Electric Line Clearance Management Plan – 1 July 2021 to 30 June 2026

TransGrid

Revision 2 March 2021

Document Control					
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Approver:	Sean McGoldrick – Executive Manager / Network Planning and Operations				

Table 1 Change from previous version

Revision No.	Approved By	Comment
2	Energy Safe Victoria	Plan modified to meet the requirements of **Electricity Safety (Electric Line Clearance) Regulations 2020**
1	Energy Safe Victoria	As per ESV Letter Ref: CM-9509, **APPROVAL OF ELECTRIC LINE CLEARANCE MANAGEMENT PLAN 2019-20**

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1. Summary

This Electric Line Clearance Management Plan (the **Plan**) describes the vegetation management processes for managing transmission line assets and associated easements in compliance with the Electricity Safety (Electric Line Clearance) Regulations 2020 (the Regulation) and its Schedule – Code of Practice for Electric Line Clearance (the **Code**).

The Plan demonstrates compliance with the objectives of the Code:

- **(i)** The duties of Responsible Persons;
- **(ii)** The standards and practices to be adopted and observed in vegetation management in the vicinity of the electric lines;
- **(iii)** Management procedures to minimise danger of electric lines causing fire or electrocution;
- **(iv)** Any other matters for or with respect to the maintenance of electric lines and associated assets.

TransGrid prepared and submitted the Plan to Energy Safe Victoria (ESV), for approval in accordance with the Electricity Act 1998 before 31st of March of 2021 for the period of 1 July 2021 to 30 June 2026. The Plan will be reviewed regularly (during the 5 years period) to ensure relevant new transmission line assets in Victoria that come under the ownership of TransGrid are covered by the Plan, and that the processes remain effective and current.

A copy of the approved Plan will be published on the TransGrid website (www.transgrid.com.au) after submission.

2. Foreword

The Plan outlines how TransGrid will manage its transmission lines and associated assets located in Victoria from the risk of vegetation coming into contact with the electric lines, and fulfil our commitment to provide customers with a safe and reliable electricity supply.

The purpose of the Plan is to provide management procedures in relation to tree pruning, cutting or removal in the vicinity of electric transmission lines and the keeping of the whole or any part of a tree clear of such. The Plan also incorporates TransGrid's procedures that ensures maintenance of prescribed clearance spaces and compliance with the Electricity Safety (Electric Line Clearance) Regulations 2020.

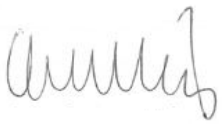
The Plan is subject to 5 yearly review (or as required based on new transmission line assets that come under the ownership of TransGrid) to provide an objective and robust framework for its continued development, including the adoption of emerging technologies and innovative ideas. The review and update of the Plan for implementation for the period of 1 July 2021 to 30 June 2026 must be submitted to ESV for approval by 31 of March 2021. Furthermore, the Plan will be amended if instructed to do so in writing by Energy Safe Victoria within 14 days after the written instruction or such longer period as specified by Energy Safe Victoria in the written instruction, as specified in Part 2 s.10 of the Regulations 2020.

A copy of the approved TransGrid Electric Line Clearance Management Plan is published on the TransGrid website (www.transgrid.com.au).

As the responsible Executive officer for TransGrid's Strategic Bushfire Risk, I trust the Plan conveys key aspects of how TransGrid's manages Electric Line Clearance for its Victorian Assets in order to mitigate bushfires. TransGrid welcomes contributions for the continued development of the Plan's effectiveness.

Sean McGoldrick
Executive Manager / Network Planning and Operations

Signatories to the Electricity Management Safety Scheme:

Endorsed by	Endorsed by	Prepared by
Lance Wee	Hilary Priest	Andrew McAlpine
		
Head of Asset Management	Head of Compliance	Asset Systems and Compliance Manager

3. Responsible Officers

For the purposes of Part 2 of the Code, the prescribed particulars related to sections 9(4) (a) – (d) of the Regulation are provided in the below table. The responsible person identified below is to ensure the Plan is reviewed before 31 of March 2021, and the Plan related to compliance with the Code for the period of 1 July 2021 to 30 June 2026.

Regulation Reference	Prescribed particular – contact details	TransGrid Information
9(4)(a)	the name, address and telephone number of the responsible person	Sean McGoldrick / Executive Manager of Network Planning and Operations. NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for NSW Electricity Networks Operations Trust (ABN 70 250 995 390) (operating as TransGrid) 180 Thomas Street Haymarket NSW 2000 T: (02) 9284 3000 Postal address: PO Box A1000 Sydney South NSW 1235
9(4)(b)	the name, position, address and telephone number of the individual who was responsible for the preparation of the management plan	Andrew McAlpine / Asset Systems and Compliance Manager / Network Planning and Operations 180 Thomas Street, Haymarket NSW 2000 T: (02) 9284 3000
9(4)(c)	the name, position, address and telephone number of the persons who are responsible for carrying out the management plan	Vijay Vetrivel / Easement Maintenance Manager / Works Delivery Old Wallgrove Road, Eastern Creek NSW 2766 T: (02) 9284 3000
9(4)(d)	the telephone number of a person who can be contacted in an emergency that requires clearance of a tree from an electric line that the responsible person is required to keep clear of trees	**Emergency Contact Number for general public (open 24 hrs and available on TransGrid website):** 1800 027 253 https://www.transgrid.com.au/Pages/contact.aspx

As per Part 2 s.10(6) of the Regulation a copy of the accepted and current Electric Line Clearance Management Plan will be available on TransGrid's website: https://transgrid.com.au/news-views/publications/Pages/default.aspx

The TransGrid's complaint handling policy can be viewed at:

https://www.transgrid.com.au/being-responsible/complaint-handling-policy

To lodge a complaint please call the toll-free hotline 1800 222 537 or email us at:

community@transgrid.com.au.

4. Introduction

4.1 Objective

The objective of the Plan is to demonstrate compliance to the Regulations and the Code. This is done by describing the standards and practices used by TransGrid to observe and remove vegetation in the vicinity of electric lines, and keeping the whole or any part of the vegetation clear of the electric lines TransGrid operates.

This results in the achievement of:

> Electrical safety.
> Minimisation of fire starts from assets.
> Effectively manage reliability of supply.
> Achievement and promotion of public safety.
> Achievement and promotion of workplace safety.
> Maximised environment protection and amenity.
> Effectively protecting areas of important vegetation.
> Ensuring community satisfaction.

The Plan will communicate how external stakeholders, such as Contractors and landowners, are engaged to ensure the objectives of the Plan are achieved.

4.2 Ownership of Assets

TransGrid's core business is to operate and maintain the high voltage electricity transmission network in NSW and ACT, connecting generators, distributors, and major end users. TransGrid's network forms a major backbone of the National Electricity Market (NEM), enabling energy trading between Australia's three largest states along the east coast and supporting the competitive wholesale electricity market. In addition to its prescribed transmission network in NSW and ACT the TransGrid Group owns and operates a number of non-prescribed assets across NSW, ACT, and Victoria.

As a result, TransGrid owns the following elements of the Victorian transmission network as referred in Table 2.

Table 2 TransGrid Group ownership of Victorian network elements

Legal Entity	Assets Owned
NSW Electricity Networks Operations Pty Ltd as trustee for NSW Electricity Networks Operations Trust	Deer Park Terminal Station (**DPTS)**
TransGrid Services Pty Limited as trustee for the TransGrid Services Trust	Kiamal Terminal Station (**KMTS**) Berrybank Terminal Station (**BBTS**) Berrybank Windfarm 220/33kV Substation (**BBWF**) 220kV Line connecting BBTS and BBW (**BBTS-BBWF)**

The operator of all assets in this Electric Line Clearance Management Plan (**ELCMP**) is NSW Electricity Networks Operations Pty Ltd, as trustee for NSW Electricity Networks Operations Trust (**TransGrid**), with the transmission line connecting the Berrybank Terminal Station and the Berrybank Substation owned by

TransGrid Services Pty Limited, as trustee for the TransGrid Services Trust (**TGS**). TGS and TransGrid have entered into a Management Services Agreement under which TransGrid will operate TGS owned assets under its processes and procedures for the management of network safety, bushfire mitigation, and vegetation management.

The assets owned by TransGrid and TGS and operated by TransGrid are collectively referred to as Network Assets or Victorian Network in this document.

4.3 Purpose

The management of safe clearances from vegetation to conductors is essential to:

> Mitigate the risk of lines starting fires through flashover to vegetation.
> Minimise the safety risk to the public.
> Minimise the damage to environment and private property.
> Maintain high levels of system reliability by reducing the instances of contact with vegetation.

This Plan specifies the standards for vegetation maintenance that are aimed at satisfying the requirements in the Code. TransGrid's ISO55001 certified Asset Management System (recertified in 2017) and Electricity Safety Management Scheme approved by ESV inform the effectiveness of vegetation maintenance.

The Plan demonstrates how various TransGrid staff and Contractors coordinate activities to achieve the aforementioned objectives. Figure 1 and Table 3 provides information on key TransGrid internal stakeholders in vegetation management in Victoria.

Figure 1 TransGrid Org Structure for Vegetation Management

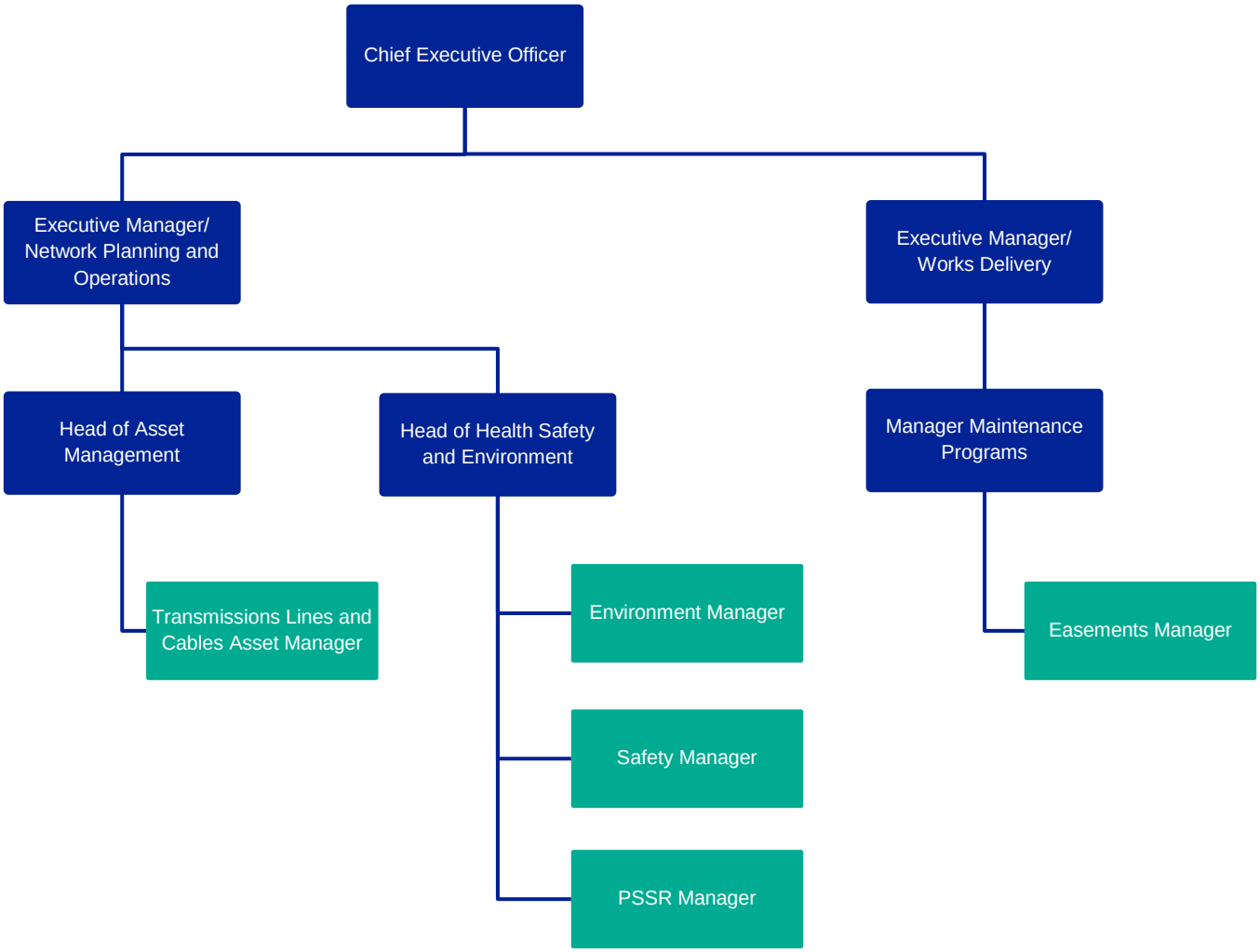


Table 3 TransGrid Organisation Structure for Vegetation Management

Title	Role in Vegetation Management
Transmission Lines and Cables Asset Manager	> Define the easement strategy. > Develops and monitors the implementation of the Maintenance Plan – Easement and Access Tracks, and the easement maintenance requirements in Maintenance Plan – Non-Prescribed Assets. > Undertakes Control Assurance Reviews (CAR) on the implementation of the nominated Maintenance Plans.
Easements Manager	> Implement the Maintenance Plan – Easement and Access Tracks and the easement maintenance requirements in Maintenance Plan – Non-Prescribed Assets. > Participate in the internal audit on the implementation of the Maintenance Plan – Easement and Access Tracks and the easement maintenance requirements in Maintenance Plan – Non-Prescribed Assets. > Manage contracts with Contractors providing easement maintenance services. > Manage Contractors' quality of service by ensuring their procedures are at par with TransGrid's procedures. > Manage Contractors' technical competency.
Environment Manager	> Ensure Contractor's environmental management system is equivalent to or better than TransGrid's certified Environment Management System. > Track Contractor performance and perform environmental audits on Contractors. > Develop and communicate asset specific site management plans to Contractors.
Safety Manager	> Ensure Contractors safety management systems are equivalent to or better than TransGrid's certified Safety Management System. > Track Contractors performance and perform safety audits on Contractors.
Power System Safety Rules (PSSR) Manager	> Manage Contractors safety competency when working near or on TransGrid's assets.

4.4 Geographical implementation of the Plan

Victorian network assets are separate discrete assets and do not form a network. Network Asset specific line clearance management activities, are included as asset-specific appendices. Figure 2 illustrates that all current transmission line Network Assets in Victoria are located in a hazardous bushfire risk area, emphasising the importance of the Plan in minimising any bushfire risk from network assets in Victoria. Figure

3 illustrates the approximate location of the Network Assets in the context of the Victorian electricity network.

This plan covers the Berrybank Transmission Line (BBTS-BBWF) operating at 220kV that is the only transmission line TransGrid are currently contracted to own and operate in Victoria. Specific information on this line and the corresponding substations can be found in Appendix A. The Blue dot in Figure 2 is the approximate location of BBTS-BBWF, which illustrates that the asset is located in and surrounded by land categorised as high bushfire risk area.

The Plan will be updated as new transmission lines are acquired by TransGrid. Consequently, Country Fire Authority is contacted to determine the bushfire risk area classification of all assets (existing and new) when the Plan is updated.

Figure 2 Bushfire risk area coverage in Victoria

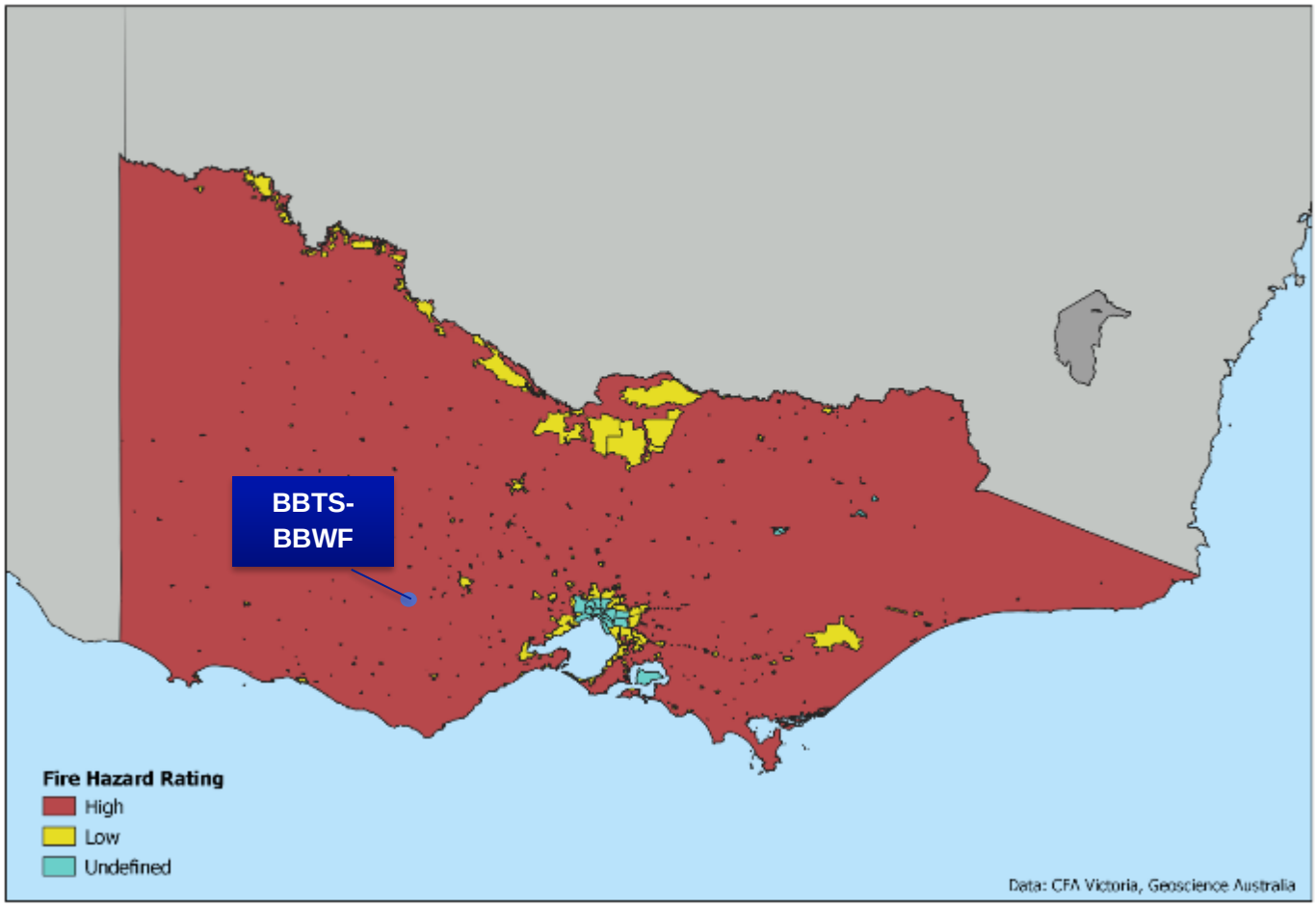
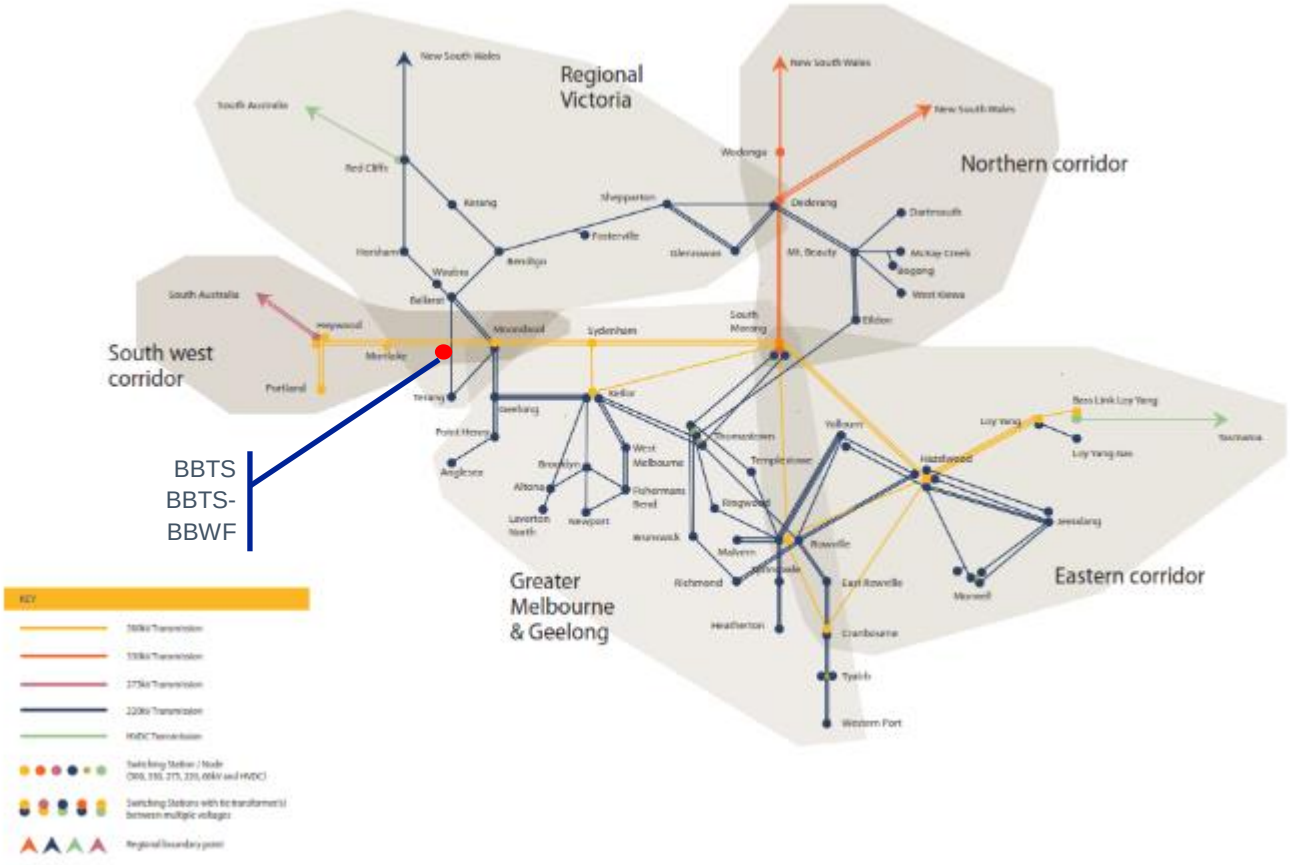


Figure 3 Victorian Electricity Network[1]



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[1] Taken from https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/Interactive-maps-and-dashboards/Other-Maps-and-Diagrams accessed on 6th of September 2019.

5. Abbreviations and Definitions

Table 4 Abbreviations

Abbreviation	Phrase
AIM	Asset Inspection Manager
CAMMS	Hazard, Risk, Waste, Incident, Audit and Compliance Management System
CFA	Victorian Country Fire Authority
BBTS	Berrybank Terminal Station
BBWF	Berrybank Windfarm Substation
BBTS-BBWF	Berrybank Transmission Line
ENSMS	The Electricity Network Safety Management System and associated formal safety assessments developed by TransGrid under the NSW Electricity Supply (Safety and Network Management) Regulation 2014
EPIRB	Emergency Position Indicating Radio Beacon
ESMS	Electricity Safety Management Scheme in accordance with the Electricity Safety (Management) Regulations 2009 Division 1
ESV	Energy Safe Victoria, the Victorian technical and safety regulator
PSSR	TransGrid's Power System Safety Rules (refer Definitions) which dictates Safe Approach Distance for working on or near TransGrid's assets.
TSS	TransGrid Spatial System

Table 5 Definitions

Term	Definition
As Far As Practicable	The reduction of risk in accordance with the *Electricity Safety Act (1998)* Section 83 and Part 10. This level of reduction exceeds the requirements for meeting ALARP under AS5577.
Authorisation System	TransGrid's Authorisation System is an online system, which performs the traditional approval to work function whilst ensuring access to areas is only granted to authorised and competent persons. The Authorisation System is integrated with the TransGrid's enterprise resource planner system (Ellipse) and the TransGrid Resource Allocation Calendar (TRAC) to ensure competencies Authorisation System are up to date when allocated to work. TransGrid currently use an in-house system called Authorisation to Work (ATW) to perform this process.
Bushfire Danger Period	CFA declares the Fire Danger Period for each municipality (shire or council) at different times in the lead up to the fire season. It depends on the amount of rain, grassland curing rate and other local conditions.
Bushfire Risk Area	Country Fire Authority (CFA) classifies Bushfire Risk Area into one of the three categories:

Term	Definition
	> High > Low > Undefined Figure 2 Bushfire risk area coverage in Victoria is an output of the information provided by CFA on Bushfire Risk Areas.
Contractor	First response, emergency, and maintenance related service provided to TransGrid to respond to manage the asset on behalf of TransGrid via a signed contract.
Maintenance Plan	Officially titled Maintenance Plan – Easement and Access Track, this specific document is owned by the Transmission Line and Cables Asset Manager. The document describes the activities and required for easement maintenance and inspection activities. Intervals and activities for TransGrid's Victorian Operations will be mentioned in Maintenance Plan – Non-prescribed Assets, which will specify non-standard maintenance activities for assets in-scope of this document.
Easement	The area of land specified in an actual easement right granted to TransGrid on a title of land, or where an easement right does not exist, to a corridor of land centred on the transmission line.
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from TransGrid's activities.
Expected Growth Rate	A range between slow, medium, or high referring to the vegetation in an easement in respect to the tallest growing tree species.
Hazard Tree	A tree with the potential to impact or come within electrical clearances of the transmission line or its structures should whole or part of the tree fall. In many cases, hazard trees are outside the easement. These are also known as Danger Trees. The potential to impact is calculated at Maximum Line Operating Conditions (Tmax only).
LiDAR	**Li**ght **D**etection **A**nd **R**anging – In this document, LiDAR is taken to be the whole process of 3D laser scanning of ground, electricity infrastructure and vegetation, comparing the laser point data to PLS-CADD® transmission line models to determine the vegetation clearance to wire at nominal line temperature, maximum operating temperature and blowout conditions.
Maximum Line Operating Conditions	The maximum sag (Tmax) and blowout (50ºc + 500Pa) conditions for a transmission line. The maximum sag will occur with maximum line current load on a still hot day and relates to the line rating available for use by TransGrid System Operations, and the maximum sway that will occur at high wind conditions.
Minimum Clearance Space	The Minimum Clearance Space (as defined in the Code Clause 30) is the applicable distance plus an allowance for cable sag and sway calculation, including the space above the line. This distance is to be maintained at all times.
Minimum Safe Approach Distance	Safe Approach Distances (SAD) for authorised Persons as defined in Power System Safety Rules (PSSR). The TransGrid required SAD under the PSSR is either greater than or equal to specified distances in section 6 of Blue Book 2017

Term	Definition
Network Assets (also known as Victorian Network)	The TransGrid Network Assets that are within the scope of this ESMS. This revision of the ESMS includes: > Deer Park Terminal Station (DPTS). > Kiamal Terminal Station (KTS). > Berrybank Terminal Station (BBTS), Berrybank Substation (BBWF), and Berrybank Terminal Station to Berrybank Substation 220kV line (BBTS-BBWF).
Nominal Line Temperature	Transmission line operating condition where conductor temperature is 50°C + zero wind.
the Act	*Electricity Safety Act 1998* (Victoria)
The Code	Electricity Safety (Electric Line Clearance) Regulations 2015, Schedule 1 – Code of Practice for Electric Line Clearance
Regrowth space	It is the space beyond the clearance space that must be cleared to allow for anticipated vegetation regrowth between maintenance cycles
the Regulation	Electricity Safety (Electric Line Clearance) Regulations 2015
The Wire	TransGrid's internal intranet system
Vegetation Clearance Requirement (VCR)	TransGrid stipulated minimum separation in air that shall be maintained between vegetation and live electrical apparatus. This clearance is required at all times to conductors at Maximum Line Operating Conditions and is greater than Minimum Clearance Space

6. Compliance Information

Section 7 of this document is structured in line with the Regulations to assist with demonstrating compliance as shown in Table 6.

Table 6 Compliance Reference

Clause	Regulatory Requirement	Section in ELCMP
9(1)	This regulation does not apply to a responsible person referred to in section 84A or 84B of the Act.	Not applicable
9(2)	A responsible person that is not a major electricity company, before 31 March in each year, must prepare a management plan relating to compliance with the Code for the next financial year.	Not Applicable
9 (3)	A responsible person that is a major electricity company, before 31 March 2021, must prepare and submit to Energy Safe Victoria for approval a management plan relating to compliance with the Code for the period from 1 July 2021 to 30 June 2026.	3
9(4)(a)	The name, address and telephone number of the responsible person	3
9(4)(b)	The name, position, address and telephone number of the individual who was responsible for the preparation of the management plan	3
9(4)(c)	The name, position, address and telephone number of the persons who are responsible for carrying out the management plan	3
9(4)(d)	the telephone number of a person who can be contacted in an emergency that requires clearance of a tree from an electric line that the responsible person is required to keep clear of trees	3
9(4)(e)	the objectives of the management plan	4.1
9(4)(f)	the land to which the management plan applies (as indicated on a map)	4.4
9(4) (g)	any hazardous bushfire risk areas and low bushfire risk areas in the land referred to in paragraph (f) (as indicated on the map)	4.4, Figure 2
9(4)(h)	each area that the responsible person knows contains a tree that the responsible person may need to cut or remove to ensure compliance with the Code and that is— **(i)** Indigenous to Victoria; or **(ii)** listed in a planning scheme to be of ecological, historical or aesthetic significance; or **(iii)** a tree of cultural or environmental significance	7.1
9(4)(i)	the means which the responsible person is required to use to identify a tree of a kind specified in paragraph (h)(i), (ii) or (iii)	7.1

Clause	Regulatory Requirement	Section in ELCMP
9(4)(j)	the management procedures that the responsible person is required to adopt to ensure compliance with the Code, which must— **(i)** include details of the methods to be adopted for managing trees and maintaining a Minimum Clearance Space as required by the Code; and **(ii)** for the purposes of determining a Minimum Clearance Space in accordance with Division 1 of Part 3 of the Code- (A) must specify the method for determining an additional distance that allows for conductor sag and sway; and (B) may provide for different additional distances to be determined for different parts of an electric line span;	7.3, 7.4 7.4.2
9(4)(k)	the procedures to be adopted if it is not practicable to comply with the requirements of AS 4373 while cutting a tree in accordance with the Code.	7.2.2
9(4)(l)	a description of each alternative compliance mechanism in respect of which the responsible person has applied, or proposes to apply, for approval under clause 31 of the Code	Not Applicable
9(4)(m)	the details of each approval for an alternative compliance mechanism that— **(i)** the responsible person holds; and **(ii)** is in effect	Not Applicable
9(4)(n)	a description of the measures that must be used to assess the performance of the responsible person under the management plan	7.5
9(4)(o)	details of the audit processes that must be used to determine the responsible person's compliance with the Code	7.6
9(4)(p)	the qualifications and experience that the responsible person must require of the persons who are to carry out the inspection, cutting or removal of trees in accordance with the Code and the Electricity Safety (General) Regulations 2019	7.7
9(4)(q)	notification and consultation procedures, including the form of the notice to be given in accordance with Division 3 of Part 2 of the Code	7.2, 7.8
9(4)(r)	a procedure for the independent resolution of disputes relating to electric line clearance	7.8
9 (4) (s)	if Energy Safe Victoria has granted an exemption under regulation 11 relating to a requirement of the Code, details of the exemption or a copy of the exemption.	Not Applicable

Table 7 identifies the specific items as required in (the Code) of the Regulations.

Table 7 Compliance Reference for the Code

Reference	Requirement	Location in ELCMP
3	Responsible person must keep Minimum Clearance Space clear of trees	Table 9
4	Exception to Minimum Clearance Space for structural branches around insulated low voltage electric lines	Not Applicable
5	Exception to Minimum Clearance Space for small branches around insulated low voltage electric lines	Not Applicable
6	Exception to Minimum Clearance Space for small branches around uninsulated low voltage electric lines in low bushfire risk areas	Not Applicable
7	Exception to Minimum Clearance Space for structural branches around uninsulated low voltage electric lines in low bushfire risk areas	Not Applicable
8	Owner or operator of transmission line must manage trees around Minimum Clearance Space	7.3.2, 7.4.2, 7.4.3, 7.4.4
9	Responsible person may cut or remove hazard tree	7.4.5
10	Cutting of tree to comply with Standard	7.3,7.4
11	Cutting or removal of indigenous or significant trees must be minimised	7.4.5
12	Cutting or removing habitat for threatened fauna	7.4.5
13	Restriction on timing of cutting or removal if notification is required	7.2
14	Restriction on urgent cutting of trees	7.2
15	Restriction on urgent removal of trees	7.2
16	Responsible person must provide notification before cutting or removing certain trees	7.2, 7.8 , Appendix D,
17	Responsible person must publish notice before cutting or removing certain trees	7.2, 7.8 , Appendix D
18	Responsible person must consult with occupier or owner of private property before cutting or removing certain trees	7.2.1
19	Notification and record keeping requirements for urgent cutting or removal	7.2.2, Appendix D
20	Duty relating to the safety of cutting or removal of trees close to an electric line	7.3
21	Duty relating to assisting to determine the allowance for cable sag and sway	7.4.2
22	Duties relating to management procedures to minimise danger	Not applicable
23	Additional distance that allows for cable sag and sway	7.4.2

Reference	Requirement	Location in ELCMP
24	Insulated electric lines in all areas	Not applicable
25	Uninsulated low voltage electric line in a low bushfire risk area	Not applicable
26	Uninsulated high voltage electric line (other than a 66,000 volt electrical line) in a low bushfire risk area	Not applicable
27	Uninsulated 66,000 volt electrical line in a low bushfire risk area	Not applicable
28	Uninsulated low voltage and high voltage electric lines (other than a 66,000 volt electrical line) in a hazardous bushfire risk area	7.4.2
29	Uninsulated 66,000 volt electric lines in a hazardous bushfire risk area	Not applicable
30	Transmission Lines	Table 9, Appendix D
31	Application for approval of alternative compliance mechanism	Not Applicable
32	Formal safety assessment of alternative compliance mechanism	Not Applicable
33	Approval of alternative compliance mechanism	Not Applicable
34	Amendment of approval	Not Applicable
35	Suspension or revocation of approval	Not Applicable

7. Electric Line Clearance Management

7.1 Vegetation with Significance

TransGrid implements strict environmental frameworks to ensure the management of vegetation is done in ways that minimise the impact to threatened fauna and / or trees which are either indigenous or of significance in Victoria. The spread of vegetation which are either indigenous or of significance in Victoria is provided in Figure 4, with TransGrid's Victorian Network transmission line assets identified by the blue circle.

TransGrid's Environmental Assessment Framework is applied to identify the need for the Environmental Effects Statement and/or environmental approvals for each asset listed in Section 4.4. Berrybank Transmission Line did not trigger the threshold for requiring an Environmental Effects Statement.

Details on the location of the transmission line is available in TransGrid's Spatial System (TSS). The easement information available in TSS is described in Appendix A and Appendix B. The TSS database is updated frequently, and includes a search on responsible authority websites and the consultation with relevant internal stakeholders. TSS is available to all staff and will be used prior to any inspection and / or maintenance activity to identify locations and details of vegetation that may be:

- A tree that is Indigenous to Victoria.
- Trees listed in a planning scheme to be of ecological, historical, or aesthetic significance.
- Trees of cultural or environmental significance must be minimised.
- Property owner/occupier special requirements.
- Cutting or removing habitat for threatened flora and fauna with a status of 'vulnerable,' 'endangered' or 'critically endangered'.
- Vegetation listed in a planning scheme to be of ecological, historical, or aesthetic significance.
- Heritage Register.
- Victorian Aboriginal Heritage Register[2].
- Threatened Invertebrate Fauna List.
- Threatened Vertebrate Fauna List.

TransGrid will apply the same process (see below) for third party NSW/ACT datasets to third party Victorian datasets.

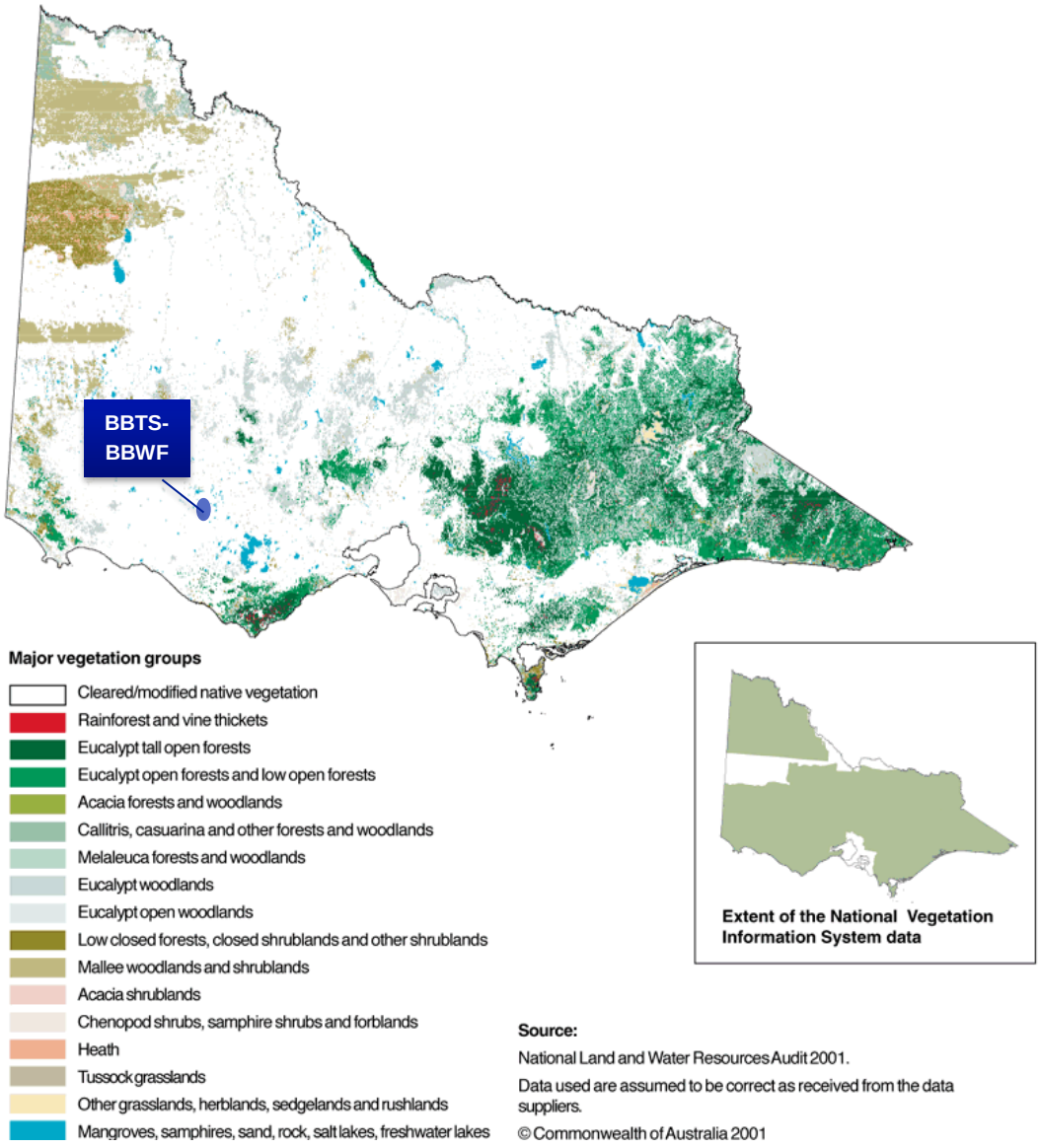
- All data that is considered static is reviewed annually
- Data that is updated more frequently will be refreshed as required

Appendix B identifies the Victorian datasets provided in TSS.

In addition to the TSS system for recording vegetation with significance, TransGrid has the Environmental Handbook to provide environmental guidance on performing vegetation management. The Environmental Handbook is available on TransGrid's external website.

[2] Application for the register was requested from State Government of Victoria, however the application was rejected. TransGrid will continue to seek access to the register.

Figure 4 Indigenous vegetation in Victoria



7.2 Notification and Consultation Procedure

7.2.1 Landowner Notification and Consultation

TransGrid actions may be undertaken on land owned privately or vested under another authority. It is important to determine if landholders have any special access or consultation requirements. This information is stored TSS.

For private landowners, access requirements and notification is provided 14 days in advance of the proposed action, and cannot be contacted after 60 days of sending the first notice. If the tree intended to be pruned is a tree of cultural, historical, aesthetic or environmental significance the notice will include details of impact and proposed actions to minimise the impact. Section 7.8 provides detailed information on the notification issued to landowners.

Notification to the landowner is performed using the form exampled in Appendix D and is recorded and kept on file. All attempts to contact the owner are recorded; evidence of at least two attempts to contact property owners is required. For all consultation activities, the following is recorded:

> Stakeholder/ property owner name.
> Contact details.
> Details of stakeholder/ property owner consultation, including date, time, and topics discussed.

> Stakeholder/ property owner requirements.

7.2.2 Emergency Notification (including Urgent Cutting) and Record Keeping

TransGrid may carry out emergency work to:

> Eliminate the risk of transmission lies causing bushfires.
> Ensure the safety of the public.
> Maintain high levels of system reliability.

Emergency works means works carried out in response to:

(a) A sudden natural event, including a storm, flood, tree fall, bush fire, land slip or coastal inundation, or
(b) Accident, equipment failure or structural collapse, or
(c) A damage caused by vandalism, arson or a pollution incident, if the works involve no greater disturbance to soil or vegetation than necessary and are carried out in accordance with all applicable requirements of the Blue Book.
(d) Encroachment or growth of trees that is not anticipated in the management plan, or is assessed to encroach in foreseeable local conditions by a suitably qualified arborist.
(e) A tree falling or becoming damaged is required to be cut or removed to maintain the Minimum Clearance Space as determined by suitably qualified arborist.
(f) Cutting or removal of vegetation or tree during the CFA declared fire danger period.

TransGrid will provide written notice to the landowner as soon as practicable after completing the urgent cutting or removal of vegetation or trees. The notice will specify the following:

> Where and when the cutting or removal was undertaken.
> Why the cutting or removal was required.
> The date of the last inspection of the span of the electric line in relation to which the cutting or removal was required before it was identified that the urgent cutting or removal was required.

The notice is kept on file for 5 years in the same location for notices sent for non-urgent vegetation or tree management. Refer to Appendix D for Urgent Cutting Notification.

In the event of an emergency, environmental impacts are considered and appropriate treatments to manage those impacts are implemented as far as practicable prior to and post event. The Environmental Assessment Framework and the Environmental Handbook are followed to ensure the environmental impacts are addressed appropriately during the emergency conditions.

Records of the documentation of environmental assessment, treatments of environmental impacts, and landowner notification prior to and post the emergency event are kept in HP TRIM, TransGrid's document and record management system. Consultation Manager is a system used by TransGrid's internal stakeholder communication group to keep a record of landowner engagement. The storage of such records follows TransGrid's Document and Records Management procedure.

Urgent pruning or removal will be undertaken to the extent practicable in accordance with the Regulations for urgent cutting or removal, whilst ensuring the provision for Minimum Clearance Space and be consistent with established practices for the location. Clearing may occur if it is the usual treatment for the site, or where the applicable horizontal distance (including allowance for sag and sway) is difficult to be maintained and pruning is considered impractical or undesirable.

7.3 Responsible Vegetation Clearing Practices

Vegetation management on transmission line easements is to be carried out in accordance with the Code.

Vegetation management on transmission easements should eliminate both risk of fire initiation, and risk to the safe and reliable operation of the transmission lines.

The Contractor performing vegetation management for TransGrid shall have its staff authorised under relevant categories in the Environmental Assessment Framework, as stated in the contract.

7.3.1 Procedure for Vegetation Clearing

The process outlined in this section is implemented such that TransGrid satisfies the minimum clearance requirements when:

> Managing trees below the transmission line to mitigate, as far as practicable, the fire risks associated with the fuel load below the transmission line.

> Managing trees adjacent to the transmission line to avoid, as far as practicable, a tree entering the Minimum Clearance Space around that line if the tree falls.

The process employed to ensure that clearing of vegetation is undertaken in a responsible manner is as follows:

1. Vegetation maintenance requires compliance with the Environmental Assessment Framework.
2. Vegetation maintenance must be completed in accordance with any relevant Memorandums of Understanding or Protocols.
3. Subject to the Environmental Assessment Framework, the preferred method of vegetation control is to remove, rather than prune, tall growing vegetation that will eventually infringe the VCR.
4. If stumps cannot be treated with herbicide, they are managed at the discretion of the service provider to prevent / minimise regrowth, where practical and environmental considerations allow.
5. Where herbicide is planned to be used, it is used strictly in accordance with TransGrid's Use of Pesticides procedure.
6. Effective management of identified Hazard Trees where whole and/or part tree failure is likely and would impinge within electrical clearance requirements or damage/impact electricity infrastructure.
7. Vegetation control shall be carried out using the safest and most cost effective method in an environmentally acceptable manner, in consultation with property owners, stakeholders, or managers, and other statutory authorities as necessary.
8. Retain and prune as required hollow bearing trees or other vegetation specifically selected for its habitat value as locally significant fauna habitat. Vegetation is managed in accordance with Section 7.4 and may be poisoned (if appropriate) to prevent regrowth. Pesticide application is in accordance with the Use of Pesticides procedure.
9. The use of practices other than those described in this section are not precluded. Approval is obtained from Environment Manager regarding the acceptability of the environmental impacts before any other practices are applied.
10. Special requirements for vegetation maintenance for transmission lines covered by an Environmental Impact Statement (EIS), or an Operational Environmental Management Plan are adhered to in the assessment of vegetation to be removed. The Contractor will provide this information to TransGrid to capture in TSS.
11. The density and character of vegetation outside the clearance space is managed to ensure the conditions for the safe and reliable operation of the line, to facilitate inspection confidence, and to mitigate as far as practicable, the fire risks associated with the fuel load below and beside the transmission line.
12. The size, regrowth space and vegetation management cycles are stated in the Maintenance Plan in consultation with affected persons, as optimal to maintain clearances. The required vegetation clearance is stated in the Maintenance Plan. This annual assessment will consider factors including regrowth rates, the size of the clearance and regrowth space, risks, access, operating costs, and environmental considerations.

13. Annual inspection will be carried out to evaluate the effectiveness of the treatment for existing vegetation. The standard easement inspection maintenance cycles are generally three years (maximum 37 months[3]), but may be more frequent in situations, as stated in the Maintenance Plan.
14. Clearing will generally be used for management of vegetation where considered appropriate and practicable, as stated in the Maintenance Plan.
15. When performing the routine inspections of vegetation easements, the vegetation management workers will determine the method for maintaining the vegetation. Where it is not practicable to follow AS 4373-2007, the vegetation management worker determines the most appropriate methods and recommends the appropriate equipment taking into consideration, safety of people, and the environmental/visual impact. The determination is recorded in the appropriate Environmental Risk Checklist.
16. Pruning will generally be used for the management of significant vegetation and may be considered for the clearance of vegetation in the hazard space.
17. Vegetation management workers must have sufficient knowledge and training to ensure that vegetation activities under their control are conducted in a safe and environmentally responsible manner. As a minimum, vegetation management workers carrying out pruning or removal works must comply with current industry work practices and/or relevant Australian standards. All vegetation management workers must be trained and authorised (refer to Section 7.7.2), and working in accordance with the VESI (Victorian Electricity Supply Industry) Vegetation Management Guidelines. TransGrid only engages vegetation management workers who have sufficient experience in the electrical industry to perform tree-clearing works in a safe manner. All new employees to the electrical industry must be approved by TransGrid and be initially supervised by an experienced person.
18. TransGrid shall conduct regular training needs analysis of their employees and contractors to ensure that the level of training is consistent with the requirements of the task to be performed. Results of audit processes are reviewed in determining these needs. Required training levels for operators are set out in Section 7.7.
19. Audits of both work in progress and/or completed work are managed by the Easements Maintenance Group to ensure that vegetation management workers:

> Undertake pruning works in accordance with Australian Standard AS 4373 – 2007 Pruning of Amenity Trees where practical.

> Demonstrate compliance with the prescribed safety and environmentally responsible aspects of industry/company requirements.

Further information available in Section 7.6 Auditing compliance of the Plan to the Code (Regulation 9(4)(o)).

7.3.2 Vegetation below the Transmission Lines (Code Clause 8)

Fires under the transmission lines can result in line outages caused by arcing through smoke and flame. The risk is related to a number of factors, including fire intensity and flame height, which in turn are affected by factors such as fuel levels, site environment and weather factors. Generally, farm production uses such as cereal, wheat, and crops are excluded, which is the case for **BBTS-BBWF**.

TransGrid Contractors will check the easement as specified in Section 7.4 to ascertain the potential for vegetation density potential to encroach the Vegetation Clearance Space (and therefore the Minimum Clearance Space) and would determine whether any actions are required to reduce the fuel load. The form of the vegetation throughout the easement is to ensure the safety and reliability of the line and to mitigate, as far as practicable, the fire risks associated with a vegetation fuel load below or beside the line.

Vegetation density hazard reduction below the line may include cyclic slashing or poisoning, but will be assessed by qualified vegetation management personnel.

[3] Electricity Safety (Bushfire Mitigation) Regulation 2013 Clause 7 (i)(i)

7.3.3 Vegetation Maintenance Outcomes

In order to meet the requirements of TransGrid's Electricity Safety Management Scheme (ESMS) and Asset Management System, the following maintenance outcomes are required for vegetation maintenance:

- Any Tall Growing Vegetation that cannot be removed due to constraints shall be pruned with an allowance for growth at that location that will not lead to the vegetation intruding on the Minimum Clearance Space prior to the next routine vegetation maintenance activity.
- Any vegetation identified during inspection that intrudes the Minimum Clearance Space requirements at Maximum Line Operating Conditions (Tmax or 50°C + 500Pa Blowout):
  - is considered to be a violation and will be addressed as defect vegetation with a priority assigned relative to the risk of interference (in accordance with Section 7.4.4) prior to the next routine vegetation maintenance activity.
  - shall be removed or maintained with an allowance for growth at that location that will not lead to the vegetation being reported in subsequent inspection reports prior to the next routine vegetation maintenance activity.
- Any vegetation identified during inspection as intruding the Minimum Clearance Space requirements at nominal line temperature (50°C no wind):
  - shall be maintained within a month (Planner Priority P2); and
  - any vegetation encroaching on Minimum Clearance Space distances shall be actioned within 24 hours (Planner Priority P1). An outage may be required to safely manage the vegetation work.
- If the vegetation maintenance outcomes are successfully achieved, with allowance for growth until the next routine vegetation maintenance activity, LiDAR should not identify any vegetation, and the risk of vegetation interfering with electricity works is eliminated.
- Hazard trees and Indigenous and or Significant Trees (refer 7.4.5) are identified and then managed on a risk basis.
- LiDAR may be used as both a maintenance validation tool and a risk identification tool, if deemed necessary.

7.4 Maintaining Minimum Clearance Spaces

7.4.1 Purpose

This procedure outlines:

- The process to be employed in maintaining the Minimum Clearance Space at all times.
- The strategy to be employed in selecting the method of maintaining vegetation near transmission lines to achieve the most appropriate outcome.

Clearance space distances required to be maintained between vegetation and conductors are given in the Table 8 below. The table reflects Code of Practice Clearances (Clause 30), which are to be applied at all times in addition to provisions for conductor movement at the design limits of sag and sway.

Table 8 Applicable Distances based on 'Code of Practice for Electric Line Clearance' and allowance for design limits

Nominal Voltage (kV)	Applicable horizontal distance (without allowance for sag and sway)	Applicable vertical distance (without allowance for sag and sway)
66	3 m	3 m
220	4.6 m	3.7 m
275	5 m	4.2 m

Nominal Voltage (kV)	Applicable horizontal distance (without allowance for sag and sway)	Applicable vertical distance (without allowance for sag and sway)
330	5.5 m	4.7 m
500	6.4 m	6.4 m

7.4.2 Procedure

To maintain the above requirements in accordance with the Code, TransGrid employees follow the processes described in the subsequent sections.

7.4.2.1 Vegetation Management Guidance

Vegetation management on transmission line easements is to be carried out in accordance with the Code.

Vegetation management on transmission easements should eliminate both the risk of fire initiation, and the risk to the safe and reliable operation of the transmission lines.

When pruning or removing vegetation on public land every endeavour must be made to comply with the Code of Practice for Bushfire Management on Public Land.

Contractors pruning amenity tress, if located in TransGrid easement, shall be compliant to AS 4373:2007 – Pruning of amenity trees. Where it is not practicable to follow AS 4373-2007, the vegetation management worker determines the most appropriate methods and recommends the appropriate equipment taking into consideration customer satisfaction, safety of people, and the environmental/visual impact. The determination is recorded in the appropriate Environmental Risk Checklist.

7.4.2.2 Minimum Clearance Space (Regulation 9(4)(j))

TransGrid's transmission lines are designed to meet the requirements of AS 7000:2016. Vegetation Clearance Requirement is defined in TransGrid's Maintenance Plan and Environmental Assessment Frameworks.

The maximum sag will occur with maximum line current load on a still hot day and relates to the line rating available for use by TransGrid System Operations, and the maximum sway that will occur at high wind condition. The vegetation clearance stated in Table 9 takes into account the maximum sag and sway of the line when it is at maximum operating temperature and blowout condition and as a result, the clearance specified is greater than the requirements of the Code (as mentioned in Table 8). These distances account for the distance from conductor at the maximum line operating condition.

The minimum vegetation clearance stated in Table 9 is compliant with Regulation 616(2) of the Electricity Safety (General) Regulations 2019, which states the specific clearance requirements for qualified persons carrying out vegetation management work.

Table 9 Minimum Clearance Space that is to be maintained at all times

Nominal System Voltage	Vegetation Clearance at Maximum Line Operating Conditions (Minimum Clearance Space to be maintained at all times)	
	Horizontal distance (Including allowance for sag and sway)	Vertical distance (Including allowance for sag and sway)
220kV	19m	9 m

7.4.3 Vegetation Maintenance Preventative Activities

TransGrid undertakes multiple types of easement inspections to ensure compliance to the Plan and to deliver effective and efficient easement management. Inspection methods and their frequencies are detailed below.

Ground Inspection

Due to the topography and isolated nature to TransGrid's Victorian network this is the default inspection method at BBTS-BBWF.

A ground inspection of the easement provides a high degree of assurance that the easements do not pose a bushfire, reliability, and/or public safety risk and the line clearance is controlled. The inspections are undertaken annually at ground level using binoculars to inspect:

- Vegetation clearance infringements or potential to infringe.
- Unauthorised easement encroachments.
- Public safety signage.
- On and off easement hazard trees.

All activities will be undertaken as per non-prescribed maintenance plans to ensure minimum clearance space are maintained.

LiDAR Inspection

Airborne 3D laser scanning of the transmission line, vegetation, other above ground installations and ground modifications is carried out with the main function of confirming there is sufficient clearance to the transmission line, mainly from any vegetation. LiDAR inspection, if used may also validate whether prior maintenance work performed ensures minimum clearances are satisfied. The reporting requirements of LiDAR are detailed in the Transmission Lines and Easements Condition Data Collection Instruction.

This is TransGrid's primary method for inspecting easements in its NSW network and is conducted annually prior to Declared Fire Danger Period. It may also be used as an alternative at BBTS-BBWF when appropriate.

Defects identified by either or both of the above inspection processes, shall report on:

- All trees violating the Minimum Clearance Space at nominal line temperature. These are evaluated as a **P1 defect priority**.
- All trees with the potential (due to continued growth) to violate the Minimum Clearance Space at nominal line temperature. These are allocated a **P2 defect priority**.
- All trees violating or with the potential to violate (due to continued growth) the Vegetation Clearance Requirement at Maximum Line Operating Conditions. These are allocated a **P3 defect priority**.

The priority codes are described in Table 11 in Section 7.4.4.

The Responsible Person for implementing the Plan will provide the Contractor adequate notice to deliver any of the above inclusions in reporting.

All intrusions identified shall have work orders created by Works Delivery, with no review of AIM Issues required. The order of the lines to be inspected is provided below and shall be followed.

1. Transmission lines in regions where either:
   a. The permanent/statutory start of Bushfire Danger Period is 1 August.
   b. Access restrictions that may cause delays in inspection even though the permanent start of the bushfire danger period is after 1st August.
2. Lines in regions where the permanent/statutory start of Bushfire Danger Period is 1st of September.
3. Lines in regions where the permanent/statutory start of Bushfire Danger Period is 1st of October.

The Contractor will monitor local land conditions, and will liaise with TransGrid to ensure any changes to the fire danger period start date do not put at risk the delivery of the above requirements. TransGrid is responsible for ensuring completion of all works before the declared fire danger period and would

communicate the requirements to the Contractor. This is done through Contractor Management and regular meetings as specified in the Performance Measurement in Section7.5. This is in addition to TransGrid's monitoring activities outlined in the Victorian Bushfire Mitigation Plan.

Scheduling of inspections shall occur such that **defects are recorded in AIM and Ellipse by 1st of June each year**. Corrective maintenance prioritised in accordance with this plan and completed prior to the commencement of the bushfire danger period. The assessment of P1, P2 & P3 defects shall be completed and closed prior to commencement of the bushfire danger period. At other times, prioritisation will occur in conformance with the Corrective Maintenance procedure.

Easement Inspection

An easement inspection involves for the easement and existing vegetation at the site determining:

- Maintenance work required to meet the Vegetation Maintenance Outcomes in Section 7.3.3, taking into consideration the risk rating for the section of line and associated maintenance practices.
- Tree to conductor clearance intrusions (estimated at maximum sag).
- Record present state of easement, such as vegetation type, density, and extent.
- Validate the span's vegetation probability of failure rating.
- Validate the regrowth rate.
- Validate the probability of regrowth rate that will encroach between easement inspection cycles.
- Identify condition of hot spot spans.
- Identify vegetation likely to encroach VCR (estimated at maximum sag), record the vegetation species, and location of vegetation from the lowest numbered structure.
- Inspect hazard trees for obvious defects likely to result in whole or part tree failure, which would fall within VCR.
- Record unauthorised easement encroachments.
- Record unearthed fences or metallic objects.
- Identify unpermitted activity on easement.
- Inspect the condition of public safety signage.

The reporting requirements of easement inspections is detailed in the Transmission Lines and Easements Condition Data Collection Instruction.

Easement inspections occur on all easements at specified frequency specified the Maintenance Plan. Subsequent vegetation maintenance is determined in accordance with the existing easement condition and span risk rating as defined in the Maintenance Plan.

Regrowth Allowance

The regrowth allowance shall allow for vegetation growth and/or regrowth between vegetation management activities. The regrowth allowance is determined by the best local knowledge estimates for the particular vegetation species being maintained under the relevant weather conditions. General vegetation regrowth rates are identified in Table 10.

Table 10 Growth Rate Classification

Growth Rate	Annual Regrowth Rate
Slow	Less than 0.5m/year
Moderate	Between 0.5m/year and 1.5m/year
Fast	Greater than 1.5m/year

Regrowth rates are to be taken into consideration while undertaking vegetation maintenance as specified in Section 7.4.4.2 and Section 7.4.4.3.

7.4.4 Vegetation Maintenance Reactive Activities

7.4.4.1 Defects identification - General

The identification and management of asset related incidents and events, including asset failures and fire starts, is through the following processes:

> 24 hour monitoring:
  – Operators identify failures and events either through the SCADA monitoring systems, or from an external incoming call and record through the Operations Logging System (OpsLog) this generates an Irregularity that feeds into the Corrective Maintenance Process.
> Identified during the routine maintenance process as described in Section 7.4.3

Operations and Field maintenance staff identify and record asset defects and failures by entering an issue (defect) into the Asset Inspection Manager (AIM) application. For serious events, the control room operator is contacted to commence emergency management procedures.

> Events that have a people safety or environment consequence are recorded as “Incidents” in CAMMS for investigation.

TransGrid has instigated an incident management processes that is used to control people, activities and information following the occurrence of an event that has led to, or could have led to injury to people, damage to plant, machinery or the environment and/or some other loss including bushfire. The process for incident investigation is managed through CAMMS.

7.4.4.2 Condition Based Vegetation Maintenance

Condition based maintenance occurs following easement inspections. The extent of the condition based vegetation maintenance is determined during the easement inspection and in conjunction with the associated risk rating and maintenance practices. The frequency of condition based maintenance for each line is identified in the Maintenance Plan.

Due to the short isolated nature of TransGrid’s Berrybank assets, all defects will be treated as high-risk items.

7.4.4.3 Vegetation Defect Maintenance

This type of corrective maintenance refers to vegetation intrusion, identified during inspections, violating or likely to violate VCR prior to the next condition based vegetation maintenance cycle.

Defects identified through inspections are created in the Asset Inspection Manager (AIM) as an Issue, and may be converted to maintenance work orders with a priority code allocated as per Table 11. Rectified defects are marked closed in Ellipse and Issue in AIM. This process is described in the Corrective Maintenance Process.

The Ellipse priority codes below relate to the likelihood of the vegetation violating the VCR within the timeframes defined in Table 11 (taking into account regrowth and expected conductor sag).

Table 11 Classification of Vegetation Defects Priority Codes

Priority Code	Timeframe	Line Operating Scenario	Defect Criteria
P1	24 Hours	Nominal line temperature	Within Minimum Clearance Space
P2	1 Month	Nominal line temperature	Within Minimum Clearance Space
P3	3 Months	Maximum line operating conditions	Within VCR with potential to violate (due to continued growth) Minimum Clearance Space
P4	12 Months	Maximum line operating conditions	Within VCR within 12 months with potential to violate (due to continued growth) Minimum Clearance Space
P5	12 – 36 Months	Maximum line operating conditions	Within VCR prior to next routine inspection, return date required
P6	Monitor only	Maximum line operating conditions	Not expected to infringe VCR prior to next inspection.

NOTE: Priorities allocated to vegetation defects are appropriately selected such that the minimum safe approach distance is never intruded.

Defects are actioned and closed, or reprioritised within the timeframe specified in Table 11. P1 defects are assessed and work packages issued within 24 hours for rectification. Close-out of the defect may take longer than 24 hours but is required as soon as practicable.

Defect vegetation can only be reprioritised following assessment:

> It has a growth rate such that it will not intrude on the VCR within the timeframe proposed.

> It is mature or dead and is not expected to intrude within the VCR, in which case the defect can be noted as P6 or alternately closed.

Any defect reprioritised or closed without action must include commentary in the work order explaining the reasons for the action.

If the vegetation is determined to be within the minimum safe approach distances (SAD) to conductors as per Table 12 (taken from Power System Safety Rules (PSSR)), an outage to safely manage the vegetation clearance will be required. The Easements Maintenance Work Lead and/or Program Lead or Manager is consulted for the safest method of managing an emergency. The assessment of the PSSR against the Blue Book is described in Section 7.7.1.

Table 12 Safe Approach Distances (m)

Nominal Voltage (kV):	11-33	66	132	220	275	330	500
Persons (person performing work that requires that person to approach electrical apparatus.)	0.7	1.0	1.2	1.8	2.3	3.0	3.9
Vehicles (includes mobile plant stowed for transit)	0.7	1.0	1.2	1.8	2.3	3.0	3.9
Mobile Plant	3.0	3.0	3.0	6.0	6.0	6.0	8.0
Mobile Plant (Operating with restrictive devices applied or an authorised safety observer appointed)	1.2	1.4	1.8	2.4	3.0	3.7	4.6

7.4.5 Hazard Trees and Indigenous or Significant Trees

A hazard tree defined in the Regulations – Clause 8 of the Code is *"...trees that are likely to fall onto, or come into contact with, an electric line..."* If left unmanaged, hazard trees can cause injury to people and property, interruptions to electric supply and threats to critical infrastructure.

The hazard tree assessment is a ground based visual inspection (performed by an Assessor) of the tree crown, trunk, trunk flare, and above ground roots. The prevailing environmental conditions are also factored in to identify any trees that could become a hazard to the safety of the electric lines.

Hazard trees identified by an arborist during inspections are stored in TransGrid's Hazard Tree Risk Register.

The condition of these hazard trees are inspected as:

> Easement Inspections – inspection of all known hazard trees undertaken to identify defects (from inspection vantage point(s) on easement) most likely to result in whole or part tree failure, which would fall within the VCR. A defect is raised for each defective tree and allocated a P2 priority. The defect is managed and prioritised in accordance with Section 7.4.4.3.

The treatment of a hazard tree must, as far as reasonably practicable, comply with AS 4373-2007. If not, the vegetation management worker determines the most appropriate methods and recommends the appropriate equipment taking into consideration customer satisfaction, safety of people, the environmental/visual impact, and the type of hazard tree (refer to the below list). Their determination is recorded in the appropriate Environmental Risk Checklist.

A hazard tree may be cut or removed if a suitably qualified arborist has both:

(a) Assessed the tree having regard to foreseeable local conditions.
(b) Advised that the tree, or any part of the tree, is likely to fall onto or otherwise come into contact with an electric line.

Indigenous and or Significant trees are defined in the Regulations – Clause 11 (3) of the Code identified as one of the following will have constraints imposed on the cutting or removal of the tree.

> trees that are indigenous to Victoria.
> Trees listed trees listed in a planning scheme to be of ecological, historical, or aesthetic significance.
> Trees of cultural or environmental significance.

The constraints when cutting or removing the tree are:

(a) Must, as far as is practicable, not cut the tree more than is necessary to either:
  (i) Ensure compliance with minimum clearance requirements (refer to Section 7.3.3).
  (ii) Make an unsafe situation safe.
(b) Must not remove in order to satisfy minimum clearance requirements, unless:
  (i) It is necessary to remove the tree to either:
    (A) Ensure compliance with minimum clearance requirements (refer to Section 7.3.3).
    (B) Make an unsafe situation safe.
  (ii) A suitably qualified arborist has both:
    (A) Inspected the tree.
    (B) Advised TransGrid that cutting the tree in accordance with (a) would make the tree unhealthy or unviable.
(c) For trees identified as threatened fauna:
  (i) must not cut or remove a tree that is the habitat for threatened fauna during the breeding season for the threatened fauna unless either:
    (A) It is necessary to cut or remove the tree to make an unsafe situation safe.
    (B) It is not practicable to undertake cutting or removal of that tree outside the breeding season.

(ii) If it is not practicable to undertake cutting or removal of that tree outside the breeding season, the responsible person must translocate the fauna before undertaking the cutting or removal if it is practicable to do so.

7.5 Measuring performance of the Plan (Regulation 9(4) (n))

TransGrid measures the performance of the implementation of the Plan through the following types of reporting described in Table 13. Overall, the performance of the electric line clearance management program is monitored through tracking and reporting of financial performance, vegetation fault rates, and defect notification. Performance targets will be developed annually and are reported to senior management and board as detailed in Table 13. Targets will determined based on a combination of regulatory requirements, risk mitigation, contractor's performance, and vegetation regrowth.

TransGrid's Easement Maintenance group validates vegetation maintenance work completed by Contractor before recording the work as closed in Ellipse and AIM.

TransGrid's Victorian Bushfire Mitigation Plan contains specific measures on the performance of the Plan in managing the bushfire risk arising from vegetation management.

The continual improvement of the Plan is performed through:

> The review of TransGrid's procedures identified in the Plan.
> Implementation and auditing of key processes in the AMS that ensure the maintenance strategy development and planning processes are effective. This is covered in Section 7.6.

An Easement Maintenance Working Group that includes the Transmission Line and Underground Cables Asset Manager and their team, and Easement Maintenance Manager and their key managers, to monitor the progress of vegetation management to the Maintenance Plan. Issues or concerns affecting the delivery of vegetation management program are discussed and corrective actions taken to achieve compliance as soon as practical. As mentioned in section 7.3.1, payments are only processed once defects are rectified in a timely manner.

Table 13 Measuring Performance of the Plan

Type	Frequency	Description	Audience
Daily vegetation maintenance reporting	Daily via an online report	The report will provide a daily view to help monitor and track the delivery of vegetation maintenance program. A sample of measures tracked are: > Progress on scheduling maintenance work. > On time this month ($) > On time year to date ($) > Delivery efficiency year to date > Financial Performance –actual vs budget Information available at TransGrid's Maintenance Delivery Portal.	Transmission Line and Underground Cables Asset Manager Easement Maintenance Manager
Bushfire internal reporting	May and June of each year. Report is	The report in April / May (after fire danger period) is to provide feedback on the delivery	Head of Asset Management

Type	Frequency	Description	Audience
	emailed to audience.	performance of bushfire vegetation maintenance program. The report due in June is to communicate the planning of bushfire vegetation maintenance program from June to March the following year. The report is used to highlight any potential issues in the delivery of the planned program. Information available in Victorian Bushfire Mitigation Plan.	Head of Maintenance Program
Bushfire Status Report	Beginning of October. Report is emailed to audience.	Provides an update on the delivery status of the vegetation maintenance program in scope of managing bushfire risk.	Head of Asset Management Head of Maintenance Program
BARC bushfire reporting	Quarterly. Report is presented in BARC meeting.	The report provides assurance to BARC that TransGrid is effectively maintaining the assets in managing bushfire risk throughout the fiscal year. A traffic light rating system is used to illustrate the performance of delivering vegetation maintenance work related to managing bushfire risk.	Board Audit Risk Committee
Vegetation Clearance Reporting	OSIRIS	Report on the progress of vegetation inspection and corrective works.	Head of Maintenance Program ESV
Bushfire Mitigation Index (to be developed)	OSIRIS	Weekly report on the progress of bushfire mitigation activities.	ESV

7.6 Auditing compliance of the Plan to the Code (Regulation 9(4) (o))

The following processes ensure auditing to ensure compliance to the Plan:

1. Control Assurance Review.
2. AMS and ENSMS Audit Procedure.
3. Auditing of Contactors.

Control Assurance Review

The main objective of a Control Assurance Review procedure is to identify gaps in the design and implementation of the Easement Maintenance Plan, which is critical to the successful implementation of the

Plan. This in turn demonstrates whether the requirements of the Asset Management System (AMS) are satisfied.

The Control Assurance Review specifies the following as a minimum:

- Type of audits – desktop and/or field.
- Frequency of audits.
- Monitoring and recording of findings and actions from audits.

A list of the relevant requirements of the AMS related to successful implementation of the Plan are as follows:

- Ensure that the maintenance and inspection activities, as set out within the Maintenance Plan, are scheduled correctly within the maintenance planning systems (Ellipse Standard Jobs, MSTs, and AIM scripts).
- Ensure the inspection and maintenance activities required by Asset Managers and communicated through the Asset Management Plans, Asset Management Instructions, or Internal Work Requests (IWR) are being undertaken to a satisfactory standard.
- Ensure that all activities being undertaken are in accordance with the relevant asset management policies, service instructions, standards, and processes.
- Ensure that underlying processes which initiate or support operations and maintenance practices have provided the required asset related data, such as equipment fitment information, issues, defects raised from these issues, and conditional data obtained from inspections are being correctly recorded within the appropriate corporate information system (e.g.: Asset Inspection Manager and Ellipse).
- Ensure that asset defects are recorded appropriately in Asset Inspection Manager as per procedure.
- Ensure the rectification of defects is effective and occurring in accordance with priorities.
- Ensure that inspectors whom complete asset maintenance for TransGrid have valid competencies.

Further information can be found in Control Assurance Review (CAR) document.

AMS and ENSMS Audit Procedure

The processes stated in the Plan are in scope of the AMS and/or Electricity Safety Management System/ Electricity Safety Management Scheme (ENSMS/ESMS). Demonstrating compliance to these processes in the Plan is a focus of the AMS and ENSMS Audit Procedure. This procedure ensures that the AMS and ENSMS/ESMS support the regulatory and license requirements in Victoria.

Target Area Reviews might be performed as separate audits on included in a normally schedule audit. These target areas of concern triggered by the below events. These reviews further demonstrate compliance to the Plan.

- Previous Audit Recommendations – the scope is triggered by the recommendations of previous audits as defined by those audit recommendations. The review should make recommendations for corrective action, improvement, or further investigation, as appropriate.
- Significant Changes – the scope involves a review of the assets, documents, systems, processes, procedures, practices, and controls directly affected by the changes. The review should also identify broader areas, which could be impacted by unintended consequences and make recommendations for: corrective action, improvement, or further investigation as appropriate.
- Significant Incidents – the scope involves a review of the assets, documents, systems, processes, procedures, practices, and controls directly affected by the incident. The review should also identify the root cause and any broader impacts not immediately apparent, and make recommendations for: corrective action, improvement, or further investigation as appropriate.
- Significant Issues Closeout – the scope involves a review of the actions undertaken to resolve the identified significant issue and verification that the actions have resolved the issue. The review should also consider whether the actions taken might have broader unintended system impacts and make recommendations for corrective action, improvement, or further investigation as appropriate.

The record of audit outcomes in an action tracking system for monitoring and tracking of completion to prevent re-occurrence is outlined in Table 14. Refer to Control Assurance Review for more information.

Table 14 Record and monitoring of audit outcomes

Guidance for Categorisation of Corrective Actions	Action Tracking System
Actions shall be created in CAMMS where: > A critical deficiency identified on a control and the effectiveness rating is less than rating identified in CAMMS. > There is a non-compliance to an Asset Management Plan requirement. > A correction of a deficiency is essential to effective operation of ESMS, ENSMS and AMS processes.	CAMMS
Actions that: > Address a shortcoming in processes or practices are identified and jointly agreed upon by the Assessment team and the Area. > Represent an opportunity for improvement and not directly acted upon during the CAR.	Relevant business group specific Continuous Improvement Register
If a required corrective, action is immediately actioned or completed, for example by direct action occurring during the assessment.	To be noted in the report to allow identification in the scoping of future audits.

An implementation audit schedule for this plan is identified in each asset-specific Appendix C.4

Auditing of Contractor

As part of Contractor management, TransGrid ensures that its contractors satisfy TransGrid's expectations and requirements on performance objectives for carrying out any work on TransGrid network and easements. The Contractor is required to complete annual audits, where the scope is defined by TransGrid, to demonstrate compliance to the Plan. The scope may cover the topics below:

> Environment
> OHS Records
> Monitoring/Measurement
> Training
> Emergency Procedures/Equipment
> Process Control
> Risk Management
> Subcontracting & Purchasing
> Management Responsibilities

The Contractor shall plan and document its required inspections and verifications of work performed by the Contractor and any Sub Contractors to ensure quality of work. Additionally, the Contractor shall submit Field Progress Reports as required, detailing plant on site, personnel on site, work completed, expenditure details and weather conditions including any man hours lost to wet weather. Unannounced site conformance inspections will be undertaken periodically throughout the term of the contract. Non-conformances that are identified during audits and inspections will be notified by issue of Corrective Action Requests (CARs)/Non-

Conformance Reports (NCRs). CARs and NCRs will be recorded in CAMMS for monitoring and tracking closure.

Health, safety and environmental performance reports, including incident statistics, is submitted by the Contractor during the performance of the work under the Contract on a monthly basis. The reports are made available on request to TransGrid. The following will also be maintained by the Contractor and made available on request:

- Hours worked by the Contractor and its sub-contractors on a monthly basis;
- Inspection reports, audit reports and any non-conformances identified;
- Incident statistics (including incident frequency rates and environmental incidents);
- Hazard statistics;
- Risk Assessments conducted;
- Incident investigation reports;
- Records and minutes of Health and Safety meetings and tool box meetings;
- Induction and training records;
- Safety equipment records, and;
- Records of any complaints received and action taken.

Contractor's performance may be discussed by Easement Maintenance group and Transmission Lines & Cables Asset Management group during regular work group meetings. Any feedback will be communicated through to the Contractors.

7.7 Required qualification to implement the Plan (Regulation 9(4) (p))

7.7.1 Safety Qualifications

TransGrid staff and contractors must be trained and achieve the necessary authorisation level under the Power System Safety Rules (PSSR) and Environment Authorisations in order to attend to energised equipment or work near powerlines. PSSR Manager has checked the compliance of PSSR against the Code of Practice on Electrical Safety for Work On or Near High Voltage Electrical Apparatus (the Blue Book 2017). Clearance Comparison between Blue Book and PSSR is provided in Appendix F. A plan has been developed to close identified gaps in a timely manner.

Specific qualifications required for job roles is listed in Section 7.7.2.

TransGrid has an integrated online Authorisation System, which performs the traditional approval to work function whilst ensuring access to areas is only granted to authorised and competent persons. The system will include vegetation maintenance authorisation in the near future.

Information on the safety training and auditing to manage safety qualifications for delivery of the Plan are provided in the Victorian Bushfire Mitigation Plan.

7.7.2 Technical Qualification

TransGrid will be engaging with Victorian based easement Contractors familiar with and satisfy ESV compliance requirements. As part of Contractor management, TransGrid ensures the Contractors satisfy TransGrid's expectations and requirements on competencies for carrying out maintenance any work on TransGrid's network and easements. TransGrid requires Contractors to have achieved mandatory qualifications, experience, and training. Information on the technical qualifications of competent staff and Contractors to ensure the Plan is implemented correctly, and the auditing to ensure they are competent is provided in the Victorian Bushfire Mitigation Plan.

TransGrid will be engaging with Victoria based easement and transmission line contractors familiar with and satisfy ESV compliance requirements as stated in this plan. TransGrid ensures that all inspectors have the

following qualifications by specifying the requirement in its contracts. TransGrid requires staff and contractors to have the following mandatory qualifications:

- Transmission Line Inspector Qualifications:
  - UET30512 - Certificate III in ESI Power systems transmission overhead. TransGrid provides the training for this course.
- Suitably Qualified Arborist Qualifications:
  - Certificate II in ESI - Powerline Vegetation Control
  - National Certificate Level 3 in Arboriculture, including the "Perform a ground-based tree defect evaluation" unit of competency, or an equivalent qualification
  - And has at least three years of field experience in assessing trees
- Easement Clearance Worker Qualifications:
  - Certificate II in ESI - Powerline Vegetation Control

Further details about roles and expected skills (as defined by VESI) along with core and elective units are provided in Appendix E. It is expected that the contractor will have a current certificate specifying satisfactorily completion of a training course in tree clearing, approved by Energy Safe Victoria as specified in the Electricity Safety (General) Regulations 2019

The Contractor will be authorised as per the *Electricity Safety (General) Regulations 2019*.

The monitoring of authorisation of staff and compliance to *Electricity Safety (General) Regulations 2019* is managed in TransGrid's online Authorisation System. The system will contain the following information to ensure staff are qualified, experienced, and trained and hold a valid and current qualification to implement the Plan. These include:

- TransGrid Vegetation Skills and Training Matrix modelled on VESI matrix (to ensure competency personnel undertaking tasks related to electric line clearance).
- Skills required to perform vegetation management safety at TransGrid.
- Staff details and their qualifications. It is the responsibility of the Contractor to maintain the currency of staff details, their qualifications, and use of Registered Training Organisation (RTO). TransGrid will audit the Contractor's staff qualification records. These records will be made available to TransGrid upon request.
- Processes relevant to the management of training records (initial and refresher).
- Induction and authorisation processes for all new ELC personnel.
- Authorisation details of staff, including Contractor staff, is maintained in our Authorisation System.
- It is the responsibility of the Contractor to monitor the expiry date of their skills, which will trigger notifications to ensure the skills are updated before working for TransGrid.
- Identification of skills training provided via a RTO or internally by TransGrid.
- ELCMP induction.

7.7.3 Non-conformities to Authorisation Requirements

To ensure that competent staff are being allocated to site audits will be conducted as per Section 7.6, more specifically under Easements and Access Tracks Performance and Quality Audit Process, to identify staff of Contractor that are on site without the required training or qualification. Non-compliant staff will be expelled from site and disciplinary action undertaken. TransGrid's response to such an event and the consequence to the Contractor will be remedied through the contractor performance management processes and discussed by the responsible team leader at contractor review meetings. Corrective actions will be managed through CAMMS.

The Contractor is required to send updated training matrix of staff on a periodic basis to ensure they are compliant to VESI requirements.

7.8 Dispute Resolution Procedure (Regulation 9(4) (r))

TransGrid ensures that landowners' details and any access challenges and conditions are recorded against the property in TransGrid Spatial System (TSS). Landowners includes public authorities. This information is maintained under TransGrid's privacy policy. The intention is to minimise the occurrence of disputes by ensuring TransGrid and our Contractors satisfy and overcome the landowners' access conditions and challenges. Refer to Section 7.2.1 for information on consultative process for landowner.

The easement maintenance scenarios that require cooperation with landowners are:

> Inspection and/or pruning of vegetation on easement.
> Inspection and/or pruning of hazard trees on/off easement.
> Urgent removal trees when the tree either has fallen or become damaged and is to be removed to keep the Minimum Clearance Space for a span of electric line as specified in the Regulations and as assessed by a suitably qualified arborist.

The letter to be issued to in the above scenarios is attached in Appendix D.

For the first scenario, a dispute is likely to occur if the landowner does not provide TransGrid access to TransGrid's easement to inspect and/or maintain the easement. In such instances, the field officer (Contractor representing TransGrid) aims to resolve the dispute without escalation, by communicating TransGrid's responsibility and authority to perform such work under the *Electricity Safety Act 1998*. If landowner consent is still not received, the dispute is escalated to the Contractor's manager to involve TransGrid's Easement Maintenance Manager. The Easement Maintenance Manager will issue the letter prior to entering the land without landowner permission to complete the required easement maintenance work before a safety risk is realised. The Division 3 of the Regulations outlines requirements for notification, consultation, and dispute resolution regarding Electric line clearance works.

An outline of the content in the letter sent to targeted landowners requesting consent is listed below. The landowners of interest are owners or occupiers of the property when the tree is within the boundary of a private property, or if the tree is on land that is contiguous to private property and the use of that property may be affected during the cutting or removal.

TransGrid communicates our obligation under the Victorian Electricity Safety Act 1998 to ensure the transmission line does not cause a safety risk to the landowner and general public. Consent, and any conditions, is received via email (to community@transgrid.com.au) or phone call (1800 222 537), which is then communicated to the Easements Manager. The Easements Manager then communicates the consent to the Contractor to complete work.

Inspection of vegetation or hazard trees on/off easement.

> The letter will state when inspections will start and duration of the inspections, the next steps in remediating any issues found and that TransGrid bears the cost of this work.

Pruning of vegetation or hazard trees on/off easement.

> Where vegetation is on easement:
  – The letter will state that TransGrid will be undertaking the vegetation or tree(s) pruning works in accordance with our easement terms, and states that it is at no cost to the landowner. Images of the vegetation are attached to the letter.
> Where vegetation or hazard tree(s) are off easement:
  – The letter will state that TransGrid will contact the landowner to obtain consent prior to pruning of vegetation or tree(s) and at no cost to the owner. Images of the vegetation or hazard tree(s) are attached to the letter. The next letter is issued when the landowner refuses to provide consent.
> Details of whether the vegetation or tree to be cut or removed is:
  – On private or contiguous or public land.
  – A tree of cultural or environmental significance.

  - Listed in a planning scheme to be of ecological, historical, or aesthetic significance.
- Details of the intended cutting or removal of trees.
- Details of the impact that the intended cutting or removal may have on the landowner's use of their land during the cutting or removal. This only applies to landowners of private land.

Electricity Safety (Electric Line Clearance) Regulations of 2015 Notice.

- A formal notice under the *Regulations* is sent to the landowner when they cannot be contacted or refuses to provide consent for pruning of a hazard tree(s). In accordance with the Act, TransGrid is allowed to cut the tree(s) without landowner permission as written notice is given to the landowner. TransGrid will provide a set timeframe for TransGrid to complete the required works.
- Each notice will include requirements, such as safety information.

Details of the consultation procedure TransGrid will follow.

- TransGrid contact details, including the contact details for all enquiries regarding vegetation and the intended cutting or removal of trees.
- States the number of days on which, or a period during which, TransGrid intends that the intended inspection, and/or cutting or removal will commence. The first day of which is:
  - After 14 days from the date of the notice; and
  - Less than 60 days from the date of the notice.
- If no resolution is obtained, then a dispute/complaint can be lodged with the Energy and Water Ombudsman (Victoria) provided the complaint does not involve electrical safety or a breach of the Code of Practice. Complaints in these latter categories should be referred to Energy Safe Victoria.
- TransGrid advises the landowner to refer the matter to Energy and Water Ombudsman Victoria Advice for any dispute and provides the details on how to obtain access to TransGrid Complaints Handling Policy.

The notification requirements to landowner that is a Council (when the tree is on land that is managed by a Council) is as follows:

- A written notice is to be published unless the cutting or removal of vegetation is urgent (refer to Section 7.2.2).
- The notice is to be published in a newspaper circulating generally in the locality of the land in which the tree is to be cut or removed. The notice will also be published on TransGrid's external website.
- The notice must:
  - Describe the cutting or removal that TransGrid intends to undertake.
  - States the number of days on which, or a period during which, TransGrid intends that the intended inspection, and/or cutting or removal will commence. The first day of which is:
    - After 14 days from the date of the notice; and
    - Less than 60 days from the date of the notice.

A summary of TransGrid's dispute process is outlined in the TransGrid Complaints Handling Policy, which is available on TransGrid's website.

Appendix A Berrybank Transmission Line Easement information

Berrybank Terminal Station (BBTS)

The Berrybank Terminal Station is connected to the existing 220kV transmission network, specifically at the transmission line that runs between Terang and Ballarat Terminal Stations. BBTS is located at Mount Bute, approximately 1.5km off Lismore-Scarsdale Road or approximately 1.4km off Willowvale Rd.

The latitude and longitude in GDA94-LL for the termination station is available in TSS.

BBTS-BBWF 220kV line

The 220kV transmission line connects the Berrybank Windfarm Substation to the Berrybank Terminal Station to enable electricity to flow from the Berrybank Wind Farm to the Victorian transmission network.

The line is approximately 7.5km long on a 50m easement. The structures used are of double circuit single steel pole. The line crosses over Willowvale Road and Lismore Road, Wallindue Road and Padgetts Lane.

The majority of the transmission line is in parallel with Padgetts Lane, in the road corridor, which is taken into careful consideration to eliminate, if not possible to reduce to AFAP, the bushfire risk during the design of the line.

Berrybank Substation (BBWF)

The transmission line terminates at a gantry, which then connects to two power transformers. The Berrybank Substation is strategically located to connect to the Berrybank Wind Farm via 33kV underground cables.

The neighbours, in order of increasing distance from the BBW are as follows:

> BBW is located off Padgetts Lane.
> The town Lismore, which is approximately 20km southwest of BBW.

A.1 Description of the Land

The proposed location for the BBTS and BBWF are within a greenfield area. The Network Assets are located approximately 50km southwest of Ballarat, and 10km north of Berrybank, Victoria. The proposed new transmission line (approximately 7.5km in length) runs south east from the BBTS to the BBWF, following the alignment of Padgetts Lane. Land use along the alignment is predominantly private property, used primarily for agriculture, with cropping, sheep and cattle grazing observed.

The topography of the site is generally flat with gently undulating countryside.

A 5m wide access track is provided to BBTS from Willowvale Road, Mount Bute.

In broad terms the assets that are within the scope of this plan are:

> Substation equipment.
> Property under the control of TransGrid.
> Secondary systems, including metering systems.
> Transmission line and associated fittings and fixtures.
> Easement.

For the operation of BBTS, TransGrid interfaces with another major electricity company (MEC) AusNet Services. For the operation of BBWF, TransGrid interfaces with the windfarm generator. Appendix C contains more information on the operational interface between these connected parties.

BBTS, BBWF and BBTS-BBWF Transmission Line are on **High Bushfire Prone** land based on the spatial data provided by CFA to TransGrid's Spatial Information and Survey business group (please refer to Appendix B).

Vegetation spatial data for all assets is available in TSS as listed in Appendix B.

Appendix B TSS Spatial Datasets

Type of Dataset	Source	Source Type	Implementation status in TSS
Indigenous to Victoria vegetation	> Native vegetation – https://discover.data.vic.gov.au/dataset/native-vegetation-modelled-2005-ecological-vegetation-classes-with-bioregional-conservation-sta > Indigenous to Victoria Vegetation regulation – https://discover.data.vic.gov.au/dataset/native-vegetation-regulation-location-2017 > Tree Density – https://discover.data.vic.gov.au/dataset/vicmap-vegetation-tree-density-dense	Shapefile	
Council planning scheme overlay for historical, cultural, environmental or aesthetic significance	https://discover.data.vic.gov.au/dataset/planning-history-scheme-overlay-vicmap-planning	Shapefile	Initiated
Heritage register National\Commonwealth\World Heritage is already available	https://discover.data.vic.gov.au/dataset/victorian-heritage-register	WMS feed	Initiated
Victorian aboriginal heritage register	https://achris.vic.gov.au/#/dashboard Alternatively, use publically available sensitivities at: https://achris.vic.gov.au/#/onlinemap	Unknown	Application to access dataset submitted[2]
Threatened flora & fauna list	Flora data : > https://discover.data.vic.gov.au/dataset/victorian-biodiversity-atlas-flora-records-unrestricted-for-sites-with-moderate-to-low-spatial- > https://discover.data.vic.gov.au/dataset/victorian-biodiversity-atlas-flora-records-unrestricted-for-sites-with-high-spatial-accuracy	Shapefile	Initiated
	Fauna data: > https://discover.data.vic.gov.au/dataset/victorian-biodiversity-atlas-fauna-records-unrestricted-for-sites-with-moderate-to-low-spatial-	Shapefile	Initiated

Type of Dataset	Source	Source Type	Implementation status in TSS
	> https://discover.data.vic.gov.au/dataset/victorian-biodiversity-atlas-fauna-records-unrestricted-for-sites-with-high-spatial-accuracy		
Flora and fauna as listed as threatened with a status of 'vulnerable', 'endangered' or 'critically endangered'.	Flora and Fauna Atlas data	Unknown	Initiated
Threatened invertebrate fauna list	Fauna Atlas	Unknown	Initiated
Threatened vertebrate fauna list.	Fauna Atlas	Unknown	Initiated
High Bushfire Prone	fire-hzd-ratings@cfa.vic.gov.au	Shapefile	Complete

Appendix C Berrybank Transmission Line (BBTS-BBWF)

C.1 Operational Boundary Points

The specific operational interface points at BBTS is shown in Figure 5.

Figure 5 BBS Operational Boundary Points between TransGrid, AusNet Services (220 kV lines)

C.2 Maintenance Task Frequency

The maintenance tasks and their frequency for BBTS-BBWF is specified in the Maintenance Plan – Non-Prescribed Assets.

An extract of the maintenance requirement for the easement is provided in the table below.

Customer	Line Number Ellipse Part No	Structure Type	Section	Inspection (Easement)	Scheduled Easement Inspection & Maintenance
Berrybank Wind Farm	BBWF-BBTS	DC SP	Berrybank 220 kV connection	1	End of defects liability 01/10/21 (1 year from energisation of the line) then 3 years

C.3 Key Documents

Document	Description
Maintenance Plan – Easement and Access Tracks	TransGrid standard easement inspection and maintenance activities that details scope and frequency applicable to all assets in TransGrid's network.
Maintenance Plan – Non-prescribed Assets	Non-standard easement inspection and maintenance activities, scope and frequency, if any, applicable to BBTS-BBWF.
Transmission Line and Easement Condition Data Collection	Defines a systematic approach to identify and record easement data during inspection and maintenance activities for easements.
AMS and ENSMS Audit Procedure	Describes the procedure to audit key artefacts in the AMS and ESMS that demonstrate our compliance to Vic regulations.
Control Assurance Review (CAR)	Describes the process to be used by Asset Management in conjunction with the Works Delivery group to plan, schedule, and carry out targeted reviews (CAR) related to the operations and maintenance component of the asset lifecycle.
Environment Effects Statement (EES) or other environmental approvals and permits	Not required as stated in Section 7.1.

C.4 Implementation audit

Scope	Audit Type – Desktop/Field	Completion Due Date
> Cutting or removing habitat for threatened flora and fauna with a status of 'vulnerable,' 'endangered' or 'critically endangered'. > Vegetation listed in a planning scheme to be of ecological, historical, or aesthetic significance. > Heritage Register. > Threatened Invertebrate Fauna List > Threatened Vertebrate Fauna List	Desktop	Energisation
Victorian aboriginal heritage register	Desktop	Practical Completion
Vegetation easement training and authorisation in the Authorisation System (refer to Section 7.7.2).	Desktop	Energisation
Update of Maintenance Delivery Portal – Home tab to include bushfire reporting for non-prescribed assets. (Refer to Section 7.5)	Desktop	Energisation
Implementation of the Plan and the Maintenance Plans	Desktop and Field	2021
Vegetation Clearance as part of Bushfire Mitigation Management Audit	Desktop and Field	2021

Appendix D – Easement Works Notification Form

ABN 70 250 995 390
180 Thomas Street, Sydney
PO Box A1000 Sydney South
NSW 1235 Australia
T (02) 9284 3000
F (02) 9284 3456

DATE

Customer Name: **Address:** **Contact No:**	
Line/Location:	
Anticipated Work Date:	
Last Inspection Date (Urgent Cutting):	

Dear Property owner

Vegetation Maintenance Work

TransGrid manages and operates the high voltage transmission network assets in Victoria, NSW, and the ACT. Protecting the safety of the public and our staff is our highest priority in providing a reliable and efficient transmission service for the communities we serve.

Under the *Electricity Safety Act 1998 and Electricity Safety (Electric Line Clearance) Regulations 2015 (Victoria),* TransGrid has the responsibility and authority to maintain vegetation on and off easement to protect the electricity infrastructure.

Recent inspections of the transmission line easement on your property has identified vegetation that requires management to meet the regulatory requirements. Vegetation, predominantly trees, and tall shrubs with the potential to intrude into vegetation clearance requirements must be managed clear of electricity assets to prevent bushfires or other risks.

Vegetation works will be undertaken between **Date** and **Date**, by an authorised TransGrid contractor, at no charge to the landowner/occupier. All TransGrid employees and their contractors are issued with identification as authorised representatives.

☐ **Pruning Works**

Pruning works will be carried out in accordance with the regulatory requirements and to Australian Standard AS 4373-2007 ‘Pruning of Amenity Trees’ as far as practicable.

No action is necessary by you unless you are concerned about the vegetation being pruned. If you require consultation, please contact TransGrid on the number provided below or send us an email.

☐ **Vegetation Removal**

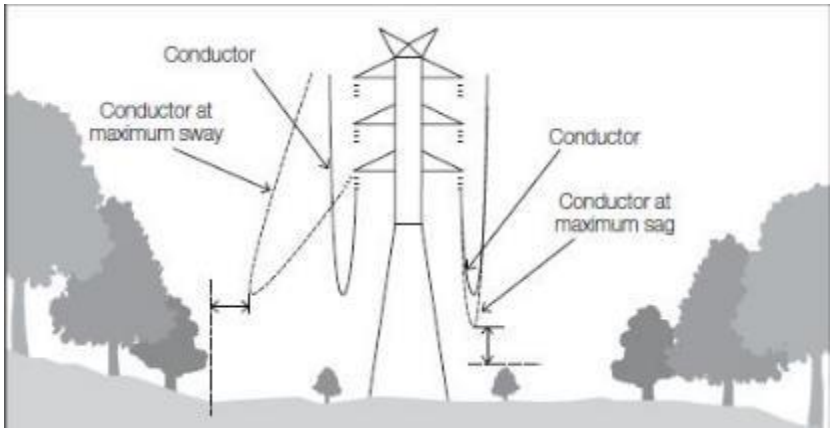
Whilst pruning is the preferred option, in some cases, it may not be possible to achieve the required clearances without compromising the vegetation’s shape, character, and health. In these instances, a complete removal is the preferred management practice. No mature vegetation will be removed without prior consultation with you. *Where vegetation exists in a hazardous state and poses a threat to electrical assets, TransGrid may undertake immediate preventative works without prior notice*

Please contact TransGrid on the number provided below or send us an email.

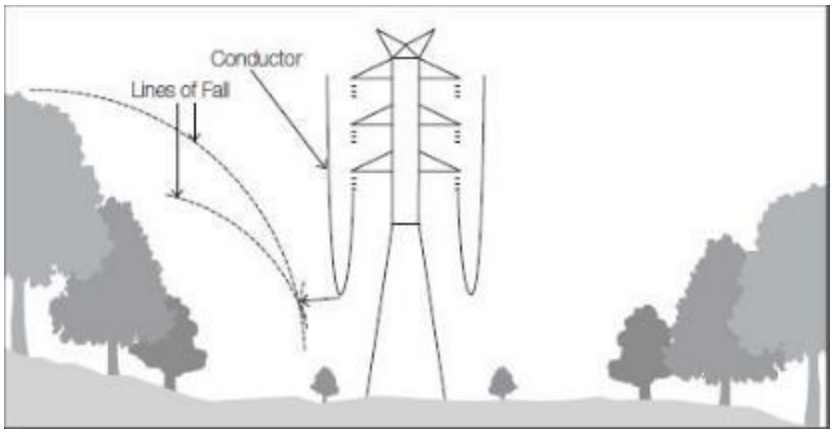
Access

TransGrid requires access to your property to undertake the proposed works to meet Clause 30 of the Code requirements. The diagrams below illustrate how trees may be pruned or removed. In order to protect electricity infrastructure. Please contact TransGrid on the number provided below or send us an email.

End View of the Transmission Line



Trees Adjacent to the Transmission Line



Vegetation of Significance

TransGrid consults with landowners and local, State and federal Government agencies to identify vegetation of significance located within the area of its network assets.

If vegetation is off cultural, historical, or environmental significance, please contact TransGrid on the number provided below or send us an email explaining the impact of proposed cutting or removal of vegetation.

Debris Management

Vegetation (branches) that have been pruned or removed will be cleared away as soon as practicable. Where safe to do so, larger limbs or logwood will be cut into manageable lengths and remain onsite (non-urban areas only). All stumps will be cut at ground level where

practicable. If any chemical treatment (herbicide application) is undertaken, you will notified of any potential impact.

☐ **Urgent Cutting- due to Emergency/Fault/Storm**

Where vegetation exists in a hazardous state and poses a threat to electrical assets, because of an Emergency, Fault, or Storm event, TransGrid may have to undertake urgent preventative works without prior notice.

It may be the responsibility of the owner of the vegetation (where it existed) to dispose of it. Where possible you will be advised of the locations where you are responsible for the disposal of vegetation that TransGrid has actioned.

TRAINING OF EMPLOYEES

All personnel involved in vegetation management works have been suitably trained in relation to the task they are performing. TransGrid utilises authorised and trained contractors to carry out these works.

Easement Planting Restrictions

TransGrid strongly encourages only planting of low growing vegetation on the easement to reduce the need for ongoing inspections and maintenance. Restrictions may be placed regarding the planting of vegetation on within the transmission easements on your land.

For any advice regarding the planting of vegetation on or adjacent to transmission easements, or any other questions or concerns regarding any matter stated above, please contact our Community Information Line on 1800 222 537 or via email at community@transgrid.com.au.

Thank you in advance for your cooperation.

Yours faithfully

TransGrid Community Relations

Appendix E – TransGrid Vegetation Worker Skills and Training Matrix

Frequency	Qualification/License Requirements		TransGrid Worker Roles: Program Delivery Manager Works Leader Easement Officer			Contractor Worker Roles: Cutter working from EWP Ground Crew Specialised Plant Operator Tree Cutter							
		Qualification / Competency Standard Unit (CSU) number	Arborist (not required)	Assessor Trainee (not required)	Assessor	Arborist	Assessor	Cutter working from EWP	Cutter working from EWP Trainee (not required)	Ground Crew	Specialised Plant Operator	Specialised Plant Operator Trainee (not required)	Tree Climber
	Certificate II in ESI - Powerline Vegetation Control	UET20312			M		M	M		C	M		M
	Certificate 3 in Arboriculture		M		C	M							
	Licence												
	High Risk Work Licence - Boom-type Elevating Work Platform (WP)							M	C				
	Core Competency Standard Units												
	Apply Occupational Health Safety regulations, codes and practices in the workplace	UEENEEE101A		C	M	M	M	M	C	C	M	C	M

	Comply with sustainability, environmental and incidental response policies and procedures	UETTDREL13A		C	M	M	M	M	C	C	M	C	M
	Working safely near live electrical apparatus as a non-electrical worker	UETTDREL14A		C	M		M	M	C	C	M	C	M
	Operate and maintain chainsaws	AHCARB205A		C	M		M	M	C	C	M	C	M
	Plan the removal of vegetation up to vegetation exclusion zone near live electrical apparatus	UETTDRVC23A		C	M	M	M	M	C	C	M	C	M
	Monitor safety compliance of vegetation control work in an ESI environment	UETTDRVC27A		C	M		M	M	C	C	M	C	M
	Elective Competency Standard Units												
	Use climbing techniques to cut vegetation above ground near live electrical apparatus	UETTDRVC21A											M
	Assess vegetation and recommend control measures in an ESI environment	UETTDRVC24A		C	M		M						
	Use elevated platform to cut vegetation above ground level near live electrical apparatus	UETTDRVC25A						M	C				

	Use specialised plant to cut vegetation above ground level near live electrical apparatus	UETTDRVC32A								M	C	
	Apply pruning techniques to vegetation control near live electrical apparatus	UETTDRVC33A						M	C		M	C	M
	Undertake release and rescue from a tree near live electrical apparatus	UETTDRVC34A											M
	Undertake standard climbing techniques	AHCARB204A											M
	Recognise plants	AHCPCM201A		C	M	M	M	C	C		C	C	C
	Licence to operate a boom-type elevating work platform (boom length 11 metres or more)	TLILIC2005						M	C				
	Initial training												
Initial training	Apply ESI safety rules, codes and procedures for work on or near electrical apparatus	UETTDRRF01B			M	M	M	M		M	M		M
	Prepare to work safely in the construction industry	CPCCWHS1001		M	M		M	M	M	M	M	M	M
Frequency	Training[2]												
1 Year	Provide cardiopulmonary resuscitation	HLTAID001		M	M	M	M	M	M	M	M	M	M

1 Year	Perform EWP controlled descent escape	UETTDRRF08B						M	C				
1 Year	Perform EWP rescue	UETTDRRF03B						M	C				
1 Year	Provide first aid in an ESI environment	UETTDRRF10B		M	M		M	M	M	M	M	M	M
1 Year	Safe Approach Distances - Vegetation Work			M	M	M	M	M	M	C	M	M	M
1 Year	Undertake release and rescue from a tree near live electrical apparatus	UETTDRVC34A											M
3 Yearly	Manual Handling			M	M	M	M	M	M	M	M	M	M
3 Yearly	Control traffic with stop-slow bat	RIIWHS205D		C	C		C	M	M	M	M	M	M
3 Yearly	Implement traffic management plan	RIIWHS302D		C	C		C	M	M	M	M	M	M
3 Yearly	VESI Environmental Framework/ TransGrid Environmental Rules E1-E4 for TG / E1-E3 for Contractors			M	M	M	M	M	M	M	M	M	M
3 Yearly	VESI Safety Framework/ TransGrid Induction eLearning WHSE and Your Guide to Staying Alive			M	M	M	M	M	M	M	M	M	M
Legend													
M - Mandatory - definitely required by VESI													
C - Conditional - a person may be required to have this Qualification, Licence, Competency Unit or training for the works being performed.													

Appendix F – Clearance Comparison between Blue Book 2017 and PSSR

Note: All clearances are in metres (m)
Relevant voltages for TransGrid in Victoria are highlighted in green.

Voltage (kV)	Blue Book	PSSR
	Instructed or Authorised Persons	
6.6	**0.7**	**-**
11		**0.7**
22		
33		
50	**0.75**	**-**
66	**0.9**	**1**
110	**1**	**-**
132	**1.2**	**1.2**
220	**1.7**	**1.8**
275	**2.3**	**2.3**
330	**2.7**	**3**
400	**3.3**	**-**
500	**3.6**	**3.9**

Voltage (kV)	Blue Book	PSSR
	Vehicles under the control of instructed or authorised persons. TG does not consider that ordinary persons can be used for work	
6.6	**0.7**	**-**
11		**0.7**
22		
33		
50	**0.75**	**-**
66	**1**	**1**
110	**1**	**-**
132	**1.2**	**1.2**
220	**1.8**	**1.8**
275	**2.3**	**2.3**
330	**3**	**3**
400	**3.3**	**-**

Voltage (kV)	Blue Book	PSSR
500	**3.9**	**3.9**

Voltage (kV)	Blue Book	PSSR
	Uninsulated Mobile Plant operated with a safety observer or restrictive devices. Note TG does not utilise ordinary persons to perform mobile plant work and does not perform glove and barrier work	
6.6	**1.2**	**-**
11		**1.2**
22		
33		
50	**1.3**	**-**
66	**1.4**	**1.4**
110	**1.8**	**-**
132	**1.8**	**1.8**
220	**2.4**	**2.4**
275	**3**	**3**
330	**3.7**	**3.7**
400	**4**	**-**
500	**4.6**	**4.6**