications and a report to the Project/Operations Manager, Management Team and TransGrid. The ECO shall activate the EP appropriate to the level of emergency.

A wide variety of external parties may need to be notified of an emergency. One of the first external parties to be contacted by the CW will be Police Fire and Emergency Services (PFES), and others required for assistance with the immediate on-site response effort. Other external parties to be notified in the event of an emergency, may include such groups as:

- Government authorities (e.g. EPA, etc.);
- Government departments (e.g. Local Council, etc.);
- Landowners, including FCNSW and NPWS;
- Next of kin;
- Specialist authorities (e.g. Electricity Regulator, Telstra, etc.);
- Neighbours and community groups; and
- Sub-contractors.

TransGrid will also be notified as an external party. TransGrid will be consulted on all emergencies that are related to the TransGrid Network for guidance in dealing with that scenario.

6.1.1.1 Incident Notification

An incident is an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.

When an incident occurs, the Department and the NPWS will be notified immediately after becoming aware of the incident and via the Major Projects website portal within 7 days after becoming aware of the incident. The notification will identify the development (including the development application number and the name of the development) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 5 of the COA.

6.1.2 Evacuation

Evacuation of project personnel from an area of danger or potential danger is a possible strategy to mitigate the impact of the hazard. Assessment of the imminent danger to the project, work site, or personnel and the need to evacuate must be assessed before the decision to evacuate. A direction to evacuate may be issued by the PFES, or the Emergency Evacuation Coordinator (EEC) or their delegate may decide to evacuate the work site or Project Area. The EEC manages evacuation arrangements and is to ensure that such arrangements do not conflict with other emergency response agencies.

In the event of a declared emergency, where an evacuation of the Project Area is required, personnel will be instructed by the EEC to immediately proceed to the closest Assembly Area where safe to do so. The evacuation plan and site emergency maps can be found in Appendix D. Further evacuation directions to be provided by the EEC as required.

For flooding, site evacuation will be in accordance with the Flood Response Procedure, provided in Appendix I of this EP.

For bushfire, site evacuation will be in accordance with the BP, provided in Appendix H of this EP.

6.2 BUSHFIRE RESPONSE

See Appendix H for Bushfire Plan

Actions for bushfire emergency response are provided in Section 8 of the BP, which is provided in Appendix H of this plan.

6.3 FLOOD RESPONSE

See Appendix I for Flood Response Procedure

A Flood Response Procedure for the Project is included in Appendix I of this EP

6.4 LANDSLIP RESPONSE

Landslip response measures will include:

- The safe removal of all personnel from the area where the landslide has occurred/is likely to occur (if working in the vicinity of the area);
- The area will be secured to restrict access; if the landslide prohibits access on site roads, alternate access provisions will be communicated to project staff;
- Where evacuation is required, it will be undertaken in accordance with Section 6.1.2 of this plan; and
- Where necessary adherence to the Local Emergency Operations Controller as the response agency for landslips.

Landslips often occur during periods of extreme weather or extended rain. Site inspections will occur following adverse conditions (e.g. including bushfire, heavy rain, flood) to check for actual or potential landslip hazards.

Where emergency services are required to attend the scene of a landslip, UGL will provide clear access. The relevant emergency service will control the area until it is cleared for release back to UGL.

If required, advice from the appropriate specialist (e.g. engineer, geotechnical) will be obtained, assess the stability of the incident area and identify risks. This will inform required short term actions and any longer-term or broader investigations that may be required.

6.5 RESPONSE TO OTHER NATURAL HAZARDS

The response measures for other natural hazards such as heavy rainfall, high winds, lightning, and extreme temperatures are outlined in Appendix G.

6.6 RESPONSE TO ANTHROPOGENIC HAZARDS

The response measures for electrical infrastructure and other anthropogenic hazards are outlined in Appendix G.

6.7 TERMINATION OF EMERGENCY

6.7.1 Return of Control to the CW from the PFES

Where an Emergency is of such proportions that Emergency Services are involved, the formal response control will be assumed by a senior member of the Emergency Services. When the Emergency Services Controller decides that the situation is fully under control and no further danger exists, they will formally declare the emergency over, and advise

the CW. The CW will in turn notify (by suitable means) other parties involved of the termination, and resumption of normal operational activities.

If the emergency does not involve the PFES, the CW will formally declare the emergency over. The CW will in turn notify (by suitable means) other parties involved of the termination, and resumption of normal operational activities.

7 RECOVERY AND RESTORATION

The responsibility for planning and implementing Recovery and Restoration action rests with the CW in consultation with first aid and HSSE personnel. Activities may include:

- Rehabilitation of staff;
- Repair of damaged facilities;
- Environmental remediation;
- Replenishment of emergency facilities e.g. fire extinguishers, first aid kits, control room equipment and documents etc; and
- Actions to restore image and business operations.

7.1 SITE INSPECTION

Any site areas which required closure can be opened only once it is deemed safe following an inspection by the Project Safety Advisor and Site Supervisor or delegates. Other specialists, such as structural engineers or geotechnical specialists, may be requested to assess the site before reopening.

7.1.1 Post-Rainfall Safety Inspection

When safe to do so, the CW will ensure the post-rainfall inspection is completed immediately following significant rainfall (> 30 mm in 24 hours or otherwise depending on the intensity, duration, soil moisture or location). Actions and timeframe for completion will be agreed upon with the Construction Team. Safety considerations will also be a factor in determining if it is safe to complete the action following significant rainfall.

7.2 POST-INCIDENT INVESTIGATION AND REPORTING

All incidents are to be investigated (to the appropriate level of classification) to ensure all causes, contributory factors and corrective actions are identified. The Project Manager and Chief Warden will decide who will lead investigations. The investigation will follow the UGL Incident Investigation Process.

Investigations are to commence within 24 hours of the incident occurring and the report on the investigation is to be completed within 3 days (unless otherwise agreed to by the Project Manager and Chief Warden) detailing only the facts relating to the incident.

Where lessons are learnt from the investigation, the EP will be revised to include updated procedures or requirements. An alert may also be circulated to share lessons learned.

7.3 PLAN REVIEW

This EP will be provided for comment annually to the Local Emergency Management Committee, NSW RFS, NSW SES, FRNSW, NPWS, and FCNSW. Comments received will be considered in review of the plan as relevant.

If necessary, the plan will also be reviewed to the satisfaction of the NSW DPE Planning Secretary within 3 months of the submission of an incident report, the submission of an Independent Audit, the approval of any modification of the conditions of this approval, or the issue of a direction of the Planning Secretary which requires a review.

The plan will be reviewed and updated at other times where there are changes in the nature of the Project. This includes an update when the project changes from the construction to the operation phase. Up-to-date copies of this plan will be kept on site (E&W) and made readily accessible to those responsible for coordinating and emergency response.

7.4 DEBRIEF PROCEDURES

Formal debriefings shall be conducted for all incidents activating this EP. It is the responsibility of the Controlling CW to perform this task.

The initial debrief on the actual incident shall occur within 48 hours or as otherwise agreed. Weekly debriefs shall be held until the recovery and restoration are over. Emergency Service agencies from the Local Emergency Management Committee will be invited to participate in the debriefs. The debrief should seek to:

- Confirm the Time Log/Sequence of Events to ensure accuracy as to what occurred;

- Identify those aspects of the emergency response where improvements and lessons learned can be made to systems and procedures, thereby improving overall business performance; and
- Once improvements have been identified responsibilities for completing the tasks are to be assigned. Emergency and Debrief records are to be filed in the office document management system.

7.4.1 Trauma Debrief

Trauma is a deeply distressing or disturbing experience. Emotional shock following a stressful event or a physical injury may be associated with physical shock and sometimes leads to long-term neurosis.

Counsellors: Following a workplace disaster or emergency, UGL Senior Management will determine if counselling services are required for persons affected by the incident. Counselling services will be sourced and managed by UGL Health Services.

Family: Where the family of an injured worker is required to be notified, the Project Manager will advise the People and Culture (PC) representative to determine the appropriate method of communication.

Co-workers and Witnesses: Co-workers and witnesses to incidents will be supported and counselled as required. They may also be required to be interviewed as part of the subsequent incident investigation.

The workforce will be advised of the incident and provided with consistent information to prevent rumours.**Legal Advice:** Where required in accordance with the incident reporting process, UGL Legal departments shall be notified by the UGL Operations Manager or UGL Safety Manager in order to provide advice on the matter as necessary.

Media: All statements to the media concerning any emergency at any UGL workplace shall be made only after consultation with the client and UGL Management. The Media will be treated courteously but should not be allowed free access to the site. All media enquiries and/or releases shall be referred to the client and the UGL Project Manager, who will refer them to the appropriate media representative.

8 APPENDICES

8.1 APPENDIX A – INTERNAL INCIDENT ESCALATION WORKFLOW

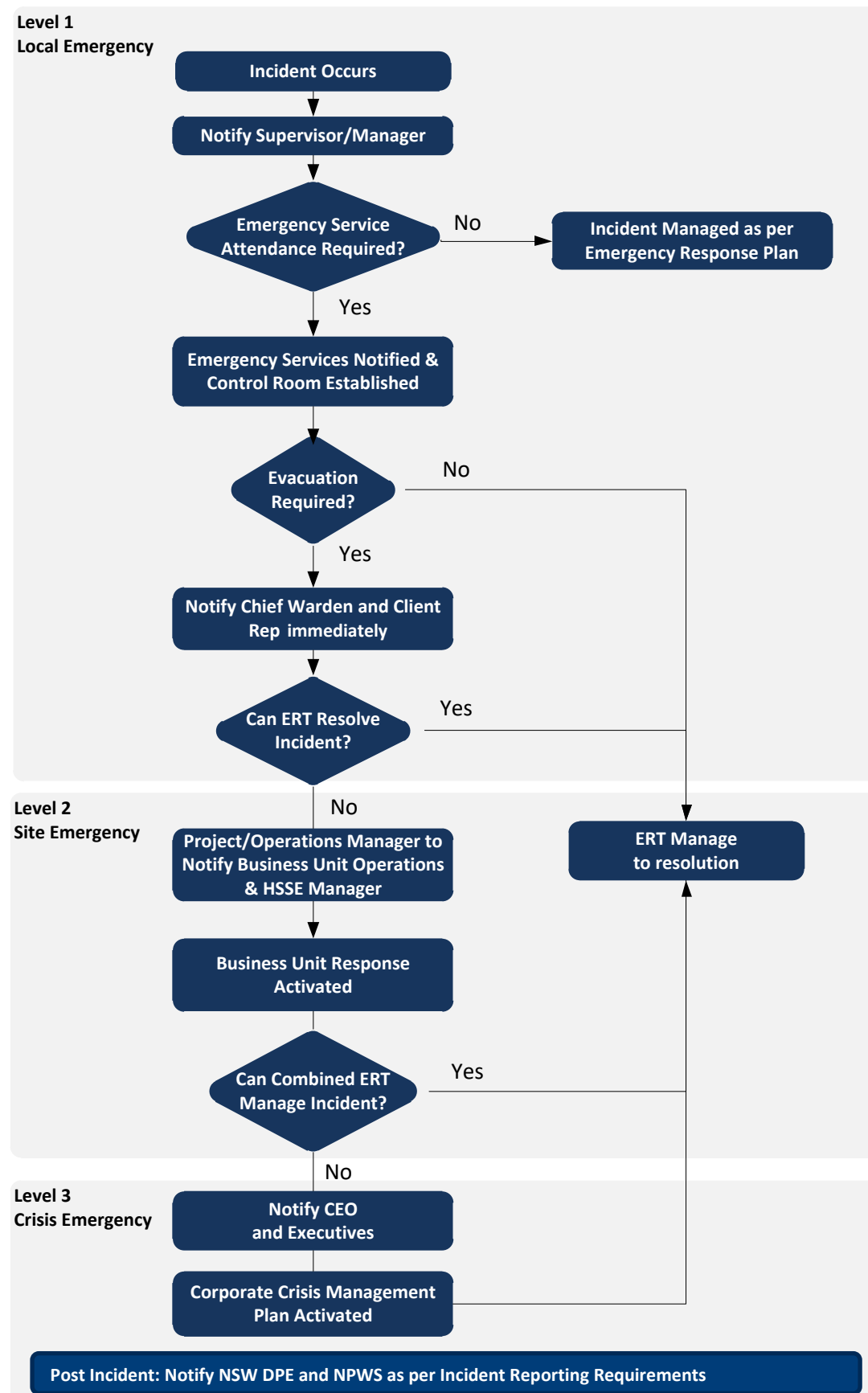


Figure 8-1 Internal Incident Workflow

8.2 APPENDIX B – EMERGENCY CONTROL ORGANISATION RESPONSIBILITIES

Name	Role	Identified By:
Darrell Van Bruchem	Chief Warden and Emergency Evacuation Coordinator	Red Wardens Helmet
Riley McMullen	First Aider and Emergency Evacuation Coordinator (Deputy)	UGL White Helmet with a white cross on a green background
Ian Rembridge	Emergency Evacuation Coordinator	UGL White Helmet with a white cross on a green background

Position	Responsibilities
Chief Warden (CW)	<p>To respond and coordinate, manage any emergency event until PFES arrive.</p> <p>Initial actions of the CW</p> <ul style="list-style-type: none"> • Proceed to scene/ area (where safe to do so) or act on best available information; • Evaluate the extent of the Emergency; • Activate any alarms as required and request PFES where relevant; • If safe to do so respond to any fire or spill and attempt to prevent escalation of an incident; • Coordinate personnel to initiate evacuation and area sweeps; and • Shut down plant/ equipment as necessary and if safe to do so. <p>Ongoing actions of the CW</p> <ul style="list-style-type: none"> • Continue to coordinate and manage an emergency until PFES arrive on site; • Ensure the flow of up-to-date information is maintained at regular intervals with EEC; • Liaise with emergency services; and • Control access to the emergency site and implement restrictions on normal operations as appropriate until the CW arrives on site to manage the emergency. <p>Concluding Actions of the CW</p> <ul style="list-style-type: none"> • Prior to standing down ensure all ongoing and outstanding matters and obligations are completed; • Facilitate post incident review or investigation process; and • Complete the log of events for the Project/Operations Manager and the Emergency Committee to review CW.
Emergency Evacuation Coordinator (EEC)	<p>Initial actions of the EEC</p> <ul style="list-style-type: none"> • Assist the CW with an appropriate plan of action to contain the immediate situation and respond as appropriate, including relocation and/or evacuation. • Evacuate personnel and casualties (where required) in accordance with relevant Evacuation procedures; • Provide First Aid/medical assistance and/or coordinate first aiders within the team; • Provide regular situation reports to the CW providing a description of the incident and providing details of: <ul style="list-style-type: none"> – Threats, injuries, fatalities; – Environmental threat and damage; – Equipment threat and damage;

	<ul style="list-style-type: none"> –Actions taken; and –Any further support required at the site. <p>Ongoing actions of the EEC</p> <ul style="list-style-type: none"> •Continue to review and respond to an emergency until the CW arrives on site to manage the emergency; •Ensure the flow of up-to-date information is maintained at regular intervals to the CW; •Assist emergency services at the scene; •Account for all personnel within their area (including contractors and visitors) at the muster point; and •Control access to the emergency site and implement restrictions on normal operations as appropriate until the CW arrives on site to manage the emergency. <p>Concluding Actions of the EEC</p> <ul style="list-style-type: none"> •Prior to standing down ensure all ongoing and outstanding matters and obligations are completed; •Under the direction of the CW, help coordinate post incident review or investigation process; and •Complete the log of events for the CW.
Emergency Control Organisation (ECO)	<ul style="list-style-type: none"> •Undertake training and familiarisation required to fulfil allocated role in the event of an emergency; and •Fulfil specified duties in the event of an emergency, or an emergency drill.
HSSE Professionals	<ul style="list-style-type: none"> •Ensure the plan produced follows this procedure and <i>AS3745 Planning for Emergencies in Facilities</i>; •Ensure that the Hazard Identification and Risk Assessment activities include emergency situations; •Provide advice to the Emergency Committee as required; and •Monitor changes in the work environment which may require the EP to be updated.
First Aid Personnel	<p>Initial Actions of First Aid Personnel Under the direction of the CW or EEC:</p> <ul style="list-style-type: none"> •Proceed to scene; •Evaluate the extent of any injuries; •Administer first aid (first aid personnel only, and only where safe to do so); or •Assess if the injured person can be evacuated safely. <p>Ongoing actions of First Aid Personnel</p> <ul style="list-style-type: none"> •Evacuate and attend to any injuries at muster points or Assembly Areas; •Notify PFES of any remaining personnel, and location; •Provide details to PFES of suspected injuries; and •Assist PFES onsite where required with ongoing treatment of injuries.
Emergency Services	<ul style="list-style-type: none"> •The role of the Emergency Services will be determined based on the nature and location of the emergency.

8.3 APPENDIX C – EMERGENCY CONTACT DETAILS AND LOCATIONS

Site Details for Emergency Services	
PROJECT	TransGrid Maragle Project (Snowy 2.0 Transmission Connection)
CUSTOMER	TransGrid
JOB NO	3200-0645
Project Area West	
LOCATION	Transmission Line West & Switchyard
ADDRESS	Elliott Way, Nurenmerenmong, NSW 2649
COORDINATES	Lat 35°47'40.42"S, Long 148°19'2.33"E (UGL Switching Yard Assembly Area)
Project Area East	
LOCATION	Transmission Line East
ADDRESS (Use in event of 000 call)	818 Lobs Hole Ravine Rd, Cabramurra, NSW 2629
COORDINATES	Lat 35°47'19.72"S, Long 148°23'38.60"E (UGL Lobs Hole Assembly Area) Lat 35°46'59.8"S, Long 148°23'36.8"E (FGJV Lobs Hole Accommodation Camp Assembly Area & Refuge Building)

Internal UGL Emergency Contacts

Project/Operations Contacts	Name	Contact Telephone
Project Manager	Trevor Noble	0413 027 480
Chief Warden	Darrell Van Bruchem	0447 307 244
Construction Manager (includes out-of-hours contact)		
Emergency Evacuation Coordinator	Ian Rembridge	0466 517 794
First Aid		
Safety Advisor		
Emergency Evacuation Coordinator	Riley McMullen	0438 456 891

First Aid		
Operations Manager	Andrew Vaughan	0477 755 585
HSE Manager	Anthony Richards	0466 471 796
Environmental Advisor	Kim Lembke	0427 450 879
Health Services	Sarah Weller	0466 850 263
Return to Work Co-Ordinator		

Emergency Control Organisation

Name	Role	Identified By:
Darrell Van Bruchem	Chief Warden and Emergency Evacuation Coordinator	Red Wardens Helmet
Ian Rembridge	Emergency Evacuation Coordinator	UGL White Helmet with white cross on a green background
Riley McMullen	Deputy Emergency Evacuation Coordinator	UGL White Helmet with white cross on a green background

External Emergency Contacts

Other Contacts	Name / Location	Contact
General		
Client Contact TransGrid Project Manager	Andrew Buttigieg	0436 166 667
Snowy Hydro Safety Manager (Interim)	Sebastian Holt	0417 378 351
FGJV Safety Manager	Peter Cooke	0437 584 322
Snowy Hydro Operations (Emergencies Only)	24/7 response	(02) 6453 2999
Transgrid Emergency Number	24/7 response	1800 027 253
SES	NSW	132 500
NPWS	24-hour incident response	1800 629 104
	NPWS Duty Officer After Hours Emergency	02 6450 5550
FCNSW	Tumut Office	02 6947 3911
EPA Pollution Incident Hotline	NSW	131 555

Safe Work NSW	NSW	13 10 50
Project Area East		
FGJV Medical Centre/Paramedic	lobshole@medicalrescue.com.au	0409 240 359
FGJV Emergency Response Team Shift Telephone	Lobs Hole	0447 276 669
Hospital	Cooma Hospital and Health Service, Bent Street, Cooma, NSW 2630	000/112, (02) 6455 3222
Medical Centre	Ochre Medical Centre Cooma, 184 Sharp St, Cooma NSW 2630	(02) 6455 0000
Police Services	Cooma Police Station, 87 Massie St, Cooma NSW 2630	000/112, (02) 6452 0099
Fire and Rescue	Fire and Rescue NSW, 84 Massie St, Cooma NSW 2630	000/112, (02) 6453 4763
RFS	Tumut RFS, 76 Capper St, Tumut NSW 2720	000/112, (02) 6981 4222
Project Area West		
Hospital	Tumbarumba Hospital, 4 Mitchell St, Tumbarumba NSW 2653	000/112, (02) 6948 9600
	Corryong Health, Kiell St, Corryong VIC 3707	(02) 6076 3200
Medical Centre	Tumbarumba Medical Practice, 69 Murray St, Tumbarumba NSW 2653	(02) 6948 2052
	Corryong Medical Clinic, Kiell St, Corryong VIC 3707	(02) 6076 3293
Police Services	Tumbarumba Police Station, 66 Winton St, Tumbarumba NSW 2653	000/112, (02) 6948 2044
	Corryong Police Station, 17 Jardine St, Corryong VIC 3707	000/112, (02) 6076 1666
Fire and Rescue	Fire and Rescue NSW, 36 Winton St, Tumbarumba NSW 2653	000/112, (02) 6948 2164
	Country Fire Authority, 77 Hanson St, Corryong VIC 3707	000/112
RFS	Tumut RFS, 76 Capper St, Tumut NSW 2720	000/112, (02) 6981 4222

8.4 APPENDIX D – SITE EVACUATION PLAN (AND EMERGENCY MAPS)

For a bushfire emergency evacuation, see Appendix H (bushfire).

For a flood emergency evacuation, see Appendix I (flood).

For all emergencies (excluding bushfire and flood), please follow the evacuation plan below:

In a declared emergency, evacuation will be dependent on whether the project team are located in the Project Area East (Eastern Transmission Line) or the Project Area West (Western Transmission Line).

Project Area West:

For Project Area West, which includes the Western Transmission Line and Switchyard, the project team will muster at the closest tower structure. From here, the project team will evacuate to the UGL Switch Yard Emergency Assembly Area.

At the UGL Switch Yard Emergency Assembly Area, a decision will be made to shelter in place or evacuate off-site. There are shelter in place buildings (when available) if the decision is made to stay. If off-site evacuation is required, the project team will then evacuate West or South along Elliott Way depending on the imminent threat direction and advice/direction given by emergency services, and/or the Emergency Evacuation Coordinator or their delegate. The evacuation routes are as follows:

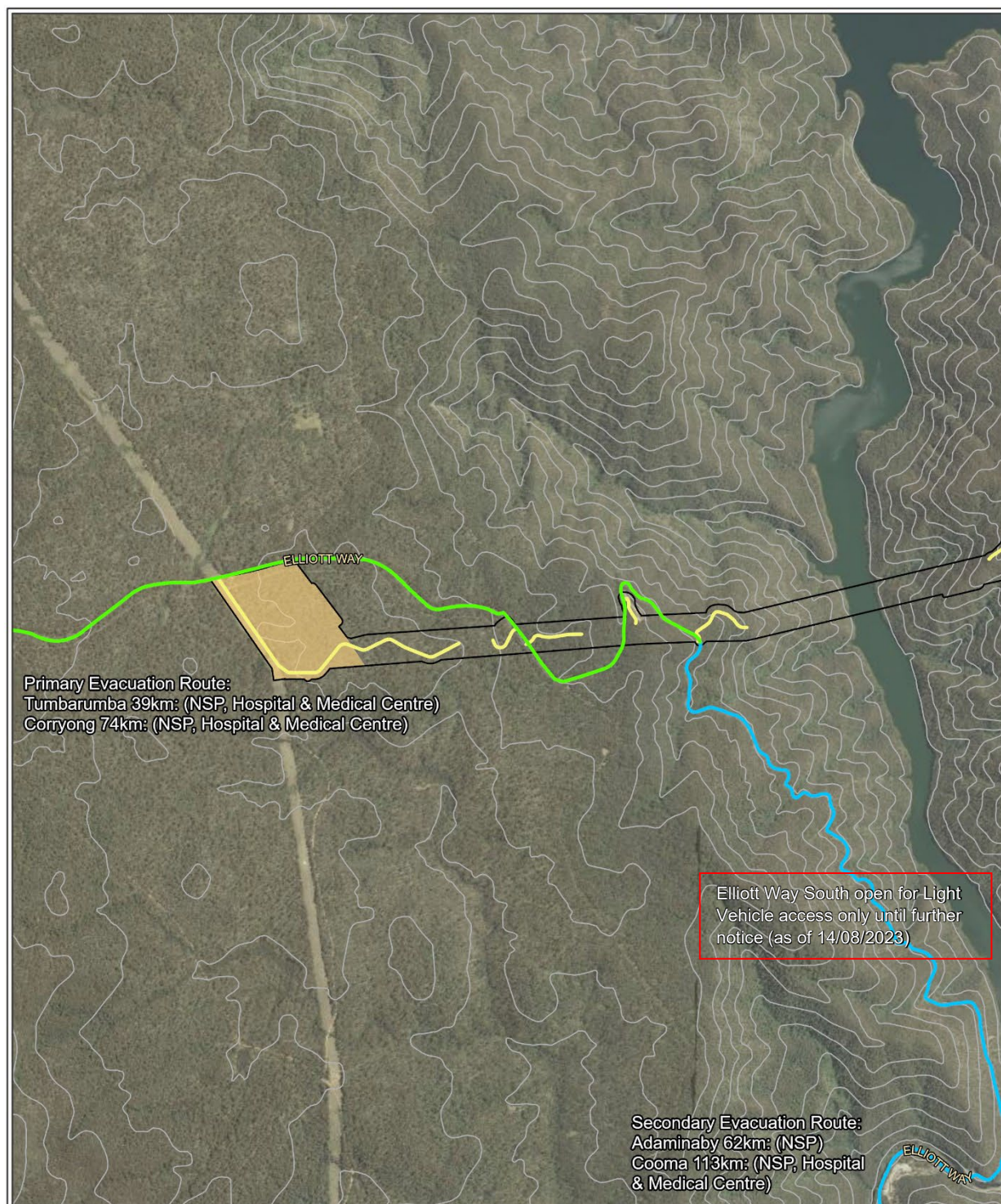
- The primary evacuation route is travelling west along Elliott Way to Tumbarumba (39 km via road)
 - The nearest Hospital or medical centre is located in Tumbarumba
 - Alternatively, the primary evacuation route provides access to Corryong (74 km via road)
- The secondary evacuation route is travelling south along Elliott Way to Cabramurra (27 km via road)
 - Alternatively, the secondary evacuation route provides access to Adaminaby (62 km via road) and Cooma (113 km via road)

Note: Elliott Way south toward Cabramurra is open for light vehicle use only (unavailable for heavy vehicle use as of 14/08/2023 due to construction works following a landslip between Link Road Gate and Sue City Gate.

Elliott Way East towards Tumbarumba remains open for both light and heavy vehicles

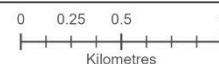
The location of the UGL Switching Yard Assembly Area can be found below:

Assembly Area	Location
UGL Switching Yard Assembly Area (Lat 35°47'40.42"S, Long 148°19'2.33"E)	At the Switching Yard in Bago State Forest, near where the existing TL64 line crosses Elliott Way Rd. About 450m off the road.



Western Transmission Line and Switching Station Emergency Evacuation

- Project Area
- Switch Yard Emergency Assembly Area
- Infrastructure access tracks
- Primary evacuation route
- Secondary evacuation route
- Contours (50m)



Datum/Projection:
 GDA2020 MGA Zone 55
 Project: 22SYD4001-SK
 Date: 8/14/2023



eco
logical
 AUSTRALIA
 A TETRA TECH COMPANY

Project Area East:

For Project Area East, which includes the Eastern Transmission Line, the project team will muster at the closest tower structure. From here, the project team will evacuate to the UGL Lobs Hole Emergency Assembly Area.

From there, if further evacuation is required, the Project Team will make contact with FGJV and make a decision to relocate to the Lobs Hole Accommodation Camp Refuge Building or to evacuation off-site, either with FGJV or to evacuate the UGL project team separately.

If a decision will be made to shelter in place at the UGL Lobs Hole Emergency Assembly Area, there are shelter in place buildings (to be available at site mobilisation).

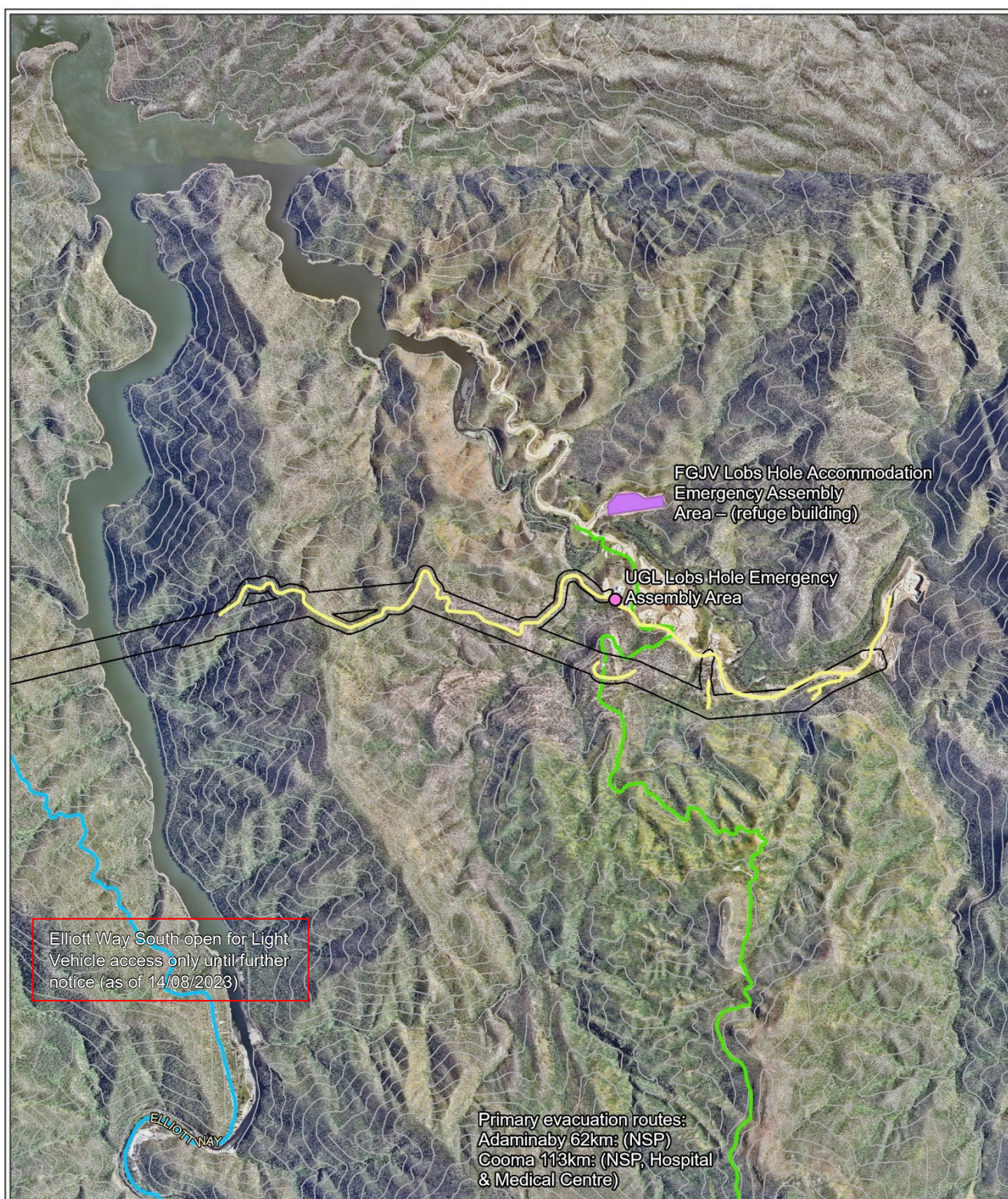
The UGL interface management plan will communicate what actions are required from FGJV and UGL in an evacuation situation. If a decision is made to evacuate with FGJV, the UGL project team will follow the advice/direction of the FGJV Emergency Coordinator.

If a decision is made to evacuate the UGL project team separately from FGJV, this should be communicated to FGJV. Then the UGL project team will then evacuate South (preferred) or North along Lobs Hole Ravine Road depending on the imminent threat direction and advice/direction given by emergency services, and/or the Emergency Evacuation Coordinator or their delegate. The evacuation routes are as follows:

- The primary evacuation route is travelling south along Lobs Hole Ravine Road, the nearest town is Cabramurra (27 km via road)
 - Alternatively, further evacuation is available if required as this route provides access to Adaminaby (62 km via road) and Cooma (113 km via road). A hospital and medical centre is located in Cooma.
- The secondary evacuation route is travelling north along Lobs Hole Ravine Road to Talbingo (45 km via road)
 - If a Hospital or medical centre is required keep travelling north from Talbingo to Tumut (43 km North of Talbingo via road)

The location of the UGL Lobs Hole Assembly Area and the nearby FGJV Assembly Area should UGL make the decision to evacuate the Project Area East team with FGJV, can be found below:

Assembly Area	Location
UGL Lobs Hole Assembly Area (Lat 35°47'19.72"S, Long 148°23'38.60"E)	700 m south of the Yarrangobilly River Crossing and 15.3 km North along Lobs Hole Ravine Road from the Link Road Junction.
FGJV Lobs Hole Accommodation Camp Assembly Area and Refuge Building (Lat 35°46'57.00"S, Long 148°23'41.00"E)	1 km north of the UGL Lobs Hole Assembly Area. It is within Lobs Hole Accommodation Camp, on the northern side of Yarrangobilly River, 400m north of Yarrangobilly River Crossing and 16.4km north along Lobs Hole Ravine Road from the Link Road junction.



Eastern Transmission Line Emergency Evacuation

- Project Area
- Infrastructure access tracks
- Primary evacuation route
- Secondary evacuation route
- Contours (50m)

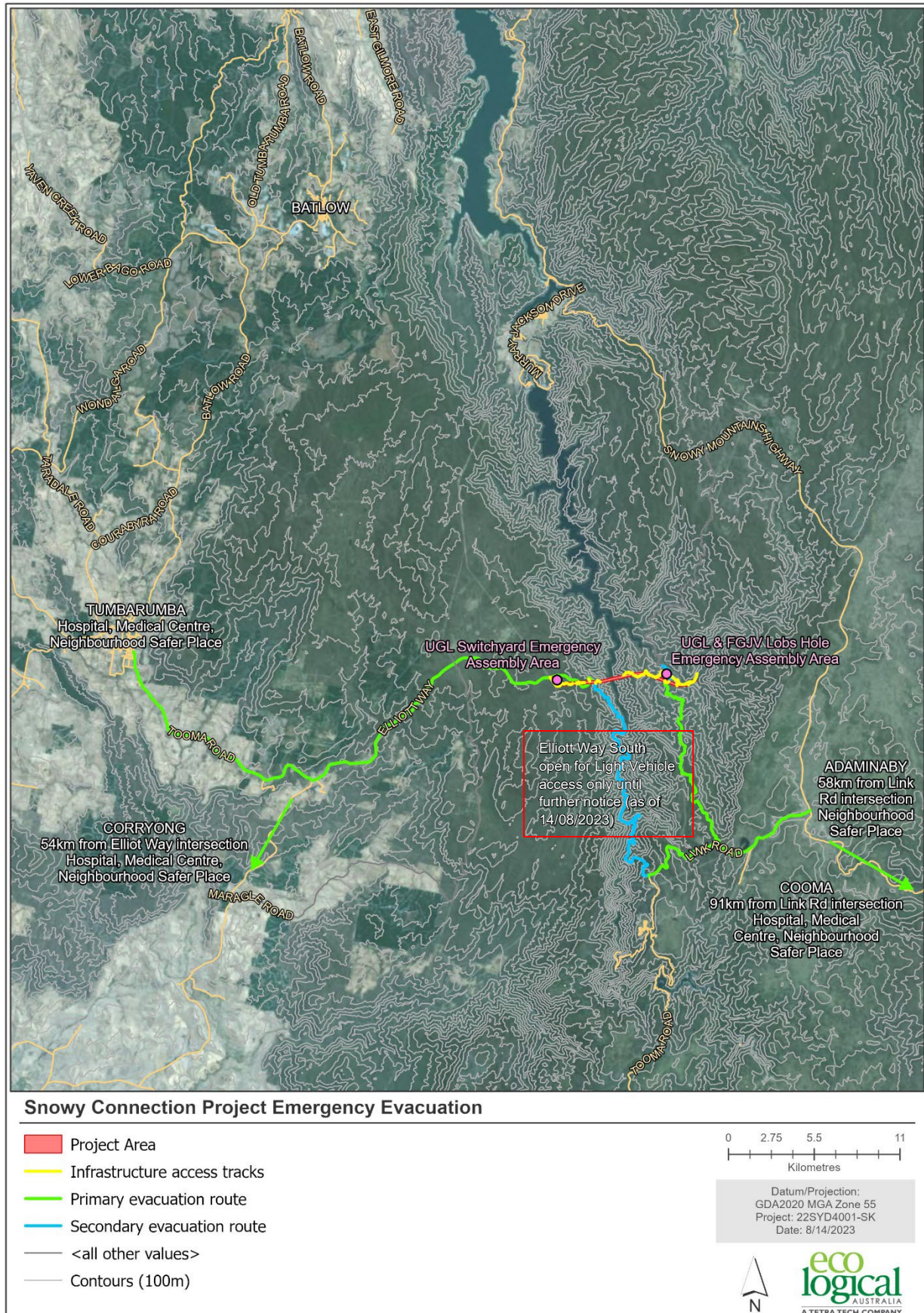
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Datum/Projection:
GDA2020 MGA Zone 55
Project: 22SYD4001-SK
Date: 8/14/2023



Evacuation from Assembly Areas:

If a decision is made to evacuate away beyond the emergency assembly areas, the map below provides possible routes and the facilities available in the nearby towns.



8.5 APPENDIX E – EMERGENCY RESPONSE HARDWARE – LOCATION, SUITABILITY, ACCESSIBILITY

Emergency/Hazard/Injury	Detail	RESPONSE EQUIPMENT and PROVISIONS	LOCATION	SUITABILITY	ACCESSIBILITY
Excavation – <ul style="list-style-type: none"> Fall to depth, potentially resulting in: Broken bones; Strains; and/or Sprains. 	<p>Excavations will be present on-site during the project, however benching of oil tank excavation (deepest site excavation) will eliminate the potential for engulfment, and suffocation and the excavation will not be deemed a confined space.</p> <p>Therefore, the scenario is worker falls into an open trench with a maximum depth of 2.5m, but with benching at 1.5m.</p>	<ul style="list-style-type: none"> Ladder (secondary means of access/egress), Field First Aid Kit – To be maintained and inspected monthly or after use, as per Project First Aid Requirements Assessment, Personnel on site with training in First Aid (preferably 'HLTAID005 Provide First Aid in Remote Situations'), Communications equipment, Barricading around the excavation. 	At the immediate work site	Yes	Yes
Work at Heights – <ul style="list-style-type: none"> Suspension trauma Fall from height Emergency while working at height 	<p>A worker falls and is suspended in a harness</p> <p>Contact with structure or ground while completing work at height.</p> <p>A worker requires rescue from height due to an emergency which leaves them unable to return the EWP to the ground themselves.</p>	<ul style="list-style-type: none"> First aid kit, Additional EWP with an emergency decent device added, Decent kit / Tower rescue kit'. 	At the immediate work site	Yes	Yes
Electrical – <ul style="list-style-type: none"> Contact with live parts, energised equipment Burns Electrocution 	<p>Person in contact with live part/equipment</p> <p>Potential of electrocution of additional personnel</p>	<ul style="list-style-type: none"> First aid kit, LV/HV rescue kits Defibrillator 	At the immediate work site	Yes	Yes
Equipment Fire – <ul style="list-style-type: none"> Burns Damage to plant and equipment, Buildings Environment 	<p>Fire contained in part of the site that could damage plant or equipment.</p>	<ul style="list-style-type: none"> Fire extinguishers, First aid kit, Training in the use of fire extinguishers. 	At the immediate work site	Yes	Yes
Mobile Plant – <ul style="list-style-type: none"> Crush injuries Caught between, struck by Contact with 	<p>Personnel struck by mobile plant</p> <p>Structures or equipment contacted by mobile plant</p>	<ul style="list-style-type: none"> First aid kit, Delineation signage, fencing, Free fall devices on project cranes to be locked or disabled, Liaison with external emergency providers. 	At the immediate work site	Yes	Yes
Light Vehicle Accident – <ul style="list-style-type: none"> Crash Roll-over Caught between, struck by 	<p>Personnel involved in car accident where car has crashed or rolled over, or they have been caught between or struck by a light vehicle</p>	<ul style="list-style-type: none"> Fire extinguishers, First aid kit, Defibrillator, Spill kit, Communications equipment. 	At the immediate work site	Yes	Yes
Hazardous Spills or Contaminated Material (Use handling, transport, and storage)- <ul style="list-style-type: none"> Burns, Asphyxiation, Chemical / Hydrocarbon release, 	<p>Loss of containment</p> <p>Exposure to substances</p>	<ul style="list-style-type: none"> Fire extinguishers, First aid kit, Hydrocarbon Spill kits and collection containers (for liquids), Eye Wash Station, SDS, Gloves, coverall and eye protection (for clean-ups), Spill kit training. 	At the immediate work site	Yes	Yes

Emergency/Hazard/Injury	Detail	RESPONSE EQUIPMENT and PROVISIONS	LOCATION	SUITABILITY	ACCESSIBILITY
Medical Emergency - that requires MEDICAL EMERGENCY SERVICES	Heart attack, cuts, crushes, burns, fractures, seizures, snake bites, stings, illnesses, etc.	<ul style="list-style-type: none"> First aid kits, Defibrillator, Communication equipment. 	At the immediate work site	Yes	Yes
Storm/severe weather event	Light structures are being blown around, tree limbs fallen, or power lines down	<ul style="list-style-type: none"> First aid kits, Display of muster points and emergency evacuation route in a prominent position, Chainsaw and trained operator. 	At the immediate work site	Yes	Yes
Flood	Rising river levels or localised flooding due to heavy rain. Track washout.	<ul style="list-style-type: none"> First aid kits, Display of muster points and emergency evacuation route in a prominent position. 	At the immediate work site	Yes	Yes
Gas leak, explosion, fire, weather - that requires an EMERGENCY EVACUATION	Emergency Evacuation	<ul style="list-style-type: none"> First aid kit, Display of muster points and emergency evacuation route in a prominent position. 	At the immediate work site	Yes	Yes
Stranded or Missing Persons	A person goes missing or is stranded on site	<ul style="list-style-type: none"> First aid kits, Communication devices – mobile phones, 2-way radios, satellite phones. 	At the immediate work site / in the vicinity of the work site	Yes	Yes
Site Security	There is a bomb threat, site incursion, or a suspicious package identified	<ul style="list-style-type: none"> First aid kits, Communication devices – mobile phones, 2-way radios, satellite phones, Food and water rations at site offices in case of a lockdown. 	At the immediate work site	Yes	Yes

8.6 APPENDIX F – SITE ENVIRONMENTAL SENSITIVITIES

The following site sensitivities are specific to the Site and must be considered in the event of any emergency where impacts may extend outside the immediate sites. Where sensitivity is affected, HSSE Professionals should be contacted as soon as practical to help develop mitigating controls.

Sensitivity	Controls	Contact
Asbestos (unlikely as Greenfield site, the possibility of naturally occurring asbestos at Towers 10 & 11 (Talbingo Reservoir))	CEMP Controls EPA Guidelines Project Conditions of Approval (CoA)	Trevor Noble/Kim Lembke
Cultural Heritage	CEMP Controls Project CoA	Trevor Noble/Kim Lembke
Threatened Species (could be impacted by hazardous chemical spillages, excess sediment, or windblown overspray of herbicides/pesticides)	CEMP Controls EPA Guidelines Project CoA	Trevor Noble/Kim Lembke

8.7 APPENDIX G – SPECIFIC EMERGENCY RESPONSE SCENARIOS

Table 8-1 ECO Minimum Requirements

#	Scenario	Response
1	Work at height with Elevating Work Platform (EWP) (Fall from while wearing fall arrest protective equipment, a medical emergency in the basket, or issues with EWP hydraulic controls)	<ol style="list-style-type: none"> 1. Assess the situation using DRSABCD principles; <ol style="list-style-type: none"> a. Danger b. Response c. Send for help d. Airway e. Breathing f. CPR g. Defibrillation 2. If the worker is suspended from an Elevated work platform (EWP), then a competent person (spotter) is to activate the ground controls for the machine and lower the suspended person to the ground. 3. If the person has been suspended for some time call emergency services. 4. Be aware that a suspended person may be susceptible to toxic shock when the harness pressure is released from the legs. Be prepared to administer CPR if the person collapses after release. 5. If required, bring the Secondary EWP to the accident site and use it to reach the suspended worker. 6. Ensure that rescue workers are wearing full-body harnesses attached to appropriate anchors in the EWP. 7. Ensure that the EWP has the load capacity for both the rescuer(s) and the fallen worker. If the fallen worker is not conscious, two rescuers will probably be needed to safely handle the weight of the fallen worker. 8. Position the EWP platform below the worker and disconnect the worker's lanyard when it is safe to do so. When the worker is safely on the EWP, reattach the lanyard to an appropriate anchor point on the EWP if possible. 9. Lower the worker to a safe location and administer first aid. Treat the worker for suspension trauma and any other injury. 10. Arrange transportation to the hospital if required.
2	Excavation and trenching (Fall to depth, injury)	<ol style="list-style-type: none"> 1. Assess the situation using DRSABCD principles; 2. The work area will be made as safe as reasonably practicable for an emergency response to access the excavation/trench to provide required medical/ first aid treatment. If required a ladder will be used for access and egress to the trench. 3. If practical, first aid treatment is to be provided and the first aider is to determine whether further medical care/treatment is required at a Hospital or Medical Centre. Local emergency / medical services contact details are to be displayed on the wall in the site office. 4. First Aider to assess whether an ambulance is required to transport the injured party to medical care or not.
3	Electrocution (Low-voltage, High-voltage, lightning)	<ol style="list-style-type: none"> 1. Assess the situation using DRSABCD principles; 2. Call emergency services

#	Scenario	Response
		<ol style="list-style-type: none"> If the person is still in contact with the electricity, do not make contact with them Switch off the electricity source if possible If low-voltage, use the low voltage release rescue kit (available at all low voltage work fronts) to separate the person from the electricity source If high-voltage, contact TransGrid immediately following the response steps for response procedure 4 below If high-voltage, do not attempt to go near the power line while it remains live Once safe to check on the person, start CPR if not responding or breathing and/or administer first aid Use defibrillator on site if relevant. First aid treatment is to be provided immediately on site before transportation to Hospital for further assessment/treatment, depending on the first aider's assessment. Stop all works in the vicinity and stay away from the source of electrocution until advised by emergency services or other decisionmakers such as TransGrid If emergency isolation of live transmission infrastructure is required, please see response scenario 4 below
4	Emergency Isolation of Live Transmission Infrastructure	<ol style="list-style-type: none"> If electrocution has occurred please see response scenario 3 above, otherwise: Contact TransGrid Project Manager (Appendix C – Emergency Contact Details and Locations), or Contact TransGrid Emergency number 1800 027 253 Keep all personnel clear of any live infrastructure until instructed by TransGrid
5	Vehicle/Mobile Plant incident (Roll over, Fatality, serious injury, crush injury)	<ol style="list-style-type: none"> Assess the situation using DRSABCD principles; Call emergency services The first aider (provide first aid training) to be present on site. Use defibrillator on site if relevant. First aid treatment is to be provided immediately on site before transportation to Hospital for further assessment/treatment, depending on the first aider's assessment.
6	Medical Emergency (Heart attack, stroke, heat stress, cold stress)	<ol style="list-style-type: none"> Assess the situation using DRSABCD principles; First aid treatment is to be provided immediately on site. First aider to assess whether further medical care/treatment is required at Hospital. First Aider to assess whether an ambulance is required to transport the injured party to medical care or not. Notify Supervision of the incident.
7	Lifting activities (Crush injury)	<ol style="list-style-type: none"> Assess the situation using DRSABCD principles;

#	Scenario	Response
		<ol style="list-style-type: none"> The work area will be made as safe as reasonably practicable for an emergency response to access the injured party to provide required medical/ first aid treatment. If practical, first aid treatment is to be provided and the first aider is to determine whether further medical care/treatment is required at Hospital. Local emergency / medical services contact details are to be displayed on the wall in the site office. First Aider to assess whether an ambulance is required to transport the injured party to medical care or not.
8	Snake or Spider Bite (Injection of venomous toxin leading to severe reaction, potentially death)	<ol style="list-style-type: none"> Assess the situation using DRSABCD principles; Immobilise and treat the patient for snake/spider bite and apply a restrictive bandage where required. If possible, locate the area of the bite. Call the Hospital by phone or radio (see contact/call details at the end of this document) Transportation of the patient via ambulance from the site or confirm the patient is being transported to a medical facility by road. Determine if possible, information regarding the snake or spider type for medical staff.
9	Site Security (Bomb threat, site incursion, suspicious package)	<ol style="list-style-type: none"> If a bomb threat is made over the phone, record all details of the threat Call emergency services Based on the advice of the emergency services, evacuate and/or lockdown the project areas
10	Stranded or Missing Persons	<ol style="list-style-type: none"> When a person is identified as missing or stranded, try to contact them via the relevant communication methods (mobile phone, 2-way radio, satellite phone, etc) Notify supervision Initiate a local search and rescue party to find the missing/stranded person If the missing/stranded person cannot be located or safely reached, immediately contact emergency services and follow their advice
11	Covid-19 (Positive Covid 19 case on site)	Follow the latest government advice on COVID-19 (https://www.nsw.gov.au/covid-19)
12	Environmental Incidents	<ol style="list-style-type: none"> Odours and dust: <ol style="list-style-type: none"> Apply odour/dust suppression agents (including water mists, soil, and chemicals (i.e. Vital 'Stonewall' and Gypsum); Consider carefully which option to select considering the scale and type of problem; The Environmental Advisor, in consultation with the Project Manager, determines the most suitable corrective actions. <p>Flora/fauna kills: cease activity causing flora/fauna injury or disturbance;</p> <ol style="list-style-type: none"> The UGL Site Supervisor, in consultation with the Project Manager determines the most suitable corrective actions.

#	Scenario	Response
		<ul style="list-style-type: none"> e. Environmental Advisor, in consultation with asset owner and Project Manager, are to determine if an endangered/threatened flora species has been injured or killed. Reporting such injury or loss to the Department is a requirement of the project, if relevant to the project site. f. For all native animals, notify the local wildlife carer - LAOKO Ph 6456 1313 or SONA Ph 6946 2222. Non native animals may be taken to a local vet if safe transportation can be facilitated. Seek NPWS or specialist veterinary support via the project Environmental Advisor for scenarios involving wild horses. <p>2. Release of Waste:</p> <ul style="list-style-type: none"> a. Cease activity causing the release of wastes off-site; b. Notify relevant agencies immediately if material environmental harm has occurred; c. The UGL Site supervisor in consultation with the project manager determines the most suitable process for clean-up. <p>3. Chemical Spills:</p> <ul style="list-style-type: none"> a. Refer to below #13 – Chemical Spills
13	Hazardous chemical spill (Personnel/environment exposed to hazardous chemicals)	<ol style="list-style-type: none"> 1. Identify incident has occurred; 2. Stop work immediately and notify management; 3. Delegation: The senior member of the team present when a pollution incident occurs is to take charge and become the Emergency Controller; this person will delegate the main assisting roles of the emergency response i.e., Safety controller, information controller, combat assistant, communications clean up and waste management; 4. Control the source of the incident, e.g., stop the fuel leaking; 5. Contain the incident using appropriate spill kits and adequate measures; 6. Site staff to report to environment team and all other relevant personnel including Transgrid; 7. NOTIFY the agencies immediately if material environmental harm has occurred. Where the public has been, or could potentially be, impacted the public will be notified; 8. Plan clean up and implement strategy, this may involve specialist external spill subcontractors; 9. Undertake incident investigation to determine cause and include measures to minimise potential for incident reoccurring; 10. Ensure contaminated waste disposal is managed appropriately and any spill kits utilised are restocked; and 11. Findings of the incident investigation to be briefed to all relevant staff.
14	Fire/Bushfire	<p>Follow the advice given in the Bushfire Plan in Appendix H</p> <ol style="list-style-type: none"> 1. Monitor RFS Apps and website for bushfire warnings 2. Any evacuation in the event of a bushfire is to be in accordance with the site evacuation plan

#	Scenario	Response
		<ol style="list-style-type: none"> 3. Consider the locality and direction of spread of the fire 4. Plan for two escape routes 5. Any fire in the locality evacuate immediately if safe to do so 6. If off-site evacuation is not possible or safe, relocate to Refuge Building or shelter in place building (where safe)
15	Flood/storm event (Incursion of water onto site, or isolation)	<ol style="list-style-type: none"> 1. In Case of a flood warning: <ol style="list-style-type: none"> a. monitor the rate of rise of water level in the adjacent area; b. keep staff fully informed of the situation; c. If evacuation is required, UGL will initiate the evacuation. 2. UGL shall facilitate the following tasks with the help of internal or external resources before resuming work after the flood: <ol style="list-style-type: none"> a. Removal of standing water from the site; b. Cleaning and drying plant and equipment; 3. Removal of flood debris and other wet materials from the facility.
16	Landslips	<ol style="list-style-type: none"> 1. Monitor weather conditions. 2. Monitor road conditions and alerts from NPWS/SFC/SVC/TfNSW. 3. Stabilise any excavations, bench, batter, and shore. 4. Assess when safe to return / resume works.

8.8 APPENDIX H – BUSHFIRE PLAN

SNOWY 2.0 TRANSMISSION CONNECTION BUSHFIRE PLAN

Maragle 330kV Switching Station and 330kV Transmission Line Connections

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Plan Approval

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0.01	Endorsed By	Andrew Buttigieg	Senior PM (Delivery)	TransGrid		
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ABBREVIATIONS AND DEFINITIONS

Term	Definition
APZ	Asset Protection Zone
BFMC	Bush Fire Management Committee
BOM	Bureau of Meteorology
BP	Bushfire Plan, a sub-plan of the Emergency Plan
CASA	Civil Aviation Safety Authority
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
Designated Smoking Area	A signposted non-combustible area set aside within the Project site for the purpose of smoking.
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EP	Emergency Plan – the parent plan to this plan
EPA	NSW Environment Protection Authority
FBI	Fire Behaviour Index. A numerical scale with increasingly high values indicating increasingly dangerous fire behaviour and therefore fire danger risk. It unites a range of potential fire behaviour characteristics that includes fire intensity, flame height, rate of spread and spotting potential.
FCNSW	Forestry Corporation of New South Wales
BFDP	Bush Fire Danger Period. In the Riverina Highlands Rural Fire District, it runs from 01 November to 31 March, unless adjusted by the NSW Rural Fire Service (NSW RFS) Commissioner
FDR	Fire Danger Rating. A relative class denoting the potential rates of spread or suppression difficulty for specific combinations of temperature, relative humidity, drought effects and wind speed, indicating the relative evaluation of fire danger. Forecast in classes as MODERATE, HIGH, EXTREME and CATASTROPHIC.
Fire Risk Work	Includes heat or potential spark producing activities other than hot works that have the potential of creating a fire risk when undertaken in a hazardous area. Fire Risk work on the Project includes: <ul style="list-style-type: none"> • Slashing; • Mulching; • Chainsaw operation; • Chipping; • Mowing; • Brush cutting; • Track grading • Rock-breaking;

Term	Definition
	<ul style="list-style-type: none"> • Drilling; • Blasting; • Geophysical investigations; and • Haulage
Fire Season	Fire season also referred to as the statutory Bush Fire Danger Period. In the Riverina Highlands Rural Fire District, it runs from 01 November to 31 March, unless adjusted by the NSW Rural Fire Service (NSW RFS) Commissioner.
FRNSW	Fire and Rescue New South Wales
FRACM	Fire Risk Assessment and Control Measures form
FGJV	Future Generation Joint Venture
Hazardous Area	<p>For the purposes of this plan a Hazardous Area is defined as any work area where flames, sparks, molten materials and hot surfaces may come into contact with flammable/combustible materials. Hazardous areas may include (but not be limited to):</p> <ul style="list-style-type: none"> • Dry/combustible vegetation or areas within 30m of such vegetation; • Confined spaces (not including the exploratory tunnel); • Buildings where there are materials that are made of or contain combustible matter; • Rubbish, and • Oil and fuel storage areas.
Hot works	<p>Any action that involves high temperatures and has a high risk of creating a fire. Examples of hot work include but are not limited to:</p> <ul style="list-style-type: none"> • Welding, Oxy-Acetylene or Plasma cutting; • Grinding/cutting of metal including the use of flexible sanding disks; • Production of heat, flammable fumes and gases during work activities; and • Dry concrete metal grinding/cutting.
HSE	Health, Safety and Environment
IC	Incident Controller
ISSC	Industry Safety Steering Committee
KNP	Kosciuszko National Park
kV	kilovolt
LGA	Local Government Area
m	metres
ML	megalitres
mm	millimetres
NEM	National Electricity Market
Non-combustible areas	Includes enclosed workshops, hardstand laydown areas, area within UGL compound boundaries, and maintained access roads that are not otherwise considered a

Term	Definition
	hazardous area. Non-combustible areas may be indoors or outdoors but is indicative of a modified environment where bushfire ignition potential is negligible.
NPWS	National Parks and Wildlife Service
NSP	Neighbourhood Safer Place. A Neighbourhood Safer Place is a building or an open space that may provide for improved protection of human life during the onset and passage of a bush fire. It is a location where people facing an immediate threat to their personal safety can gather and seek shelter from the impact of a bush fire. Their function is to provide a place of last resort for a person to seek shelter at during the passage of the bush fire front.
NSW RFS	NSW Rural Fire Service
Remote Area	A remote area is one where personnel are not within a 20-minute response time of the project ambulance
Snowy Hydro / SHL	Snowy Hydro Limited
SVC	Snowy Valleys Council
TOBAN	Total Fire Ban as declared by the NSW RFS Commissioner
WHSMP	Workplace Health and Safety Management Plan
WMS	Work Method Statement

1 INTRODUCTION

1.1 PROJECT OVERVIEW

In 2020 Snowy Hydro Limited (Snowy Hydro) obtained approval (application number SSI 9208 and EPBC 2018/8322) to expand the existing Snowy Mountains Hydro-electric Scheme (Snowy Scheme), by linking the existing Tantangara and Talbingo reservoirs through a series of underground tunnels and constructing a new underground hydro-electric power station (referred to as 'Snowy 2.0'). Snowy 2.0 will increase the generation capacity of the Snowy Scheme by almost 50%, by providing an additional 2,000 megawatts (MW). At full capacity Snowy 2.0 will provide approximately 350,000 megawatt hours (MWh) (175 hours) of large-scale energy storage to the National Electricity Market (NEM). This will be enough to ensure the stability and reliability of the NEM, even during prolonged periods of adverse weather conditions.

To connect Snowy 2.0 to the NEM, a new transmission connection is required. NSW Electricity Networks Operations Pty Ltd as a trustee for NSW Electricity Operations Trust (known as TransGrid) received development approval on 14 September 2022 to construct a substation and overhead transmission lines ('the Project') to facilitate the connection of Snowy 2.0 to the existing electrical transmission network, approximately 27 kilometres (km) east of Tumbarumba. An overview of the project area is shown in **Figure 1-1**.

The Project was declared Critical State Significant Infrastructure (CSSI) under the *State Environmental Planning Policy (State and Regional Development) 2011* as part of the CSSI declaration for the Snowy 2.0 and Transmission Project in clause 9 of Schedule 5.

An Environmental Impact Statement (EIS) was prepared by the Proponent under Part 5, Division 5.2 of the *NSW Environmental Planning and Assessment Act 1979* to assess the environmental impacts of the proposed Project. The Minister for Planning and Public Spaces is the determining authority for the Project. UGL has been engaged on behalf of the Proponent (TransGrid) to undertake the Project.

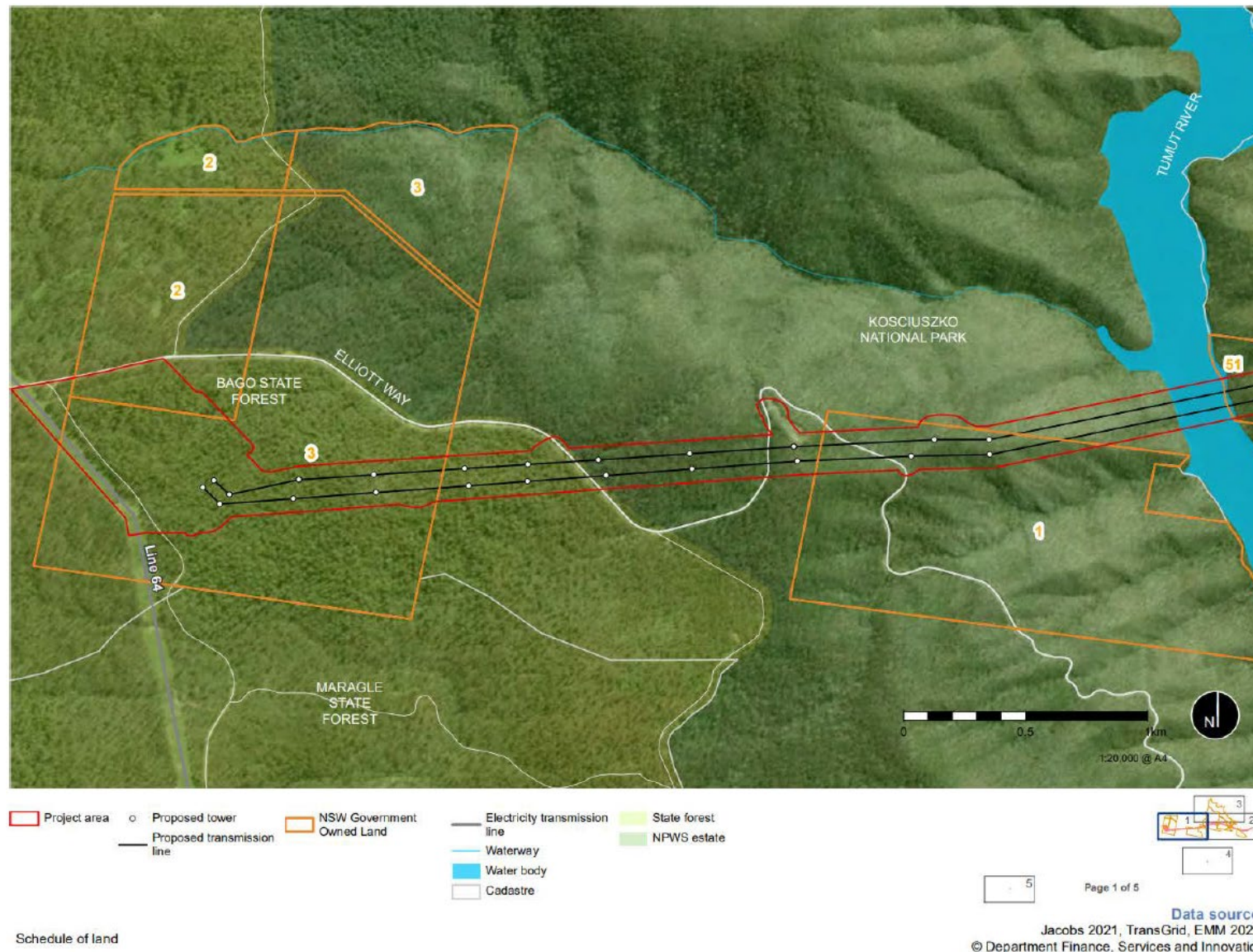


Figure 1-1 Project Area West Overview

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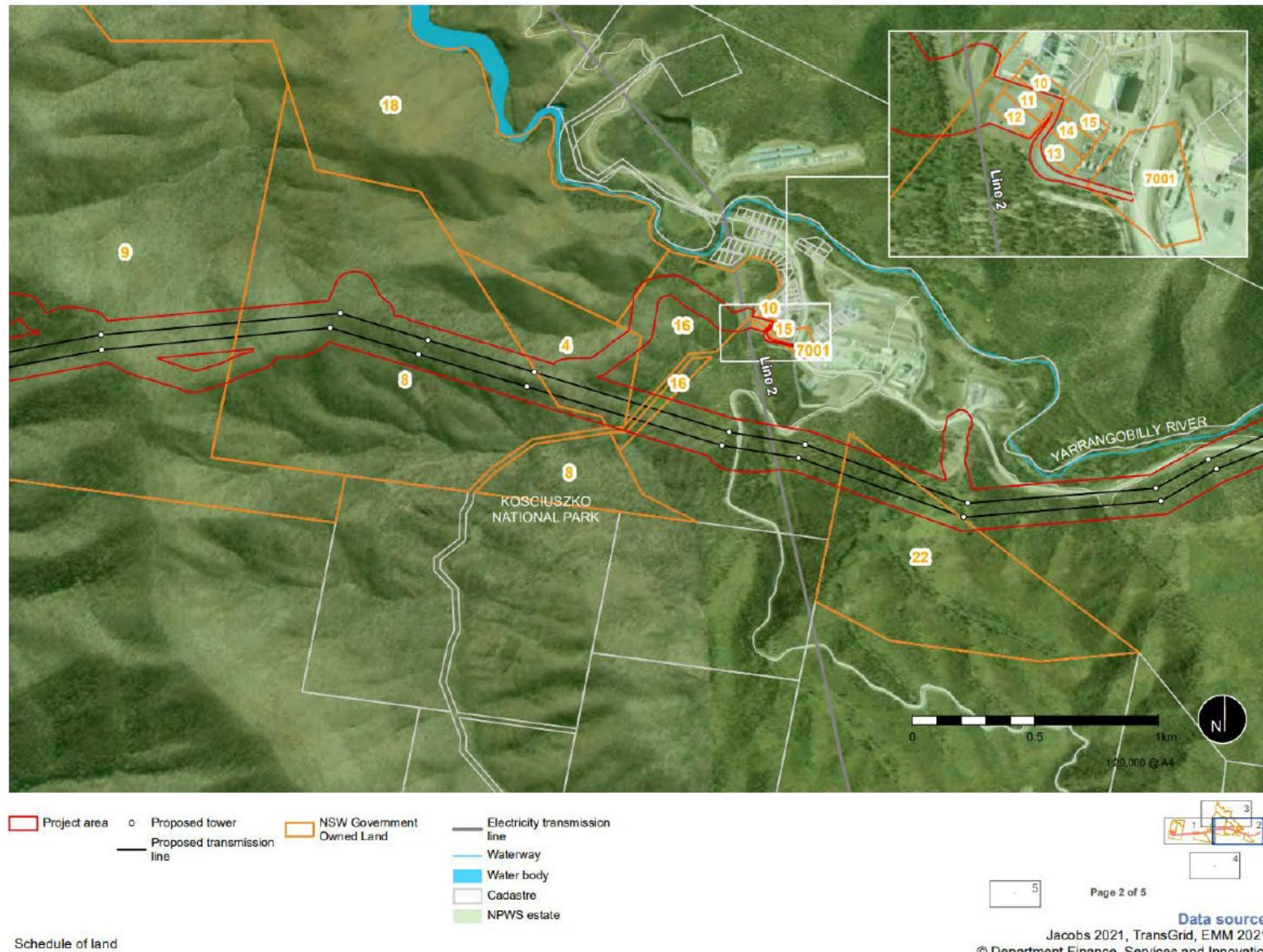


Figure 1-2 Project Area East Overview

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1.2 PURPOSE AND OBJECTIVES

The purpose of this plan is to address the Bushfire requirements detailed within the following documents:

- Project Conditions of Approval (CoAs) – Snowy 2.0 Transmission Connection (SSI 9717) Schedule 1 (dated 02/09/2022)

The key objectives for the management of bushfire risk and response during Project works include:

- Minimise bushfire risk on the local environment
- Minimise bushfire risk on neighbours and local community
- Maximise safety of public and employees in the event of a fire.
- Protect the assets on site from bushfires;
- Respond to any bushfires on or in the vicinity of the site;

1.3 ENVIRONMENTAL MANAGEMENT SYSTEM

The UGL Environmental Management System (EMS) for the Project is described in the Construction Environmental Management Plan (CEMP) which is a key component of the overall Environmental Management Strategy for the project required under CoA C1. This Bushfire Plan (BP) is a component of the Emergency Plan relevant to both the CEMP and Workplace Health and Safety Management Plan (WHSMP). It is applicable to all staff, contractors and sub-contractors associated with the construction of the Project.

Where relevant, management measures identified in this plan will be incorporated into activity specific Work Method Statements (WMS). WMS will be developed and signed off by safety and environment representatives prior to the respective works, and construction personnel will be required to undertake works in accordance with the identified mitigation and management measures.

1.4 CONSULTATION

Table 1-1 Consultation with Stakeholder Summary

Date	Consultation	Outcome
July 2021	Snowy Valleys Council	Snowy Valleys Council advised it could not meet the full estimated water demand requirements for project area west and advised on alternate water supply points at the existing Snowy Hydro T2 Tailbay site at Talbingo Reservoir and Paddy's River near Paddy's River Flat Campground
16 July 2021	Forestry Corporation of NSW (FCNSW)	Meeting between the project team to discuss issues relating to bushfire management, ecology and biosecurity, transport management, construction clearing and earthworks and post construction rehabilitation
25 February 2022	FCNSW	Transgrid stop work procedures regarding bushfire management at the request of FCNSW
13 September 2022	LEMC Meeting	An LEMC meeting took place involving a host of emergency agencies including Snowy Valleys Council, Fire and Rescue, NSW Police, VISY, Water NSW, NSW Health, and Transport NSW
October 2022	NPWS & FCNSW	NPWS and FCNSW endorsement of a suitably qualified person
18 October 2022	NPWS	NPWS reviewed the Bushfire Plan
21 March 2023	LEMC Meeting	An LEMC meeting took place to present the Emergency Plan. It involved a host of emergency agencies including Snowy Valleys Council, Fire and Rescue, NSW Police, VISY, Water NSW, FCNSW, NSW Health, and Transport NSW.
24 March to 27 April 2023	NPWS, FRNSW, FCNSW, and NSW RFS	NPWS, FRNSW, FCNSW and NSW RFS provided feedback on the Emergency Plan.

1.5 AUTHORSHIP

In accordance with condition B42(a) of the Conditions of Approval, this plan is to be prepared by a suitably qualified an experienced person/s whose appointment has been endorsed by NPWS and FCNSW.

This plan was originally drafted (rev 0.01) by UGL, who drew heavily on the endorsed Main Works Bushfire Plan of the Future Generation Joint Venture (FGJV).

A full review and revision of rev 0.01 was undertaken by Nathan Kearnes of Eco Logical Australia. Nathan Kearnes is the approved suitably qualified and experienced person in relation to emergency and bushfire management, who was endorsed as such by NPWS on 24 October 2022 and FCNSW on 28 October 2022.

2 ENVIRONMENTAL ASSURANCE

2.1 RELEVANT LEGISLATION AND GUIDELINES

2.1.1 LEGISLATION

Legislation relevant to this BP includes:

- *Biodiversity Conservation Act 2016*
- *Biosecurity Act 2015*
- *Electricity Supply Act 1995*
- *Electricity Supply (Safety and Network Management) Regulation 2014*
- *Environmental Planning and Assessment Act 1979*
- *Environmental Protection and Biodiversity Conservation Act 1999*
- *Fire Brigades Act 1989*
- *National Environment Protection Council Act 1994*
- *National Parks and Wildlife Act 1974*
- *Rural Fires Act 1997*
- *State Emergency and Rescue Management Act 1989*
- *Work Health and Safety Act 2011*

Relevant provisions of the above legislation are explained in the register of legal and other requirements included in Appendix C of the CEMP.

2.1.2 GUIDELINES

The main guidelines, specifications, and policy documents relevant to this Plan include:

- Planning for Bushfire Protection – RFS, 2019
- AS 1940:2017 “The storage and handling of flammable and combustible liquids
- TransGrid Fire Risk Assessment and Control Measures (FRACM) form
- *ISSC 20 – Guideline for the Management of Activities Within Electricity Easements and Close to Electricity Infrastructure* – ISSC, 2012
- *Hot Work and Fire Risk Work Procedure Rev 15* – TransGrid, March 2020
- The Department’s Hazardous Industry Planning Advisory Paper No. 1, ‘Emergency Planning’,
- FCNSW Guidelines including the Code of Practice for Timber Harvesting in Softwood Plantations 2022;
- RFS’s Development Planning – A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan (RFS, 2014);
- Kosciuszko National Park Fire Management Strategy 2008 to 2013 - NPWS, 2008;
- The Fire and Rescue NSW Act 1989; and
- The Work Health and Safety (WHS) Act 2011.

2.2 PERMITS AND LICENCES

Total Fire Ban (TOBAN) orders Gazetted under Section 99 of the NSW Rural Fires Act 1997 are subject to the NSW RFS Schedule of Standard Exemptions to Total Fire Bans. Hot works associated with the Project are defined under Schedule 6 of the standard exemptions, as follows:

Schedule 6 Services & utilities – construction, essential repairs or maintenance.

Fire lit, maintained or used by, or on behalf of, a provider of a utility or transport service, in connection with the:

- a. construction; or
- b. the essential repair; or
- c. maintenance of facilities or equipment required for the provision or continuation of the utility or transport service

provided that:

- a. the fire is lit, maintained or used in a manner which will prevent the escape of fire, and
- b. adequate firefighting equipment is provided at the site of the fire to prevent the escape or spread of the fire, and
- c. in the case of construction, the provider of the utility or transport service has:
 - a. if the land where the construction works is to be undertaken is within a rural fire district – notified the NSW Rural Fire Service Fire Control Centre for that district, or
 - b. if the land where the construction works is to be undertaken is within a fire district – notified the officer in charge of the nearest Fire and Rescue NSW fire station.

The provider of the utility or transport service must comply with any direction or additional condition which may be imposed by the NSW Rural Fire Service or Fire and Rescue NSW, which may include a direction that a fire not be lit.

Note: In this clause: utility or transport service means a sewerage, drainage, water, gas, electricity, telephone service or the operation of a road or railway

The UGL Work Standard for hot works outlines internal requirements for hot work permits (refer Section 5.3).

Applying for an exemption for smoking within KNP is being considered by UGL. UGL are to either request a smoking exemption permit or make the Snowy Connection project smoking free prior to construction. An exemption permit will be added to the appendix if a smoking exemption is requested and provided.

2.3 PROJECT CONDITIONS OF APPROVAL AND ADDITIONAL MITIGATION MEASURES

The Conditions of Approval and mitigation measures relevant to this Plan are listed in Table 2-1, below. A cross reference is also included to indicate where the requirement is addressed in this Plan or other Project management documents.

Table 2-1 Project Conditions of Approval and Mitigation Measures Relevant to the BP

Reference Number	Requirement	Document Reference
Operating Conditions		
B41	The Proponent must:	Section 5.2
	(a) minimise the fire risks of the development, including managing vegetation fuel loads on-site;	
	(b) ensure that the development;	Section 5 and a matter for detailed design
	(i) complies with the relevant asset protection requirements in the RFS's Planning for Bushfire Protection 2019 (or equivalent) and	

Reference Number	Requirement	Document Reference
	Standards for Asset Protection Zones;	
	(ii) is suitably equipped to respond to any fire on site, including provision of a 20,000 litre water supply tank fitted with a 65 mm Storz fitting and a FRNSW compatible suction connection located at each of the construction compounds;	Section 4.7
	(iii) incorporates the recommendations of a fire risk assessment as per TransGrid's design standards;	A separate fire risk assessment has been prepared (and a matter for detailed design)
	(c) ensures that buildings within the compounds comply with Australian Standard AS3959-2018 Construction of buildings in bushfire-prone areas (or equivalent) and RFS's Planning for Bushfire Protection 2019;	Sections 4.2, 5.3, and a matter for detailed design
	(d) ensure any fire trails or asset protection zones associated with the development are wholly contained within the approved disturbance area;	Noted – a matter for detailed design
	(e) develop procedures to manage potential fires on site, in consultation with the RFS, FRNSW, FCNSW and NPWS;	Sections 4, 7 and 8
	(f) assist the RFS, FRNSW, FCNSW, NPWS and emergency services as much as practicable if there is a fire in the vicinity of the site; and	Noted– Section 8
	(g) notify the relevant local emergency management committee following completion of construction of the development, and prior to commencing operations.	LEMC to be notified
Emergency Plan		
B42	<p>Prior to commencing construction, the Proponent must prepare and implement a comprehensive Emergency Plan and detailed emergency procedures for the development, in consultation with the Local Emergency Management Committee and to the satisfaction of the NPWS, FCNSW, RFS and FRNSW. This plan must:</p> <p>(a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by NPWS and FCNSW;</p>	This Document (see Section 1.5)
	<p>(b) be consistent with:</p> <ul style="list-style-type: none"> (i) the Department's <i>Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'</i>, (ii) <i>Kosciuszko National Park Fire Management Strategy 2008-2013</i> (NPWS, 2008), (iii) FCNSW Guidelines including the <i>Code of Practice for Timber Harvesting in Softwood Plantations 2022</i> (iv) RFS's <i>Planning for Bushfire Protection 2019</i> (or equivalent); (v) RFS's <i>Development Planning – A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan</i> (RFS, 2014); (vi) the <i>Fire and Rescue NSW Act 1989</i>; and (vii) the <i>Work Health and Safety (WHS) Act 2011</i>; 	This document (see Section 2.1.2)

Reference Number	Requirement	Document Reference
	(c) include evacuation protocols for the site;	Section 8
	(d) describe the measures that would be implemented to:	Section 5
	(i) minimise the risk of bushfire on site;	
	(ii) protect the assets on site from bushfires;	Section 5
	(iii) respond to any bushfires on or in the vicinity of the site;	Section 8
	(iv) minimise flood risks on site, including flooding response procedures;	Emergency Plan
	(v) minimise the risk of landslips on site, including landslip response procedures;	Emergency Plan
	(vi) evacuate the site in an emergency; and	Emergency Plan
	(e) include details on how live transmission infrastructure can be safely isolated in an emergency.	Emergency Plan
	The Proponent must implement the Emergency Plan for the duration of the development.	Noted
Mitigation measures – Amendment Report		
HAZ1	All designs will be in accordance with the ICNIRP Guidelines for limiting exposure to time varying Electric and Magnetic Fields (1Hz – 100Hz) (ARPANSA, 2010) with consideration to the public and on-site workers.	Noted - a matter for detailed design
HAZ2	The following lightning protection measures will be included in the detailed design: <ul style="list-style-type: none"> Each structure will be equipped with earthing fixtures Each transmission line will have two earthing lines at the top of each structure to provide protection to the conductors from lightning strike Lightning masts will be installed at the substation. 	Section 5.1 IFC Design Drawings
HAZ3	A ' <i>Prepare-Act-Survive</i> ' bushfire response plan will be prepared for the Project. The plan will be prepared according to <i>Planning for Bush Fire Protection</i> (RFS, 2019) and in consultation with NPWS, FCNSW and Snowy Valleys Bush Fire Management Committee. The fire prevention/mitigation strategies within Bago State Forest would be generally in accordance with Forest Practices Codes including the <i>Standard Operating Procedure - Plantation Harvesting, Haulage and Site Preparation Fire Restrictions (Fire Prevention 19/51)</i> . The plan will include responsibilities associated with and details of: <ul style="list-style-type: none"> Site specific hazards and risks for the Project area Procedures to maintain bushfire awareness Bushfire mitigation measures Fire preparedness actions including: <ul style="list-style-type: none"> Evacuation triggers Evacuation routes Mustering points Neighbourhood safer places and refuges of last resort Instructions for sheltering in-vehicle if there are no other options. 	This document

Reference Number	Requirement	Document Reference
HAZ4	For the main construction compounds, a minimum of 40 meters clearance is required between fuel/chemical storage points and woody vegetation. The construction compound buildings will have at least 20 meters clearance to the vegetation.	Noted – a matter for detailed design and addressed in Section 5.2.
	<p>Firefighting equipment will be maintained at and/or accessible to all active construction sites during the declared bushfire danger season, and site personnel trained in its use. Equipment will be appropriate to the activities being conducted and the fire danger at the time of works, but as a minimum must include TransGrid Prescribed Fire Safety Equipment.</p> <ul style="list-style-type: none"> • 4WD vehicle with towable water unit, pump, and hoses • Extinguishers • Hand tools (e.g., rakes, shovels) 	Sections 4.7 and 6
	Any vegetation cleared as part of these works will be removed from site (as much as reasonably practicable), or otherwise processed to avoid excessive bushfire fuel accumulation as agreed with FCNSW and NPWS.	Section 5.2
HAZ5	<p>All chemicals or other hazardous substances will be stored in a bunded area and away from any natural drainage lines. The capacity of the bunded area will be at least 130% of the largest chemical volume contained within the bunded area. The location of the bunded enclosure/s will be shown on Site Plans.</p> <p>The storage, handling and use of dangerous goods and hazardous substances will be carried out in accordance with the WHS Act and Regulations, the <i>Storage and Handling of Dangerous Goods Code of Practice</i> (WorkCover NSW, 2005) and relevant Australian Standards.</p>	Refer to SWMP
HAZ6	<p>Routine condition monitoring and risk-based maintenance of Project elements to minimise the incidence of ignitions from asset failures.</p> <p>Ongoing vegetation management will be in accordance with TransGrid's operational vegetation monitoring and management procedures. This will include regular inspection and maintenance of trees and woody vegetation within the transmission corridor to provide safe clearance distance to the overhead conductors, and maintenance of the substation APZ.</p> <p>The APZ surrounding the substation would be completely cleared with vegetation managed to approximately 100 mm in height.</p> <p>Ongoing risk management of trees located outside the easement that have potential to strike the conductor if they were to fall.</p> <p>Access tracks will be maintained to facilitate ongoing access to transmission structures for maintenance. It is recommended that these tracks are to be maintained to the standards of a Category 9 fire trail (RFS, 2016) to allow fire response in the area.</p>	Noted - TransGrid
HAZ7	Hot work (activities involving high temperatures) and fire risk work (activities involving heat or with the potential to generate sparks) will be managed under TransGrid's procedures (FRACM)	Sections 5.5 and 7
Mitigation measures – Bushfire Assessment		
S7.3	A 120-200 m wide transmission corridor. The transmission corridor will be maintained in accordance with TransGrid (2018b) to manage vegetation grow-in and fall-in hazard	Noted - TransGrid

Reference Number	Requirement	Document Reference
	An APZ providing clearance between the substation and the surrounding vegetation to reduce Bushfire Attack Level (BAL) and associated heat flux at sensitive components.	Section 5.2 and a matter for detailed design
	Access tracks are maintained periodically to facilitate access along the transmission corridor for maintenance. When it occurs, maintenance is recommended to be to the standards of a Category 9 fire trail (NSW RFS, 2019b) to allow fire response in the area.	Section 5.4
	A Prepare-Act-Survive bushfire response plan will be prepared by contractors according to NSW RFS guidelines and the Snowy 2.0 Construction Bushfire Emergency Management Plan.	This Plan

Note: Mitigation Measures taken from the Amendment Report, Snowy 2.0 Transmission Connection Project (December 2021); and Bushfire Assessment – Environmental Impact Statement, Snowy 2.0 Transmission Connection Project (February 2021)

3 EXISTING ENVIRONMENT

3.1 LANDSCAPE ENVIRONMENT

The Project is located across two state-managed tracts of forest and national park, including Bago State Forest within Project area west and Kosciuszko National Park (KNP) in Project area east. As identified in the Bushfire Assessment for the Project undertaken by Jacobs (2020), the Project is being undertaken within a bushfire prone environment. The vegetation surrounding the permanent infrastructure to be completed as part of Project works is classified as Vegetation Category 1 in accordance with the NSW RFS *Guide for Bushfire Prone Land Mapping*. This vegetation category is considered to have the highest combustibility and greatest likelihood of forming large fires with embers, classifying it as the highest risk for bushfire.

There is a history of bushfire in Kosciuszko National Park and surrounding areas (NPWS 2008). When vegetation is dry enough for a fire to start and spread, bushfires have historically burnt over large areas of these alpine regions and at high intensity, producing embers and spotting ahead of the fire front.

The Snowy Valleys Bush Fire Management Committee (BFMC) Bush Fire Risk Management Plan (Snowy Valleys BFMC 2017) identifies that within this region the:

- climate is cool temperate with winter rainfall maximum;
- bush fire season usually occurs from November to March in the Riverina Highlands Rural Fire District;
- adverse fire weather is associated with north-westerly winds, high daytime temperature and low humidity;
- dry lightning storms are common in the fire season; and
- fire danger periods have occurred in winter months.

3.2 LOCAL GOVERNMENT AREA AND FIRE DANGER RATING AREA

The Project works are located within the Snowy Valleys Council (SVC) Local Government Area (LGA) and the Southern Slopes Fire Area, or Fire Area 16, as classified by the NSW RFS. Fire danger ratings are issued by NSW RFS in conjunction with the Bureau of Meteorology (BOM) each afternoon during the bush fire danger period (BFDP), classifying each designated fire area within NSW as one of five FDR categories as outlined in Figure 3-2.

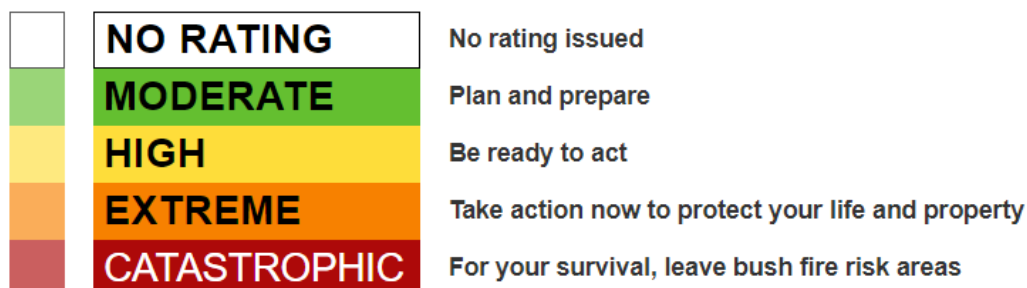


Figure 3-1 Fire Danger Rating Categories and Corresponding Colour-Coding (NSW RFS, 2022)

3.3 BUSHFIRE SEASON AND WEATHER

The BFDP, or bushfire season, for the Riverina Highlands Rural Fire District is usually declared from 1 November to 31 March, unless adjusted by the NSW Rural Fire Service (NSW RFS) Commissioner.

The region experiences a cool, temperate climate, with warm, drier summers typical for the area. Temperatures in excess of 35°C have been recorded in all months between November and March, with days of 'High' fire danger rating (FDR) most common between December and March. The fire danger ratings and "what you should do" for that rating within the Project area is included in Table 3-1.

Table 3-1 Fire Danger Ratings and Average Occurrence within the Project Area (Jacobs, 2020)

Fire Danger Rating	What You Should Do
No Rating	Fire danger ratings are used on days when you need to take action. On days of minimal risk, 'No Rating' will be issued.
Moderate	Plan and prepare. Stay up to date and be ready to act if there is a fire.
High	Be ready to act. There's a heightened risk. Be alert for fires in your area. Decide what you will do if a fire starts. If a fire starts, your life and property may be at risk. The safest option is to avoid bush fire risk areas.

Fire Danger Rating	What You Should Do
Extreme	<p>Take action now to protect your life and property.</p> <p>These are dangerous fire conditions.</p> <p>Check your bush fire plan and ensure that your property is fire ready.</p> <p>If a fire starts, take immediate action.</p> <p>If you and your property are not prepared to the highest level, go to a safer location well before the fire impacts.</p> <p>Reconsider travel through bush fire risk areas.</p>
Catastrophic	<p>For your survival, leave bush fire risk areas.</p> <p>These are the most dangerous conditions for a fire.</p> <p>Your life may depend on the decisions you make, even before there is a fire.</p> <p>Stay safe by going to a safer location early in the morning or the night before.</p> <p>Homes cannot withstand fires in these conditions.</p> <p>You may not be able to leave, and help may not be available.</p>

3.4 IGNITION SOURCES

A number of bushfire ignition sources have been identified by National Parks and Wildlife Services (NPWS) as part of historical fire records, and the Snowy Monaro BFMC in the Snowy-Monaro Bush Fire Risk Management Plan. These ignition sources include the following, in descending order of frequency:

- Lightning strike
- Arson
- Escaped campfires
- Escaped planned burns \ fuel-load reduction activities
- Discarding of cigarettes
- Motor vehicles
- Powerlines

A number of potential ignition sources during construction have been identified during the Project Environmental Impact Assessment (EIS), including:

- Hot works / Grinding / Welding works
- Vegetation clearing
- Management and use of on-site vehicles
- Discarding of cigarettes

- Fuel leaks and spills
- Storage of flammable goods.

3.5 ADDITIONAL CONSIDERATIONS

As specified in the Snowy 2.0 Main Works Bushfire Management Plan, a number of additional considerations exist for the management of bushfires within the greater Snowy 2.0 Project footprint. These considerations include:

- The use of firefighting chemicals is prohibited within 50m of the banks of Yarrangobilly River, Talbingo Reservoir and Three Mile Dam
- Planned (i.e., not during an emergency situation) track widening, and vegetation disturbance is prohibited on a number of access tracks within the greater project area, due to the presence of threatened species habitat
- A range of Aboriginal and historic heritage sites exist within the greater project footprint and should be considered during emergency planning and management. Several sensitive areas that contain protected animals exist within and around the project area. Wherever practicable, consideration should also be given to minimising impacts on these areas during emergency events.

4 BUSHFIRE RISK MITIGATION RESOURCES

4.1 PROJECT EVACUATION

To accommodate the potential location on site of any person and differing evacuation scenarios, as well as to ensure consistency with advice provided as part of the Snowy 2.0 Main Works Bushfire Management Plan, evacuation routes and site maps for the greater Snowy 2.0 Project footprint are provided in Appendix A – Bushfire Evacuation Plan.

All evacuations must be managed in accordance with the instructions of the Person in Charge (PIC), Incident Controller (IC), fire warden or their delegate. Personnel may be directed to a works area Muster Point to await instructions or seek refuge and shelter at the nearest Assembly Area (detailed in Section 4.2) until a bushfire passes.

A Consequence Management Guide (CMG) relating to evacuation will be prepared in consultation with NPWS, FCNSW, RFS and FRNSW and will be in place prior to works mobilisation. This will include notification triggers to the local Emergency Operations Centre (EOC). CMGs will be discussed with the local EOC to ensure compatibility with EOC operations. Each Assembly Area will have an evacuation CMG due to the various topographical and access constraints at each location.

4.2 ASSEMBLY AREAS

A number of assembly areas have been identified for the Project (Table 4-1). UGL will confirm the location of localised muster points and any additional assembly areas within the finalised site layout plans prior to construction.

Table 4-1 Assembly Areas within the Greater Snowy 2.0 Project Area

Project Area	Assembly Area	Location
West	UGL Switching Yard Assembly Area (Lat 35°47'40.42"S, Long 148°19'2.33"E)	At the Switching Yard in Bago State Forest, near where the existing TL64 line crosses Elliott Way Rd. About 450m west, off Elliott Way Rd.
East	UGL Lobs Hole Assembly Area (Lat 35°47'19.72"S, Long 148°23'38.60"E)	It is 700 m south of the Yarrangobilly River Crossing and 15.3 km North along Lobs Hole Ravine Road from the Link Road Junction.
East	FGJV Lobs Hole Accommodation Camp Assembly Area & Refuge Building (Lat 35°46'57"S, Long 148°23'41"E)	1 km north of the UGL Lobs Hole Assembly Area. It is within the FGJV Lobs Hole Accommodation Camp, on the northern side of Yarrangobilly River, 400m north of Yarrangobilly River Crossing and 16.4km north along Lobs Hole Ravine Road from the Link Road junction.

The main Emergency Assembly Areas at the Switchyard and UGL Lobs Hole Compound will include:

- A minimum 20,000L dedicated fire water supply (rainwater roof collected, topped up by watercart) fitted with 65mm Storz bushfire couplings;
- A minimum of three 12m x 3m portable offices (or equivalent floor space) placed in a U-shape. The sizing of these assembly areas will be catered to suit the expected number of personnel at each location;
 - Gravel central hardstand and gravel building perimeter track;

- A 20 m buffer around the shelter in place buildings (when available) and a 10 m buffer around the perimeter will be maintained as an APZ with any grass <10 cm height.
- A Colorbond perimeter fence (minimum 1.8m high) – the Colorbond perimeter fence is flush with the ground and maintained with no gaps between the fence bottom and the ground surface;

4.2.1 STAYING AND DEFENDING AT ASSEMBLY AREAS

Ideally, the bulk or all of the workforce and any other persons on-site would be evacuated well in advance of any known bushfire threat. The assembly areas will also function as a site of potential 'last resort' refuge for workers if it is determined too late to safely evacuate from site. It should be noted that any persons seeking refuge at an assembly area may be exposed to risk of significant injury or death during bushfire attack, thus they are a last resort refuge option.

The decision to stay and defend at a site must not be taken without careful planning. A specific incident action plan and a back-up plan that carefully considers all the local risk factors associated with a bushfire in the vicinity of each Assembly Area must be prepared. The incident action plan should also consider the impact of an evacuation, which may increase congestion on Elliott Way, Lobs Hole Road, and other nearby roads would have on the egress capabilities for the surrounding community.

Regardless of a decision to leave early or stay and defend, the Assembly Areas should be prepared for direct flames, radiant heat, and ember attack from bushfire.

A site is better prepared (even if you choose to leave) and potentially defensible if by the start of the fire season and during the fire season, the mitigation actions identified in Section 5 are in place.

4.3 MUSTER POINTS

Muster points provide gathering points for personnel in the locality of their works area. They serve as the initial coordination point for personnel prior to mobilisation from the works area to the assembly areas (see Section 4.2).

Muster points will be determined dynamically by the Emergency Evacuation Coordinator and/or Safety Advisor as the construction activities progress throughout the project site. The location of muster points will be communicated to personnel through signage on site, HSE notice boards and in toolbox talks. Muster points will be regularly inspected and tested for suitability as works progress.

4.4 NEIGHBOURHOOD SAFER PLACES

Neighbourhood Safer Places (NSP) are designated locations to be used as last resort options during a bush fire emergency. An interactive and up-to-date map of all NSPs within NSW can be found on the RFS website (<https://www.rfs.nsw.gov.au/plan-and-prepare/neighbourhood-safer-places>) and should be consulted during any future revisions of this plan to confirm currency.

To ensure consistency in response, details of the Neighbourhood Safer Places relevant to the UGL Project area have been directly aligned with those provided as part of the Snowy 2.0 Main Works Bushfire Management Plan. These details can be found in Table 4-2, below.

Table 4-2 Neighbourhood Safer Places in Close Proximity to the Greater Snowy 2.0 Project Area

Neighbourhood Safer Place	Distance from Project	Work fronts to use this NSP
The Big Trout Park Off Snowy Mountains Highway, Adaminaby	<ul style="list-style-type: none"> Approximately 38km south-east from junction of Link Road and Snowy Mountains Highway 	Safer place when evacuating south from: <ul style="list-style-type: none"> Lobs Hole

Neighbourhood Safer Place	Distance from Project	Work fronts to use this NSP
GPS Coordinates: 35°59'50.41"S, 148°46'28.25"E		
Miles Franklin Park Corner Miles Franklin Drive and Day Street, Talbingo GPS Coordinates: 35°34'46.97"S, 148°18'10.66"E	<ul style="list-style-type: none"> Approximately 55 km north from junction of Link Road and Snowy Mountains Highway 	Safer place when evacuating north from: <ul style="list-style-type: none"> Lobs Hole
Tumbarumba Sportsground 16 Mate Street, Tumbarumba GPS Coordinates: 35°46'26.40"S, 148° 0'28.80"E	<ul style="list-style-type: none"> Approximately 39km west of junction of Elliott Way and transmission easement, where Switchyard Site is located 	Safer place when evacuating west from: <ul style="list-style-type: none"> Switchyard
Tumut Plains Cricket Ground Tumut Plains Road, Tumut Plains GPS Coordinates: 35°21'3.60"S, 148°16'15.60"E	<ul style="list-style-type: none"> Approximately 83 km north from junction of Link Road and Snowy Mountains Highway 	Safer place when evacuating north from: <ul style="list-style-type: none"> Lobs Hole
Multifunction Centre Corner Boundary Street and Cromwell Street, Cooma GPS Coordinates: 36°14'24.00"S, 149°7'19.20"E	<ul style="list-style-type: none"> Approximately 90 km southeast from junction of Link Road and Snowy Mountains Highway 	Safer place when evacuating south from: <ul style="list-style-type: none"> Lobs Hole
1488 Bistro and Canteen Murrain Road (Centre of Town Complex), Cabramurra GPS Coordinates: 35°56'9.30"S, 148°22'51.05"E	<ul style="list-style-type: none"> Approximately 27 km south from junction of Link Road and Snowy Mountains Highway Approximately 27 km south of junction of Elliott Way and transmission easement, where Switchyard Site is located 	Safer place when evacuating south from: <ul style="list-style-type: none"> Lobs Hole, and Switchyard
Attree Park (Town Centre Parkland) Bounded by Hansen Street (Murray Valley Highway), Jardine Street and Harris Street, Corryong GPS Coordinates: 36°11'44.90"S, 147°54'14.24"E	<ul style="list-style-type: none"> Approximately 74 km southwest of junction of Elliott Way and transmission easement, where Switchyard Site is located 	Safer place when evacuating west from: <ul style="list-style-type: none"> Switchyard

4.5 IN-VEHICLE SHELTERING

If a situation arises where personnel encounter smoke or flames and are not able to evacuate safely, a number of measures, recommended by the Victorian Country Fire Authority (CFA, 2021), can be put in place to increase chances of survival when sheltering in a vehicle. These actions include:

- Positioning the car to minimise exposure to radiant heat:
 - Park away from dense bush
 - Park behind a barrier such as a wall or rocky outcrop
- Position the car to face the oncoming fire front
- Park off the roadway and turn hazard lights on
- Stay in the car and tightly close windows and doors
- Cover up with woollen blankets and stay below window level
- Drink water to prevent dehydration
- When the fire front becomes close by, shut all vents, turn the air-conditioning off and turn the engine off.

All mitigation measures practicable should be taken to ensure that this situation does not arise for any Project personnel during the event of a bushfire, however, these measures will be communicated to all staff via a toolbox prior to the commencement of bushfire season.

4.6 HELIPADS

Table 4-3 provides a breakdown of helipad locations and descriptions should the need arise for access for firefighting purposes.

Table 4-3 Helipad locations

Helipad	Lat	Long
Ravine Helipad Accommodation Camp	35°46'57.31"S	148°23'50.87"E
	Located at the Lobs Hole Accommodation Camp	
Switchyard and Western Transmission Line	Following consultation with Toll Rescue Helicopters, vertical rescue or landing on Elliott Way at East Bago Powerline Road junction as determined by the attending crew. No dedicated helipad Western side.	
All helipads should be established and maintained with consideration of the Civil Aviation Safety Authority (CASA) Helicopter Landing Site Guidelines (CASA 2014).		

4.7 FIREFIGHTING SUPPLIES AND EQUIPMENT

A range of firefighting equipment will be maintained at the main works project site during each annual bushfire season. As a minimum, this equipment will include, but not be limited to, the following:

- Four-wheel drive (4WD) vehicle with towable water unit, equipped with a diesel pump and hoses
- Appropriate water supply
- Fire extinguishers

- Hand tools, including fire rakes and shovels
- Dedicated 20kL firefighting static water supply tanks (RFS approved water tanks) will be located at the Lobs Hole Ravine UGL Compound and the UGL Switchyard Compound
 - The water supply tanks will have 65 mm Storz coupling to suit bushfire tankers and a FRNSW compatible suction connection
- Towable 1000L fire units (utility vehicle or dedicated fire trailer, pump and hose reel and 65mm Storz couplings) are required at each worksite to put out spot fires, as per the preparedness requirements Section 7.2 (Table 7-1).

In the event of an emergency, water can be directly sourced from the Talbingo Reservoir, or Paddy's River. Where no emergency exists, water sourcing will be under a permit or written approval.

A register of all firefighting equipment within the site compounds will be maintained by UGL, including quantities, location, and maintenance records. Prior to the commencement of each bushfire season for the Project duration. All equipment will be inspected by an appropriately qualified person for functionality and suitability, in conjunction with a review of location suitability in response to any usage during the previous season.

4.8 EXTERNAL FIREFIGHTING RESOURCES

The nearest fire resources are NPWS Blowering Works Depot, and the volunteer NSW RFS brigades at Adaminaby, Talbingo, and Tumbarumba, all more than one-hour response time away, when available. NPWS maintains firefighting units, which are based at Tumut and Jindabyne. FCNSW also has firefighting resources at Tumbarumba and the Ardrossan Depot in Green Hills State Forest near Batlow.

The NSW RFS or Tumbarumba Fire and Rescue are likely to be the first responders despatched to an incident. This will be dependent on the emergency response automated system which will deploy available or closest units. There are also fire stations in Cooma and Tumut, however both are more than two hours response time away.

4.9 NPWS FIRE DETECTION TOWERS

The Black Jack Fire Tower (35°58'29.00"S | 148°18'48.50"E) (approximately 20km SSE) uses camera monitoring to pick up smoke sightings from the vicinity of Lobs Hole but not see directly into the valley. The Big Talbingo Fire Tower (35°36'58.00"S | 148°19'53.00"E) (approximately 20km NNE) also uses camera monitoring to pick up smoke sightings from the vicinity of Talbingo.

Any smoke sightings or fires detected should be immediately reported to the Chief Warden or their delegate who is to contact emergency services in line with the fire reporting procedure in Figure 8-2.

NPWS would advise TransGrid of relevant smoke sightings and incidents in the area and where relevant TransGrid will advise the Chief Warden or their delegate. The Control Centre would directly notify the Chief Warden or their delegate in the event of smoke sightings in the vicinity of or having potential to affect the Project.

5 BUSHFIRE PREVENTION AND MITIGATION

5.1 DESIGN CONSIDERATIONS

A number of mitigation measures will be factored into the final design for the Project, with a specific focus on earthing transmission line structures for protection in the event of lightning strike. Each transmission line constructed for the Project will comprise 21 steel lattice structures, resulting in 42 total structures. Each of these structures will be earthed via a combination of earthing strips and earthing stakes, with one earthing fixture per leg (four in total), per structure.

In addition to the structure earthing fixtures, each transmission line will have two accompanying earth wires to provide protection to conductors in the event of a lightning strike. Lightning masts will be installed at the constructed substation.

5.2 ASSET PROTECTION ZONES AND VEGETATION MANAGEMENT

To accommodate the new 330kV substation constructed as part of Project works, an asset protection zone (APZ) will be established around the switchyard boundary. Any APZ works undertaken during construction will be in accordance with Appendix 4 of *Planning for Bush Fire Protection* (NSW RFS, 2019).

For construction compounds utilised during works, a minimum of 20 metres clearance between the compounds and surrounding vegetation will be established, in addition to a minimum of 40 metres clearance between compound chemical storage facilities and woody vegetation.

Ongoing vegetation management will be undertaken, including regular inspection and maintenance of woody vegetation within the transmission corridor, to ensure safe clearance distance to the overhead conductors is maintained at all times. Maintenance of the substation APZ will be undertaken to ensure appropriate clearance is consistently maintained, with all vegetation, including grasses, maintained at approximately 100 mm height or less.

Any vegetation cleared as part of Project works will be either removed from site or appropriately processed to reduce on-site fuel loading. This process will be undertaken in consultation with the Forestry Corporation of NSW (FCNSW) and NPWS, and in accordance with the Construction Management Plan (CEMP). Given the potential for self combustion, mulch stockpiling for site rehabilitation must be a considered action if it is to occur, mindful of client & stakeholders expectations and mitigations applied.

5.3 BUILDING MAINTENANCE AND PREPAREDNESS

Once constructed, site buildings are to be well-maintained for bushfire mitigation. The following preparatory maintenance activities should be conducted prior to the official start of the bushfire season (1 November, unless declared earlier) and monthly throughout the bushfire period:

- Clear all leaf litter and debris <6mm diameter from:
 - Gutters;
 - Garden beds;
 - Roofs;
 - External decks;
- Ensuring external walls, eaves and roofs are sealed and painted and any window fly wires or screens are repaired – this will reduce the potential for ember attack;
- Service fire extinguishers;
- Conduct testing of fire hose reels and alarm systems, where installed.

5.4 FIRE BREAKS AND TRAILS

Fire trails, trail signage, passing bays, turn-around points and fire breaks must be serviceable before the start of each fire season and during the season. Maintenance will be undertaken in conjunction with the greater Snowy 2.0 Project team, as well as in accordance with the Maintenance Protocol between OEH and TransGrid (2014) and relevant RFS standards for access to transmission structures for maintenance activities.

Key locations within the project work areas will be clearly marked with key information (e.g. dead end, no access, steep and narrow) and will be wholly contained within the approved disturbance area. This will be done at site mobilisation and locations will include:

- all infrastructure access tracks
- all Muster Points and Assembly Areas; and
- directional signage to the active Helipads.

Where trail and access tracks do not provide an escape route in an emergency, signage will be installed to notify project staff accordingly.

5.5 PERMITS

All hot works will be managed under TransGrid's procedures, as outlined in the *Hot Work and Fire Risk Work Procedure Rev 15* (TransGrid, March 2023), including the use of the *Fire Risk Assessment and Control Measures* (FRACM) form.

Hot works, including any work involving high temperatures such as welding, grinding, or sanding, will only be performed on a total fire ban (TOBAN) day if there is an approved exemption from the Rural Fire Service in place, and with a hot work permit in place and in accordance with the UGL Work Standard for hot works. The hot works undertaken on TOBAN days should be of essential nature only, as per the Government Gazette Schedule Of Standard Exemptions to Total Fire Bans for TOBANs (see standard exemption item 6(1))

TransGrid's Hot works permit will be used for any works that generate heat or sparks and are completed daily per work area and have set minimum controls to be in place prior to works commencing – controls also change pending risk. The FRACM form covers all activities for track machine movement, vegetation slashing, excavations, ground engagement etc and are completed daily.

Preparedness and restrictions on hot works are to be put in place when an FBI is greater than 12. The actions are detailed in Table 7-2 Bushfire Preparedness (Code yellow, orange, red, and grey)

Smoking, if permitted, will only be allowed in designated smoking areas. UGL are to either request a smoking exemption permit or make the Snowy Connection project smoking free prior to construction.

5.6 CHEMICALS AND HAZARDOUS SUBSTANCES

A variety of chemicals, dangerous goods and hazardous substances will be used during both construction and operation of the permanent infrastructure constructed as part of Project works. They will be stored in accordance with Australian Standards and handled according to Safe Work practices. Dangerous goods and hazardous substances to be used during Project works include, but will not be limited to:

- Diesel
- Oils, grease, and lubricants
- Class 2.1 gases (oxy-acetylene)
- Class 3 PGII and Class 3 PGIII paints and epoxies
- Class 6.1 PGII herbicides
- Aerosols

6 BUSHFIRE AND HAZARD AWARENESS TRAINING

6.1 SITE INDUCTION AND TRAINING REQUIREMENTS

The Chief Warden or delegate is responsible for the induction of new staff members, contractors, visitors, and site users. The induction is to include:

- Information about the site context as detailed in Section 3
- Fire weather awareness and preparedness requirements – in response to forecast Fire Behaviour Index (FBI) and Fire Danger Ratings (FDR), see Section 7.2 and Section 7.3
- Permissible activities based on works preparedness code, see Table 7-1
- Familiarisation and training in the safe and effective use of the provided fire safety equipment, see Table 7-1
- Response to an emergency warning being issued by fire authorities, see Section 8.3
- Fire reporting and response actions to a smoke sighting or fire starting, see Section 8.4
- Onsite and offsite emergency arrangements, including but not limited to evacuation procedures and assembly area locations, see Section 4, Section 8 and Appendix A – Bushfire Evacuation Plan.

6.1.1 BUSHFIRE AWARENESS AND FIREFIGHTING TRAINING

All UGL supervisory personnel working in bushfire-prone areas during the bushfire season must complete Bushfire Awareness Training covering the relevant elements of this BP prior to starting activities. All other ground personnel must be briefed on how to avoid a bushfire ignition and what to do in a bushfire through toolbox talks and the above site induction requirements. All personnel working outside compounds are to be escorted by a person who has completed the Bushfire Awareness Training.

All personnel with responsibilities within the emergency control organisational structure or for the operation of emergency equipment will be adequately qualified and trained with the appropriate level of competency-based training in accordance with the EP.

6.2 FIRE DANGER AWARENESS

6.2.1 FIRE DANGER BOARDS

Fire danger boards will be set up and updated daily and will communicate the NSW RFS Fire Danger Rating (FDR) for the day. The fire danger boards will be positioned at the discretion of the Project Manager and/or the Chief Warden throughout the site to give best clarity to workers and will be relocated as the concentration of personnel relocates for works activities. A fire danger board will also be situated at the main access gates at the western and eastern work fronts.

6.2.2 STAFF BRIEFING AND TOOLBOX TALKS

The Chief Warden shall ensure that personnel are informed of site-specific fire and emergency procedures and hot works permit requirements as part of toolbox talks given to all staff and contractors at:

- The commencement of each fire season;
- New starter induction;
- Daily during the fire season, to confirm the FBI and fire danger works preparedness code level for the current and next four days.

6.3 LIAISON AND PRE-SEASON DRILLS

The Emergency Committee will annually and prior to the bushfire season (which typically starts 1 November in the Riverina Highlands Rural Fire District, unless brought forward by the NSW RFS Commissioner) invite the local NSW RFS Brigade, FCNSW, FRNSW, and NPWS representatives onsite for site familiarisation, fire response and evacuation drill and liaison with personnel. This will include running through the procedures and operations detailed in this plan.

A copy of this plan will be provided to the relevant Bush Fire Management Committee (BFMC) and Local Emergency Management Committees.

During times where FDR is High or above, UGL's Chief Warden or delegate will instigate communication with NPWS project officers, FCNSW and RFS who will remain in frequent and direct communication to share information on project activities being undertaken and how these relate to ongoing or predicted bushfire hazards in the locality. TransGrid will be kept informed of these discussions and the resulting Project consequences.

6.4 OTHER RELATED HAZARDS

6.4.1 POWERLINES AND AIRCRAFT OPERATIONS

Powerlines may not be visible to aircraft, including helicopters. Aircraft, drone, and unmanned aerial vehicle pilots carrying out project activities should be advised of the presence of powerlines in the vicinity.

During a bushfire incident no Project aircraft, drones or unmanned aerial vehicles will be used from the first sighting or notification of a fire in the area until clearance is given by the RFS, FCNSW and NPWS.

6.4.2 RISK FROM FIRES BURNING NEAR TRANSMISSION POWERLINES AND ELECTRICITY ARCING

As per the National Guidelines on Electrical Safety for Emergency Service Personnel (*ENA Doc 008—2006*):

'Large fires burning adjacent to or under high voltage transmission lines have the potential to create electrical arcs (known as "flashovers") that can endanger people, animals and objects. The combination of dense smoke and hot gases generated by a large fire directly under or near a high voltage transmission line can create a conductive path that increases the potential for a flashover. A flashover is when electricity, especially at higher voltages, jumps across an air gap to create a conductive path. A flashover may occur between wires or from wires to the ground – this may be seen as a flash or heard as an explosion or loud cracking sound.

Under everyday conditions, the height of wires and their separations are designed to be entirely safe. However, a fire burning under or very close to the powerline can increase the distance that an electricity arc can jump. Flashovers are potentially life threatening to a person standing in the near vicinity of the flashover and can also cause damage to nearby equipment.

When there is a fire close to a powerline keep all personnel, vehicles and attachments at least 25 metres clear from the powerline.'

See Section 8.2.2 for protocols for firefighting in the vicinity of powerlines.

7 BUSHFIRE PREPAREDNESS ACTIONS

7.1 ASSESS FIRE DANGER AND NOTIFY PERSONNEL

The Chief Warden or delegate must undertake the following tasks daily, throughout the bushfire season:

- check for notice of Total Fire Ban in the relevant fire areas (Section 7.1.2);
- check the fire danger level for the site at 6am each day as per Section 7.1.2;
- daily monitor fire danger weather warnings and change in weather conditions on the Bureau of Meteorology (BoM) website over the next four days. Take note of forecasts for:
 - Fire Danger Rating;
 - increases in wind or temperature;
 - reductions in humidity;
 - significant changes to wind direction or speed;
 - potential for lightning; and
 - fires in the area.
- determine the fire preparedness works colour code by 6am each day (see Section 7.1.2 and Table 7-1);
- consider the merits of leaving early (Section 7.1.3) on days where the FBI is or is predicted to be greater than 50;
- notify personnel of relevant weather forecasts and direct the implementation of the applicable fire preparedness works colour code actions (as per Table 7-1);
- consistently monitor the fire danger levels and weather forecast on adverse bush fire weather days throughout the day as prescribed in Table 7-1 and Table 7-2;
- consistently monitor the following media for fire warnings and bushfire emergency alerts:
 - ABC local radio (ABC South East NSW 1602 kHz AM Monaro, ABC Riverina 97.9FM or 89.9FM in the Ravine) – note there is poor reception in Lobs Hole;
 - NSW RFS website and/or Fires Near Me App.
- notify personnel of any official emergency alert issued for the site (as required);
- direct initiation of response actions when an emergency warning is issued (Section 8.3); and
- when FDR is High or above, instigate communication with NPWS project officers, FCNSW and RFS on project activities being undertaken and how these relate to ongoing or predicted bushfire hazards in the locality.

7.1.1 ACCESSING FIRE DANGER RATING INFORMATION

The primary fire danger indicator to be employed on the project site is the Fire Behaviour Index (FBI). A secondary indicator is the Fire Danger Rating (FDR).

The FDR is considered a secondary fire danger indicator for the project site because the conditions on site can vary significantly from the surrounding Fire Areas due to altitude variations and other localised climatic effects on the project site. At other times, the localised FBI could be higher than the surrounding Fire Areas.

The forecast FBI and FDR for the next four days should be reviewed for planning purposes and is available from: <http://www.bom.gov.au/nsw/forecasts/fire-danger-ratings.shtml>.

7.1.1.1 Fire Behaviour Index (FBI)

The current FBI from the closest weather station can be obtained via the Fire Weather Observation Bulletin (Product code: IDZ20081) ([fireweatherbulletins.pdf](http://www.bom.gov.au/fireweatherbulletins.pdf) (bom.gov.au)) is a subscription-based service which provides text-based data of the current FBI and maximum FBI observed for the subject day, updated every ten minutes for all weather stations in NSW.

The nearest weather station to the project sites is Cabramurra. This is the preferred data source for FBI, however it is noted that the Lobs Hole area may experience slightly higher FBI than Cabramurra, due to the difference in elevation. The Chief Warden can obtain the necessary subscription from BOM Real-time Data Services at <http://reg.bom.gov.au/reguser/reguser.shtml>.

7.1.1.2 Total Fire Ban

The NSW RFS FDR and Total Fire Ban (TOBAN) declarations can be found at the following link:

- <https://www.rfs.nsw.gov.au/fire-information/fdr-and-tobans>

Exemption from TOBAN orders for General purpose Hot Works (such as welding, grinding or gas cutting or any activity that produces a spark or flame) and Fire Risk Works may be undertaken in the outdoors during TOBAN is covered schedule 6, services and utilities – constructions, essential repairs or maintenance, of the NSW Government Gazette.

7.1.2 DETERMINING FIRE PREPAREDNESS WORKS CODE

The fire preparedness code is determined by cross referencing the FBI and Total Fire Ban declaration (if in force) in Table 7-1 and Table 7-2.

The forecast FDR over the next four days should be considered as detailed in Section 7.1.1. Additional forecast weather conditions over the following three days should also be considered. Where significant increases in wind and/or temperature or decreases in humidity are forecast, the fire danger is likely to increase. Significant increases in fire danger for coming days should be considered for any works with ignition potential or where personnel will be working in remote and hazardous areas.

7.1.3 LEAVING EARLY

Leaving early is always the safest option above FBI 50 – Works Code Grey, on Extreme or Catastrophic fire danger days. Leaving early may mean staff stay offsite or schedule works earlier and that only critical personnel attend the works area (no contractors or visitors).

The Chief Warden or their delegate may direct onsite personnel to leave early and/or reschedule works under the following conditions:

- Above FBI 50 – Works Code Grey where Extreme or Catastrophic FDR is forecast by the BoM for the Southern Slopes Fire Area;
- staff are not physically or mentally prepared and not able to stay and shelter in place, if required;
- dry lightning storms coupled with hot weather is forecast;
- remote work areas are not defensible from bush or grassfire under the conditions forecast;

- RFS or another emergency services authority recommends vacating the area.

7.1.4 NIGHT SHIFT CONSIDERATIONS

No night shift work is proposed to be undertaken for the project.

7.2 BUSHFIRE PREPAREDNESS (CODE YELLOW, ORANGE, RED AND GREY)

Table 7-1 details the bushfire preparedness requirements for all project works within the bushfire danger period. Where Total Fire Ban (TOBAN) has been declared, refer to Section 7.3.

Note that Table 7-1 details a list of preparatory requirements that apply for working on days where there is an FBI of 1 to 23 (preparedness code Yellow and Orange). On days where the FBI is over 24 (preparedness code Red, Grey or Black) strict prohibitions on certain activities including hot works and fire risk works must be enforced in the indicated areas. In the event of an inconsistency between works colour code requirements detailed in Table 7-1, the higher colour code requirement prevails.

Project personnel will be trained in the safe and effective use of the fire safety equipment listed in Table 7-1 as detailed in Section 6.1.1.

Table 7-1: Fire preparedness in relation to FBI

FBI & Fire Danger Rating (as per Section 7.1.1)	Works Fire Preparedness Code	Fire Preparedness Requirements
Fire Behaviour Index 0-5 (No Fire Danger Rating) <ul style="list-style-type: none"> • Fire difficult to ignite and sustain. Fires generally unlikely to spread and likely to self-extinguish. • Potential for any spotting is very limited and likely <150 m • Fire control relatively simple Fire Behaviour Index 6-11 (No Fire Danger Rating) <ul style="list-style-type: none"> • Slow spreading fires, • Spotting is sporadic and limited to short-distances (up to 400 m) • Fire control mostly simple with sufficient resources and becoming more complex at higher intensities 	CODE YELLOW (FBI 11 or less)	The Chief Warden must ensure: <ul style="list-style-type: none"> • Site works must be in accordance with standard procedures, including compliance with Hot Works Permit conditions • Induction and briefings include ignition prevention and fire response actions • Fire Danger is assessed for the day in accordance with Section 7.1. This assessment shall include, but not be limited to, considering the forecast FDR for the coming four days in programming work and in setting any work limitations • Personnel are notified in accordance with Section 7.1 • Code Yellow work limitations are enforced, or higher code limitations are applied if deemed appropriate by the Chief Warden or delegate, considering forecast FDR for the coming four days • Category 1 preparedness requirements are implemented <hr/> Category 1 preparedness requirements: <ul style="list-style-type: none"> • Each vehicle, workplace centre or mechanical plant must have available for immediate use: <ul style="list-style-type: none"> – One 15L knapsack or equivalent¹ filled with water

¹ The term 'equivalent' equates to either a stored pressure water-style fire extinguisher of 9L minimum capacity, certified and approved to AS/NZS 1841.2 (and providing high pressure air for refilling is readily available from a mechanical unit working at the site), or a dry chemical powder extinguisher of at least 1.25kg capacity, certified and approved to AS/NZS 1841.5

FBI & Fire Danger Rating (as per Section 7.1.1)	Works Fire Preparedness Code	Fire Preparedness Requirements
		<ul style="list-style-type: none"> – At least one rake hoe in serviceable condition – A 2kg fire extinguisher • All vehicles and mechanical plant must: <ul style="list-style-type: none"> – Be fitted with firmly mounted fuel lines and tanks – Be clean of surplus oil and vegetation around surfaces heated by the exhaust or motor – Have electrical and exhaust systems in good order – Have fire blankets for each occupant where a risk assessment determines them necessary (e.g. a person working >30 minutes from a bushfire refuge or an area that does not provide secondary access/egress). <p>Code Yellow work limitations:</p> <ul style="list-style-type: none"> • None
* refer to Abbreviation and Definitions at start of this document		
<p>Fire Behaviour Index 12-23 (Moderate Fire Danger)</p> <ul style="list-style-type: none"> • Actively spreading fires • Low-moderate spotting frequency; isolated medium range spotting can occur (up to 2 km) • Fires generally becoming more complex and require more resources to control 	<p style="text-align: center;">CODE ORANGE</p> <p style="text-align: center;">(FBI 12-23)</p>	<p>The Chief Warden must ensure:</p> <ul style="list-style-type: none"> • Code Yellow preparedness requirements are implemented • The Chief Warden or delegate is to maintain a 'listening watch' for fire warnings (e.g. RFS 'Fires Near Me') and follow response requirement in Section 8.3 or changes to forecast weather as detailed in Section 7.1. • Chief Warden to reassess the FBI at 12:00pm (or before if weather conditions noticeably worsen) <ul style="list-style-type: none"> – If the FBI at 12:00pm remains below 23, fire risk work* and hot works* in hazardous areas* may continue. Hourly monitoring of the FBI will be undertaken during the works. If the FBI goes above 23 then implement Code Red requirements • Code Orange work limitations are enforced, or higher code limitations are applied if deemed appropriate by the Chief Warden or delegate, considering forecast FDR for the coming four days <hr/> <p>Category 2 preparedness requirements:</p> <ul style="list-style-type: none"> • A two-way radio (or mobile phone where reception is adequate) is present at the worksite and in contact with a base with phone reception • A mobile water unit (min. 400L capacity) is present at each work location with: <ul style="list-style-type: none"> – Tanks kept full – Pump fully fuelled – Minimum pump unit 2.2kW/3HP – Minimum 60m of hose – Fill and outlet hoses with 65mm Storz fittings – Nozzle capable of fog and jet stream – Must be maintained in a fully serviceable condition

FBI & Fire Danger Rating (as per Section 7.1.1)	Works Fire Preparedness Code	Fire Preparedness Requirements
		<ul style="list-style-type: none"> There should be two operators trained in the use of the mobile water unit equipment at each location (minimum Bushfire Awareness Training) and the procedure to put out fires A fire watch person will monitor fire risk work* and hot works* activities in hazardous areas*. The number of fire watchers will be appropriate to ensure adequate oversight of all fire risk works being undertaken in hazardous areas. The fire watcher's primary task will be observing the fire risk works in their area of responsibility. In the case of a towed mobile water unit, the towing vehicle must remain attached <p>Code Orange work limitations:</p> <ul style="list-style-type: none"> None
* refer to Abbreviation and Definitions at start of this document		
<p>Fire Behaviour Index 24-49 (High Fire Danger)</p> <ul style="list-style-type: none"> Rapidly spreading fires with potential for development into large burn areas within burning period. Short-range spotting is prevalent, with possibility of medium range and occasional long-range distance spotting (up to 4 km) Fire control is likely to be difficult and requires increased resourcing 	<p>CODE RED (FBI 24-49)</p>	<p>The Chief Warden must ensure:</p> <ul style="list-style-type: none"> Code Orange preparedness requirements are implemented Hourly monitoring of the FBI to be undertaken by the Chief Warden or delegate <ul style="list-style-type: none"> If monitoring shows escalation of the FBI into the middle to upper part of the range, then the Chief Warden or delegate shall consider the existing and forecast conditions in relation to the criteria for suspending works and leaving early in hazardous* and remote areas* (as per Section 7.1.3). Fire risk works* in hazardous areas* are conducted in accordance with the Fire Risk Assessment and Control Measures Form (Appendix B – Fire Risk Assessment and Control Measures (FRACM) Form) Haulage and other vehicle usage to only occur on formed tracks and access roads Consideration is given to leaving early (Section 7.1.3) if there is a fire in the region at emergency alert level (Section 8.3) Code Red work limitations are enforced, or higher code limitations are applied if deemed appropriate by the Chief Warden or delegate, considering forecast FDR for the coming four days <p>Code Red work limitations:</p> <ul style="list-style-type: none"> Fire risk works* and hot works* in hazardous areas* are suspended by 12:00 pm Haulage suspended within State Forests by 12:00 pm All works (including fire risk work and hot works) may continue in non-combustible areas*, however, safe egress should be communicated to staff. If a TOBAN is in place (see Section 7.1) then Table 7-2 applies.

FBI & Fire Danger Rating (as per Section 7.1.1)	Works Fire Preparedness Code	Fire Preparedness Requirements
Fire Behaviour Index 50-59 (Extreme Fire Danger) <ul style="list-style-type: none">Fires likely to quickly transition to crowningPossibility for fire behaviour to become erratic and plume drivenWind speed and direction likely to be erratic at timesHigh ember density in short and medium range with possible long distance spotting (up to 12 km)Control of developed fires is extremely difficult and unlikely until conditions ease.	CODE GREY (FBI 50+)	The Chief Warden must ensure: <ul style="list-style-type: none">Code Red preparedness requirements are implementedConsideration is given to leaving early (Section 7.1.3)Fire risk works* in non-combustible areas* are conducted in accordance with the Fire Risk Assessment and Control Measures Form (Appendix B – Fire Risk Assessment and Control Measures (FRACM) Form)Code Grey work limitations are enforced
Fire Behaviour Index ≥ 100 (Catastrophic Fire Danger) <ul style="list-style-type: none">Fires likely to quickly transition to crowningPossibility for fire behaviour to become erratic and plume drivenWind speed and direction likely to be erratic at timesHigh ember density in short and medium range with possible long distance spotting occurring 20-30 km ahead of the main fire frontFire control of developed fires is extremely difficult and unlikely until conditions ease		Code Grey work limitations: <ul style="list-style-type: none">All works in hazardous areas* are suspendedAll outdoors* hot works* are prohibited (except in accordance with the Total Fire Ban exemption permit – if obtained)

** refer to Abbreviation and Definitions at start of this document*

7.3 TOTAL FIRE BAN BUSHFIRE PREPAREDNESS (CODE BLACK)

When NSW RFS has declared a TOBAN in the Project's Fire Area, the fire preparedness requirements detailed in Table 7-2 below override those in Table 7-1 above.

Table 7-2 Total Fire Ban Preparedness Requirements

Total Fire Ban	Works Fire Preparedness Code	Fire Preparedness Requirements
TOTAL FIRE BAN (TOBAN)*	CODE BLACK	<p>In the event that a TOBAN is declared by NSW RFS the following preparedness requirements override the provisions detailed in Table 7-1.</p> <p>The Chief Warden must ensure:</p>

		<ul style="list-style-type: none"> The Code preparedness requirements from Table 7-1 will apply based on the forecast/current FBI for the site. Haulage and other vehicle usage can occur on formed tracks and access roads only Code Black work limitations override those prescribed in Table 7-1 <p>Code Black work limitations:</p> <ul style="list-style-type: none"> All Hot Works* and Fire Risk Works* may be undertaken following notice and approval by the nearest F+R NSW fire station and nearest NSW RFS District office, and in accordance with the Government Gazette Schedule Of Standard Exemptions to Total Fire Bans for TOBANs TOBAN rules will be added to prestart sheets and obtained off the NSW RFS Website: https://www.rfs.nsw.gov.au/fire-information/fdr-and-tobans/total-fire-ban-rules
* refer to Abbreviation and Definitions at start of this document		

7.3.1 TOBAN RULES EXEMPTIONS

A TOBAN means no fires out in the open. A Total Fire Ban helps limit the potential of fires developing. During a Total Fire Ban you cannot light, maintain, or use a fire in the open, or to carry out any activity in the open that causes, or is likely to cause, a fire.

General purpose Hot Works (such as welding, grinding or gas cutting or any activity that produces a spark or flame) and Fire Risk Works may be undertaken in the outdoors during TOBAN (Table 7-2) following notice and approval by the nearest FRNSW fire station, NSW RFS District office, and in accordance with the TOBAN exemption. Works covered under schedule 6, services and utilities – constructions, essential repairs or maintenance, of the NSW Government Gazette may continue without the additional requirement of continually seeking further TOBAN exemptions.

Additionally, the nearest FRNSW fire station and nearest NSW RFS District office is required to be notified immediately upon ceasing all Hot Works activities on any and all TOBAN days.

Hot Works must be authorised in writing by TransGrid Head of Maintenance Programs or Head of Infrastructure Delivery (under delegation from the EM, Works Delivery) if being undertaken outside premises.

Conditions and mitigation control measures for the TOBAN exemptions provided by NSW RFS are provided in Table 7-3 below.

Table 7-3: TOBAN Exemption Conditions

Mitigation Control Measures	
Adequate firefighting equipment immediately accessible	Adequate firefighting equipment must be immediately available to prevent the escape of any fire, spark, or incandescent material from the site of the exempted work/event.
Discussion of proposed work/event with NSW RFS	Prior to undertaking and immediately upon ceasing all Hot Works activities on any and all days of a Total Fire Ban the activities must be notified to the local NSW RFS Zone/District Manager or the Officer in Charge of the nearest Fire and Rescue NSW Fire Station, as additional conditions may be imposed, which may include a direction that the event be postponed. ⁴
Supplementary Conditions	

Mitigation Control Measures
Provision of minimum 9 litre dry chemical fire extinguisher (tested, tagged and in date), fire blanket and minimum 10 litre water container which is readily accessible and located within reach (within 5 metres) of all appliances being used, areas of work and any areas of preparation for the approved activity.
Staff training and supervision in the use of this firefighting equipment.
A spark arrestor to be fitted onto the outlet of any flues and air inlets of equipment being used.
All combustible materials must be removed for no less than 15 metres in all directions from the cooking appliance whilst in operation.
All fuels must be completely extinguished and allowed to sufficiently cool prior to being disposed of in a safe manner.
The area is checked (including rubbish receptacles, bins, etc.) at the completion of the activity to ensure no heated, smoldering or burning material remains.
On days where the Fire Danger Rating is predicted to be Extreme or Catastrophic, in consultation with the NSW RFS and or Fire + Rescue NSW, request may be made for all hot works activities (including cooking and baking) to be suspended.
Access to a reticulated water supply and provision of an operating fire hose and or hoses that will provide coverage to the entire site when the activities are being undertaken.
Areas are to be clear of all combustible materials for a minimum of 10 meters in all directions from the site.
Strict supervision of all activities to be undertaken for entire duration of works.
A fire spotter in place before, during and minimum 30 minutes after activities.
The area is checked post activities to ensure no heated, smoldering or burning material remains.
A copy of the TOBAN Exemption Approval is to be available for display to an authorised person (e.g., representative of a fire agency, police force, etc.) when requested. ⁴
On days of Catastrophic Fire Weather all hot works (Services & Utilities - Construction, Essential Repairs or Maintenance) with an open flame are suspended.

⁴ Hot Works at Elliott Way, and Lobs Hole work fronts would seek approval from the Snowy Valleys NSW RFS district office

7.3.2 TOBAN STANDARD EXEMPTIONS

A range of other activities may be exempt from Total Fire Bans, such as emergency infrastructure work, use of fireworks or ceremonial fires. The NSW RFS Commissioner is responsible for exemptions to Total Fire Bans. These exemptions are advertised in the NSW Government Gazette (<https://legislation.nsw.gov.au/#!/gazettes>) each time a Total Fire Ban is declared. Each declaration can be unique and so the gazette must be reviewed for the relevant exemptions, however, a list of standard exemptions of relevance to the project may include:

- Bitumen roadworks
- Fire lit, maintained, or used for the purpose of heating bitumen in tankers, sprayers, storage units, mobile asphalt plants, mobile asphalt pavers and pavement recycling machines for road repair and construction works provided that:

1. the fire is lit, maintained, or used in a manner which will prevent the escape of the fire, and
 2. adequate fire-fighting equipment is provided at the site of the fire to prevent the escape or spread of the fire.
- Building construction or demolition
 - Fire lit, maintained, or used by an authorised person in association with any cutting, welding, or grinding work for the purpose of the urgent and essential construction or demolition of a building provided that:
 1. the authority to undertake the fire is lit, maintained, or used in a manner which will prevent the escape of the fire, and Government Notices 603 NSW Government Gazette No 16 of 9 February 2018
 2. adequate fire-fighting equipment is provided at the site of the fire to prevent the escape or spread of the fire, and
 3. if the work is to be carried out above the normal ground or floor level - the area below the work free of all combustible material and the fire is prevented from falling to that area, and
 4. the person in charge of the building or demolition work:
 - a. if the land where the fire is to be lit is within a rural fire district - has notified the NSW Rural Fire Service Fire Control Centre for that district of the proposed fire, or
 - b. if the land where the display is to be held is within a fire district - has notified the officer in charge of the nearest Fire and Rescue NSW fire station of the proposed fire, and
 5. the person in charge of the building or demolition work complies with any direction or additional condition which may be imposed by the NSW Rural Fire Service or Fire and Rescue NSW, which may include a direction that the proposed fire not be lit.
 - Electric or gas barbecues
 1. An electric appliance (barbeque) maintained or used for the purpose of food preparation provided that:
 - a. the appliance is under the direct control of a responsible adult person who is present at all times while it is operating, and
 - b. no combustible material of any kind is allowed within 2 metres of the appliance while it is operating.
 2. Fire lit, maintained, or used for the purpose of food preparation on a gas appliance provided that:
 - a. the appliance is under the direct control of a responsible adult person who is present at all times while it is operating, and
 - b. no combustible material of any kind is allowed within 2 metres of the appliance while it is operating, and
 - c. a system of applying an adequate stream of water to the appliance and its surrounds is available for immediate and continuous use, and
 - d. if the appliance is on land on which a permanent private dwelling is located—the gas appliance is within 20 metres of that dwelling, and
 - e. if the appliance is not on land on which a permanent private dwelling is located, both the appliance and the site of the appliance have been approved by:
 - i. the National Parks and Wildlife Service in the case of land acquired or reserved under the National Parks and Wildlife Act 1974, or
 - ii. the Forestry Corporation of NSW in the case of land in a state forest, or

iii. the council for the area in which the land is located in any other case.

- Fire approved by Commissioner of the Rural Fire Service
- Fire lit, maintained, or used in accordance with a written approval (including any conditions to which the approval may be subject) of the Commissioner of the NSW Rural Fire Service.

The full list of standard exemptions can be viewed at the following web link:

https://gazette.legislation.nsw.gov.au/so/download.w3p?id=Gazette_2018_2018-16.pdf

8 BUSHFIRE EMERGENCY RESPONSE

8.1 FIRE AND INCIDENT EMERGENCY CONTROLLER

In the event of an emergency, the Chief Warden or their delegate will function initially as the Incident Controller (IC) until replaced by responding external fire authority IC. The replacement will occur on the arrival of the external fire authority IC and following a handover briefing.

The IC shall ensure the necessary parties are notified of an existing bushfire in accordance with Section 8.5. The information in Sections 8.6, 4.2, 4.3 and the nature of the existing bushfire threat should inform the Incident Action Plan and any decision to evacuate.

In the event of ignition on site the IC shall consider the deployment of trained personnel to provide a rapid response first attack (Section 8.2.1) if safe to do so.

8.2 FIRE FIGHTING PRECAUTIONS

8.2.1 RAPID RESPONSE FIRST ATTACK

Site personnel are not employed as firefighters and are not expected to combat bushfires on the site. However, in accordance with Section 6.1.1 relevant personnel will be provided with Bushfire Awareness Training and will be instructed on the safe and effective operation of the fire safety equipment that is detailed in Table 7-1. In the event of a fire ignition on site, these trained personnel will be capable of providing a rapid response to extinguish minor fires and to prevent escalation to bushfire. Personnel should only carry out this work if safe to do so and report any incidents in accordance with Section 8.3 and 8.4. The precautions of Section 8.2.2 and 8.2.3 should be observed where relevant.

8.2.2 FIREFIGHTING NEAR POWERLINES

As detailed in Section 6.4.2, firefighting in the vicinity of powerlines introduces additional hazards for electrocution and spark. While most UGL Project personnel will not be undertaking firefighting activities it is important to understand the risk factors associated with encountering fire in the vicinity of power lines. The following steps are necessary when in the vicinity of powerlines during fire events and when firefighting under powerlines:

- Do not directly attack fires in cleared areas beneath powerlines;
- Do not spray water from the ground or air on or near powerlines or insulators;
- Wait for fire to burn clear of the cleared areas beneath the powerlines before commencing a mop-up operation;
- At all times treat the powerline as live until clearance has been given by powerline company personnel onsite;
- At all times keep personnel and vehicles at a minimum of 25m clear of a fire burning under or within 25m of the powerlines;
- When working near or under live powerlines, approach no closer than 25m to the fire edge to conduct mop-up of grass fires;
- Mop-up may include the knockdown of low (less than 2m high) isolated flames, spots and/or smouldering logs which are not producing a convection column or heavy smoke plume. In such cases:
 - Never direct the hose stream into the powerline;

- Never direct the hose stream into a smoke plume that is near (less than 25m from reaching) powerlines. Keep stream no higher than a person's head height;
- Never direct the hose stream at a burning bush or tree (more than head height) in a powerline easement.
- Bushes or trees burning in powerline easement present a real threat of creating a flashover to earth from powerlines – KEEP AT LEAST 25m CLEAR.
- When crossing powerline easement, ensure there is adequate clearance (which will vary between 3m to 8m depending on the voltage of the line) between the highest point of the vehicle (including aerials) and powerlines, avoiding areas with tall vegetation under lines.

8.2.3 FIREFIGHTING NEAR SUBSTATIONS

Firefighting in the vicinity of a substation introduces additional hazards for electrocution and spark. While most UGL Project personnel will not be undertaking firefighting activities it is important to understand the risk factors associated with encountering fire in the vicinity of substations. The following steps are necessary when in the vicinity of Substations during fire events;

- At all times treat the substation as live until clearance has been given by substation company personnel onsite;
- Do not spray water from the ground or air on or near a substation;
- At all times keep personnel and vehicles at a minimum of 100 m clear of a fire burning at a substation;
- Be alert to the risk of transformer explosions, smoke hazards and oil releases. Stay upwind and consider initial downwind evacuation for at least 300 m; and
- Monitor for oil runoff; direct it away from catch basins or surface waters.

8.3 EMERGENCY ALERT ISSUED

The Chief Warden should oversee the steps detailed in Figure 8-1 in the event of:

- A formal bushfire emergency alert being issued by the NSW Rural Fire Service;

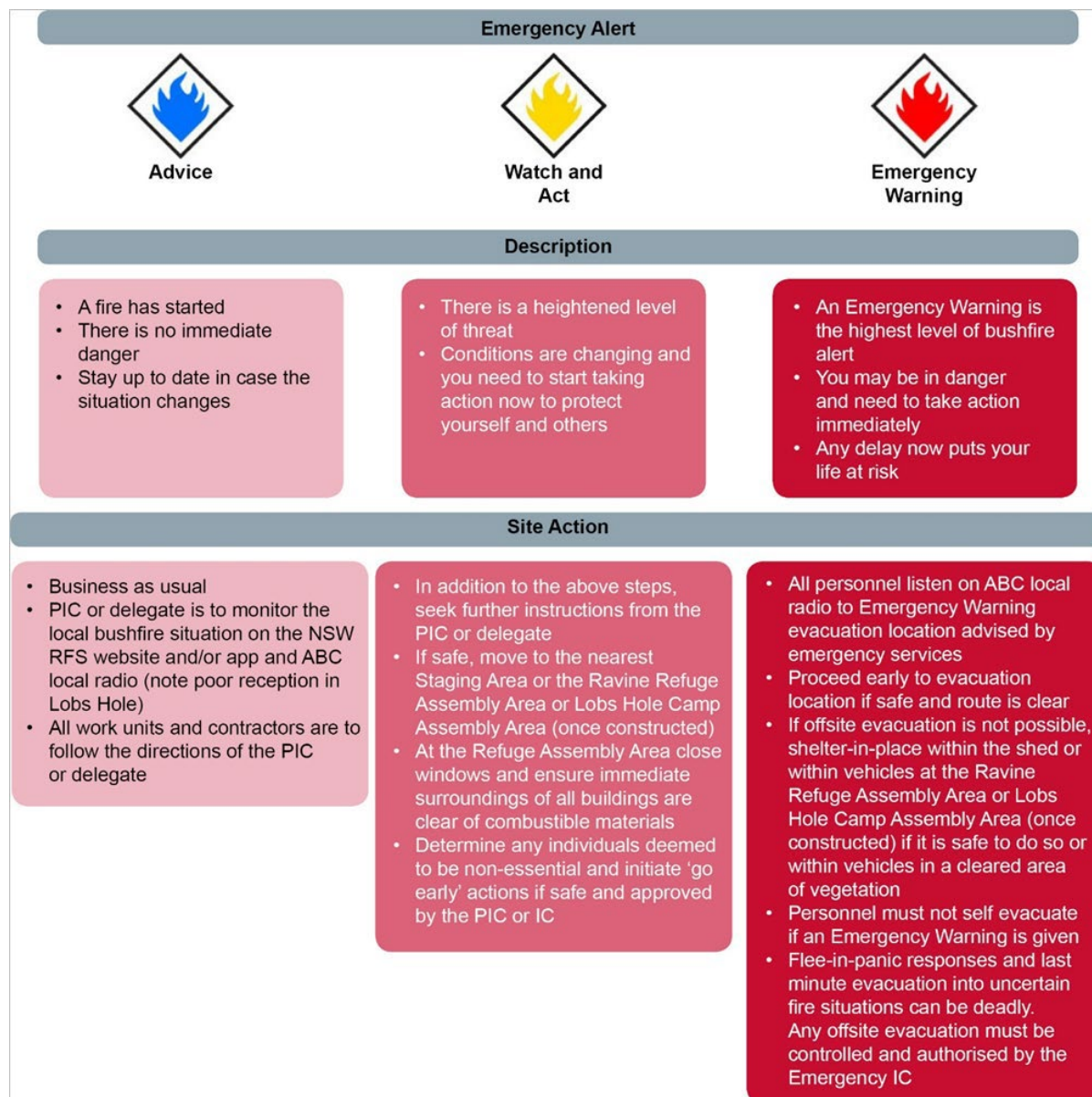


Figure 8-1 Emergency Alert Response Actions

8.4 SMOKE OR FIRE PRESENT

Figure 8-2 breaks down the different stages of action in the event of fire or smoke. Relevant contact details are shown in Section 8.5 below.

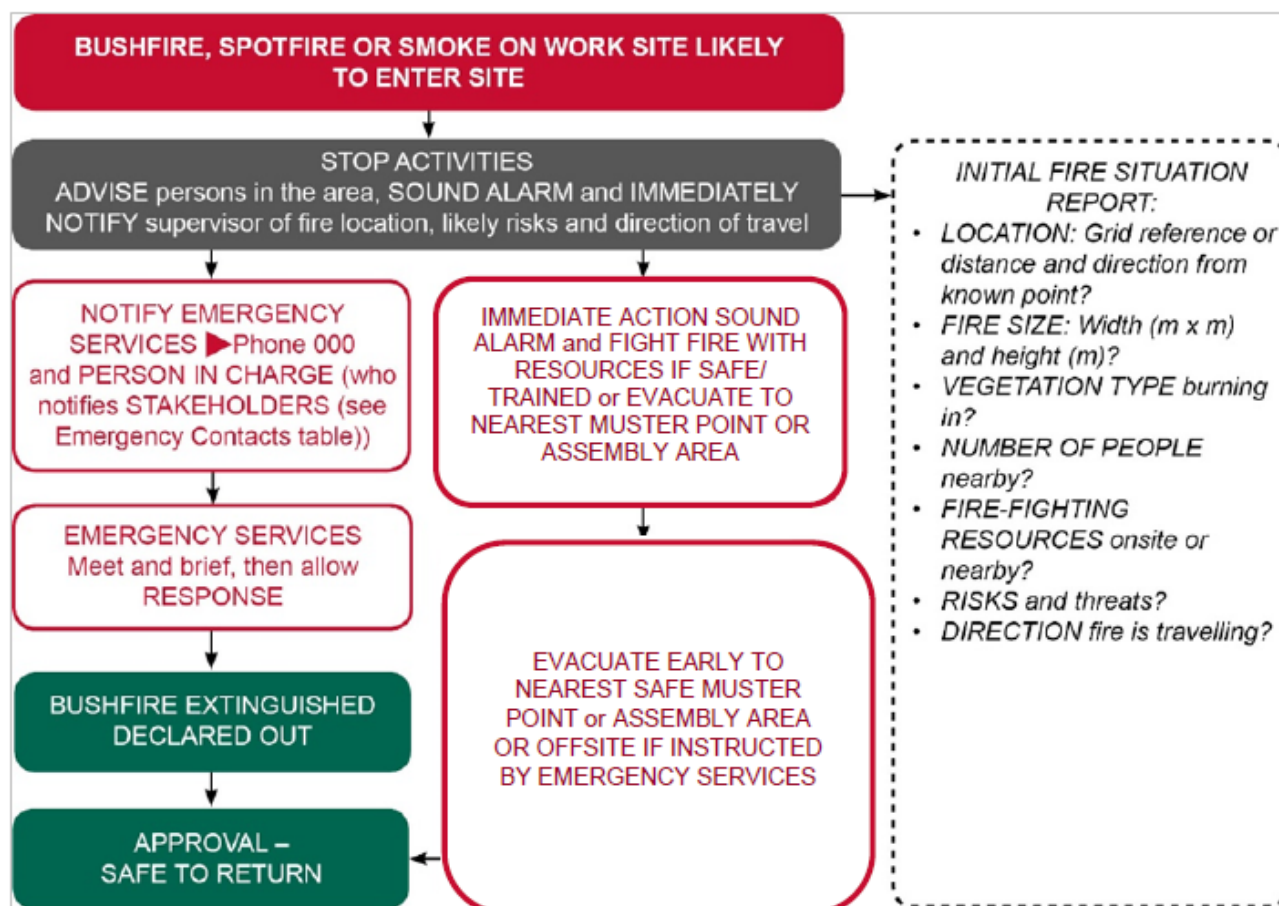


Figure 8-2 Fire Reporting Procedures and Actions

8.5 EMERGENCY CONTACT DETAILS

Table 8-1 presents the emergency contacts and stakeholders within the project vicinity.

Table 8-1 Emergency and Stakeholder Contact Details

Emergency Contacts	
IN AN EMERGENCY and FOR ALL FIRES: DIAL 000 (TRIPLE ZERO) Secondary Emergency Call from Mobiles: Dial 112	
DO NOT CALL 000 FOR INFORMATION OR ADVICE. CALLING 000 UNNECESSARILY MAY PUT OTHERS WHO ARE IN A GENUINE EMERGENCY SITUATION AT RISK.	
All emergencies including bushfires	Dial 000
NSW RFS – current fire information	https://www.rfs.nsw.gov.au/fire-information/fires-near-me
NSW RFS Bush Fire Information Line	1800 NSW RFS (1800 679 737)
ABC Local Radio ¹ (¹ Poor reception in Lobs Hole)	ABC South East NSW 1602 kHz AM Monaro ABC Riverina 97.9FM
STAKEHOLDERS (TO BE NOTIFIED IN THE EVENT OF A FIRE AFTER 000 HAS BEEN CALLED)	
Snowy Hydro Snowy Mountains Control Centre	02 6453 2777
NPWS Duty Officer After Hours Emergency	02 6450 5550
NPWS After Hours Emergency Call Centre	1800 629 104
NSW RFS Riverina Highlands Operations Centre (primary contact)	02 6981 4222
NSW RFS Riverina Highlands Duty Officer (24 hours)	02 6981 4229
NSW RFS Snowy Monaro Operations Centre (backup only, if Riverina office not available)	02 6455 0455
NSW RFS Snowy Monaro Duty Officer (24 hours – backup only)	1300 722 164
FCNSW Tumut Office	02 6947 3911
TransGrid (emergencies)	1800 027 253
OTHER INFORMATION (NON-EMERGENCY)	
NSW Police Talbingo Station (not 24 hours)	02 6949 5244
NSW Police Tumut Station (not 24 hours)	02 6947 7199
NSW Police Adaminaby (not 24 hours)	02 6454 2244
NSW Ambulance	131 233
State Emergency Service	132 500
UHF Radio Communication – UHF CB Bands	UHF Ch 12 and UHF Ch 20 – preferred RFS fireground UHF Ch 05 – Big Talbingo Mountain Emergency Repeater UHF Ch 02 – Mt Youngal UHF Transmitter

8.6 EVACUATION RESPONSIBILITIES

The trigger for evacuation of site will be determined by the nominated UGL Chief Warden or their delegate in collaboration with Future Generation and emergency service personnel. An interface management guide has been created by UGL to establish process requirements for managing the various interfaces between FGJV and UGL associated with the Project at the execution stage. Site evacuation responsibilities will be determined prior to site establishment, with roles and responsibilities clearly communicated to all personnel during site induction and at toolboxes. Staff roles and responsibilities are outlined in Table 8-1.

Table 8-2 UGL Personnel Evacuation Responsibilities

Evacuation Responsibility	Contact
Chief Warden	Darrell Van Bruchem – 0447 307 244
Emergency Evacuation Coordinator	Ian Rembridge – 0466 517 794
Project Manager	Trevor Noble – 0413 027 480
First Aid	Ian Rembridge – 0466 517 794
HSE Manager	Anthony Richards – 0466 471 796
Safety Advisor	Ian Rembridge – 0466 517 794
Environmental Advisor	Kim Lembke – 0499 892 216

8.7 WHERE TO GO – MANAGED EVACUATION

Evacuation offsite will only be conducted under instruction from the Chief Warden or Emergency Services. In a bushfire emergency, the Project Team will evacuate from the tower site work fronts to an Emergency Assembly Area. From there, the Project Team will then evacuate to nearby towns depending on advice/as directed by FGJV Emergency Coordinators and/or imminent threat direction.

If offsite evacuation is not possible or safe, relocation to a refuge building, (e.g. at Lobs Hole Accommodation Camp) or shelter in-place should be instructed, depending on the situation and the safest options available.

Appendix A – Bushfire Evacuation Plan details assembly and evacuation instructions and site maps for the project work areas.

9 COMPLIANCE MANAGEMENT

The Emergency Committee should undertake the following monitoring activities on a monthly basis, throughout the bushfire season:

- Asses the APZs to ensure compliance with the requirements detailed in Section 5.1;
- Confirm with the relevant personnel that the FBI monitoring procedures are being undertaken and are effective;
- Confirm that the bushfire preparedness processes (as per Table 7-1) are being followed;
- Ensure the relevant personnel have received Bushfire Awareness Training (as per section 6.1.1); and implement corrective action where necessary to maintain compliance with this plan
- Weekly environmental inspections of the project in accordance with Section 8 of the EMS.

10 ENVIRONMENTAL MITIGATION AND MANAGEMENT MEASURES

Specific mitigation measures to address impacts on bushfire response management are outlined in Table 10-1.

Table 10-1 Mitigation Measures for Bushfire Response Management for the Project

ID	Measure / Requirement	Resources needed	When to implement	Responsibility	Reference
BMM1	<p>The following lightning protection measures will be included in the detailed design:</p> <ul style="list-style-type: none"> Each structure will be equipped with earthing fixtures Each transmission line will have two earthing lines at the top of each structure to provide protection to the conductors from lightning strike Lightning masts will be installed at the substation 		Prior to construction	Design Team	HAZ2
BMM2	<p>A Bushfire Plan will be prepared for the Project.</p> <p>The plan will include responsibilities associated with and details of:</p> <ul style="list-style-type: none"> Site specific hazards and risks for the Project area Procedures to maintain bushfire awareness Bushfire mitigation measures Fire preparedness actions including: <ul style="list-style-type: none"> Evacuation triggers Evacuation routes Mustering points Neighborhood safer places and refuges of last resort <p>Instructions for sheltering in-vehicle if there are no other options.</p>	This plan	Prior to construction	<p>Senior Environmental Advisor</p> <p>Environmental Consultant</p> <p>Safety Advisor</p>	HAZ3
BMM3	A minimum of 40m vegetation clearance will be maintained between chemical storage points and woody vegetation at all times during construction.	Environmental inspection records	During construction	Site Environmental Advisor	HAZ4

ID	Measure / Requirement	Resources needed	When to implement	Responsibility	Reference
BMM4	A minimum of 20m vegetation clearance will be maintained between compound buildings and vegetation at all times during construction.	Environmental inspection records	During construction	Site Environmental Advisor	HAZ4
BMM5	<p>Firefighting equipment will be maintained at and/or accessible to all active construction sites during the declared bushfire danger season, and site personnel trained in its use. Equipment will be appropriate to the activities being conducted and the fire danger at the time of works, but as a minimum must include TransGrid Prescribed Fire Safety Equipment.</p> <ul style="list-style-type: none"> ○ 4WD vehicle with towable water unit, pump, and hoses ○ Extinguishers ○ Hand tools (e.g., rakes, shovels). 	Equipment register and maintenance records	During bushfire season	Site Environmental Advisor Site Supervisor Safety Advisor	HAZ4
BMM6	Vegetation cleared during works will be removed or processed to prevent bushfire fuel accumulation.	Environmental inspection records	During construction	Site Environmental Advisor	HAZ4
BMM7	All chemicals or other hazardous substances will be stored in a bunded area and away from any natural drainage lines. The capacity of the bunded area will be at least 130% of the largest chemical volume contained within the bunded area. The location of the bunded enclosure/s will be shown on Site Plans.	Environmental inspection records	During construction	Site Environmental Advisor Site Supervisor Safety Advisor	HAZ5
BMM8	The storage, handling and use of dangerous goods and hazardous substances will be carried out in accordance with the WHS Act and Regulations, the <i>Storage and Handling of Dangerous Goods Code of Practice</i> (WorkCover NSW, 2005) and relevant Australian Standards.	Environmental inspection records	During construction	Site Environmental Advisor Site Supervisor Safety Advisor	HAZ5
BMM9	Regular inspections and maintenance of bushfire	Environmental inspection	During construction	Site Environmental	HAZ6

ID	Measure / Requirement	Resources needed	When to implement	Responsibility	Reference
	mitigation measures, including vegetation clearances and APZs, will be undertaken during the life of the Project.	records		Advisor Site Supervisor	
BMM10	Access tracks will be maintained to facilitate ongoing access to transmission structures for maintenance.	Environmental inspection records	During construction and operation	Site Supervisor	HAZ6
BMM11	Hot work (activities involving high temperatures) and fire risk work (activities involving heat or with the potential to generate sparks) will be managed under TransGrid procedures	Hot work permits	During construction	Project Engineer Site Supervisor Safety Advisor	HAZ7
BMM12	All facilities, containers, storage sheds, vehicles and plant equipment will be fitted with a serviced fire extinguisher (relevant to works or area), which will be inspected and tagged every 6 months by a suitability qualified person.	Equipment maintenance records	During construction	Safety Advisor Site Supervisor	This document
BMM13	Smoking will only be permitted in designated areas and in KNP as approved by NPWS. These shall be clearly marked and communicated to site personnel.	Delineation signage	During construction	Site Supervisor Safety Advisor	This document
BMM14	Ensure construction lay down areas and construction sites are maintained in a tidy and neat condition to reduce the risk of fire hazards.	Environmental inspection records	During construction	Site Environmental Advisor Site Supervisor	This document
BMM15	Vehicular access to the Project will be via designated road access points only, to reduce the risk of exhausts causing grassfires.		During construction	Site Environmental Advisor	This document
BMM16	All flammable materials will be kept in a segregated area and stored in accordance with SDS/AS1940. Dangerous Goods licence (if applicable) and appropriate storage/separation guidelines.	SDS register	During construction	Site Environmental Advisor Safety Advisor	This document
BMM17	Hot works will only be performed on a Total Fire Ban day with an	Hot work permit	During construction	Site Environmental	This document

ID	Measure / Requirement	Resources needed	When to implement	Responsibility	Reference
	approved exception from Local Fire Service, with a hot work permit in place and to the UGL Work Standard for Hot Works; work considered high risk hot works will not be undertaken on a Total Fire Ban day. No hot work will be undertaken on a day rated Catastrophic.			Advisor Site Supervisor Safety Advisor	
BMM18	No open fires shall be permitted on site at any time. Formally report all fire incidents to TransGrid.		During construction	Site Environmental Advisor Safety Advisor	This document

11 REFERENCES

- NSW Rural Fire Service (2019). Planning for Bush Fire Protection – A guide for councils, planners, fire authorities and developers. NSW RFS, Sydney;
- NSW Department of Planning and Environment (2011). Hazardous Industry Planning Advisory Paper No.1. 'Emergency Planning'. NSW DPE, Sydney;
- NSW Parks and Wildlife Group (2008). Kosciuszko National Park Fire Management Strategy 2008–2013. NPWS, Sydney Department of Environment and Climate Change;
- NSW Rural Fire Service (2014). Development Planning – A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan. NSW RFS, Sydney;
- Jacobs (2020). Snowy 2.0 Transmission Connection Project Environmental Impact Statement – Appendix F, Bushfire Assessment;
- TransGrid (2022). Snowy 2.0 Transmission Connection Project Amendment Report;
- Country Fire Authority (2021). Staying safe in the car, < <https://www.cfa.vic.gov.au/plan-prepare/before-and-during-a-fire/leave-early/staying-safe-in-the-car>>
- UGL (2022). Snowy Connection Emergency Plan, Maragle 330kV Switching Station and 330kV Transmission Line Connections, Document No. 3200-0645-PLN-026-EP;

12 APPENDICIES

12.1 APPENDIX A – BUSHFIRE EVACUATION PLAN

The Chief Warden (or their delegate) shall coordinate a managed evacuation in consultation with the relevant Emergency Services Agency. Personnel should not self-evacuate. Options for offsite evacuation include but are not limited to:

- A Neighbourhood Safer Place (NSP) for the work front being evacuated (see Section 4.4);
- another low fire risk area; or
- an evacuation centre (if activated).

In a declared emergency, evacuation will be dependent on whether the project team are located in the project area East (Eastern Transmission Line) or the project area west (Western Transmission Line).

Project Area West:

For Project Area West, which includes the **Western Transmission Line** and **Switchyard**, the project team will muster at the closest tower structure. From here, the project team will evacuate to the UGL Switch Yard Emergency Assembly Area.

At the UGL Switch Yard Emergency Assembly Area, a decision will be made to shelter in place or evacuate off-site. There are shelter in place buildings (when available) if the decision is made to stay. If off-site evacuation is required, the project team will then evacuate West or South along Elliott Way depending on the imminent threat direction and advice/direction given by emergency services, and/or the Emergency Evacuation Coordinator or their delegate. The evacuation routes are as follows:

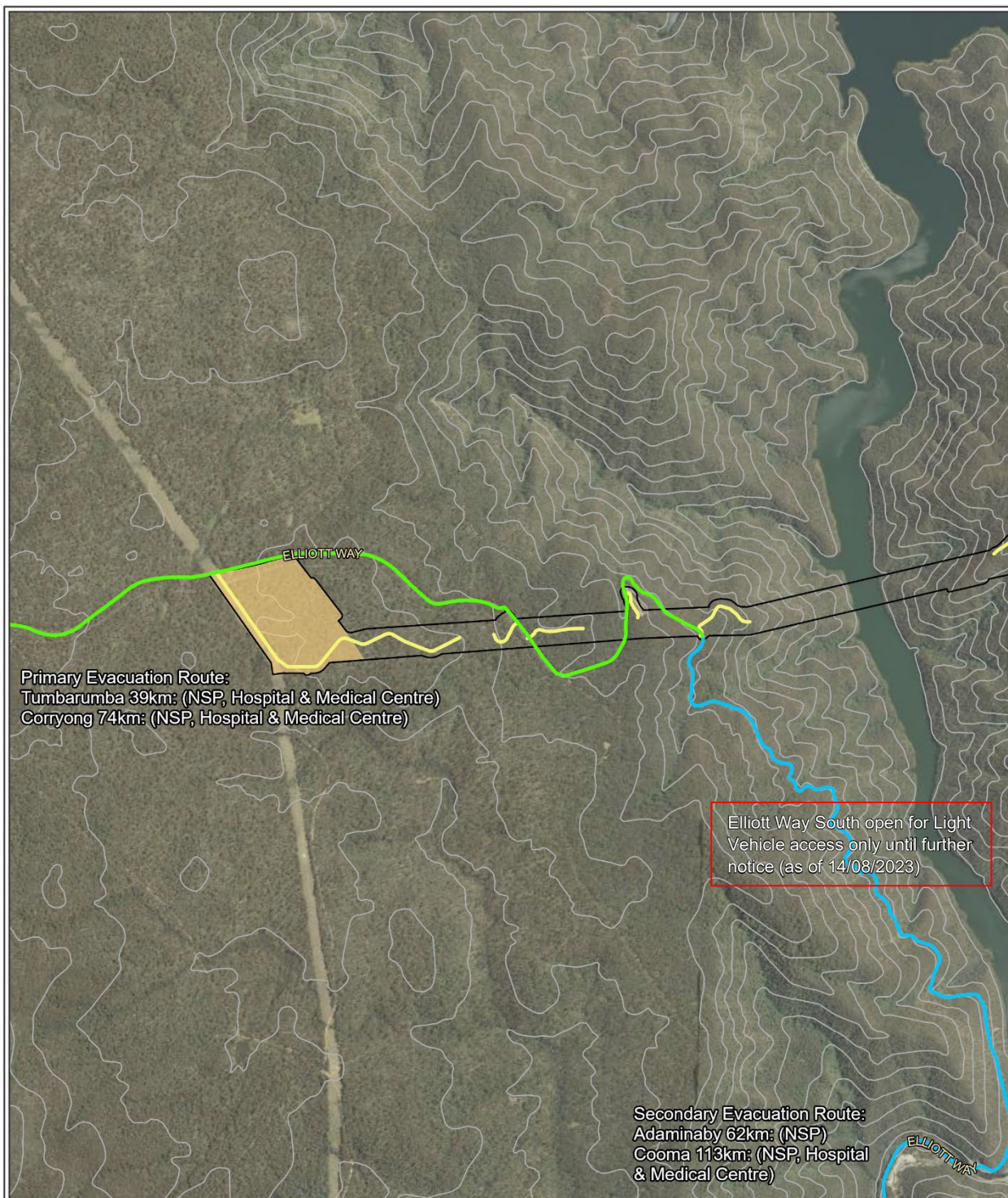
- The primary evacuation route is travelling west along Elliott Way to Tumbarumba (39 km via road)
 - The nearest NSP following the primary evacuation route is located in Tumbarumba
 - Alternatively, the primary evacuation route provides access to Corryong (74 km via road)
- The secondary evacuation route is travelling south along Elliott Way to Cabramurra (27 km via road)
 - Alternatively, the secondary evacuation route provides access to Adaminaby (62 km via road) and Cooma (113 km via road)

Note: Elliott Way south toward Cabramurra is open for light vehicle use only (unavailable for heavy vehicle use as of 14/08/2023 due to construction works following a landslip between Link Road Gate and Sue City Gate.

Elliott Way East towards Tumbarumba remains open for both light and heavy vehicles

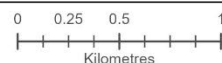
The location of the UGL Switching Yard Assembly Area can be found below:

Assembly Area	Location
UGL Switching Yard Assembly Area (Lat 35°47'40.42"S, Long 148°19'2.33"E)	At the Switching Yard in Bago State Forest, near where the existing TL64 line crosses Elliott Way Rd. About 450m off the road.



Western Transmission Line and Switching Station Emergency Evacuation

- Project Area
- Switch Yard Emergency Assembly Area
- Infrastructure access tracks
- Primary evacuation route
- Secondary evacuation route
- Contours (50m)



Datum/Projection:
 GDA2020 MGA Zone 55
 Project: 22SYD4001-SK
 Date: 8/14/2023



eco
logical
 AUSTRALIA
 A TETRA TECH COMPANY

Project Area East:

For Project Area East, which includes the **Eastern Transmission Line**, the project team will muster at the closest tower structure. From here, the project team will evacuate to the UGL Lobs Hole Emergency Assembly Area.

From there, if further evacuation is required, the Project Team will make contact with FGJV and make a decision to relocate to the Lobs Hole Accommodation Camp Refuge Building or to evacuation off-site, either with FGJV or to evacuate the UGL project team separately.

If a decision will be made to shelter in place at the UGL Lobs Hole Emergency Assembly Area, there are shelter in place buildings (when available).

The UGL interface management plan will communicate what actions are required from FGJV and UGL in an evacuation situation.

If a decision is made to relocate to the Lobs Hole Accommodation Camp Refuge Building, the UGL project team will follow the advice/direction of the FGJV Emergency Coordinators.

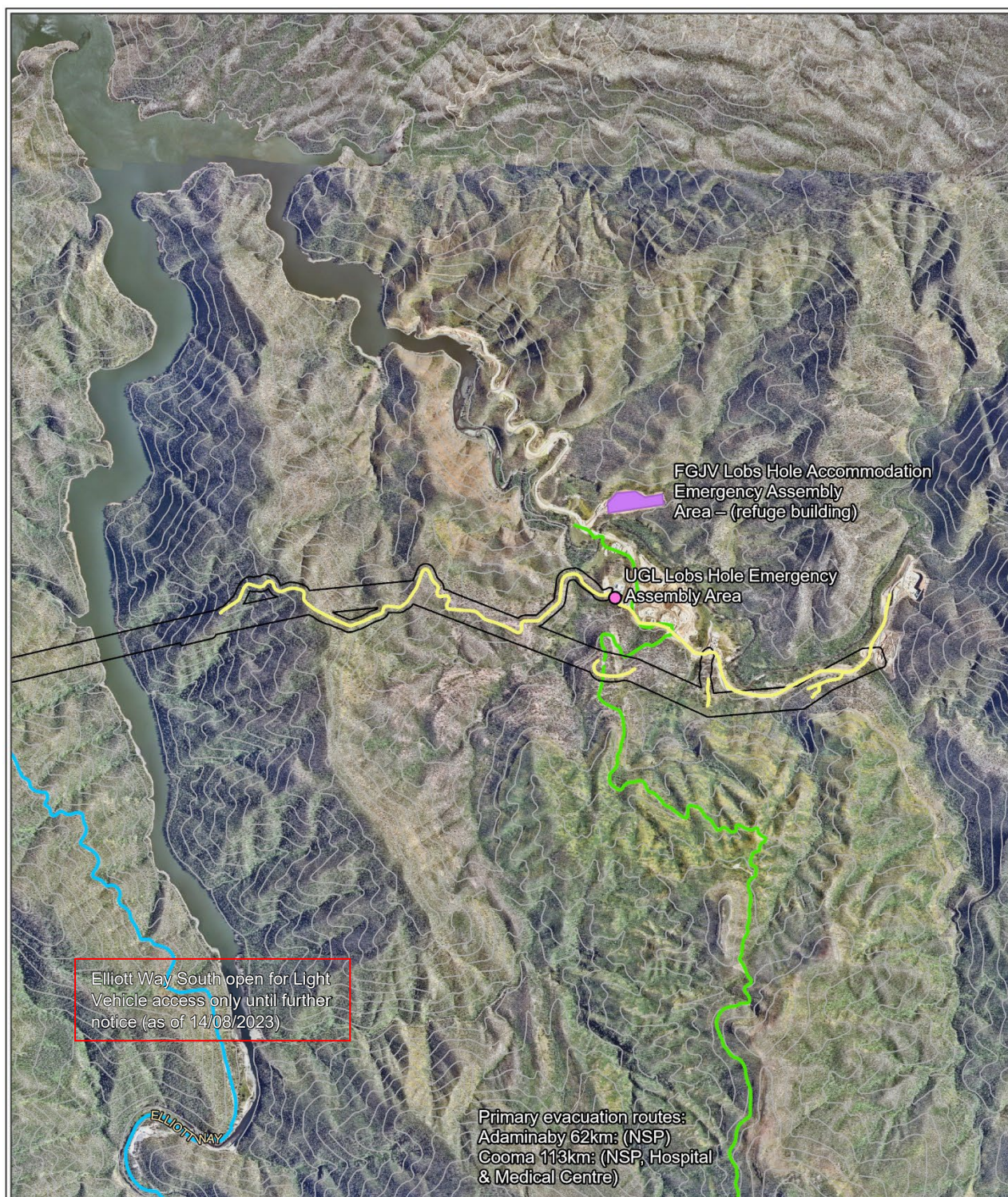
If a decision is made to evacuate with FGJV, the UGL project team will follow the advice/direction of the FGJV Emergency Coordinators.

If a decision is made to evacuate as the UGL project team, separate from FGJV, the UGL project team will then evacuate North or South along Lobs Hole Ravine Road depending on the imminent threat direction and advice/direction given by emergency services, and/or the Emergency Evacuation Coordinator or their delegate. The evacuation routes are as follows:

- The primary evacuation route is travelling south along Lobs Hole Ravine Road, the nearest town is Cabramurra (27 km via road)
 - Alternatively, the secondary evacuation route provides access to Adaminaby (62 km via road) and Cooma (113 km via road). A hospital and medical centre is located in Cooma
- The secondary evacuation route is travelling north along Lobs Hole Ravine Road to Talbingo (45.2 km via road)
 - If further evacuation is required, Tumut is located 43 km North of Talbingo via road (a total of 88 km from assembly area)

The location of the UGL Lobs Hole Assembly area and the nearby FGJV assembly areas should UGL make the decision to evacuate the Project Area East team with FGJV, can be found below:

Assembly Area	Location
UGL Lobs Hole Assembly Area (Lat 35°47'19.72"S, Long 148°23'38.60"E)	It is 700 m south of the Yarrangobilly River Crossing and 15.3 km North along Lobs Hole Ravine Road from the Link Road Junction.
FGJV Lobs Hole Accommodation Camp Assembly Area and Refuge Building (Lat 35°46'57.00"S, Long 148°23'41.00"E)	1 km north of the UGL Lobs Hole Assembly Area. It is within Lobs Hole AccommodationCamp, on the northern side of Yarrangobilly River, 400m north of Yarrangobilly River Crossing and 16.4km north along Lobs Hole Ravine Road from the Link Road junction.



Eastern Transmission Line Emergency Evacuation

- Project Area
- Infrastructure access tracks
- Primary evacuation route
- Secondary evacuation route
- Contours (50m)

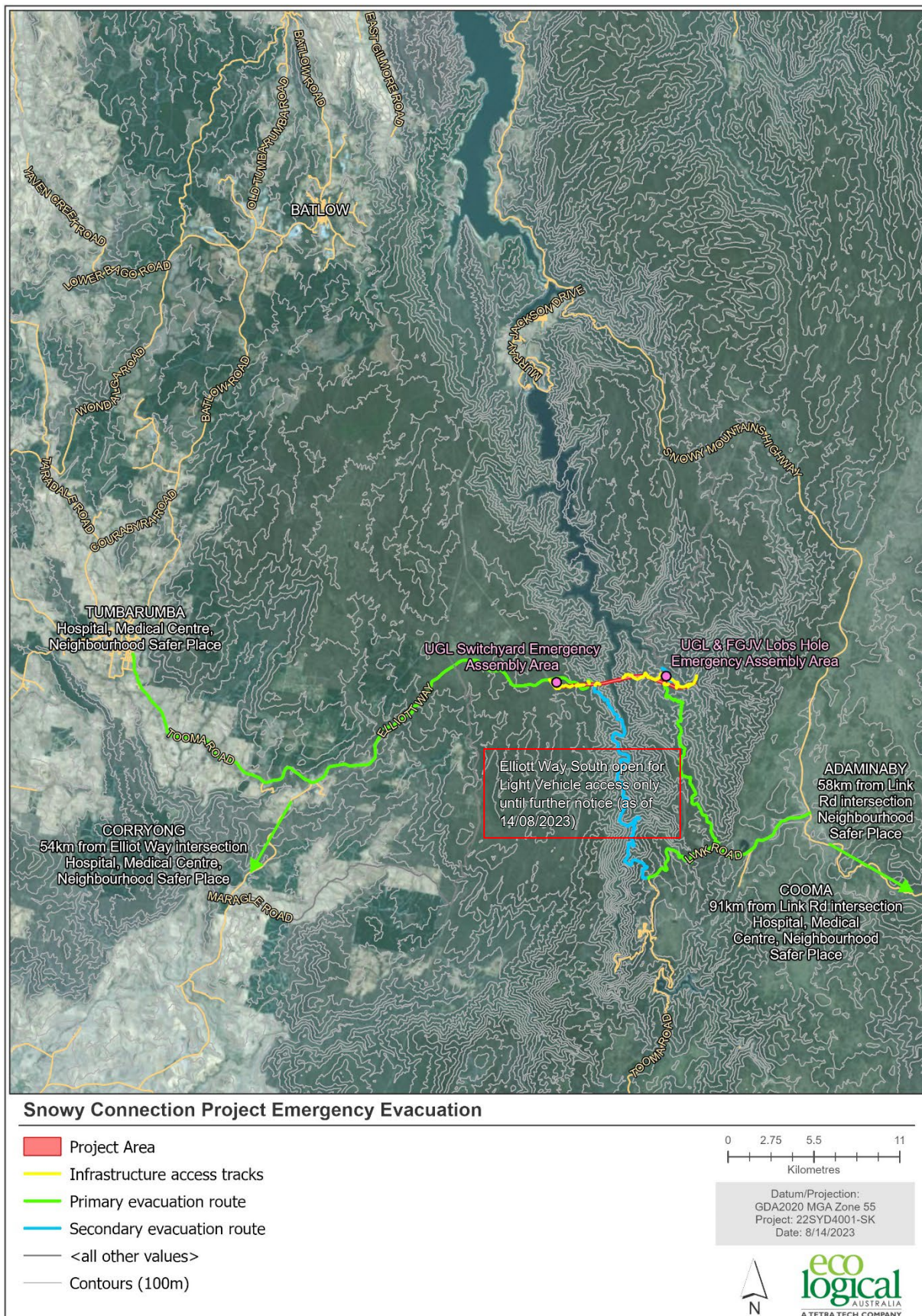


Datum/Projection:
GDA2020 MGA Zone 55
Project: 22SYD4001-SK
Date: 8/14/2023



Evacuation from Assembly Areas:

If a decision is made to evacuate away beyond the emergency assembly areas, the map below provides possible routes and the facilities available in the nearby towns:



12.2 APPENDIX B – FIRE RISK ASSESSMENT AND CONTROL MEASURES (FRACM) FORM

Fire Risk Assessment and Control Measures (FRACM) Form

Use / directions

This form is required for all Fire Risk activities in a Hazardous Area or within the Declared Bushfire Danger Period.

The duration of a FRACM cannot exceed a period of one (1) working day.

Please refer to Hot Work and Fire Risk Work procedure.

Section A: Details of activity:

Location/Line/Span	Date	Time to
Description of work		
Is the work occurring during the declared bushfire danger period?	Yes <input type="checkbox"/> (Continue)	No <input type="checkbox"/> (Go to Section C)

Section B: TOBAN Check:

Has a Total Fire Ban been declared?	Yes <input type="checkbox"/> (Continue)	No <input type="checkbox"/> (Go to Section C)
Is the Fire Danger Rating Catastrophic?	Yes <input type="checkbox"/> (Continue)	No <input type="checkbox"/> (Go to Section C)
Does the work involve the following activities:	Yes <input type="checkbox"/> Approval required by GM, Maintenance or GM, Infrastructure Delivery Confirmed <input type="checkbox"/> (Continue)	
<ul style="list-style-type: none"> Steel tracked mobile plant or mobile plant used for excavation, or Slashing/Mulching 		

Section C: TOBAN requirements:

All Fire Risk Work	Conditions
Proceed to Section D once confirmed	Ensure appropriate controls are in place as per Section D of procedure. Confirmed <input type="checkbox"/>
	Fire Watch Observer has been appointed ¹ (refer to Section 5.1.3 of the Hot Work and Fire Risk Work procedure for specific requirements) Confirmed <input type="checkbox"/> No <input type="checkbox"/>

Section D: Declared Bushfire Danger Rating and Mandatory controls:

Declared Bushfire Danger rating (if applicable)			
Moderate	High	Extreme	Catastrophic
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prescribed Fire Safety Equipment (PFSE): Rake-hoe or shovel AND 16L water filled knapsack or 0.9kg dry chemical extinguisher or 9kg water extinguisher	Prescribed Fire Safety Equipment (PFSE) AND Fire Watch Observer ¹ AND Final Fire Check	PFSE + Fire Watch Observer ¹ + Final Fire Check + Fire Trailer or vehicle mounted water tank (400L) ² Note: Catastrophic rating has additional approval requirements for: Steel tracked plant, Mobile plant used for excavation and Slashing/mulching.	

¹Required if working in a *hazardous area* unless working alone or traversing vehicles/mobile plant.

²Required if working in a *hazardous area* unless working alone.

Approved By: Adam Clappett | Issue Date: 12/09/2022 | TRIM No.: D2015/06078 | Revision No.: 8
1 | Fire Risk Assessment and Control Measures Form



Section E: Control measure confirmation:					
Nominated Controls	Yes	N/A	Nominated Controls	Yes	N/A
Confirm all mandatory controls are available and in place	<input type="checkbox"/>	Must be Yes	Equipment fitted with muffler &/or spark arrestor	<input type="checkbox"/>	<input type="checkbox"/>
Machinery free from combustible debris	<input type="checkbox"/>	<input type="checkbox"/>	Firefighting equipment laid out ready for use	<input type="checkbox"/>	<input type="checkbox"/>
Fire Trailer	<input type="checkbox"/>	<input type="checkbox"/>	Available exit routes have been identified & all staff are aware of their location	<input type="checkbox"/>	<input type="checkbox"/>
Additional controls implemented:					

Section F: Required Sign-offs by Authorised Officer				
Confirmation Prior to works commencing				
Control	Initials	Time	Signature	
All controls have been implemented				
Fire Watch Observer appointed, if required				
All staff working on permit understand and accept controls/conditions.				
Revalidation (at least once per permit period if > 2 hours)				
Control	Weather conditions and other hazards	Initials	Time	Signature
Conditions monitored and permit revaluated				
Conditions monitored and permit revaluated				
Final check and sign-off				
Control	Initials	Time	Signature	
Final fire check completed (Mandatory one hour final fire check is required if a Fire Watch Observer has been appointed)				

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12.3 APPENDIX C – HOT WORK AND FIRE RISK WORK PROCEDURE

Corporate-wide Procedure

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Hot Work and Fire Risk Work

Summary					
The purpose of this procedure is to identify and control the risks associated with Hot Work and Fire Risk Work conducted by Transgrid employees and contractors.					
Revision no:	15	TRIM No:	D2012/04610	Approval/ Review Date:	13 March 2023
Business function:	Health, Safety & Environment			Document type:	Corporate-wide Procedure
Lumea circulation:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Process owner:	GM, Health, Safety and Environment				
Author:	Luke Fania, Environment Manager				
Reviewers:	Megan Calvert, HSE Systems Manager Kathryn Pate, Environment Business Partner Nicol Joubert, Senior HSE Manager David Donehue, Senior Environment and Sustainability Manager Joel McMurtrie, Acting GM of Health, Safety and Environment				
Approver:	Jane Sherlock, Executive General Manager, People, Culture and Safety				

A printed copy of this document may not be the current version. Please refer to the Wire to verify the current version.

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1. Purpose

The purpose of this procedure is to identify and control the risks associated with Hot Work and Fire Risk Work conducted by Transgrid employees and contractors. This procedure also identifies Transgrid's obligations during a Total Fire Ban declared by the NSW Rural Fire Service, ACT Emergency Services Agency or the Victorian Country Fire Authority.

2. Scope

This procedure applies to all Transgrid staff and contractors undertaking Hot Work and Fire Risk Work.

3. Definitions

Term	Definition
Authorised Officer	A person who has been assessed as competent to assess Hot Work and Fire Risk Work and compile and issue a Hot Work permit or Fire Risk Assessment and Control Measures (FRACM) form.
CFA	Victorian Country Fire Authority
Combustible Material	Material that can maintain combustion with the addition of an external heat or ignition source, e.g. timber or linings present within wall and ceiling framing, flammable liquids/fibres, vapours, dry vegetation/grass or combustible liquids.
Confined Spaces	An enclosed or partially enclosed space that: <ol style="list-style-type: none"> is not designed or intended primarily to be occupied by a person, and is, or is designed or intended to be, at normal atmospheric pressure while any person is in the space, and is or is likely to be a risk to health and safety from: <ol style="list-style-type: none"> an atmosphere that does not have a safe oxygen level, or Contaminants, airborne gases, vapours and dusts that may cause injury from fire or explosion, and/or harmful concentrations of any airborne contaminants, or engulfment.
Declared Bushfire Danger Period (BDP)	The time of high fire danger prescribed by the NSW Rural Fire Service, ACT Emergency Service Agency or CFA Victoria. The statutory Bush Fire Danger Period in NSW runs from 1 st October to 31 st March but it may vary due to local conditions. In Victoria, the Bush Fire Danger Period is declared for each individual municipality, generally running from November until May.
Designated Hot Work Area (DHWA)	Area specifically configured to undertake Hot Work activities. DHWAs must be free of Combustible Materials and have appropriate control measures in place. They are generally a workshop or welding bay (but may be located outside a building) and need to comply with the following: <ul style="list-style-type: none"> No flammable materials within the room; Hot Work must be 15 metres away from any combustible material; Fire extinguisher is within 10 metres of the work area; Work area must be contained within four walls or screened with fire resistant material; No cavities in walls or eaves suitable to prevent escape of sparks; and

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Term	Definition
	<ul style="list-style-type: none"> Drains need to be covered Caution - Adequate ventilation must be supplied for the operator
ESA	ACT Emergency Services Agency
Essential or Emergency work	<p>For the purposes of performing Hot Work or Fire Risk Work on a day declared 'Catastrophic', essential or emergency works include;</p> <ul style="list-style-type: none"> Works required to restore parts of the network, including transmission lines assets or HV apparatus. Works required to ensure staff or public safety. Works requested to be undertaken by Government agencies. <p>Note: Essential or Emergency works doesn't include works required to meet construction or maintenance timelines/schedules.</p>
Exemptions and Permits (for Hot Work)	<p>During a Total Fire Ban the lighting or maintaining a fire 'in the open' is prohibited, however, certain activities may be exempted or approved by Permit during total fire bans. The following exemptions may apply to Transgrid:</p> <p>The NSW RFS Commissioner may grant exemptions (which can be issued or are detailed in the NSW Government Gazette each time a total fire ban is declared.)</p>
Fire Risk Work	<p>Work (other than Hot Work) that has the potential to cause a fire.</p> <p>Fire Risk Work involves heat or potential spark producing activities that have the potential of creating a fire risk, Fire Risk Work includes:</p> <ul style="list-style-type: none"> Slashing; Mulching; Operation of steel tracked machines or steel attachments on mobile plant (e.g. grading, boring, excavation and the like); Chainsaw operation; Chipping; Mowing; Brush cutting; and Operation of motor vehicles/rubber tyred mobile plant (excluding their use on sealed or unsealed gravelled roads).
Fire Risk Management Plan (FRMP)	<p>A separate plan either attached to a WHSMP or CEMP that highlights fire risks and control measures specific to that project.</p> <p>FRMPs must be in accordance with this procedure.</p>
Final Fire Check	Mandatory surveillance undertaken at the completion of Hot Work or Fire Risk Work to observe the workplace for any signs of smouldering, ignition or other factors that may start a fire.
Fire Watch Observer	<p>A Fire Watch Observer is responsible for observing Hot Work and Fire Risk Work activities and to be able to respond to any potential or actual fire outbreak.</p> <p>A person must not be engaged in any other activities whilst acting as a Fire Watch Observer.</p>
Hazardous Area	<p>Any work area where flammable/combustible materials may come into contact with flames, sparks, molten materials or hot surfaces. Hazardous Areas may include (but not exclusively);</p> <ul style="list-style-type: none"> Confined spaces; Buildings where there are materials that are made of or contain combustible matter;

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Term	Definition
	<ul style="list-style-type: none"> • Dry/combustible vegetation; • Rubbish; and • Oil and Fuel storage areas. <p>An area is deemed not to be hazardous where there are no combustible materials such as oil/chemicals/fuel storage, dry/combustible vegetation or rubbish, within 15m (or as approved by Transgrid management) of the work area/zone.</p>
High Risk Activity (ACT)	<p>High risk activity in the Australian Capital Territory means the following:</p> <ul style="list-style-type: none"> (a) welding; (b) grinding; (c) soldering; (d) gas cutting; (e) any other activity prescribed by regulation as a high risk activity.
Hot Work	<p>Hot Work is any action that involves high temperatures and has a high risk of creating a fire. Examples of Hot Work are as follows, but are not limited to:</p> <ul style="list-style-type: none"> • Welding, Oxy-Acetylene or Plasma cutting; • Grinding/cutting of metal including the use of flexible sanding disks; • Production of heat, flammable fumes and gases during work activities; and • Dry concrete metal grinding/cutting;
Hot Work Area	<p>The area within a radius of 15m from the point where the Hot Work is to be undertaken (including the space above and below that area). The Hot Work Area should be made safe by various techniques, preparation and testing to ensure that any risk of fire or explosion resulting from the Hot Work is eliminated.</p>
Indoors	<p>Inside a building or other structure that is fully enclosed on all four sides and has a door and roof to prevent sparks from escaping.</p>
Instructed Person	<p>A person advised by or supervised by an Authorised Officer.</p>
In the open	<p>Locations that are <i>in the open air</i>, including areas such as:</p> <ul style="list-style-type: none"> • Easements and outdoor public spaces • Substations/switchyards; • Communications facilities; • Depots and perimeter lands;
One working day	<p>A shift with the same work party. This is typically between 7am and 7pm, or may include a shift that occurs overnight due to required work activities.</p>
Prescribed Fire Safety Equipment (PFSE)	<p>The <u>minimum</u> fire safety equipment to be available and deployed for all Hot Work and Fire Risk Work, which includes:</p> <ul style="list-style-type: none"> • Rake-hoe or shovel; <p>and</p> <ul style="list-style-type: none"> • A water knapsack spray pump of 16 litre minimum capacity filled with water or; • A fire extinguisher (liquid type) of 9 litre minimum capacity; or • A dry powder type extinguisher of 0.9 kg minimum capacity. <p>Refer to Appendix B for the complete Fire Safety & Equipment Requirements for Hot Work and Fire Risk Work.</p>

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Term	Definition
Pre-work risk Assessment (PWRA)	The process conducted and documented before commencing a work activity. It includes assessing the risks associated with the tasks to be performed, the workplace and the environment.
RFS	NSW Rural Fire Service.
Premises	Premises are areas within a security fence such as switchyards/substations and depots. Note: Premises includes new substations still under construction, if the security fence has been fully erected.
Security fence	Palisade/man-proof fence surrounding substations, depots, switching stations and communication facilities.
Total Fire Ban (TOBAN)	A TOBAN is declared by the RFS, CFA or ACT ESA due to extreme weather conditions or when widespread fires are seriously stretching firefighting resources. When declared, it prohibits the lighting of any fires in the open air and any other activities that may start a fire. A declaration of a TOBAN covers specific identified areas of the relevant state. In this procedure the term TOBAN applies to a declaration of a Total Fire Ban (or Code Red day in Victoria). TOBAN declarations are made in accordance with, either: (a) Section 99 of the Rural Fires Act 1997 (NSW), by way of a notice in the Government Gazette, (b) Section 4 of the Country Fire Authority Act 1958 (VIC), or (c) Section 114 of the Emergencies Act 2004 (ACT).
Work	Any physical maintenance, survey or construction/augmentation activity.
Working alone	Applies to any <u>unexpected</u> Hot Work or Fire Risk Work that is undertaken on easement or along access tracks where the Authorised Officer is alone.
Unfavourable	Adverse conditions such as extreme hot dry windy weather or in an area of increased fire activity.

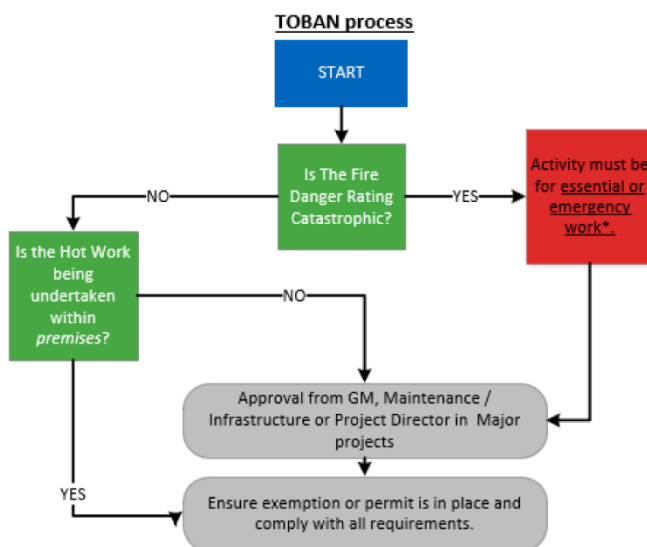
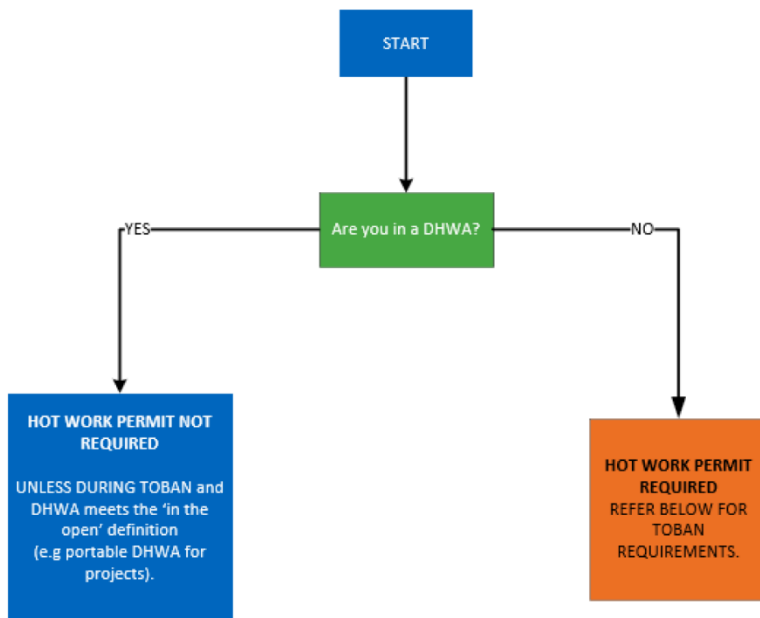


4. Hot Work Process

The following diagram sets out the process managing Hot Work activities in Transgrid.

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*Essential or Emergency works doesn't include works required to meet construction or maintenance timelines/schedules. Refer to Section 3 for full definition.



4.1. Hot Work Permit Process

4.1.1. Identify Risks

The first step in the Hot Work Permit process is to identify risks as part of a Pre-work risk assessment process, including:

- Assess the risks on site. Determine if conditions are unfavourable to undertake Hot Work. If yes postpone the Hot Work until conditions are suitable.
- Identify and control (remove) any fire hazard (including the presence of flammable or combustible liquids, gases, vapours, dusts, fibres or substances) within 15 metres from the Hot Work location;
- Consider relevant hazards that may exist outside the 15 metre area;
- Consider the possibility of changing circumstances during the progress of the Hot Work and whether they may render the area unsafe for the work to continue;
- Properly ventilate the Hot Work area;
- Suitably position the equipment, including emergency firefighting equipment;
- Isolate the area where the Hot Work is to be performed; and
- Provide a safe entry to and exit from the Hot Work area.

4.1.2. Testing for the Presence of a Gas or Vapour

Testing is only required for work where there is the potential for the presence of flammable gas and flammable vapour. This only applies to Hot Work in or adjacent to any pipe, drum, tank or vessel that has the potential to carry a flammable gas or vapour.

The majority of Hot Work undertaken by Transgrid will not require gas/vapour testing before Hot Work is undertaken.

If testing is required, prior to the commencement of Hot Work the following must be complied with:

- The detectors used for the testing must comply with AS 2275.1 and AS2275.2;
- Each detector used for the testing shall be used by a person skilled in its operation, limitations and maintenance;
- Testing must continue until every source and potential source of flammable gas and flammable vapour has been tested; and
- Testing must take place as late as practical before the Hot Work is commenced, subject to it being not more than two hours beforehand.

4.1.3. Hot Work Permit

A Hot Work Permit must be completed by an Authorised Officer when:

- Hot Work is being undertaken outside a Designated Hot Work Area (DHWA), and
- Approval by Transgrid Management and Notification to the RFS/CFA /ESA may be required if Hot Work is proposed during a TOBAN (refer to Section 6 for detailed information).

The duration of a Hot Work Permit cannot exceed a period of one (1) work day.

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Appendix B sets out the fire safety equipment requirements for Fire Risk Work.

***Note:** A *Hot Work Permit* does not require approval in accordance with the exemptions and protocols in Section 6 if being undertaken within in DHWA.

4.1.4. Fire Watch Observer

Fire watching is a continuous and thorough inspection/observation of the work site(s) and its vicinity by an Authorised Officer.

The decision to appoint a Fire Watch Observer is made based on the risks on the particular day and in accordance with Appendix B - Fire Safety Equipment Requirements for Hot Work and Fire Risk Work.

The Fire Watch Observer must:

- Be an Authorised Officer;
- Be alert for any fire outbreak or hazards;
- Take immediate action to combat any outbreak of fire that may occur, if safe to do so;
- Not allow Hot Work to proceed outside the area specified on the Hot Work Permit;
- Immediately stop the work and withdraw the Hot Work Permit if a hazardous condition is observed;
- Be aware of the need to use PPE where Hot Work involves arc welding, cutting or arc gouging; and
- Not leave the work site(s) unless properly relieved by an Authorised Officer.

Note: A single person may be nominated as the Fire Watch Observer for multiple permits across multiple locations as long as they can adequately satisfy the conditions above.

In the event that any unexpected Hot Work is required in a *hazardous area* either on an access track or easement, then a Fire Watch Observer is not required if the worker is defined as *working alone*. Unexpected work does not include any activity that could be reasonably predicted to occur and therefore included in the planning process.

4.1.5. Revalidation of Controls

Revalidation of the suitability of the implemented controls measure should be undertaken at least once per permit duration. This should occur at the approximate halfway point of the work or when conditions change that could reduce the effectiveness of the controls. If the duration of the permit is less than 2 hours, then revalidation of controls is not required unless conditions worsen.

4.1.6. Final Fire Check

A Final Fire Check must be performed and signed off at the completion of any Hot Work activity undertaken under a Hot Work Permit. This will be dependent on the activity, weather conditions or in accordance with Appendix B.

Activity	Requirement	Exceptions
Final Fire Check	<p>Mandatory Final Fire Check after a suitable monitoring period for ALL Hot Work.</p> <p>Mandatory one-hour Final Fire Check after cessation of Hot Work where a Fire Watch Observer has been appointed on:</p> <ul style="list-style-type: none"> • Extreme or above declared days inside premises; or • High or above declared days outside premises. 	If a Hot Work Permit is not required.

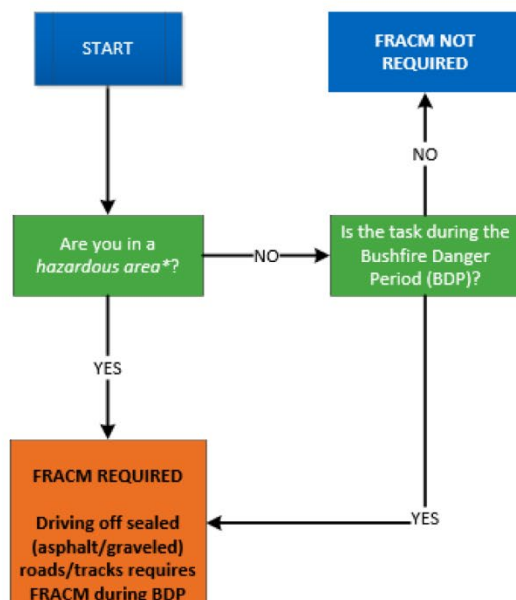
Note: Research and fire investigation has found that the majority of Hot Work fires break out up to one hour after the completion of the work. Hot work ignition sources can get into areas not easily seen, providing the opportunity to smolder for lengthy periods before breaking out into fire.



5. Fire Risk Work Process

The following flow chart shows the process for managing Fire Risk Work.

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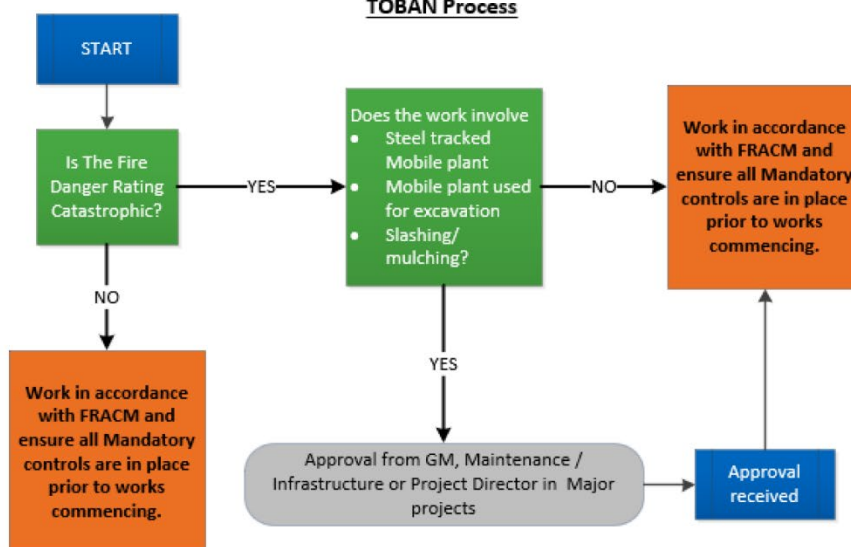


*Hazardous Areas may include (but not exclusively);

>Confined spaces; Buildings where there are materials that are made of or contain combustible matter; Dry/combustible vegetation; Rubbish; and Oil and Fuel storage areas.

An area is deemed not to be hazardous where there are no combustible materials such as oil/chemical/fuel storage, dry/combustible vegetation or rubbish, within 15m of the work area/zone.

TOBAN Process



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5.1. Fire Risk Work Process

5.1.1. Identify Risks

- The first step for the Fire Risk Work process is to identify risks as part of a Pre-work risk assessment process, including:
 - Is the Fire Risk Work located in a Hazardous Area;
 - Is the Fire Risk Work being undertaken during the Declared Bushfire Danger Period;
 - Whether there is an alternative to the Fire Risk Work activity that could achieve the same work outcome (i.e. an alternative way of doing the work that does not involve Fire Risk Work) or whether the Fire Risk Work activity can be postponed or delayed on days when the conditions (e.g. fire rating) are unfavourable;
 - The risks on site.
 - Control of any fire hazards;
 - Presence of any relevant hazards that may exist outside the work areas;
 - The suitable location of fire safety equipment, including emergency firefighting equipment;
 - Changing circumstances (such as wind and temperature) during the progress of the Fire Risk Work and whether they may render the area unsafe for the work to continue; and
 - Do not commence the Fire Risk Work, until the work complies with all of the above requirements.

5.1.2. Fire Risk Assessment and Control Measures (FRACM) Form

A Fire Risk Assessment and Control Measures (FRACM) form must be completed by an Authorised Officer when:

- a. Fire Risk Work is being undertaken in a Hazardous Area, or
- b. Fire Risk Work is being undertaken during the Declared Bushfire Danger Period (BDP); and
- c. Approval by Transgrid Management and Notification to the RFS/CFA/ESA may be required if Fire Risk Work is proposed during a TOBAN (refer to Section 6 for detailed information).

The duration of a FRACM cannot exceed a period of one (1) working day.

Appendix B sets out the fire safety equipment requirements for Fire Risk Work.

5.1.3. Fire Watch Observer

The decision to appoint a Fire Watch observer is made based on the risks on the particular day and in accordance with Appendix B - Fire Safety & Equipment Requirements for Hot Work and Fire Risk Work.

Fire watching is a continuous and thorough inspection/observation of the work site(s) and its vicinity by an Authorised Officer.

The Fire Watch Observer must:

- Be an Authorised Officer;

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- Be alert for any fire outbreak or hazards;
- Take immediate action to combat any outbreak of fire that may occur;
- Not allow Fire Risk Work to proceed outside the area specified;
- Immediately stop the work if a hazardous condition is observed;
- Obtain fire extinguishers or fire hose or both; and
- Not leave the work site(s) unless properly relieved by an Authorised Officer.

Note: A single person may be nominated as the Fire Watch Observer for multiple permits across multiple locations as long as they can adequately satisfy the conditions above.

In the event that any unexpected Fire Risk Work is required in a *hazardous area* either on an access track or easement, then a Fire Watch Observer is not required if the worker is defined as *working alone*.

Unexpected work does not include any activity that could be reasonably predicted to occur and therefore included in the planning process.

5.1.4. Revalidation of Controls

Revalidation of the suitability of the implemented controls measure should be undertaken at least once per permit duration. This should occur at the approximate halfway point of the work or when conditions change that could reduce the effectiveness of the controls. If the duration of the permit is less than 2 hours, then revalidation of controls is not required unless conditions worsen.

5.1.5. Final Fire Check

A Final Fire Check must be performed and signed off at the completion of any Fire Risk Work activity undertaken under a FRACM. This will be dependent on the activity, weather conditions or in accordance with Appendix B.

Activity	Requirement	Exceptions
Final Fire Check	Mandatory Final Fire Check after a suitable monitoring period for ALL Fire Risk Work. Mandatory one hour Final Fire Check after cessation of Fire Risk Work under a FRACM on 'High' or above declared days where a Fire Watch Observer has been appointed.	On 'Moderate' declared days <u>or</u> working in non-hazardous areas under a FRACM during the BDP.

Note: Research and fire investigation has found that the majority of fires break out up to one hour after the completion of the work. Ignition sources can get into areas not easily seen, providing the opportunity to smolder for lengthy periods before breaking out into fire.

6. Total Fire Bans (TOBAN)

6.1. General Requirements for Hot Work 'in the open' on TOBAN days

A total fire ban (TOBAN) day is a day declared by the NSW RFS, ACT ESA or VIC CFA due to extreme weather conditions or when widespread fires are seriously stretching firefighting resources. When declared, it prohibits the lighting of any fires in the open air and prohibits any other activities from being carried out that may start a fire, which includes Hot Work.

A declaration of a TOBAN covers specific identified areas of the state.

Further information and daily updates are available at:

For NSW - <http://www.rfs.nsw.gov.au/fire-information/fdr-and-tobans>,

For Victoria <https://www.cfa.vic.gov.au/warnings-restrictions/total-fire-bans-and-ratings>.

For ACT - <https://esa.act.gov.au/>

- It is prohibited to carry out any Hot Work 'in the open' that causes or is likely to cause a fire during a TOBAN unless authorised under an exemption or Permit issued by the NSW RFS, CFA (Victoria) or ESA (ACT).

During a TOBAN, Hot Work 'in the open' for construction, essential repairs or maintenance, the Authorised Officer must ensure that the Hot Work:

- Is in accordance with conditions of the NSW RFS general exemption or CFA (Victoria) or ESA (ACT) Permits;
- Be lit, maintained or used in a manner that will prevent its escape;
- Have adequate firefighting equipment laid out and immediately available;
- Have a Hot Work Permit completed; and
- Be authorised in writing by the GM, Maintenance or GM, Infrastructure Delivery (under delegation from the EGM, Works Delivery) or Project Directors within Major Projects (under delegation from the EGM, Major Projects) if being undertaken outside premises.

***Note** that Principal Contractors can work under a Permit issued to Transgrid or apply for their own permit, as long as they meet the requirements of this procedure.

6.1.1. Hot Work during a TOBAN with a Catastrophic Fire Danger Rating

No Hot Work can be undertaken on a TOBAN with a catastrophic fire danger rating, unless the activity is required for essential or emergency work. Approval must be sought and granted in accordance with Section 6.2.1.

6.2. Specific Requirements for Hot Work 'in the open' on TOBAN days

6.2.1. New South Wales

- Ensure a current exemption is in place and all conditions are complied with (refer to Appendix A),



- The Authorised Officer undertaking the Hot Work must advise the local RFS or Fire and Rescue station, in accordance with Appendix A, and comply with any additional conditions imposed.
- Ensure Management approval has been granted in writing if undertaken outside premises.

6.2.2. Victoria

6.2.2.1. Hot Work 'in the open' during the Bushfire Danger Period

Hot Work in Victoria during the fire danger period (October to May, depending on Municipality) requires a Schedule 14 Permit to be in place prior to works commencing.

Transgrid has a current Schedule 14 Permit* (refer to the [WIRE](#)) that has specific conditions that need to be adhered too, as a minimum:

- The Schedule 14 Permit must be attached to the Hot Work Permit,
- Staff are to be aware of Permit requirements and ensure that these conditions are reviewed and implemented during the Hot Work.

*Note Check the current Schedule 14 Permit to see where this applies for Victorian assets ([refer to the WIRE](#)).

The GM, Infrastructure Delivery, GM, Maintenance (or delegate) or relevant Project Directors (or delegate) within Major Projects are responsible for obtaining Section 14 permits for construction, maintenance or operational works.

6.2.2.2. Hot Work 'in the open' on a TOBAN

Any Hot Work during a TOBAN requires the issue of a Section 40 Permit from the CFA, as a minimum:

- The Section 40 Permit* must be attached to the Hot Work Permit (refer to the current permit [on the WIRE](#)),
- That there are not less than two persons on site, together with not less than two knapsack spray pumps of at least 15 liters capacity each, fully charged with water, or a length of hose adequate to reach the appliance connected to a reticulated water supply one such person shall be available solely for fire watching and firefighting purposes; and
- The Operations Manager of the local area where fire is to be used in the open air is to be notified between 2 and 24 hours before the activity is to commence.

The GM, Infrastructure Delivery, GM, Maintenance (or delegate) or relevant Project Directors (or delegate) within Major Projects are responsible for obtaining Section 40 permits for construction, maintenance or operational works.

6.2.3. Australian Capital Territory (ACT)

6.2.3.1. Hot Work 'in the open' on a TOBAN

A *High risk activity* in the ACT is classified as welding, grinding, soldering or gas cutting.

For the purposes of this procedure, all Hot Works are classified as High risk activities.

Hot Works undertaken in the ACT during a TOBAN requires a Permit from the ESA (ACT) and are issued on a case-by-case basis for each individual TOBAN day.



Permits can be requested by Transgrid or Contractors, however they must align with Section 6.1

6.3. Fire Risk Work during a TOBAN

Fire Risk Work is not specifically prohibited under legislation, but fire authorities recommend that these activities are not undertaken in a hazardous area during a TOBAN, due to the increased fire risks.

During a declared TOBAN (with a Catastrophic Fire Danger Rating), the following Fire Risk Work activities require authorisation granted in writing from either GM, Maintenance or GM, Infrastructure Delivery (under delegation from the EGM, Delivery) or Project Directors within Major Projects (under delegation from the EGM, Major Projects) regardless of whether in a Hazardous Area or not:

- a. Works involving steel tracked mobile plant or mobile plant used for excavation, or
- b. Slashing/Mulching

A FRACM must be completed for all other Fire Risk Work (i.e. operation of motor vehicles, chainsaws, mowing or brush-cutting) during a TOBAN. However, authorisation in writing from the GM, Maintenance or Infrastructure Delivery is not required.

The Authorised Person assessing the Fire Risk Work must:

- 2. Seek Approval from the relevant Manager where required, and
- 3. Ensure that Fire Safety Equipment (in accordance with Appendix B) is available, in working order, and deployed.



7. Contractors Undertaking Hot Work and Fire Risk Work

The fire risk associated with Hot Work and Fire Risk work must be assessed and considered for all work conducted by contractors on behalf of Transgrid. The following points set out the requirements for Hot Work and Fire Risk Work by Contractors:

- **Where Transgrid is in control of the site** - Contractors undertaking maintenance activities, activities managed through a site specific management plan for minor work, or where it is specified in the contract, are required to follow this procedure.
If a contractor is only doing minor works and is only required to be onsite for a short period of time, they are not required to be trained to undertake Hot Work or Fire Risk Work as long as they are an *Instructed Person* that is supervised by an *Authorised Officer*.
- **Principal Contractors engaged by Transgrid** - For all projects or work initiated by, or on behalf of, Transgrid or by third parties on land controlled by Transgrid such as:
 - network augmentation projects,
 - large network replacement projects, unregulated projects,
 - negotiated services projects, and
 - project works by other parties on Transgrid sites

Principal Contractors are required to work in accordance with Transgrid's Hot Work and Fire Risk Work Procedure.

Contractors have the option of either adopting Transgrid's Hot Work and Fire Risk Work process or creating a Fire Risk Management Plan, which must be prepared in accordance with Section 7.1 and endorsed/approved by Transgrid.

7.1. Fire Risk Management Plan

A Fire Risk Management Plan (FRMP) is a specific plan that covers the management of Hot Work and Fire Risk Work activities for the duration of a Project. It would mirror the requirements of this procedure and would be prepared by the Contractor and approved/endorsed/not rejected by Transgrid. Once approved/endorsed/not rejected by Transgrid, the Contractor would work in accordance with this plan including during the Bushfire Danger Period in the relevant state or territory that they are working in. At a minimum the FRMP would include:

- Appropriate definitions of key terms.
- A description of the Hot Work Permit process that meets the requirements of the relevant Australian Standards.
- A description of what other activities may constitute a fire risk and require day to day onsite management.
- A description of what constitutes a Hazardous Area for the project in question and how this will be defined/managed/controlled on a day to day basis during the project.
- A description of the approval process to be followed for Hot Work and/or Fire Risk Work activities.
- A description of the approval process to be followed on TOBAN days for Hot Work and/or Fire Risk Work activities.

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8. Training

For Transgrid staff and Contractors to become an Authorised Officer under this procedure, they are required to successfully complete Transgrid's Hot Work and Fire Risk Work online training.

Transgrid staff must also be trained to E2 under the Authorisation to Work procedure.

Principal Contractors must have a suitable number of staff trained to undertake the duties as an Authorised Officer.

9. Information

All Hot Work Permits and Fire Risk Assessment and Control Measures (FRACM) forms must be stored in the appropriate work or project folder and include (included) in material transferred to Transgrid's corporate document storage system, HP TRIM.

10. Incidents

All incidents relating to hot work must be registered in CAMMS, Transgrid's incident reporting system. Refer to Transgrid procedure HSE Hazard and Incident Management for more information on incident notification and investigation.

11. Accountability

Title	Responsibilities and Accountabilities
General Worker	<ul style="list-style-type: none"> Adhering to and following all procedures for Hot Work and Fire Risk Work; and Adequately trained in the use of Fire Safety Equipment.
Authorised Officer	<ul style="list-style-type: none"> Identifying and nominating the appropriate control measures required to perform the Hot Work and Fire Risk Work; Ensuring that the nominated control measures have been implemented prior to work commencing; Documenting that all workers have been instructed in the appropriate control measures required to perform the Hot Work; Validation of the control measures during the work (at least once per day); Adequately trained in the use of Fire Safety Equipment; Able to use fire safety equipment to extinguish a fire (when safe to do so) and stop work, if required; and Ensure all Hot Work Permits and FRACM documents are retained and entered into TRIM.
Fire Watch Observer	<ul style="list-style-type: none"> Adhering to and following all procedures for Hot Work and Fire Risk Work; Adequately trained in the use of Fire Safety Equipment; and Undertake no other duties while acting as Fire Watch Observer.

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Title	Responsibilities and Accountabilities
Final Fire Check	<ul style="list-style-type: none"> Final Fire Check must be undertaken by the appointed Fire Watch Observer (if appointed) otherwise by the Authorised Officer; Fire Watch duties can be delegated to a suitable alternate Fire Watch Observer, where appointed they must be an Authorised Officer; and Adhering to and following all procedures for Hot Work and Fire Risk Work.
Contractors	<ul style="list-style-type: none"> Ensuring all their staff and sub-contractors have suitable training in the use of Fire Safety Equipment; Adhering to and following Transgrid procedures for Hot Work and Fire Risk Work or the requirement of the Fire Management Plan; Ensuring an adequate number of their staff are Authorised Officers for the purposes of Hot Work and Fire Risk Work.
Instructed Person	<ul style="list-style-type: none"> A person advised by or supervised by an Authorised Officer to enable them to avoid unacceptable fire risks associated with Hot Work and Fire Risk Work.
Project or Contract Manager	<ul style="list-style-type: none"> Assessing the contractor's procedures prior to the commencement of works to ensure that they meet Transgrid's Hot Work and Fire Risk requirements.
GM, Infrastructure Delivery	<ul style="list-style-type: none"> Obtaining Section 14 and 40 permits in Victoria for construction works Approval of Hot Work Permits during a TOBAN for Hot Work 'in the open' for construction, essential repairs or maintenance Approval of a FRACM during a declared TOBAN (with a Catastrophic Fire Danger Rating) if the work includes steel tracked mobile plant or mobile plant used for excavation, or slashing/mulching
GM, Maintenance	<ul style="list-style-type: none"> Obtaining Section 14 and 40 permits in Victoria for maintenance or operational works Approval of Hot Work Permits during a TOBAN for Hot Work 'in the open' for construction, essential repairs or maintenance Approval of a FRACM during a declared TOBAN (with a Catastrophic Fire Danger Rating) if the work includes steel tracked mobile plant or mobile plant used for excavation, or slashing/mulching
Major Projects Project Directors	<ul style="list-style-type: none"> Approval of Hot Work Permits during a TOBAN for Hot Work 'in the open' for construction or essential repairs. Approval of a FRACM during a declared TOBAN (with a Catastrophic Fire Danger Rating) if the work includes steel tracked mobile plant or mobile plant used for excavation, or slashing/mulching

12. Implementation

This procedure will be implemented through the following mechanisms:

- HSE Notice
- Notification on HSE News page;
- Included in HSE Systems Monthly Update;

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- Training under the Environmental Assessment Framework

13. Monitoring and review

This procedure will be reviewed at the conclusion of each Fire Season (every 12 months).

14. Change from previous version

Revision no	Approved by	Amendment
6	Ken McCall, Manager/HSE	<ul style="list-style-type: none"> • Minor edit to flowchart
7	Jon Workman, A/Manager/HSE	<ul style="list-style-type: none"> • Clarification of Hot work definition • Minor edits to process flow charts • Typographical corrections • Addition of 16L knapsack to PFSE
8	Ken McCall, Manager/HSE	<ul style="list-style-type: none"> • Changes to Section 7 and 8 to reflect requirements for Contractors to work in accordance with TransGrid procedures and requirements for training and authorisation.
9	Krista-Lee Fogarty, Manager/HSE	<ul style="list-style-type: none"> • Updates to include requirements for undertaking hot work in Victoria and ACT.
10	Michael Gatt, EM, Works Delivery	<ul style="list-style-type: none"> • The procedure has been revised to simplify the requirements for carrying out Hot work and Fire Risk Work on a TOBAN day compared to the usual requirements during the Bushfire Danger Period. A new section has also been included setting out the option for Contractors to develop their own Fire Risk Management Plan (mirroring the requirements of this procedure). This is set out in Section 7.1
11	Krista-Lee Fogarty, GM, HSE	<ul style="list-style-type: none"> • Minor typographical errors fixed.
12	Krista-Lee Fogarty, GM, HSE	<ul style="list-style-type: none"> • Minor update to revise the requirements of the mandatory Fire Watch Observer/Fire Trailer and One Hour Final Fire Check. Added the definition of working alone under a Hot Work Permit or FRACM and updated Appendix F. Included permit length restrictions and revalidation requirements.
13	Tracy Hibbert, Acting EGM, PC&S	<ul style="list-style-type: none"> • Section 6.2.2.1 and 6.2.2.2 – inclusion of requirements for GM, Infrastructure Delivery, GM, Maintenance or delegate are responsible for obtaining Section 14 and 40 permits for construction, maintenance or operational activities. • Section 11 - Inclusion of accountabilities for GM, Infrastructure Delivery and GM, Maintenance • Position titles updated to reflect the current organisational structure • Procedure updated to the new corporate branding

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Revision no	Approved by	Amendment
14	Tracy Hibbert, Acting EGM, PC&S	<ul style="list-style-type: none"> Update to reflect the changes to the new national Fire Danger Rating System. Sections changed are as follows: <ul style="list-style-type: none"> Section 5.1.5 – updated from 'Very High' to 'High' for to reflect the new fire danger rating system. Section 5 and 6 – flow chart has reference to Code Red in Victoria removed. Appendix B – Prescribed Fire Safety Equipment Requirements updated to reflect the new Fire Danger Rating system. Section 6.2.2 - Schedule 14 and Section 40 permits are available on the Wire
15	Jane Sherlock, EGM, PC&S	<ul style="list-style-type: none"> Updated Section 6 to allow Project Directors within Major Projects to approve allowable works during TOBANs (under delegation from EGM, Major Projects). Updated Flowcharts and Appendix B to align with relevant section alterations.

15. References

Transgrid

- Transgrid procedure - Environmental Assessment Framework
- Transgrid procedure – Authorisation to Work
- Transgrid procedure - Fire Protection
- Transgrid procedure - Confined Spaces
- Transgrid procedure - Health and Safety Risk Assessment
- Transgrid form – Hot Work Permit
- Transgrid form – Fire Risk Assessment and Control Measures (FRACM)

Legislation

- Work Health & Safety Act 2011 (NSW)
- Work Health & Safety Regulation 2017 (NSW)
- Rural Fires Act 1997 (NSW)
- Electricity Safety (Bushfire Mitigation) Regulations 2013 (Victoria)
- Country Fire Authority Regulations 2014
- Codes of Practice - Welding Practices

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- Code of Practice - Demolition Work
- Code of Practice - Confined Space
- Code of Practice - Construction Work
- Australian Standard - 1674.1 - safety in Welding and Allied Processes – Fire precautions
- Australian Standard - 1674.2 - safety in Welding and Allied Processes – Electrical
- Australian Standard - 2865 - Safe Working in a Confined Space

16. Appendices

Appendix A – NSW General Exemption provisions for Hot Work during a Total Fire Ban

Appendix B – Fire Safety Equipment Requirements for Hot Work and Fire Risk Work

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Appendix A – Exemptions during a Total Fire Ban NSW

The following excerpt is from the NSW Government Gazette listed under Rural Fires Act 1997 Notification under Section 99, Schedule 5 of the Total Fire Ban Notification *Schedule of Standard Exemptions to Total Fire Bans*

Government Notices

GOVERNMENT NOTICES

Rural Fire Service Notices

SCHEDULE OF STANDARD EXEMPTIONS TO TOTAL FIRE BANS

Note 1. The NSW Rural fire service can be contacted on 1800 679 737 and Fire and Rescue NSW can be contacted on 1800 422 281.

Note 2. This schedule sets out standard exemptions to total fire bans orders made by the Minister or the Commissioner of the NSW Rural Fire Service (by delegation). A total fire ban order may specify that some or all of the following standard exemptions will apply during the total fire ban. A standard exemption will not apply unless specifically referred to in the total fire ban order.

1 Definitions

In this Schedule:

fire includes a flame, spark or incandescent or burning material.

landholder, in respect of land, means:

- (a) if the land is controlled or managed by a local authority—the local authority, or
- (b) in the case of a State forest, flora reserve or timber reserve within the meaning of the *Forestry Act 2012*, or land acquired for the purpose of dedication or reservation under that Act, or in respect of which the Forestry Corporation has obtained the benefit of a forestry right within the meaning of Division 4 of Part 6 of the *Conveyancing Act 1919*—the Forestry Corporation, or
- (c) in the case of land dedicated or reserved, or acquired for the purpose of dedication or reservation, under the *National Parks and Wildlife Act 1974*—the National Parks and Wildlife Service, or
- (d) in the case of land vested in, or under the control of, Rail Corporation New South Wales, Transport for NSW, Residual Transport Corporation of New South Wales, Transport Infrastructure Development Corporation or Rail Infrastructure Corporation—that authority, or
- (e) in the case of land within the catchment area of a water authority—that water authority, or
- (f) in any other case—the owner or occupier of the land.

Standard Exemptions

6 Services and utilities—construction, essential repairs or maintenance

- (1) Fire lit, maintained or used by, or on behalf of, a provider of a utility or transport service, in connection with the construction or the essential repair or maintenance of facilities or equipment required for the provision or continuation of the utility or transport service provided that:
 - (a) the fire is lit, maintained or used in a manner which will prevent the escape of the fire, and
 - (b) adequate fire fighting equipment is provided at the site of the fire to prevent the escape or spread of the fire, and
 - (c) In the case of construction, the provider of the utility or transport service has:
 - (i) if the land where the construction works is to be undertaken within a rural fire district— notified the NSW Rural Fire Service Fire Control Centre for that district, or
 - (ii) if the land where the construction works is to be undertaken is within a fire district— notified the officer in charge of the nearest Fire and Rescue NSW fire station.
- (2) The provider of the utility or transport service must comply with any direction or additional condition which may be imposed by the NSW Rural Fire Service or Fire and Rescue NSW, which may include a direction that a fire not be lit.
- (3) In this clause:

utility or transport service means a sewerage, drainage, water, gas, electricity, telephone service or the operation of a road or railway.

Any Hot Work done under the exemption provisions above **must comply** with this procedure.

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Appendix B - Fire Safety & Equipment Requirements for Hot Work & Fire Risk Work

A FRACM is required if Fire Risk Work is being undertaken in a Hazardous Area OR within the Bushfire Danger Period (BFP) OR if a TOBAN has been declared ¹ .				A Hot Work Permit is required if Hot Work is undertaken outside a Designated Hot Work Area (DHWA) OR if a TOBAN has been declared AND working 'in the open'.			
Permit Type	Hierarchy of controls to be implemented ↓	FRACM ¹			Hot Work Permit		
		Non-Hazardous Area	Hazardous Area	TOBAN Day	Inside Premises	Outside Premises	TOBAN Day
MODERATE		Prescribed Fire Safety Equipment (PFSE) {Rake-hoe or shovel AND 16L water filled knapsack or 0.9kg dry chemical extinguisher or 9kg water extinguisher}	Prescribed Fire Safety Equipment (PFSE)	Work in accordance with FRACM and ensure all mandatory controls are in place prior to works commencing.	Prescribed Fire Safety Equipment (PFSE) {Rake-hoe or shovel AND 16L water filled knapsack or 0.9kg dry chemical extinguisher or 9kg water extinguisher}	Prescribed Fire Safety Equipment (PFSE) AND Welding Pads/Shields (as required) AND Final Fire Check	Confirm exemption or permit applies to the works AND Notify local fire authority and comply with any conditions AND Approval by is required by GM, Maintenance/, Infrastructure Delivery or Major Projects PD (if works are outside premises)
HIGH			Prescribed Fire Safety Equipment (PFSE) AND Fire Watch Observer ² AND Final Fire Check		Welding Pads/Shields (as required) AND Final Fire Check	Prescribed Fire Safety Equipment (PFSE) AND Welding Pads/Shields (as required) AND Fire Watch Observer ³ AND Fire Trailer or vehicle mounted watertank (400L) ³ AND Final Fire Check	
EXTREME			Prescribed Fire Safety Equipment (PFSE) AND Fire Watch Observer ² AND Final Fire Check		Fire Watch Observer ³ AND Final Fire Check	Fire Trailer or vehicle mounted water tank (400L) ³ AND Final Fire Check	
CATASTROPHIC		Fire Trailer or vehicle mounted water tank (400L) ³ AND Final Fire Check	Approval is required by GM, Maintenance/Infrastructure Delivery or Major Projects PD if the work involves: Steel tracked mobile plant Excavation using mobile plant Slashing/mulching	Essential or emergency works only.			

¹A FRACM is not required for the operation of motor vehicles/rubber tyred mobile plant on sealed or unsealed gravelled roads.

²Not required if working alone or when traversing vehicles/mobile plant.

³Required if working in a Hazardous Area unless defined as working alone.

8.9 APPENDIX I – FLOOD RESPONSE PROCEDURE

The Flooding Response Procedures augment the response procedure of this Emergency Plan in the event of a flood.

Flood Warning Monitoring

In the event of a potential flood, the Bureau of Meteorology (BOM) will issue a Flood Watch, which provides early advice on a developing situation that may lead to flooding. This is generally issued up to four days in advance of the expected onset of flooding, with Flood Watches updated at least daily by the BOM.

In the event that the BOM becomes more certain that flooding is expected, often when rainfall has commenced, a Flood Warning will be issued for specific catchments, including expected severity and flood level predictions.

The delegated site representative, likely the site Environmental Advisor, will monitor issued Flood Watch and Flood Warning bulletins issued by the BOM during a period of high rainfall, including high rainfall levels upstream of the Project area.

Flood warnings will also be issued by the NSW SES in the event of a flood. Local radio and media outlets will provide additional community information regarding potential flooding and responses.

SES Flood Bulletin:

<https://www.ses.nsw.gov.au/majorwarning/floodbulletin?major=1&active=FloodBulletin>

BOM Flood Watch and Flood Warning:

<http://www.bom.gov.au/water/floods/floodWarningServices.shtml>

Key site locations and muster points

Refer to the site layout plan for details regarding:

- Location of the site compound
- Location of emergency equipment and first aid facilities
- Location of evacuation points
- Site evacuation route and alternate, if required
- Site entry and exit points.

The layout plan with the above points clearly marked, will be displayed on the site notice board.

Site evacuation

In the event of flooding, a direction to evacuate may be issued by the SES or alternative emergency services, or the Project Manager, Chief Warden or delegate may make the decision to evacuate the site. Personnel designated with responsibility for coordinating a site evacuation will execute the following actions:

1. Prior to the flood event or storm reaching the site:
 - a. Inspect ESC measures, waste receptacles, stockpiles and chemical storage areas. Undertake maintenance if necessary and relocate facilities out of water levels wherever possible if flooding is likely
 - b. Isolate plant and relocate, stow or tie down loose materials.
2. If flooding is likely, instruct subcontractors and site personnel to secure their work areas and move to higher ground. Plant, machinery and vehicles must be moved to the highest possible elevations. Do not attempt to drive through flood waters higher than axle-deep or where the road cannot be clearly seen.
3. Move fuels and chemicals to higher ground where practicable. Anchor fuel tanks to the ground if they cannot be moved.
4. Once all materials have been secured or relocated to higher ground, all personnel should gather at the UGL Lobs Hole Emergency Assembly Area (for Project Area East) and the UGL Switchyard Emergency Assembly Area (for Project Area West), or an evacuation point as advised by the Emergency Evacuation Coordinator

5. Once personnel have arrived at the evacuation point, a roll call will be undertaken
6. Depending on the severity of the flood, further evacuation to nearby towns may be required at the decision of the emergency services, and/or the Emergency Evacuation Coordinator or their delegate
7. If evacuation by vehicle is required and possible, Live Traffic NSW (<https://www.livetraffic.com/>) should be consulted to ensure closed or flooded roads are avoided. Details of evacuation routes are provided in Appendix D of this Emergency Plan.

When a return to the site is possible and permitted by Emergency Services, a site environmental inspection will be undertaken to assess damage to environmental controls, chemical storage, waste receptacles and any aspect of the site that may pose an environmental risk. The results of this inspection will be communicated with TransGrid.

8.10 APPENDIX J – UGL SITE SHUTDOWN AND RESTART PLAN

SECTION A: SITE / PROJECT INFORMATION

Project Name:		Shutdown Date:		Restart Date:		
Project Manager:		Site Manager/ Superintendent:				
Is the Project going to be closed and all works suspended during Project Shut Down period? (e.g. 23 rd December 2022 to 9 th January 2023)				<input type="checkbox"/> YES	<input type="checkbox"/> NO	
If NO , please detail work that is planned to occur during the Shut Down period.						
Planned Work: <ul style="list-style-type: none">						
Key Project Personnel	Position	Contact Number	On Call (Yes/ No)			
			<input type="checkbox"/> YES	<input type="checkbox"/> NO		
			<input type="checkbox"/> YES	<input type="checkbox"/> NO		
			<input type="checkbox"/> YES	<input type="checkbox"/> NO		
			<input type="checkbox"/> YES	<input type="checkbox"/> NO		
			<input type="checkbox"/> YES	<input type="checkbox"/> NO		
			<input type="checkbox"/> YES	<input type="checkbox"/> NO		
			<input type="checkbox"/> YES	<input type="checkbox"/> NO		
			<input type="checkbox"/> YES	<input type="checkbox"/> NO		
On Call Roster						
Name	Role	Contact Number	Availability To Respond	Week Commencing 26/12/22	Week Commencing 02/01/23	Week Commencing 09/01/23

Key Contractor Personnel						
Name	Position	Company	Contact Number	On Call (Yes/ No)		
				<input type="checkbox"/> YES	<input type="checkbox"/> NO	
				<input type="checkbox"/> YES	<input type="checkbox"/> NO	
				<input type="checkbox"/> YES	<input type="checkbox"/> NO	
				<input type="checkbox"/> YES	<input type="checkbox"/> NO	
				<input type="checkbox"/> YES	<input type="checkbox"/> NO	
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				<input type="checkbox"/> YES	<input type="checkbox"/> NO	
				<input type="checkbox"/> YES	<input type="checkbox"/> NO	
				<input type="checkbox"/> YES	<input type="checkbox"/> NO	
On Call Roster						
Name	Role	Contact Number	Availability To Respond	Week Commencing 26/12/22	Week Commencing 02/01/23	Week Commencing 09/01/23

SECTION B: PROJECT SHUTDOWN INITIATIVES

Shutdown Considerations		
* Please review the following Project Shutdown Considerations and record project-specific information in the Project Shutdown Action Plan below.		
No:	Category	Description
1	Visible Leadership Initiatives	<p>3.1 Project Senior Leaders (SLT and PM's) are engaged and visible across the project as part of 2022 Shutdown / 2023 Restart – roster in place as a minimum reviewing high risk activities</p> <p>3.2 Verification of;</p> <ul style="list-style-type: none"> o sufficient levels of Supervision o control measures as per Critical Risk Control Protocols o environmental management controls as per Site Environment Plans and Erosion and Sedimentation Control Plans o monitoring arrangements in place for high-risk works
2	Project Engagement Initiatives	<p>3.3 Projects to schedule and conduct engagement initiatives centred around;</p> <ul style="list-style-type: none"> o One HSE Culture o Critical Risk o Health and Wellbeing <p>3.4 Suggestions;</p> <ul style="list-style-type: none"> o Senior Leadership Shutdown / Restart Presentations o Lunch and Learn BBQ Discussions o Collaborative Critical Risk Reviews o One HSE Culture Discussions
3	Welfare and Wellbeing Initiatives	<p>3.5 Projects to schedule and conduct engagement initiatives centred around;</p> <ul style="list-style-type: none"> o Fitness For Work o Fatigue o Driver Safety o Safety At Home o EAP and Social Support
4	Resource Arrangements / Works Scheduling	<p>Supervision</p> <ul style="list-style-type: none"> <input type="checkbox"/> Has planning and reviews occurred to limit high risk/critical works in weeks prior to the shutdown period? <input type="checkbox"/> What supervision is required for works leading up to the shutdown period? <input type="checkbox"/> Are there any site-specific training/competencies which are required for these works? <input type="checkbox"/> Is there adequate stock/material to support any works leading up to and during the shutdown period (e.g. PPE, barricading, fencing, signage, fuel, environmental controls etc.). <p>Emergency Response</p> <p>3.6 Are adequately trained personnel and resources available over the shutdown period? (e.g. emergency response and crisis management).</p> <ul style="list-style-type: none"> <input type="checkbox"/> If work is to be conducted during shutdown period, have personnel been trained/familiar with IR processes (e.g. Union Right of Entry)? <input type="checkbox"/> Have medical providers been contacted to determine their operating hours over shutdown period? <p>Site Monitoring</p> <ul style="list-style-type: none"> <input type="checkbox"/> Are work crews required to inspect and/or maintain the site over the shutdown period? (e.g. traffic management, monitoring security, environmental controls, fencing etc.)? <p>Security</p> <ul style="list-style-type: none"> <input type="checkbox"/> If you have security passes, ensure that these are not expired for all employees requiring to access site.



Shutdown Considerations

* Please review the following Project Shutdown Considerations and record project-specific information in the Project Shutdown Action Plan below.

No:	Category	Description
		<input type="checkbox"/> Has there been a check to ensure people's contact details are up to date? <input type="checkbox"/> Do nominated employees need access to secure locations (e.g. store)? <input type="checkbox"/> Are security guards required to monitor site? If so, have contact details been exchanged and guards made familiar with site? Note: need to make sure Security Guards have access to toilets and first aid rooms.
5	Client, Emergency Services, Utilities	<input type="checkbox"/> Has client been informed of the shutdown period? <input type="checkbox"/> Have local Emergency Services and Utilities Providers (if applicable) been informed of our shutdown period and discuss their access requirements? <input type="checkbox"/> Have regulators (I.e. EPA/Council/DP&E) been provided details of contacts for environmental matters / community complaints <input type="checkbox"/> Other General considerations (e.g. Consider site access and the potential for vandalism)
6	Buildings, Amenities and Offices	<input type="checkbox"/> Have toilets been emptied (portaloos) and are they located on high ground and appropriately secured? <input type="checkbox"/> All temporary construction buildings checked to ensure adequate anchorages exist to prevent dislodgement by wind or water pressure? <input type="checkbox"/> Are all containers locked close and protected from movement? <input type="checkbox"/> Are all outdoor furniture and loose items associated with crib rooms been secured (e.g. put inside crib room)? <input type="checkbox"/> Have all windows and doors been closed and secured? <input type="checkbox"/> Has all electrical equipment in office(s) been turned off? E.g. Air Conditioning Units; Fridges and dishwashers & hot water urns (empty) <input type="checkbox"/> Have unnecessary water connections been turned off? <input type="checkbox"/> Have computers, printers been covered to prevent ingress of dust? <input type="checkbox"/> Have confidential materials and valuables been secured? <input type="checkbox"/> Have all loose materials likely to be dislodged by wind or water movement been removed or secured to substantial anchorages? (e.g. roofing, ply, tarps, pallets, dunnage etc.) <input type="checkbox"/> Have staff been instructed to take valuables and their laptop computers home to keep secure? <input type="checkbox"/> Are all desk top computers, printers and electrical items shut down and turned off at power point? <input type="checkbox"/> Are communication systems, including evacuation alarms functional? <input type="checkbox"/> Is access / security lighting operational? <input type="checkbox"/> Are first aid rooms fully stocked? <input type="checkbox"/> Have compound/site gates been locked? <input type="checkbox"/> Have generators been switched off? <input type="checkbox"/> Have all internal lights been switched off?
7	Plant & Equipment	<input type="checkbox"/> Have all plant, equipment and tools not required over the shutdown period been adequately secured and returned to secure storage area? <input type="checkbox"/> Have all mobile plant (e.g. Forklifts, EWP's) been parked up with hand brake on, in low gear, with wheel chocks installed (where applicable)? <input type="checkbox"/> Have all small plant (e.g. generators) been elevated in the event of flooding? <input type="checkbox"/> Have all site vehicles and pool cars been parked up in a secure location (e.g. lockable compound) and keys handed to nominated person. NOTE: all vehicles should be cleaned inside and out (if possible) and have all tools, material etc. removed. 3.7 Have all equipment that is not required over shutdown period been turned off with power isolated? <input type="checkbox"/> Are all welding cables, electrical leads and oxy hoses rolled up and secure? <input type="checkbox"/> Are all oxy acetylene and other gas cylinders in a safe and secure storage area with gauges removed? <input type="checkbox"/> Have electrical leads and equipment been inspected to ensure they are tested and tagged? <input type="checkbox"/> Has rigging gear been collected and stored securely? <input type="checkbox"/> Have all cranes been parked on high, well drained ground with firm foundations. Crane booms lowered if work is not continuing through period.



Shutdown Considerations

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No:	Category	Description
8	Traffic Management	<input type="checkbox"/> Are pedestrian access ways clearly defined, safe with controls of a high standard? (e.g. signage, fencing, free of obstructions/trip hazards, caps on star pickets etc.) <input type="checkbox"/> Has a full inspection been completed of roadway to ensure all traffic control devices have been effectively installed, there are no loose items that could cause a traffic accident? <input type="checkbox"/> Preference should be given to permanent fencing, however where temporary fencing is being used has it been built/secured to prevent blowing over? Note: consider removing shade cloth if possible, tie back to anchors/use panels to back brace (refer AS/NZS 1170.2:2011 / AS 4687-2007)
9	Exposure to work at height	<input type="checkbox"/> Has access to elevated floors, structures, scaffolds, ladders, bridges etc. been blocked and "Danger - Do Not Enter" signage erected. Note: use hard barriers such as temporary fencing, remove ladders and install tube on scaffolds which are not required during shutdown period etc. <input type="checkbox"/> Have all open pits, penetrations, drains been covered and secured as per UGL's Critical Risk Control Protocols? <input type="checkbox"/> Are all guardrails in place and secure? <input type="checkbox"/> Have all excavations been backfilled (where possible)? If there is a fall potential have solid barriers been installed at a safe distance from the edge of the excavation? (e.g. temporary fence, concrete barriers etc.) <input type="checkbox"/> Are elevated floors, structures and scaffold free of loose objects which have the potential to fall (consider wind)?
10	Hazardous Substances / Dangerous Goods / Chemical Management	<input type="checkbox"/> Are Dangerous Goods stored in a secure location which is free from ignition sources and combustible material (e.g. rags, paper, timber, grass etc.)? <input type="checkbox"/> Are all oil drums and chemicals stored correctly in a secure location (e.g. bunded etc.)? <input type="checkbox"/> Sufficient spill response equipment on-site in the event of an incident? <input type="checkbox"/> Have all bunds been inspected to ensure they are empty? <input type="checkbox"/> Are all containers in good condition, lids secured and positioned to prevent movement? <input type="checkbox"/> Are gas cylinders secured with adequate separation for incompatible classes of Dangerous Goods (e.g. oxygen and acetylene must have a minimum of 3 metre separation). <input type="checkbox"/> Have suppliers been notified of cancelled orders over the shutdown period?
11	Environmental Contacts	<input type="checkbox"/> Weather Forecast (Consider what extreme wind, rain, cyclone and/or heat can do to your site): 1.2 <input type="checkbox"/> Identify who is available to assist in maintenance/emergency situations (Provide resources to facilitate corrective actions, investigations and contact with relevant senior managers): 1.3 Name and Contact details: 1.4 Caretaker: 1.5 Environmental Support: 1.6 Field Support: 1.7 Project Manager: 1.8 Electrical Service Provider: 1.9 Security (or similar): Other:
12	Soil and Water Management	3.8 Is the site adequately prepared for a rain fall/storm event? 3.9 Have all drainage points been identified and assessed for protection requirements? 3.10 Is clean water appropriately diverted away from site? 3.11 Are exposed surfaces compacted and/or stabilised? (grass seeded, geofabric, enviro blanket) 3.12 Are all access ramps / points been locked down with controls to prevent dirty water washing offsite? <input type="checkbox"/> Are there sufficient controls available for maintenance (e.g. sediment fencing/geofabric, sandbags filled)?
13	Wildlife, Protected Tree's and	<input type="checkbox"/> Have all trenches and excavations been backfilled (to prevent entrapment of native wildlife) or covered? <input type="checkbox"/> Have possible Mosquito / Snake / Vermin Habitats been removed?



Shutdown Considerations

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No:	Category	Description
	Vegetation Management	<input type="checkbox"/> Have receptacles been removed or turned over that may capture water (to prevent mosquito breeding habitat)? <input type="checkbox"/> Has equipment been appropriately stored to prevent snake habitat / refuge? For protected plants (heritage listed or rare plants) and re-vegetation areas, have these sites been: <input type="checkbox"/> Appropriately barricaded sign posted and exclusion zones established?
14	Other Project Specific Req.	<input type="checkbox"/>

Project Shutdown Action Plan

No:	Category	Description	Action By Who	By When	Date Completed
1	Visible Leadership Initiatives	Insert detailed action description here...			
2	Project Engagement Initiatives	Insert detailed action description here...			
3	Welfare and Wellbeing Initiatives	Insert detailed action description here...			
4	Resource Arrangements / Works Scheduling	Insert detailed action description here...			
5	Client, Emergency Services, Utilities	Insert detailed action description here...			
6	Buildings, Amenities and Offices	Insert detailed action description here...			
7	Plant & Equipment	Insert detailed action description here...			
8	Traffic Management	Insert detailed action description here...			
9	Exposure to work at height	Insert detailed action description here...			
10	Hazardous Substances / Dangerous Goods / Chemical Management	Insert detailed action description here...			
11	Environmental Contacts	Insert detailed action description here...			
12	Soil and Water Management	Insert detailed action description here...			
13	Wildlife, Protected Tree's and Vegetation Management	Insert detailed action description here...			
14	Other Project Specific Req.	Insert detailed action description here...			

SECTION C: PROJECT RESTART INITIATIVES

Restart Considerations

* Please review the following Project Restart Considerations and record project-specific information in the Project Restart Action Plan.

No:	Category	Description
1	Operational Considerations	<p>3.13 Projects recommence scheduled works</p> <p>3.14 Reduced working hours scheduled for rosters for the first 2 weeks (8 hours maximum)</p> <p>3.15 Extended pre-start on first day back to verify availability and suitability of Critical Controls before commencing Critical Risk Activities, this should also include review of relevant SWMS for High Risk Activities before task commencement (suggest 3-4hr soft start process).</p> <p>3.16 Roster assessments to stagger restart initiatives based on returning Staff, Wages, Contractors</p> <p>3.17 Daily Pre Start Briefs re-conducted after lunch periods for first 2 weeks</p> <p>3.18 Planning and reviews to limit high risk/critical works in weeks post shutdown period</p> <p>3.19 Environmental conditions following a period of shut down, slippery conditions, snakes</p> <p>3.20 Fitness for work – increased surveillance throughout the restart</p> <p>3.21 EAP support for project workers</p>
2	Visible Leadership Initiatives	<p>3.22 Project Leader to reset expectations at day1 pre-start, including activities to verify control availability and suitability before commencing work.</p> <p>3.23 Project Senior Leaders (SLT and PM's) are engaged and visible across the project as part of 2023 Restart – roster in place as a minimum reviewing high risk activities</p> <p>3.24 Verification of;</p> <ul style="list-style-type: none"> ○ sufficient levels of Supervision ○ control measures as per Critical Risk Control Protocols ○ maintenance or repair of environmental management controls prior to restart of construction works ○ monitoring arrangements in place for high-risk works
3	Supervision	<ul style="list-style-type: none"> <input type="checkbox"/> What supervision is required for works during re-start period? <input type="checkbox"/> Are there any site-specific training/competencies which are required for these works?
4	Project Re-engagement Initiatives	<p>3.25 Projects to schedule and conduct re-engagement initiatives centred around;</p> <ul style="list-style-type: none"> ○ One HSE Culture ○ Critical Risk ○ Environmental Control ○ Health and Wellbeing ○ Fitness For Work <p>3.26 Suggestions;</p> <ul style="list-style-type: none"> ○ Senior Leadership Restart Presentations ○ Site-wide Lunch and Learn BBQ Discussions ○ Collaborative Critical Risk Reviews ○ One HSE Culture Discussions

RESTART PLAN

Restart Considerations

* Please review the following Project Restart Considerations and record project-specific information in the Project Restart Action Plan.

No:	Category	Description
		<p>3.27 Consider conducting a series of “Induction Stations” to ensure all Critical Risk Controls are reviewed with returning personnel and stakeholders.</p> <p>3.28 Consider a series of environmental control activities to re-engage the team on what good looks like for environmental risk control e.g. sediment controls, dust suppression etc.</p>
5	Pre-start Meeting	<p>3.29 Outline the re-start process, it is recommended that all stakeholders receive a re-induction to the project.</p> <p>3.30 Discuss any hazards people may face and ensure that we have controls in place. Reiterate the intent of Start Card and its relevance (e.g. it is about identifying what’s changed/different.</p> <p>3.31 Refresh people with the emergency response procedure (e.g. how to raise alarm, evacuation process, etc.).</p> <p>3.32 Explain our goals and targets and the work ahead of us in 2023. Note: It is critical that people are focussed back on the job and safety is our priority after the long shutdown period</p> <p>3.33 Perform a Drug and Alcohol Test for the first couple of days (should notify personnel that this will be the case as a deterrent).</p> <p>3.34 Utilise the UGL One HSE Culture Framework to consult with stakeholders to clarify expected behaviours.</p> <p>3.35 Explain to people that they need to let their supervisor know if they have sustained a non-work-related injury over shutdown period.</p> <p>3.36 Maintenance or repair of environmental management controls prior to restart of construction works</p>
6	Site Inspection	<p>3.37 Supervisors, Engineers and HSE personnel have performed a thorough site inspection of all work areas to check for any hazards that may have occurred over the shutdown period and need to be rectified before commencing productive work. All items should be documented (as per a HSE walk) and closed out with agreed times. Any items that require immediate attention should be closed out immediately upon the return of the labour force before commencing productive work.</p> <p>3.38 Establish/ re-establish any exclusion zones, restricted work zones or other barricading.</p>
7	Review of Project Risk	<p>3.39 Engineers have lead a review of all Workpacks and associated documents to ensure compliance.</p> <p>3.40 Are all work permits current (e.g. Ground Penetration, Confined Space Entry, Work at Height etc.)</p>

RESTART PLAN

Restart Considerations

* Please review the following Project Restart Considerations and record project-specific information in the Project Restart Action Plan.

No:	Category	Description
	Registers / Workpacks & SWMS	<p>3.41 All relevant work activity SWMS to be reviewed and or updated by the respective work crew with sign offs by Safety, PM/CM, Engineer, Foreman and crew members, prior to work commencing. Work crews to be consulted with the development of specified controls, re-inducted into the SWMS and signed off their acknowledgement of the specified requirements.</p> <p>3.42 Task Cards – must be completed onsite for all activities and signed off by the work crew and Supervisor. No work can commence until the task card has been reviewed and signed off by a member of the Safety Team, Management Team or Supt.</p> <p>3.43 Take this opportunity to review your work crews' tasks and ensure that they are confident and or competent.</p>
8	Project Management Plans	<p>3.44 Project management plans should be reviewed and updated were required including but not limited to;</p> <ul style="list-style-type: none"> ○ Health and Safety Management Plan ○ Emergency Response Plan ○ Environmental Management Plan ○ Traffic Management Plans ○ Vehicle Management Plans
9	Project Manager Critical Risk Review	<p>3.45 PM Critical Risk Review must be conducted within the first week of the project re-starting normal operations to validate that work tasks are being managed in accordance with the Critical Risk Control Protocol requirements.</p>



RESTART PLAN

Project Restart Action Plan					
No:	Category	Description	Action By Who	By When	Date Completed
1	Operational Considerations	Insert detailed action description here...			
2	Visible Leadership Initiatives	Insert detailed action description here...			
3	Supervision	Insert detailed action description here...			
4	Project Re-engagement Initiatives	Insert detailed action description here...			
5	Pre-start Meeting	Insert detailed action description here...			
6	Site Inspection (including review of environmental risk controls)	Insert detailed action description here...			
7	Review of Project Risk Registers / Workpacks & SWMS	Insert detailed action description here...			
8	Project Management Plans	Insert detailed action description here...			
9	Project Manager Critical Risk Review	Insert detailed action description here...			